Readiness for the Future of Production Report 2018

In collaboration with A.T. Kearney
Insight Report

Readiness for the Future of Production Report 2018

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As the Fourth Industrial Revolution gathers momentum, decision-makers from the public and private sectors are confronted with a new set of uncertainties regarding the future of production. Technologies are transcending the computing capabilities associated with the digital revolution, transforming the physical world through robotics and new methods of production; enhancing human beings physically, mentally, and experientially; and permeating the environment to facilitate greater interconnectivity, monitoring, and efficiency of resource use. Rapidly emerging technologies—such as the Internet of Things, artificial intelligence, wearables, robotics and additive manufacturing—are spurring the development of new production techniques and business models that will fundamentally transform global production. These technologies are also driving new, more distributed and connected value chains. Both the speed and scope of change add a layer of complexity to the already challenging task of developing and implementing industrial strategies that promote productivity and inclusive growth.

In a dynamic and changing world, the World Economic Forum System Initiative on the Future of Production seeks to help usher in a sustainable production future that is:

- **Solution-driven**: technology can tackle and solve challenges that have previously been insurmountable.
- **Human-centric**: technology can unlock human potential by unleashing creativity, innovation and productivity in new ways.
- **Sustainable**: technology can promote sound production processes that minimize negative environmental impact, conserve energy and resources and enable carbon neutrality.
- **Inclusive**: employees, companies and countries at different stages of development benefit from Fourth Industrial Revolution technologies and the transformation of production systems.

Within the framework of the System Initiative, the Country Readiness for the Future of Production project focuses primarily on the fourth objective: inclusive transformation and growth. As production systems stand on the brink of another technological revolution, countries need to build awareness of the changing nature of production, determine how to best prepare to benefit from this transformation and collaborate across the public and private sector to enhance readiness. This project builds upon the World Economic Forum’s competitiveness and benchmarking expertise and is a result of collaboration between the Future of Production and Future of Economic Progress teams at the Forum.

The World Economic Forum, in collaboration with A.T. Kearney, has developed a new benchmarking framework, diagnostic tool and data set to help countries understand their current level of readiness for the future of production, as well as corresponding opportunities and challenges. This report shares the results from the inaugural Readiness for the Future of Production Assessment and insights from in-depth multistakeholder analysis in select countries, including India, Japan, Mexico, Russian Federation and South Africa. Findings are intended to catalyse multistakeholder dialogue to inform the development of modern industrial strategies. Leaders from both the public and private sectors need to work together to address key challenges, build on opportunities and define joint actions at the national, regional and global level.

We are grateful to the many economists, policy-makers, leaders and experts from diverse domains who have helped with the development of this tool. We would like to specifically thank members of the Country Readiness Project Steering Committee and Global Future Council on Production who have dedicated their time and insight to this effort. We would also like to thank the many institutions that have shared data for this analysis.

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Executive Summary

Context
The Fourth Industrial Revolution1 and emerging technologies—such as the Internet of Things, artificial intelligence, robotics and additive manufacturing—are spurring the development of new production techniques and business models that will fundamentally transform production. Both the speed and the scope of technological change, combined with the emergence of other trends, add a layer of complexity to the already challenging task of developing and implementing industrial strategies that promote productivity and inclusive growth. Further, recent changes put the competitiveness paradigm of low-cost manufacturing exports as a means for growth and development at risk. Countries need to decide how to best respond in this new production paradigm vis-à-vis their national strategies and their ambition to leverage production as a national capability. This requires countries to first understand the factors and conditions that have the greatest impact on the transformation of their production systems and then assess their readiness for the future. Subsequently, governments—together with industry, academia and civil society—can take suitable policy actions to close potential gaps related to their readiness for the future of production.

Approach
The data-driven Readiness for the Future of Production Assessment 2018 analyses how well positioned countries are today to shape and benefit from the changing nature of production in the future. Readiness is generally regarded as the ability to capitalize on future production opportunities, mitigate risks and challenges, and be resilient and agile in responding to unknown future shocks. As shown in Figure 1, the assessment is made up of two main components: Structure of Production, or a country’s current baseline of production, and Drivers of Production, or the key enablers that position a country to capitalize on the Fourth Industrial Revolution to transform production systems.

The 100 countries and economies included in the assessment are assigned to one of four archetypes based on their performance in the Drivers of Production (vertical axis) and Structure of Production (horizontal axis), as shown in Figure 2. The assessment is comprised of 59 indicators across the Structure of Production and Drivers of Production components. The end of this report includes detailed Country Profiles that can be used by policy-makers, business leaders and others to identify specific opportunities and challenges for individual countries as they navigate the future of production.

Figure 1: Readiness Diagnostic Model Framework

<table>
<thead>
<tr>
<th>Structure of Production</th>
<th>Drivers of Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>Technology &amp; Innovation</td>
</tr>
<tr>
<td>Scale</td>
<td>Human Capital</td>
</tr>
<tr>
<td></td>
<td>Global Trade &amp; Investment</td>
</tr>
<tr>
<td></td>
<td>Institutional Framework</td>
</tr>
<tr>
<td></td>
<td>Sustainable Resources</td>
</tr>
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<td></td>
<td>Demand Environment</td>
</tr>
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Executive Summary

Definition of Production
Production involves a broad spectrum of economic activity related to manufacturing products and goods. A full end-to-end appraisal of what it entails reveals the following sequence: Design-Source-Manufacture-Assemble-Distribute-Service-End of use-cycle. Advanced manufacturing refers to the use of innovative technology to improve processes and products, while traditional manufacturing relies more on the use manual or mechanized techniques.

Scope
The Readiness Assessment is a mid-level analysis focused on production. This means the assessment does not comment on the balances across different sectors in the national economy (e.g. services or agriculture), nor does it analyse country positions in specific sub-sectors or industries within production (e.g. textile or automotive). The assessment is forward-looking in that it measures readiness for the future, rather than performance today. It measures average national readiness—meaning it assesses the entire country on average, not just the highest-performing areas within a country. Thus, the assessment does not look at sub-regional differentiation within a country (e.g. Northern Italy compared to Southern Italy, coastal China compared to rural China, etc.).

Key Findings
The framework was applied to conduct analysis of 100 countries, as shown in Figure 3.

This assessment reveals numerous insights derived from the quantitative assessment as well as more in-depth engagement activities conducted in India, Mexico, Japan, Republic of Korea, Russian Federation, South Africa, and six ASEAN countries.

1. Global transformation of production systems will be a challenge, and the future of production could become increasingly polarized in a two-speed world. Of the 100 countries and economies included in the assessment, only 25 countries from Europe, North America and East Asia are Leading countries, or in the best position to benefit from the changing nature of production. These 25 countries already account for over 75% of global Manufacturing Value Added (MVA) and are well positioned to increase their share in the future. Furthermore, approximately 70% of robot sales take place in China, Germany, Japan, Republic of Korea and the United States. Germany, Japan and the United States dominate the landscape of high-value industrial robots, while China serves as the most rapidly growing market. Approximately 90% of the countries from Latin America, Middle East and Africa and Eurasia included in the assessment are classified as Nascent countries, or the group least ready for the future of production. Across all countries, bringing Micro, Small and Medium Enterprises (MSMEs) along in the journey is a global challenge, as these companies have varying levels of awareness, understanding and ability to invest. Global solutions and significant investment will be required to bring countries at different stages of development and MSMEs along in the transformation journey.

2. Different pathways will emerge as countries navigate the transformation of production systems. Not all countries may seek to pursue advanced manufacturing in the future. Some countries that are next in line as
low-cost labour destinations may still seek to capture traditional manufacturing opportunities in the near term under the current paradigm. Other countries may pursue a dual approach, with some areas pursuing advanced manufacturing and other areas pursuing traditional manufacturing. Advanced countries may seek to focus primarily on advanced manufacturing. Some countries may prioritize other sectors in the national economy over production. It will be important for each country to differentiate itself, capitalize on competitive advantages and make wise trade-offs in forming its own unique strategy for the future of production and its broader economy.

3. All countries have room for improvement. We are at the beginning of the transformation journey, and no country has reached the frontier of readiness, let alone harnessed the full potential of the Fourth Industrial Revolution in production. Compared to the ideal score (10), Japan has the strongest Structure of Production score (8.99), and the United States has the strongest weighted average Drivers of Production score (8.16) across all six drivers. While there are early leaders to learn from—including China, Germany, Japan, Republic of Korea, Singapore, the United States and others—these countries are also still navigating the early stages of transformation. Even the most advanced and complex countries are not strong in every part of their country, as different sub-regions have different levels of readiness. Furthermore, every country has a specific industry footprint today (e.g. food and beverage, automotive) and no country covers all industries. The specific industry footprints of each country may be challenged in the future under a different production paradigm.

4. There are common challenges within each archetype. Leading countries need to convert readiness into actual transformation and push the frontier by designing, testing and pioneering emerging technologies. Legacy countries need to avoid getting squeezed between more advanced Leading countries, which can offer more advanced manufacturing, and Nascent countries that can offer lower cost labour. This starts with improving the institutional framework, investing in human capital and boosting technology platforms and innovation capacity—the three areas where Legacy countries perform the worst, on average. High-Potential countries and economies have capabilities that can potentially be converted to strengthen their Structure of Production and further diversify their economy. Their key challenge will be to find the right balance across sectors when determining priorities for the national economy (e.g. how much to focus on developing industry compared to services) and to then choose which industries to develop. Nascent countries are an eclectic group with varying levels of industrial development. Their key challenge will be to determine whether to pursue advanced manufacturing or traditional manufacturing, and to what extent, as part of their overall economic strategy. Nascent countries seeking to accelerate readiness need to improve performance across all Drivers of Production, starting with improving the institutional framework. Attracting global investment will also be critical for knowledge and technology transfer.

5. As the new technological paradigm brings forth a cluster of new industries, there is potential for leapfrogging, but only a handful of countries are positioned to capitalize. New technological paradigms serve as a window of opportunity for lagging countries to catch up, since they can enter emerging industries at a later stage without the legacy costs of being locked into existing technologies. The opportunity exists with emerging technologies related to the Fourth Industrial Revolution. But are countries ready? While short cuts are attractive, a minimum level of capability is needed to leapfrog. High-Potential countries and economies, such as Australia and the UAE, and Nascent or Leading countries closest to the High-Potential archetype border, are likely in the best position to leapfrog in this new production paradigm. These countries do not have a large current production base, but have the resources and potentially the right combination of other capabilities to capitalize on leapfrogging opportunities in the new production paradigm. However, countries still need to identify which options are most promising and have an effective strategy for capturing these opportunities. Countries need to make investments—either broad investments across drivers, focused investments in a set of specific areas, or both—to improve readiness and their ability to leapfrog.

6. The Fourth Industrial Revolution will trigger selective reshoring, nearshoring and other structural changes to global value chains. Inertia is one of the biggest obstacles to changing global value chains, as it is so costly in most industries to move production from one location to another. The adoption of emerging technologies will change the cost-benefit equation for shifting production activities and, ultimately, impact location attractiveness. When a value chain is newly defined, countries will have opportunities to gain position or lose share. For example, countries that have been outsourcing activities for the last several decades may now be able to reshore or nearshore these production activities to be closer to their consumer base. The future of production will require certain skills and capabilities at each stage of the global value chain. It is critical for countries to enhance readiness and develop unique capabilities that make them an attractive production destination within global value chains. If countries cannot build capabilities and connectedness quickly, then they may lose out fast.

7. Readiness for the future of production requires global and regional, not just national, solutions. Countries seeking to compete in the future of production need to invest in enablers and develop a strategy to capitalize on
future opportunities and build or transition their production base. However, there are some enablers that cannot be developed in isolation to unlock the full potential of the future of production. For example, globally connected production systems require not only sophisticated technology, but standards, norms and interoperability across a diverse set of systems. Regulations and legal frameworks for emerging technologies developed at the sector level—versus independently by each country—can result in tremendous efficiencies and improve the ease of doing business across global value chains. Regional cooperation can also help countries leverage their collective strengths to compete on a global scale.

8. New and innovative approaches to public-private collaboration are needed to accelerate transformation. Every country faces challenges that cannot be solved by the private sector or public sector alone. Legacy and Nascent countries, in particular, can accelerate readiness and transformation by utilizing the private sector more actively in tackling macro level challenges. Leading countries, such as Germany and Japan, also involve the private sector in the development and implementation of strategies, such as Industry 4.0 and Society 5.0 strategies. Traditional public-private partnerships have historically had varying levels of success. However, new approaches to public-private collaboration that complement traditional models can help governments effectively and quickly partner with industry, academia and society to unlock new value.

Key Hypotheses
The Readiness for the Future of Production Assessment is intended to stimulate discussion and advance further research. There are two key hypotheses and working assumptions that are fundamental to the assessment’s framework that will be tested and researched over time. The framework will be updated as the future unfolds.

- The most important drivers of future readiness are Technology & Innovation, Human Capital, Institutional Framework and Global Trade & Investment. These drivers have the strongest correlation with economic complexity. The needs within each driver will evolve as we shift from current to future production paradigms, but the overall drivers will remain significant.

- Scale is not a prerequisite for future readiness. Economic complexity is more important than scale for readiness for the future of production. The ability to gather, combine and use knowledge embedded in people and technology to create a range of unique products will become an increasingly important competitive advantage. Thus, small countries such as Switzerland or Singapore are not necessarily at a disadvantage against global giants with larger scale.

Way Forward
This report analyses and presents the results of the first edition of the Readiness Assessment, which evaluates how well positioned 100 countries and economies across all geographies and stages of development are to shape and benefit from the changing nature of production. Given that the future is uncertain and hard to predict, the framework and methodology will continue to be updated as the future unfolds. Furthermore, engagement activities, such as multistakeholder workshops, and country as well as regional in-depth analyses, will be conducted in select countries to catalyse multistakeholder dialogue and action, and complement quantitative findings with qualitative insights. Lastly, the World Economic Forum has commenced work on a new transition framework to help governments design new strategies in collaboration with the private sector, civil society and academia. While the assessment is intended to serve as a diagnostic tool, the transition framework will support treatment of the diagnosis.
Chapter 1

Preparing for the Future of Production

Production has traditionally been an engine for growth, prosperity and innovation in countries around the world. Many advanced economies today, such as Germany, Japan, the United Kingdom and the United States, accelerated their growth and development through early industrialization. Newly industrialized economies in East Asia followed similar paths in more recent decades, achieving unprecedented growth and development through industrialization and export-led growth. Manufacturing has increased prosperity for nations by creating both direct and indirect jobs. Industry accounts for nearly a quarter of total global employment, and the multiplier effect of manufacturing jobs often results in the creation of several indirect jobs. In the United States, it is estimated that, for each full-time equivalent job in manufacturing, there are 3.4 full-time equivalent jobs created in non-manufacturing sectors.

Manufacturing has spurred innovation across entire economies. Manufacturing companies in China, Germany, Japan and Republic of Korea, for example, account for approximately 80% of all business-financed R&D in their economies.

Traditional industrialization models that have worked in the past are now being challenged as viable growth models for the future due to changes in production and the macro environment. Each industrial revolution has created its own path, and new players have often seized the opportunity to bypass legacy leaders. The Fourth Industrial Revolution and emerging technologies are spurring the development of new production techniques and business models that will fundamentally transform global production systems.

Table 1.1 presents a description of emerging technologies of the Fourth Industrial Revolution.

Table 1.1: Twelve Key Emerging Technologies

<table>
<thead>
<tr>
<th>Technology</th>
<th>Description</th>
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<tbody>
<tr>
<td>Artificial intelligence and robotics</td>
<td>Development of machines that can substitute for humans, increasingly in tasks associated with thinking, multitasking and fine motor skills.</td>
</tr>
<tr>
<td>Ubiquitous linked sensors</td>
<td>Also known as the “Internet of Things.” The use of networked sensors to remotely connect, track and manage products, systems and grids.</td>
</tr>
<tr>
<td>Virtual and augmented realities</td>
<td>Next-step interfaces between humans and computers invoking immersive environments, holographic readouts and digitally produced overlays for mixed-reality experiences.</td>
</tr>
<tr>
<td>Additive manufacturing</td>
<td>Advances in additive manufacturing, using a widening range of materials and methods. Innovations include 3D bioprinting of organic tissues.</td>
</tr>
<tr>
<td>Blockchain and distributed ledger technology</td>
<td>Distributed ledger technology based on cryptographic systems that manage, verify and publicly record transaction data; the basis of “cryptocurrencies” such as bitcoin.</td>
</tr>
<tr>
<td>Advanced materials and nanomaterials</td>
<td>Creation of new materials and nanostructures for the development of beneficial material properties, such as thermoelectric efficiency, shape retention and new functionality.</td>
</tr>
<tr>
<td>Energy capture, storage and transmission</td>
<td>Breakthroughs in battery and fuel cell efficiency; renewable energy through solar, wind, and tidal technologies; energy distribution through smart grid systems; wireless energy transfer; and more.</td>
</tr>
<tr>
<td>New computing technologies</td>
<td>New architectures for computing hardware, such as quantum computing, biological computing or neural network processing, as well as innovative expansion of current computing technologies.</td>
</tr>
<tr>
<td>Biotechnologies</td>
<td>Innovations in genetic engineering, sequencing and therapeutics, as well as biological computational interfaces and synthetic biology.</td>
</tr>
<tr>
<td>Geoengineering</td>
<td>Technological intervention in planetary systems, typically to mitigate effects of climate change by removing carbon dioxide or managing solar radiation.</td>
</tr>
<tr>
<td>Neurotechnology</td>
<td>Innovations such as smart drugs, neuromaging and bioelectronic interfaces that allow for reading, communicating and influencing human brain activity.</td>
</tr>
<tr>
<td>Space technologies</td>
<td>Developments allowing for greater access to and exploration of space, including microsatellites, advanced telescopes, reusable rockets and integrated rocket-jet engines.</td>
</tr>
</tbody>
</table>

production systems has led to a decline in middle-skill jobs and growth in low-skill and high-skill jobs, and automation threatens between 2–8% of today’s jobs in developing economies.

Furthermore, globalization has contributed to the steady decline of overall income inequality between countries over the past 20 years. This has been a significant achievement and has helped lift hundreds of millions of people out of poverty. Within countries, however, income inequality has actually increased, on average. Restrictions on immigration, trade and other cross-border flows are on the rise after a quarter-century of rapid globalization. Growing levels of nationalism, protectionism and parochialism, coupled with developed countries seeking to reindustrialize or upgrade their manufacturing sectors raises questions around reshoring. Therefore, the Fourth Industrial Revolution could potentially coincide with a slowdown or even reversal of international collaboration.

These factors, combined with the speed and scope of technological change, add a layer of complexity to the already challenging task of developing and implementing industrial strategies that promote productivity and inclusive growth. Developing countries with a primary competitive advantage of low-cost labour face serious risks, as emerging technologies could lead to reshoring manufacturing back to high-income countries and limit the production opportunities for lower-income countries. Developed countries seeking to reinvigorate their manufacturing sector also need to grapple with the reality that the same blue-collar jobs of past years may never return.

The future of production is at the heart of the Fourth Industrial Revolution and presents a myriad of opportunities. Despite the challenges inherent in any transformation of any industry, it has the potential to lead to unprecedented gains in productivity, efficiency and quality. The adoption of technologies on a global scale can dramatically increase the connectedness of global value chains and unlock new data-driven business models. Furthermore, combining emerging technology with human skills can boost productivity and reduce error rates, while creating new types of jobs and increasing demand for higher skill labour. The Fourth Industrial Revolution also has the potential to create entirely new product portfolios as technologies increase flexibility and enable customization. For production-specific use cases of emerging technologies, readers should refer to the World Economic Forum white paper Scaling Fourth Industrial Revolution Technologies in Production: The New Economic Growth Engine, scheduled for publication in early 2018. Leapfrogging opportunities may also emerge in areas where new technological paradigms reveal clusters of new industries and opportunities to realize gains in competitiveness, as discussed in more detail in Box 1.1.

No opportunity comes without risks, and the Fourth Industrial Revolution is no exception. New business models could quickly alter the attractiveness of manufacturing locations, leading to a high concentration of global manufacturing activity in a small set of countries and companies and shocking countries where manufacturing activity significantly drops. ‘Double winners’ or ‘double losers’ of globalization and the Fourth Industrial Revolution could result in increased inequality and social unrest. Automation has already led to job loss, and technology could increasingly become a substitute rather than a complement to human productivity. Hoarding of technologies could limit the extent of adoption and diffusion. Conversely,

Box 1.1: Leapfrogging and the Fourth Industrial Revolution

Schumpeterian economists first proposed the term ‘leapfrogging’ together with the concept of the ‘windows of opportunity.’ Pérez and Soete proposed that emerging technological paradigms serve as a window of opportunity for the latecomer or developing country that is not locked into the old technological system to grab new opportunities in the emerging or new industries. They further pointed out that during the time of paradigm shift, certain advantages of early entry into these new industries exist, such as low entry barriers and a lack of firmly established market leaders. During the initial stage of any new technological paradigm, the technology performance is unstable. Therefore, if human resources are able to access the sources of knowledge and create new additional knowledge, entry into emerging technology could be easier than during the later stage of technological evolution. Furthermore, latecomer countries can be said to hold a relatively advantageous position, as they are not locked into existing technologies. In contrast, advanced countries tend to fall into the incumbent trap. They are often locked into current existing technologies due to currently high productivity within those technologies, but remain unsure about the profitability of emerging technologies.

Today a wave of new innovations defines the Fourth Industrial Revolution, which also marks the arrival of a new techno-economic paradigm. How latecomer economies respond to new innovations and technologies will impact their economic fortune. New innovations can be a new window of opportunity or a window of further falling behind to remain stuck in the middle-income trap. Even if one country or a single company within a country takes the option of leapfrogging, it should be carefully managed because it comes with both possibilities and risks. These risks tend to fall into two categories: 1) making the right or wrong choice among several alternative technological trajectories and standards, and 2) uncertainty as to whether an initial market for the first movers exists.
has launched a new diagnostic tool, benchmarking framework to facilitate transformation. In a new production paradigm, and develop collaborative and identify new capabilities required to benefit from and succeed decision-makers need to assess their current capabilities, the unknown. To enhance readiness and prepare for the future, risks and challenges, and 3) be resilient to future shocks and capitalize on advanced manufacturing opportunities, 2) mitigate is well positioned to shape and benefit from the changing nature of production; and catalyse public-private sector dialogue and joint actions to transition to future realities. The Readiness for the Future of Production Assessment analyses the degree to which countries today are well positioned to shape and benefit from the changing nature of production in the future. The findings presented in this report are the result of the Readiness for the Future of Production Assessment 2018 that was carried out with this tool. The framework, methodology and data will continue to be refined as the future unfolds.

The forward-looking assessment is based on two dimensions: Structure of Production, or the current baseline of production today, and Drivers of Production, or key enablers to capitalize on emerging technologies to transform production systems. Insights and findings from the assessment can inform the development of modern industrial strategies and supporting policies as countries seek to improve their production base and key enablers. Leaders can also use the tool to track progress and monitor results over time.

With the release of the Readiness for the Future of Production Assessment 2018, it is important to draw boundaries on what the tool does and does not do. Since the assessment is designed to be a mid-level analysis focused on production, it does not look at overall national economic strategy across sectors, nor does it look at specific sub-sectors within production. The tool does not differentiate between sub-regions within a country, but measures average overall readiness. Figure 1.1 identifies the focus of the assessment within this broader context. Rather than current performance, it measures readiness for the future of production where a confluence of technology and trends will reshape the way things are made. Given that the future is uncertain and inherently difficult to measure, the assessment is not a prediction of the future. By design, it does not provide an overall ranking of countries, recognizing that each country has required to transform production systems; help decision-makers assess the extent to which their country is ready and positioned to shape and benefit from the changing nature of production; and catalyse public-private sector dialogue and joint actions to transition to future realities.

That is why, as production systems stand on the brink of another technological revolution, countries need to decide how to best respond. Countries at different stages of development can learn from global approaches as they shape their own unique journey in the future of production. However, there is no one-size-fits-all approach for the future, and countries will need to intentionally choose to be different and make trade-offs as they form and execute their strategy. Not all countries may prioritize advanced manufacturing as part of their strategy, as some may seek to pursue traditional manufacturing and capture share within current production paradigms in the short term. Countries will also need to decide on the sectors and value chains within production to prioritize based on comparable advantages. Most importantly, countries need to make decisions about production in the context of their national economic strategy. A combination of multiple strategies around production, services and agriculture is likely needed to drive growth, prosperity and innovation in the future.

As in all industrial revolutions, input from all stakeholders is required for successful transformation. Governments, companies, trade unions, academia, civil society and others should collaborate to shape the future of production. Public-private collaboration is particularly critical to facilitate participation in future global value chains. New approaches to public-private collaboration to complement traditional models can also help governments effectively partner with industry to unlock new value for the country.

Preparation today can help countries be agile, competitive and resilient in the future. Put more specifically, ‘readiness’ represents the extent to which a country has capacity and is well positioned today to do the following in the future: 1) capitalize on advanced manufacturing opportunities, 2) mitigate risks and challenges, and 3) be resilient to future shocks and the unknown. To enhance readiness and prepare for the future, decision-makers need to assess their current capabilities, identify new capabilities required to benefit from and succeed in a new production paradigm, and develop collaborative and customized solutions to facilitate transformation.

The World Economic Forum Country Readiness project has launched a new diagnostic tool, benchmarking framework and data set to build awareness on the key levers and factors to best respond. Countries at different stages of development can learn from global approaches as they shape their own unique journey in the future of production. However, there is no one-size-fits-all approach for the future, and countries will need to intentionally choose to be different and make trade-offs as they form and execute their strategy. Not all countries may prioritize advanced manufacturing as part of their strategy, as some may seek to pursue traditional manufacturing and capture share within current production paradigms in the short term. Countries will also need to decide on the sectors and value chains within production to prioritize based on comparable advantages. Most importantly, countries need to make decisions about production in the context of their national economic strategy. A combination of multiple strategies around production, services and agriculture is likely needed to drive growth, prosperity and innovation in the future.

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Figure 1.1: Scope of the Readiness Assessment

- National economy
  - Primary sector (extraction)
  - Secondary sector (production)
  - Tertiary sector (services)

- Focus of Readiness Assessment
  - Sub-Region (e.g. Coastal States)
  - Sub-Sector (e.g. Textiles, Automotive)
its own unique development path and production objectives that a linear ranking would not sufficiently capture. Instead, countries are placed into one of four archetypes that provide a new dimension for benchmarking against countries in a similar position. Based on specific research questions, the assessment allows for any desired clusters within or across archetypes to be formed and analysed. Further, it is not prescriptive, but provides elements of analysis in the form of comparable and reliable indicators that must be further interpreted within the context of a given country to inform agenda-setting and decision-making.

The assessment is one of many tools that decision-makers can use to prepare for the future and enhance readiness. Other ongoing projects under the mandate of the World Economic Forum System Initiative on Shaping the Future of Production provide deeper analysis on key enablers, including technology and innovation, employment and skills and sustainable production. In 2018 and beyond, the Country Readiness project will release additional tools to support treatment of the diagnostic (i.e. how countries address opportunities and challenges identified in the assessment), including a transition framework to help governments design new strategies in collaboration with the private sector, civil society and academia.
Chapter 2

Measuring Readiness for the Future of Production

Definition of Readiness
For the purposes of the Country Readiness Project, “readiness” is the ability to capitalize on future production opportunities, mitigate risks and challenges, and be resilient and agile in responding to unknown future shocks. The assessment measures readiness for the future of production, rather than production performance today. Further, it looks at average readiness of the entire country—the entire country on average, not just the highest performing areas within a country. Results from the quantitative analysis were complemented with qualitative insights from country engagement activities in India, Mexico, Japan, Republic of Korea, Russian Federation and South Africa, and six ASEAN countries.

Future of Production Scorecard
While no one can precisely predict the future, we can already see key enablers and factors that are allowing countries to adopt emerging technologies, increase productivity and transform production systems. The framework identifies key levers required to effectively transform production systems in light of rapidly emerging technologies. As shown in Figure 2.1, the assessment measures readiness for the future of production across two different components: Structure of Production and Drivers of Production.

Structure of Production
Production is one of several catalysts for growth that countries can pursue to increase the prosperity of people and achieve other objectives. A country’s Structure of Production depends on several variables, including the strategic decisions a country makes to prioritize sector development across agriculture, mining, industry and services. This structure reflects the complexity and scale of a country’s current production base, as shown in Figure 2.2. The scope of the assessment does not include sectoral mix; therefore, this is not measured as part of the Structure of Production. Countries with a large, more complex Structure of Production today are more ready for the future in that they already have a production base to build upon.

Methodology and Framework
The inaugural Readiness Assessment was conducted using a framework that was developed through a series of multistakeholder consultations, including with leading experts in government, international organizations and research institutions. The assessment is intended to stimulate discussion and advance further research and will be updated as the future unfolds.

Figure 2.1: Readiness Diagnostic Model Framework

<table>
<thead>
<tr>
<th>Future of Production Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure of Production</td>
</tr>
<tr>
<td>Complexity</td>
</tr>
<tr>
<td>Scale</td>
</tr>
<tr>
<td>Drivers of Production</td>
</tr>
<tr>
<td>Technology &amp; Innovation</td>
</tr>
<tr>
<td>Human Capital</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
</tr>
<tr>
<td>Institutional Framework</td>
</tr>
<tr>
<td>Sustainable Resources</td>
</tr>
<tr>
<td>Demand Environment</td>
</tr>
</tbody>
</table>
Chapter 2

Complexity: Assesses the mix and uniqueness of products a country can make as a result of the amount of useful knowledge embedded in the economy and the ways in which this knowledge is combined. See Box 2.1 for more on Ricardo Haussmann and Cesar A. Hidalgo’s research on economic complexity.

Scale: Assesses both the total volume of manufacturing output within a country (Manufacturing Value Added) as well as the significance of manufacturing to the economy (Manufacturing Value Added, % of GDP).

Drivers of Production

The framework’s Drivers of Production are key enablers that position a country to capitalize on emerging technologies and opportunities in the future of production. A consultative process was used to identify six main drivers: Technology & Innovation, Human Capital, Global Trade & Investment, Institutional Framework, Sustainable Resources, and Demand Environment. Each has corresponding categories, sub-categories and indicators that measure key concepts, as shown in Figure 2.3. Countries that perform well across the Drivers of Production are considered more ‘ready’ because the mix of enablers will allow for the adoption and diffusion of technology to accelerate transformation of production systems.

Technology & Innovation: Assesses the extent to which a country has an advanced, secure and connected ICT infrastructure to support the adoption of new technologies in production. Also measures a country’s ability to foster innovation and commercialize innovations that have potential application in production.

Human Capital: Assesses a country’s ability to respond to shifts in the production labour market triggered by the Fourth Industrial Revolution by looking at both current labour force capabilities as well as the long-term ability to cultivate the right skills and talent in the future work force.

Box 2.1: A Closer Look at Economic Complexity

What is economic complexity?
The Economic Complexity Index (ECI) is a measure of the knowledge embedded in a society expressed by the products it makes. Economies with high economic complexity have been able to amass sophisticated capabilities and knowledge to make a diverse and complex set of products. Increases in ECI are associated with improvements in income levels and economic growth.15

How is economic complexity calculated?
The economic complexity of a country or region is calculated based on the diversity and ubiquity of the products it makes, or the number of the economies that are able to produce them. Products that require sophisticated know-how and many capabilities tend to be produced by few economies.

How can economies improve economic complexity?
There is ongoing research on policies that can improve a region’s economic complexity and the growth that accompanies it. Unlike indices that are derived from a set of pre-conceived conditions, the ECI reflects an outcome. Economies can track it and seek to improve it with policies that encourage diversification and a move towards more complex products. These policies are context specific, based on a country’s current product mix, and the capabilities that will help firms ‘jump’ to new products. Examples of these policies may involve upgrading infrastructure, cold chain logistics and customs efficiency to allow a region to move from exporting canned fruit to fresh produce. The creation of special economic zones has allowed countries to attract more foreign direct investment that increases the complexity of their exports by creating microcosms of efficiency. Policies that allow for the import of talent and diffusion of know-how in society also contribute to improvements in ECI.

How are economic complexity scores incorporated into the readiness assessment?
The Economic Complexity Index (ECI) publishes a value for each economy annually. The Readiness Assessment 2018 uses values from the Atlas of Economic Complexity 2016 Global Rankings, which can be found at http://atlas.cid.harvard.edu/rankings/. All scores are normalized to the 0–10 scale used for all indicators included in the assessment and 2) uncertainty as to whether an initial market for the first movers exists.
Measuring Readiness for the Future of Production

• **Global Trade & Investment**: Assesses a country’s participation in international trade to facilitate the exchange of products, knowledge and technology, and to establish global linkages. Also measures the availability of financial resources to invest in production-related development as well as the quality of infrastructure to enable production-related activities.

• **Institutional Framework**: Assesses how effective government institutions, rules and regulations contribute towards shepherding technological development, novel businesses and advanced manufacturing.

• **Sustainable Resources**: Assesses the impact of production on the environment, including a country’s use of natural resources and alternative energy sources.

• **Demand Environment**: Assesses a country’s access to foreign and local demand to scale production. Also measures the sophistication of the consumer base, as this can drive diverse industry activity and new products.

For a detailed description of each driver and analysis of the driver significance in relationship to readiness for the future of production, please refer to Chapter 4 of this report.

**Indicators**

The assessment includes 59 indicators that capture pertinent concepts that are fundamental to a country’s readiness for the future of production. These indicators are measured by internationally recognized organizations, including the International Energy Agency (IEA), International Labour Organization (ILO), International Telecommunication Union (ITU), Organization for Economic Co-operation and Development (OECD), United Nations (UN), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Industrial Development Organization (UNIDO), World Bank (WB), World Trade Organization (WTO), and others. The assessment also includes indicators from the World Economic Forum’s Executive Opinion Survey (EOS) that measures the qualitative aspects of various dimensions, or serves as a substitute where a comparable statistical data was not available for a large enough set of countries. See **Appendix C** for the full indicator list and detailed descriptions.

**Global Mapping of Results**

One of the key outputs of the assessment is the global mapping of results. The following section describes the methodology used to develop the global mapping. For a visual explanation of how to read the results, please refer to the **How to Read the Country Profiles** section.
Country Coverage
This inaugural assessment includes 100 countries and economies covering all regions of the world. Country inclusion is largely driven by data availability and the significance of production in these countries. The 100 countries and economies included in the assessment account for over 96% of the global Manufacturing Value Added (MVA). Seventy-eight countries have 100% data coverage and 90 countries have at least 98% data coverage. Only Hong Kong SAR has less than 95% data coverage. In cases where data was missing, imputed data was used to calculate overall driver scores. See Appendix C for a list of imputed data and approach by indicator. The World Economic Forum seeks to expand coverage of the assessment as more data becomes available in future years.

Scale and Normalization
All scores for indicators, sub-categories, categories, Drivers of Production, as well as total driver and structure scores are measured on a 0–10 scale, with a maximum value (10) representing the ideal. Individual indicators are normalized using a min-max approach, which converts values for all indicators into unit-less scores ranging from 0 to 10. These normalized scores can then be combined to produce aggregated scores. In the case where a higher value corresponds to a worse outcome (e.g. emissions), the indicators are still normalized so that 10 always corresponds to the ideal outcome.

For each indicator, the ideal value does not necessarily correspond to actual maximum (or minimum) values in the country sample. The target value corresponds to widely accepted policy targets or aspirations and is aligned with the World Economic Forum’s Global Competitiveness Index in cases where indicators are used for both assessments. The min and max targets will be kept constant in future iterations of the assessment.

Weighting
The assessment is weighted at the driver level with categories and sub-categories receiving equal weighting within each dimension. Complexity has a larger weight than Scale within the Structure of Production component. Drivers are also given different weights, derived from their overall significance in relation to economic complexity. See Table 2.1 for a summary of the weighting scheme.

Archetypes
Recognizing that each country has its own unique goals and strategy for production and development, countries do not receive an overall global ranking. Instead, countries are assigned to one of the four archetypes based on their weighted Structure of Production and weighted Driver of Production scores. The lines to divide the four quadrants are drawn using the average Driver of Production score (5.7) and Structure of Production score (5.7) for the Top 75 countries, based on

Box 2.2: Alternative Weighting Schemes Based on Future Scenarios
Given that the assessment is forward looking, the weighting scheme inherently reflects an embedded view of the future. An underlying assumption of the model is that economic complexity is a key measure of readiness, as the ability to make increasingly complex and unique products will be important for future competitiveness in production. Thus, complexity is the core concept at the heart of the weighting scheme used for the assessment. When comparing the relationship between the Drivers of Production and complexity, four drivers stood out for their explanatory power of complexity: Technology & Innovation, Human Capital, Global Trade & Investment, Institutional Framework. These drivers all received the highest weight.

The current weighting scheme reflects one view of the future. Of course, the future is uncertain and hard to predict. Any number of scenarios could unfold and make different drivers more or less important. For example, Sustainable Resources is weighted lower due to its low correlation with Economic Complexity historically. However, sustainable production practices are critical to a sustainable production future and in different scenarios can be weighted much higher. Readers interested in making their own adjustments to weightings given to different drivers can explore the interactive online tool at http://wef.ch/fopreadiness18. For additional perspectives on potential future scenarios for production, please see the World Economic Forum whitepaper Shaping the Future of Production: Four Contrasting Perspectives in 2030 (https://www.weforum.org/whitepapers/shaping-the-future-of-production-four-contrasting-perspectives-in-2030).
Structure of Production rankings. Fixed lines allow for additional countries to be added in the future without shifting the lines. See Figure 2.4 for a visualization of the archetypes. The two different components reflect the need to both invest in the Drivers of Production to increase capacity to take advantage of future opportunities and develop a strategy to convert capacity into an expanded production base in the future.

The archetypes provide a unique perspective for benchmarking against countries with a similar outlook for the future of production:

- **Leading**: Countries with a strong production base today that exhibit a high level of readiness for the future through strong performance across the Drivers of Production component. These countries also have the most current economic value at stake for future disruptions.

- **Legacy**: Countries with a strong production base today that are at risk for the future due to weaker performance across the Drivers of Production component.

- **High-Potential**: Countries with a limited production base today that score well across the Drivers of Production component, indicating that capacity exists to increase production in the future depending on priorities within the national economy.

- **Nascent**: Countries with a limited production base today that exhibit a low level of readiness for the future through weak performance across the Drivers of Production component.

Each country has its own unique strengths and improvement areas and is therefore assigned to an archetype for a variety of reasons. No two countries within an archetype are the same, but general trends can be observed by archetype. Additional cluster analysis within and across archetypes to answer specific research questions can also be conducted using the dataset.

### Measurement challenges

There are several measurement limitations that make this exercise challenging. First, it is inherently difficult to measure or predict uncertainties that come with an unknown future. Furthermore, there is a lack of empirical evidence about the topic, given we are still in the process of understanding the factors and conditions that have the greatest impact on transforming production systems. To address this, the framework will be revisited and updated as the future unfolds.

Secondly, there is a lack of sufficient data for some key concepts. In several cases, the assessment uses proxy indicators where direct measures are not available. For example, more manufacturing specific data would give a better view than national level indicators on topics such as labour force capabilities, emissions and so on. There were also several concepts considered but not included due to lack of data availability for a large set of countries.

Lastly, sectoral strengths and weaknesses in manufacturing are difficult to identify in a holistic assessment. In-depth qualitative analyses have been conducted in select countries to provide a more comprehensive view and complement the quantitative assessment with qualitative insights. However, each country will need to view the assessment in the context of its own sectoral strategy and adapt priorities accordingly.
Chapter 3

Readiness for the Future of Production Assessment Results

The Readiness for the Future of Production Assessment 2018 evaluates the readiness of 100 countries and economies for the future of production on a scale of 0 (worst score) to 10 (best score) across both the Drivers of Production and Structure of Production components. In this chapter, we present the global results, and then examine the results by archetype, highlighting the performance of selected countries from each of the four archetypes. Please refer to the online reader (http://wef.ch/fopreadiness18) and the end of this report for the detailed Country Profiles. Results are intended to help catalyse structured dialogue between the public and private sectors in order to inform the development of the next generation of industrial development strategies. Furthermore, since the assessment will be repeated on an annual basis it will equip leaders with the tools to monitor and track issues that are most relevant for the future of production.

Global Results Overview

As stated above, the framework has been applied to conduct an analysis of 100 countries and economies, which represent over 96% of global Manufacturing Value Added (MVA) and over 96% of global Gross Domestic Product (GDP). Countries were then plotted to four archetypes—Leading, Legacy, High-Potential and Nascent countries—based on their weighted Structure of Production and Drivers of Production scores, as shown in Figure 3.1 and Table 3.1.

Of the 100 countries and economies included in the assessment, there are 25 Leading countries, 10 Legacy countries, 7 High-Potential countries/economies and 58 Nascent countries. The assessment reveals that all countries can do more to prepare for and shape future production paradigms. It is important to note, for example, that no Leading country has achieved a perfect score of 10 on either the Drivers of Production or Structure of Production components.

Furthermore, the assessment highlights the potential for widened disparity between countries, as well as the challenge of achieving inclusive growth in the future through production alone. This is most apparent when comparing the varying levels of readiness across geographic regions and economic income groups. The countries with the highest levels of readiness for the future of production are concentrated in Europe, North America, and East Asia; 20 of the Leading countries are situated in Europe and North America and five are in East Asia. All Leading countries are high-income countries except for China and Malaysia. Since labour is typically a more significant production cost in high-income countries, these countries stand to potentially realize the highest productivity gains from the emerging technologies. Overall, the 25 Leading countries already account for over three quarters of global Manufacturing Value Added today and are poised to do well in the future—which could lead to increased global disparity in production.
### Table 3.1: Readiness for the Future of Production Assessment Results, 2018

<table>
<thead>
<tr>
<th>Region</th>
<th>Country</th>
<th>Score</th>
<th>Rank</th>
<th>Score</th>
<th>Rank</th>
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- East Asia and the Pacific
- Eurasia
- Europe
- Latin America and the Caribbean
- Middle East and North Africa
- North America
- South Asia
- Sub-Saharan Africa
Box 3.1: G20 Readiness for the Future of Production

G20 countries are responsible for over 80% of global Manufacturing Value Added. On average, G20 countries display greater levels of readiness for the future of production than other groups, with the average Structure of Production score of 6.5 out of 10, and average Drivers of Production score 6.1 out of 10. The G20 countries displaying the highest levels of readiness for the future of production—or the highest combined Structure of Production and Drivers of Production scores—are Germany, Japan and the United States. The G20 countries displaying the lowest levels of readiness are Argentina, Brazil and South Africa. Japan has the strongest Structure of Production among G20 countries and ranks first among all 100 countries and economies included in the assessment. Australia has the weakest Structure of Production among G20 countries and ranks 61st globally. The United States performs the best across all Drivers of Production and ranks first among all 100 countries and economies included in the assessment, whereas Argentina scores the lowest and ranks 75th globally.

Overall, the majority of countries in the assessment exhibit a low level of readiness for the future of production, as 58 of the 100 countries in the assessment fall within the Nascent archetype. Approximately 90% of countries from Latin America, Middle East and North Africa, Sub-Saharan Africa and Eurasia are classified as Nascent countries. As Nascent countries only account for one-tenth of global MVA, significant investments in these countries will be required to prepare for and capitalize on opportunities in the future of production. For additional analysis of results of specific country groupings, see Box 3.1 and Box 3.2.

Archetype Analysis and Select Country Highlights

As noted above, countries were plotted to archetypes based on their weighted Structure of Production and Drivers of Production scores. Given the evolving nature of readiness for the future of production, archetypes will likely resonate more strongly with countries at the extremes of the various archetypes. Similarly, countries that are positioned near the borders of other archetypes may have attributes of more than one archetype. Based on specific research questions, the assessment allows for any desired clusters within or across archetypes to be formed and analysed. See Box 3.3 for more information on potential cluster analysis.

The aspirations of specific countries are not incorporated into the analysis, and a country’s trajectory in the future depends partially on how much production figures into their national economic strategy going forward. To advance readiness, countries should seek to improve performance across all Drivers of Production (or shift up, as shown in Figure 3.1) and expand their Structure of Production (shift right, as shown in Figure 3.1). Thus, each archetype has its own best/worst case scenario.

The best case for Leading countries is to push towards the frontiers of their archetype and convert readiness into transformation by adopting and fully harnessing the potential of emerging technologies. The worst case is for Leading countries to rely too much on current success and not create a burning platform for transforming production practices, potentially resulting in a shrinking production base in the future as other countries leapfrog.

The best case for Legacy countries is to improve performance across the Drivers of Production so that they have the right factors in place to transform current production systems and maintain and grow their Structure of Production. The worst case for Legacy countries is to underinvest across key drivers and have this result in a shrinking production base.

The best case for High-Potential countries is to use their strong Drivers of Production to expand, both in scale and

Box 3.2: The Future of Production in ASEAN

ASEAN, a regional bloc of 10 Southeast Asian countries—Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam—is the fifth-largest manufacturing economy in the world when combined. It accounts for 5% of global manufacturing activity, measured in terms of global MVA, and 60% of its activity is concentrated in just five sectors: food and beverage, chemicals and chemical products, electronics, motor vehicles, and rubber and plastic products. In four of these key sectors, the region holds at least the fifth spot in terms of global manufacturing outputs.

The seven ASEAN countries included in the assessment are spread across three different archetypes: Leading—Malaysia and Singapore; Legacy—Philippines and Thailand; and Nascent—Cambodia, Indonesia and Viet Nam. The range of positions across the three archetypes reflects the reality of the heterogeneous region. Member states have varying degrees of economic development and readiness for the Fourth Industrial Revolution. Singapore, the only high-income ASEAN country included in the assessment, ranks the highest in the region across all Drivers of Production.

To keep pace with developments in other countries, there are many opportunities for ASEAN member states to collaborate and use regional cooperation to accelerate readiness. For more on this topic, please see the Shaping the Future of Production in ASEAN project (https://www.weforum.org/projects/the-future-of-production-in-asean). A study on the Future of Production in ASEAN will be launched at the upcoming World Economic Forum on ASEAN event in the fall of 2018.
Box 3.3: Cluster Analysis

Additional cluster analysis of different economies within and across archetypes can reveal new insights. For example, within the Leading archetype there are several different sub-clusters. Japan, Germany and Republic of Korea have the strongest Structure of Production and have excelled in production over the past several decades as other Leading countries have trended towards services. However, these countries are not quite as high-performing across the Drivers of Production, and additional investment will be required to transition to the new production paradigm. Another cluster—Australia, Canada, New Zealand, United Kingdom and the United States—includes both Leading and High-Potential countries. This is an under-leveraged cluster, as the countries perform very well across the Drivers of Production and exhibit high readiness, but underperform in terms of their Structure of Production. As production shifts to new paradigms, it will be important for these countries to understand the missing link and convert readiness into output. Lastly, the Nordic cluster—Denmark, Finland, Norway and Sweden—represents another group that displays a high level of readiness for the future of production, as all countries perform well across the Drivers of Production.

Leading Country Results

As shown in Figure 3.2, the Leading archetype consists of 25 countries from Europe, North America, and East Asia and the Pacific that are responsible for over 75% of global MVA today. Leading countries are leaders in manufacturing today that are also well positioned for the future of production. They have the most complex economies in the world and account for the majority of global MVA. Leading countries are top performers across all Drivers of Production. The key opportunity for Leading countries is to achieve a ‘first mover’ advantage. Those that most effectively push the frontier and convert readiness into actual transformation can reap tremendous benefits. True transformation is still nascent, but Leading countries are at the forefront of designing, testing and pioneering emerging technologies. Many have developed government-led strategies to capitalize on the Fourth Industrial Revolution. As global manufacturing output is highly concentrated among Leading countries, these countries have the most current economic value at stake.

Furthermore, Leading countries are best positioned to facilitate global cooperation to usher in the next production paradigm. Readiness requires global, not just national, solutions given the interconnectedness of global production systems. It will be important for Leading countries to work together to establish standards and norms, promote interoperability, facilitate data flows and prevent other potential bottlenecks that could slow progress.

Lastly, one key challenge for Leading countries will be to accelerate sustainable production practices to counteract environmental damage from previous industrialization, as Leading countries are the world’s largest contributors of carbon emissions today.

China

After surpassing the United States in 2010, China’s manufacturing sector is the largest in the world, with a total global MVA of nearly US$ 3 trillion in 2016\(^\text{20}\), representing approximately one-quarter of global Manufacturing Value Added. While China performs very well on the scale of its production base, it still can improve on the Complexity component, as it is the 28th most complex economy in the world.\(^\text{21}\) Over the last two decades China has evolved its capabilities from producing low-cost goods to more advanced products. However, due to its size, the levels of modernization within its manufacturing sector vary greatly,
with striking differences between pockets of excellence and less sophisticated manufacturers, thus reducing its average readiness. Across the Drivers of Production, China performs particularly well on the Demand Environment and Global Trade & Investment drivers. China ranks in the top third for both Technology & Innovation and Human Capital, but will need to continue to strengthen the capabilities of its labour force to develop the skills required in the future and improve the levels of innovation within companies. China’s greatest challenges are the Institutional Framework and Sustainable Resources drivers. Though China is the world’s largest contributor of carbon emissions, it has stated a commitment to become more energy-efficient and sustainable in the future. Adopting emerging technologies can help accelerate this goal. In 2015, the government launched “Made in China 2025” to upgrade the country’s manufacturing sector and fund manufacturing innovation.22

France
France’s manufacturing sector is the 8th-largest in the world, with a total Manufacturing Value Added of over US$ 280 billion in 2016.23 Like other developed countries, the relative contribution of France’s manufacturing sector to GDP has declined, to approximately 10% today, half of its contribution in 1970.24 France performs well across all Drivers of Production—ranking in the top quartile of all countries for every driver—and performs particularly well on the Global Trade & Investment, Demand Environment and Sustainable Resources drivers. The main challenge for France is to convert readiness and capacity into a strengthened Structure of Production. With the launch of The New Face of Industry initiative in 2015, France has followed European peers by launching a new strategy to accelerate an industrial renaissance.25

Germany
Germany has the 4th-largest manufacturing sector in the world—with a total MVA of nearly US$ 775 billion in 201626 — and the third most complex economy.27 With over half of Germany’s manufacturing output being exported, Germany’s history of manufacturing excellence is globally renowned. Germany ranks in the top quartile across all Drivers of Production and in the top ten for the Technology & Innovation, Human Capital, Global Trade and Investment and Demand Environment drivers. Germany stands out for strong education outcomes, advanced technical training programs, a highly capable current workforce and a proven ability to innovate. With the launch of Industrie 4.0 in 2011, Germany was one of the first countries to increase digitization and the interconnection of products, value chains, and business models to drive digital manufacturing forward.28 Germany is widely acknowledged as a pioneer in the Fourth Industrial Revolution and is taking a leading role in building global standards and norms for international adoption.29

Japan
Japan’s manufacturing sector is currently the 3rd-largest in the world with a total MVA of over US$ 1 trillion in 2016, representing nearly 9% of global Manufacturing Value Added.30 Combined, China, the United States and Japan account for nearly half of global MVA. Since 1984, Japan has been ranked as the most complex economy in the world.31 Across the Drivers of Production, Japan performs particularly well on Demand Environment, due to a sophisticated consumer base, robust corporate activity and large market size. Japan also ranks in the top 20 on Technology & Innovation and Institutional Framework. In 2016, the government launched Society 5.0, as a strategy to use emerging technology to not only transform production, but all of society.32 In addition, the government added Connected Industries in 2017 to support Japanese industries including manufacturing and other sectors that create new added value through connecting things, people, technologies, organizations and other societal elements. Japan faces challenges related to human capital, with an ageing and shrinking population as well as lower migration than comparable countries. Japan has room for improvement on the Sustainable Resources driver as well.

Republic of Korea
The Republic of Korea has experienced a remarkable economic rise over the past several decades, progressing from a poor agricultural society in the 1960s to one of the premiere production countries today. It now has the 6th-largest manufacturing sector in the world—with a total MVA of over US$ 380 billion in 201623 – and the fourth most complex economy.24 The Republic of Korea performs well across the Drivers of Production with the exception of Sustainable Resources. The country is particularly strong on Technology and Innovation, and ranks in the Top 5 for R&D expenditures and patent applications per million people. Its well-documented ability to innovate has helped to fuel its historic rise, and can be a boon in ushering in the next production paradigm. To improve its readiness for the future of production, the Republic of Korea will need continue to enhance labour force capabilities, particularly in critical thinking skills, digital skills and knowledge-intensive employment. Furthermore, sound, transparent and trusted institutions can help steer the vision for the future and build the trust required for global connectivity.

Singapore
The contribution of Singapore’s manufacturing sector to its GDP rose from roughly 11% in 1960 to a high of approximately 28% in 2000; it currently is at 20% today.35 Singapore’s manufacturing capabilities have evolved considerably, with strong competencies today in high-value areas of manufacturing such as R&D and product design. The country ranks in the top 20 for economic complexity36 and performs well across all Drivers of Production, except Sustainable Resources. Singapore is a leader on the Global Trade & Investment driver as one of the most open and trade-friendly countries in the world. A strong Institutional Framework propels
Singapore’s success in many areas, including the future of production. The government continues to be future-oriented and recently announced the Singapore Smart Industry Readiness Index, a tool to help industrial companies harness the full potential of the Fourth Industrial Revolution.37 Within the Sustainable Resources driver, Singapore contributes less emissions than other Leading countries, but has challenges related to baseline water stress and alternative energy sources.

United Kingdom
The UK has a long history of manufacturing dating back to the late 18th century and the beginning of the first Industrial Revolution. However, the share of manufacturing in its economy has declined steadily in recent decades, from over 25% in the 1970s to less than 10% today.38 This trend has been accompanied by a loss of manufacturing facilities, capacity, capabilities and jobs, though the UK’s manufacturing sector still employs over 2.7 million people and makes up 45% of UK exports today.39 While the UK’s Structure of Production is weaker than other comparable Leading countries, the country performs well across all Drivers of Production. A strong technology platform and ability to innovate has positioned the country well to specialize in high-tech manufacturing industries such as aerospace and pharmaceuticals. The UK performs solidly on overall education outcomes, but could further develop technical training. It has a strong Institutional Framework but, historically, the government has intervened less in directing industrial development. However, at the end of 2017, the government launched a new industrial strategy developed through public-private collaboration.40

United States
The United States’ manufacturing sector is the 2nd-largest in the world, with an MVA of nearly US$ 2 trillion in 2016, representing close to 16% of global Manufacturing Value Added and 12% of US GDP.41 The United States has the world’s eighth most complex economy.42 Over the last two decades, however, the competitiveness of locally manufactured products and the attractiveness of the United States as a manufacturing location have been strongly challenged. The country is well positioned for the future, holding the top score on the weighted Drivers of Production component and scoring in the Top 5 across all drivers except Sustainable Resources and Institutional Framework. The United States is globally renowned for its ability to innovate and is currently at the forefront of major developments surrounding the emerging technologies of the Fourth Industrial Revolution. Furthermore, its ability to develop, attract and retain advanced human capital capabilities is supported by strong higher education institutions. Notably, the United States is making efforts to reinvigorate its manufacturing sector. Tax reform at the end of 2017 cut the corporate tax rate to 21% from 35%, making it more attractive for companies to shift some of their production to the United States. However, policy and regulatory uncertainties, relating to immigration and free trade agreements, for example, still remain. As one of the world’s largest contributors of carbon emissions, improvements in the efficiency and sustainability of its energy sources should be prioritized.

Legacy Country Results
As shown in Figure 3.3, the Legacy archetype consists of 10 countries from Europe, Eurasia, East Asia and the Pacific, Latin America, Middle East and North Africa, and South Asia. They are responsible for approximately 10% of global MVA today.

Legacy countries currently have a strong Structure of Production, but display a low level of readiness for the future of production, characterized by weak performance across the Drivers of Production. Historically, many Legacy countries benefited from globalization as more developed economies outsourced lower pieces of the value chain to places with lower labour costs. As a result, Legacy countries received foreign direct investment, increased market access and developed a strong Structure of Production. Whereas Leading countries score very well on Complexity, Legacy countries’ strength within the Structure of Production tends to be on Scale. With rising production costs, Legacy countries risk losing traditional manufacturing share to Nascent countries that can offer even cheaper labour. By underinvesting across drivers, Legacy countries risk not being as prepared as Leading countries to capture advanced manufacturing share in the future. Combined, these risks could lead to premature de-industrialization if they are not managed effectively.

Figure 3.3: Map of Readiness Assessment Results 2018, Legacy Countries

Notes: Axes are on a 10-point scale but have been truncated to show variances between countries. Average performance of the top 75 countries is at the intersection of the four quadrants.
To avoid being squeezed between Leading and Nascent countries, Legacy countries need to carve out a strategy for the future. Legacy countries underperform across all Drivers of Production, on average, and their three most pressing challenges are Institutional Framework, Human Capital, and Technology & Innovation. Legacy countries have a solid production base today, but need to reskill and upskill workers, upgrade their technology platform, seek frugal innovations and ensure the fundamental building block of good governance is in place to perform well in the future of production.

India
India is the 5th-largest manufacturer in the world—with a total Manufacturing Value Added of over US$ 420 billion in 2016—and ranks 45th in economic complexity. Over the last three decades, India’s manufacturing sector has grown by more than 7% per year, on average, while accounting for between 16% to 20% of India’s GDP. Home to the second-largest population in the world and one of the fastest growing economies, the demand for Indian manufactured products is rising. India has room for improvement across the Drivers of Production, except for Demand Environment where is ranks in the Top 5. Two key challenges for India are Human Capital and Sustainable Resources. India needs to continue to raise the capabilities of its relatively young and fast-growing labour force. This entails upgrading education curricula, revamping vocational training programs and improving digital skills. Furthermore, India should continue to diversify its energy sources and reduce emissions as its manufacturing sector continues to expand. In 2014, the government launched the “Make in India” initiative, with the primary goal of making India a global manufacturing hub. The government has made a significant push to improve key enablers and move towards a more connected economy, most recently announcing a US$ 59 billion investment in infrastructure in 2017.

Mexico
Mexico has the 12th-largest manufacturing sector in the world and ranks 24th in economic complexity. Manufacturing productivity in Mexico varies dramatically across sectors, geographies and company size. There is room for improvement across several Drivers of Production, most notably Technology & Innovation, Human Capital and Institutional Framework. A stronger technology platform is needed to boost connectivity, and increased industry and research activity can spur innovation. Human capital is one of Mexico’s most pressing challenges, as the education curriculum needs to be adapted to develop future skills and the current labour force needs to be retrained on skills that will be critical for the future of production. Increased transparency, effectiveness and accountability of institutions will help Mexico to further enhance readiness. In addition, investments in Mexico’s infrastructure, targeted support for SMEs to promote their integration to global value chains and multi-sector collaboration schemes should also be a priority. Mexico is a top destination for greenfield investments and should seek to leverage its global linkages to continue to facilitate knowledge and technology transfer.

Russian Federation
The Russian Federation’s manufacturing sector is the 13th-largest in the world, but manufacturing’s share of national GDP has declined over the last decade. This has constrained both the Scale and Complexity of the Structure of Production. The country’s performance across the all drivers is mixed, with Human Capital and Demand Environment as its greatest strengths. It has a highly educated workforce and its education system places a premium on STEM (science, technology, engineering and mathematics) subjects. However, soft and creative skills should be further developed within the labour force. Transforming these strengths into long-term benefits will require sustained measures to improve the country’s ability to innovate through higher levels of competition; enhanced collaboration between government, industry and education spheres; and development of regional innovation and R&D hubs.

High-Potential Countries
As shown in Figure 3.4, the High-Potential archetype consists of seven countries and economies from Europe, East Asia and the Pacific, and the Middle East and North Africa. This group is responsible for less than 2% of global Manufacturing Value Added today.

High-Potential countries and economies have a limited production base today but score well across the Drivers of

Figure 3.4: Map of Readiness Assessment Results 2018, High-Potential Countries
Drivers of production score (0–10)
Production—indicating a promising future. This group contains high-income economies that are less diversified than those in other archetypes; several are resource-rich while others are primarily focused on the services sector. The key opportunity for High-Potential countries is to convert capacity across the Drivers of Production into an advanced manufacturing base. The challenge for these countries and economies is to first determine their appetite at the national level for developing industry, and to then identify the right set of opportunities and establish an effective strategy to capture these opportunities.

The future of production presents opportunities for High-Potential countries to leapfrog and expand their production bases in shorter timeframes than were historically possible. One potential advantage for High-Potential countries is they have lower levels of capital locked into legacy production systems. This allows late adopters to quickly bypass old approaches and directly adopt new technologies, given a minimum level of capability.

**Australia**

Australia has a significantly weaker structure of production compared to most other high-income economies, as its economy focuses primarily on the services sector and extraction. The services sector accounts for over 70% of Australia’s GDP, and Australia is a significant exporter of natural resources, energy and food. Australia’s manufacturing sector contributes less than 7% to its GDP, and about 0.8% to global MVA. Australia is the 65th most complex economy in the world and is in a strong position to potentially improve its production base in the future, as it performs well across all 31 drivers of production. It ranks among the top 15 economies on Technology & Innovation, Human Capital, Global Trade & Investment, and Institutional Framework. Embracing digitalization is a key policy agenda in Australia. In 2017, the Prime Minister’s Industry 4.0 signed a cooperation agreement with Germany’s Plattform Industrie 4.0. Building on Taskforce recommendations, and the government’s Testlabs for Australia Initiative will establish five new Industry 4.0 testlabs at selected educational institutions. In 2018 Australia will release its Digital Economy Strategy, a forward-looking plan to maximize the potential of digital technologies to improve productivity and competitiveness.

**United Arab Emirates**

The United Arab Emirates has a limited Structure of Production today, but the country has continued to diversify its economy beyond oil and gas and is aiming to increase manufacturing share of GDP to 25% by 2025. The UAE is positioned well for the future as it ranks in the top quartile of countries across all Drivers of Production, with the exception of Sustainable Resources. The country should focus on improving sustainability practices and continue to invest across all Drivers of Production. Given that the UAE has relatively few workers employed in manufacturing today, it will be particularly important to develop the right set of labour force capabilities to capitalize on the transformation occurring within production.

**Nascent Countries**

As shown in Figure 3.5, the Nascent archetype consists of 58 countries from all regions except North America. This group is responsible for less than 10% of global Manufacturing Value Added today.

This is the largest group of countries in the assessment, and all display a low level of readiness for the future of production, as evidenced by weaker performance across the Drivers of Production as well as a limited Structure of Production. There are several different clusters that can be analysed within the Nascent archetype. One key distinction that can be made across countries in this archetype is their current level of industry and ambitions related to industrialization. Nascent countries have an array of production bases, ranging from a significant production base that is either shrinking or at risk of shrinking, a small base that is growing, or a small base due to limited industrialization.

Depending on a country’s position, competitive advantages and aspirations, various growth paths may be pursued. Countries with larger production bases today may be more likely to pursue opportunities to expand into advanced manufacturing; whereas countries with limited production bases may initially try to capture traditional industrialization.

![Figure 3.5: Map of Readiness Assessment Results 2018, Nascent Countries](image)

**Notes:** Axes are on a 10-point scale but have been truncated to show variances between countries. Average performance of the top 75% countries is at the intersection of the four quadrants.
opportunities to develop greater levels of scale and capabilities. Given that some Nascent countries are emerging as attractive low-cost manufacturing locations, another potential growth path may be to capture existing opportunities in traditional manufacturing in the short term. However, this strategy has risks, as it is unclear the extent of opportunities that will exist in traditional manufacturing and for how long.

Many countries that have yet to industrialize are underprepared for traditional manufacturing, let alone advanced manufacturing. Regardless of the strategy each individual country pursues, Nascent countries will benefit from improving performance across all Drivers of Production. The most pressing area for these countries to address is their Institutional Framework—the bedrock for future economic growth—followed by Human Capital. An attractive and skilled labour force is critical for accelerating growth in both traditional and advanced manufacturing. Further, increased global trade and investment and the attraction of multinational companies can accelerate development through transfer of knowledge, capabilities and technology.

**Indonesia**

Indonesia's manufacturing sector is currently the 11th largest in the world and accounts for over 20% of national GDP. With mining and agricultural products contributing a large share of Indonesia's exports, the country's Structure of Production is relatively low in complexity. Indonesia has room for improvement across the Drivers of Production, with the exception of Demand Environment where it ranks in the Top 20. Fueled by a population of over 260 million, the domestic and foreign markets for Indonesian manufactured products are vast. Yet human capital is both a strength and challenge for Indonesia. One of the country's biggest challenges is developing the right skill sets within its current workforce as production shifts from a labour-intensive to a knowledge-intensive environment. To further stimulate the adoption of emerging technologies into its production systems, targeted measures to improve Indonesia's ability to innovate through increased spending on R&D, broader access to the internet and enhanced cybersecurity protection should be prioritized. Indonesia benefits from relatively high levels of foreign direct investment, but infrastructure gaps and lack of openness to trade may impair its rate of transformation. Furthermore, a strengthened institutional framework and governance will need to be a crucial enabler.

**Brazil**

Brazil's manufacturing sector is the 9th-largest in the world and accounts for approximately 10% of national GDP, almost a third of its contribution of over 30% in the 1980s. Brazil's Structure of Production is relatively low in complexity. The country's performance across the Drivers of Production is mixed. Sustainable Resources and Demand Environment are its two highest-ranked drivers. Brazil is a top destination for foreign direct investment and greenfield investments and should seek to leverage global linkages to facilitate knowledge and technology transfer. One of Brazil's main challenges is its Institutional Framework, and regulatory efficiency and future oriented governance should be a priority. With the fifth-largest population in the world, Brazil has a wealth of human resources, but current labour force capabilities lag in digital skills, engineering, critical thinking and other key areas that are critical for success in the future. In 2017, a new labour law was passed seeking to create a more flexible system and increase the rule of law.

**Saudi Arabia**

Over the last several decades, Saudi Arabia's manufacturing share of GDP increased from less than 5% to approximately 12%, as of 2016. As the largest exporter of petroleum in the world, Saudi Arabia's economy is highly concentrated, with oil and gas contributing over 50% of Saudi Arabia's GDP. Growing the manufacturing and industrial sectors within its economy will be important for the country to successfully diversify its economy away from petroleum production. Saudi performs strongly on the Demand Environment driver, but has room for improvement across the other Drivers of Production. The country has a strategic opportunity to improve its performance to be competitive in the future of production. Several reforms aimed at improving key enablers for the economy are currently underway as part of Saudi Vision 2030 and the National Transformation Program.

**South Africa**

South Africa's manufacturing share of GDP has decreased since the early 1990s to approximately 12% today as its services sector has expanded. Nevertheless, the country has the strongest Structure of Production within Africa. Across the Drivers of Production component, South Africa's performance is mixed. On the one hand, the ability to innovate is one of South Africa's greatest strengths, as the country has a strong innovation culture, and entrepreneurial activity is supported by a sophisticated financial sector. On the other hand, human capital remains the most pressing challenge in preparing for the future of production, as there is a shortage of engineers and scientists as well as digital skills. It will also be critical for South Africa to improve its Institutional Framework to effectively respond to change, offer a stable policy environment and direct innovation.
Chapter 4

Drivers of Production Analysis

The six Drivers of Production represent factors and conditions necessary to capitalize on emerging technologies and transform production systems. The following section describes the concepts covered in each driver and their importance to improving or achieving readiness for the future of production.

Driver 1

Technology & Innovation

OVERVIEW

This driver assesses:

• How advanced, secure and connected is an economy’s ICT infrastructure used for adopting technologies in production
• The ability to foster and commercialize innovations that have potential application in production

CONCEPTS CAPTURED

Technology Platform
• Availability of ICT
• Use of ICT
• Digital Security & Data

Ability to Innovate
• Industry Activity
• Research Intensity
• Available Financing

Technology & Innovation is a key enabler for the future of production, as the adoption and diffusion of emerging technologies is the crux of the Fourth Industrial Revolution. In order to do this, countries need an advanced, connected and secure technology platform. They need to continually upgrade technology infrastructure to ensure their platform is advanced enough to fully operate emerging technologies. For example, the availability and speed of the internet matters when using the Internet of Things on the factory floor. Widespread breakthroughs for the future of production require a fully connected global ecosystem, which is only possible through interoperability across systems. Recognizing the need for international cooperation, Germany is working with other countries to develop and adopt global standards and norms that promote interoperability and data flows.62

Digital security and data privacy enabled through a strong cybersecurity policy, enforcement and other measures is critical for facilitating the adoption of technology. Connected production systems bring new cybersecurity challenges, and it is critical for people to trust the technology. If knowledge and data stored in the cloud is compromised, for example, not only does this jeopardize operations, but it also lowers trust and potentially future adoption. This can be especially challenging for Small and Medium Enterprises (SMEs) that have limited resources to protect themselves against cybersecurity threats. Cooperation between governments and companies of all sizes is needed to increase awareness of threats and protect themselves against these threats.

Innovation is the animating force behind the future of production. Technologies driving the Fourth Industrial Revolution were largely created from significant investments in research and development; new and innovative applications of these technologies in production are creating further value. There are different types of innovation that are critical to the future of production, such as generating continual, incremental improvements; adapting technologies developed abroad to fit location production systems and developing “greenfield” investments for production systems. Elite technical innovation, coupled with high R&D spend to secure patents, is concentrated among a small set of mainly advanced countries. Fifteen countries shown in Figure 4.1 are responsible for nearly 80% of all IP5 patents filed worldwide, with China, Germany, Japan, Republic of Korea and the United States accounting for 50%.

Countries need to consider their position as either a technical innovator or as a technology adopter and frugal innovator. The availability of funding, talent and other factors will likely influence the levels and type of innovation that a country pursues within the future of production. The most attainable type of innovation for most countries is frugal innovation. Business models, prototypes and other areas in production that are not
usually patented are ripe for disruption and offer tremendous potential for both emerging and developed countries.

A country can help generate innovation through several enablers. Geographic clusters, government procurement of advanced technologies and collaboration across academia, government and industry can all foster innovation. A strong financial system and available risk capital is also necessary to back promising developments occurring within borders. Innovation also requires softer elements that are harder to measure. A risk-taking culture and strong leadership to shepherd directed innovation, for example, can also help unlock human potential to foster new innovations.

People are at the forefront of the Fourth Industrial Revolution. Human Capital is critical to the transformation of production systems, as production facilities cannot evolve unless employees evolve too. Of course, the changing nature of production has significant implications for manufacturing employment worldwide. A combination of new production technologies and macro trends are changing the skills required in production, altering the number and nature of jobs across production ecosystems and geographies. For more insight and analysis on the geographies and types of workers in production who are most likely to be impacted from the Fourth Industrial Revolution, please refer to the World Economic Forum white paper Building the Workforce for the Future of Production, scheduled for publication in early 2018.

While there is significant concern about automation leading to job loss, technology can make the remaining jobs more productive and even create new jobs. Human ingenuity and creativity may become more, not less, important in the future of production. Figure 4.2 shows a clear relationships between performance on Human Capital and Technology & Innovation, as the top 10 countries and economies on these drivers also perform well on Institutional Framework.

The Fourth Industrial Revolution will result in a further shift from labour-intensive production to knowledge and skills intensive production. Countries will need an adequate pool of available digital, technical, commercial and management expertise to propel the immediate adoption and use of emerging technologies. The Fourth Industrial Revolution will also alter labour demand patterns and result in job losses and

Chapter 4

Figure 4.1: Leaders in Technical Innovation

Driver 2
Human Capital

OVERVIEW

This driver assesses:
- The ability to respond to shifts in the labour market (supply and demand) that are triggered by the Fourth Industrial Revolution
- Current labour force capabilities to adopt and use emerging technologies in production systems
- The ability to cultivate the right skills and talent in the future workforce through education outcomes, talent attraction and retention, and inclusion

CONCEPTS CAPTURED

Current Labour Force
- Labour Force Capabilities

Future Labour Force
- Migration
- Education Outcomes
- Agility & Adaptability

Notes: Y-axis refers to the total number of patent families filed in at least two of the major 5 (IP5) offices in the world, divided by population (in millions). Bubble size represents the total number of patent families filed in at least two of the major 5 (IP5) offices in the world (average between 2012 and 2014). The larger the bubble the greater number of patent families.

Sources: OECD, World Bank.

People are at the forefront of the Fourth Industrial Revolution. Human Capital is critical to the transformation of production systems, as production facilities cannot evolve unless employees evolve too. Of course, the changing nature of production has significant implications for manufacturing employment worldwide. A combination of new production technologies and macro trends are changing the skills required in production, altering the number and nature of jobs across production ecosystems and geographies. For more insight and analysis on the geographies and types of workers in production who are most likely to be impacted from the Fourth Industrial Revolution, please refer to the World Economic Forum white paper Building the Workforce for the Future of Production, scheduled for publication in early 2018.

While there is significant concern about automation leading to job loss, technology can make the remaining jobs more productive and even create new jobs. Human ingenuity and creativity may become more, not less, important in the future of production. Figure 4.2 shows a clear relationships between performance on Human Capital and Technology & Innovation, as the top 10 countries and economies on these drivers also perform well on Institutional Framework.

The Fourth Industrial Revolution will result in a further shift from labour-intensive production to knowledge and skills intensive production. Countries will need an adequate pool of available digital, technical, commercial and management expertise to propel the immediate adoption and use of emerging technologies. The Fourth Industrial Revolution will also alter labour demand patterns and result in job losses and
Drivers of Production Analysis

Countries need to be agile and adaptable to make sure they have the right mix of human capital and are dynamic in matching labour demand and labour supply in the future of production.

The immediate near-term need, particularly for countries with a large production workforce today, is to train and retrain current employees to address skills gaps created by job changes. As jobs disappear, particularly at the mid-skill level, and new jobs appear, particularly at the high-skill level, it will be important for companies, with the support of government and academia, to reskill and upskill employees. Technical training programs, apprenticeship models, on-the-job training and other approaches can all help employees develop new capabilities required. It will also be critical that employees adopt a mentality of life-long learning, as reskilling will likely not be a one-time event, but rather something that occurs continually throughout a career.

Over the long term, countries need to develop their production workforce of the future. This requires new approaches for technical and vocational training. Education curricula and targets will need to be revised to produce different outcomes, such as new courses for teaching digital skills and more STEM (science, technology, engineering and mathematics) graduates. Migration of skilled labour to the country offers an additional channel for countries to acquire skills need in the future workforce. Given the speed and scale of change is increasing, flexible approaches will be required to continually reshape the workforce.

Trade has historically underpinned manufacturing, as export-based models have fueled growth. While the advantages and viability of an export-based model for manufacturing may diminish, the importance of international trade as a determinant of growth for countries will remain relevant, for global connectivity is at the heart of the Fourth Industrial Revolution. Countries with high participation rates in international trade will continue to reap the benefits of increasing knowledge and specialization, gaining technology transfer, promoting competition and yielding economies of scale. The full benefits of global trade and investment require other countries to be open. However, there has been a recent trend of nationalism and protectionism sweeping several countries that may blunt the benefits some countries may be able to receive through this enabler.

Capital investments will be required to upgrade and connect technology platforms, train employees, adopt technologies and transform production systems. Countries will need to be attractive investment destinations in order to have access to the necessary capital. A strong domestic financial system, coupled with foreign direct investment, enables a country to properly finance the investments required for transformation. Advanced infrastructure is also necessary to remain on par with the standards expected from global value chains.


Countries best positioned for the future of production traditionally offer a good institutional framework in the form of, but not limited to, regulatory efficiency, strong legal systems, rule of law, IP protection and data security. In addition, good governance fosters an environment that can promote performance across all other Drivers of Production. For example, reducing the red tape required to register and start a company can encourage industry activity; strong IP protection may incentivize more investment in research and development; changing education curricula can stimulate the development of digital skills; and so on. Conversely, poor governance can negatively impact performance across other drivers. For example, a high incidence of corruption can deter foreign investment.

A strong institutional framework is thus critical to a country’s success, yet current legal frameworks, regulations, standards, strategies and institutions are not keeping up with the pace of change and innovation. Legal frameworks and regulations for new technologies at the global level are needed to reduce uncertainty and establish norms and standards. Regulators have a complicated role to play in shaping the ecosystem for emerging technologies. Uncertainty about technologies can cause regulators to not act, which can cause companies not to act because of uncertain regulations. Without proper regulations in place, the default may be to not use technologies to their full potential. Thus, it should not be a race to the bottom when it comes to regulation, as lax regulation is not necessarily the best. Doing nothing is a policy option that has its own set of implications and consequences.

Regulatory agencies also play a key role in establishing the ‘rules of the game’ for emerging technologies used across production in different sector and stages of the value chain. Governments need to set a level playing field and establish overall parameters. This will require balancing the need to protect consumers and citizens with encouraging companies to invest in and use new technologies. Furthermore, international coordination is required to establish global standards for both products and process. Sector-specific guidance at the global level may be most appropriate in many cases, as adapting to a wide range of country-specific regulations can cause inefficiencies and bottlenecks in global value chains.

There are varying views on industrial strategy—some countries believe it should be driven by the government while others put industry and companies in the lead. Regardless of the different roles, it is clear that governments can play an important part in ushering in the future. They can help facilitate dialogue between industry, academia and other stakeholders through initiatives such as Germany’s Plattform Industrie 4.0. Governments can also develop tools to guide the participation of in the Fourth Industrial Revolution, such as Singapore’s Smart Industry Readiness Index. Governments can also boost innovation through offering of tax incentives, such as those found in Italy’s Enterprise 4.0 national plan.

The Fourth Industrial Revolution offers an opportunity for countries to usher in a more sustainable production future and counteract damage done by earlier industrialization. Manufacturing has adversely impacted the environment, as evidenced by the over-exploitation of natural resources, the pollution/destruction of ecosystems and reduction in biodiversity. Production systems today are responsible for 35% of all global electricity use, generate 20% of CO2 emissions and account for a quarter of all extractions of primary resources. Going forward, there is a clear need for sustainable production practices that minimize the use of natural resources and toxic materials and curb the emissions of waste and pollutants so as not to jeopardize the needs of future generations.

Furthermore, resource management is a key component of national economic development planning and must be a primary consideration of industrial strategies. Unless countries closely manage their resources, they may not achieve their development targets. Risks to a country’s natural resources—some of the most likely and high-impact risks—need to be monitored, mitigated and managed.
Within the assessment, Sustainable Resources has the weakest relationship with other Drivers of Production as well as with the Complexity category within the Structures of Production. While past data shows that some of the largest producers have been the least sustainable, there is a critical need to increase sustainable practices going forward. The way we produce goods needs to change, and the largest producers have the biggest opportunity to change.

Emerging technologies may hold the keys to not only a more productive future, but also a more sustainable future. New technologies, such as short-loop recycling for manufacturing or autonomous disassembly systems for remanufacturing, have the potential to accelerate sustainable production. For more insights on accelerating sustainable production through Fourth Industrial Revolution technologies, refer to the World Economic Forum white paper *Driving the Sustainability of Production Systems with Fourth Industrial Revolution Innovation*, scheduled for publication in early 2018.

It is important to note that technology solutions are not the all-encompassing answer to sustainable production. Actors within production systems have to play a critical role in tackling this market challenge and advancing meaningful change. Companies need to unlock new value in sustainable solutions, and governments need to safeguard their own people and future growth with responsible and sustainable management of the environment. Multistakeholder solutions are required for promoting sustainable production, and emerging technologies offer a new tool to accelerate this change.

The supply of goods produced is largely influenced by the demand environment. Countries with access to large domestic and foreign markets can expand production and enjoy the advantages of economies of scale. Capturing domestic or regional demand alone may not be sufficient, but can be used as a springboard to compete globally. Consumer sophistication will continue to drive production improvements throughout the Fourth Industrial Revolution, as the most demanding consumers will force companies to respond, react and, ultimately, improve. High consumer sophistication triggers innovation, improved production techniques and enhanced products and services.

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**Driver 6**

**Demand Environment**

**OVERVIEW**

This driver assesses:
- Access to foreign and local demand to scale production
- Sophistication of consumer base to drive diverse industry activity and new products

**CONCEPTS CAPTURED**

- **Demand**
  - Market Size
- **Consumer Base**
  - Consumer Sophistication
Way Forward

This report analyses and presents the results of the first edition of the Readiness for the Future of Production Assessment, which measures how well positioned 100 countries and economies—across all geographies and stages of development—are to shape and benefit from the changing nature of production. It serves as a new benchmarking and diagnostic tool to catalyse multistakeholder dialogue, shape joint actions and inform the development of modern industrial strategies.

Given that the future is uncertain and hard to predict, the framework and methodology will continue to be updated as the future unfolds. The transformation of production systems will be studied as it unfolds, to identify the most important enablers of changes. Future changes to the framework across the Drivers of Production and Structure of Production components of the framework will use evidenced-based research to build on the consultative process. The World Economic Forum will continue to seek and gather additional data sources on the concepts that matter most for the transformation of production systems.

Public-private collaboration will be critical for ushering in new production paradigms. Countries should continually seek to use new approaches to public-private collaboration to tackle some of the biggest challenges and capture opportunities in the future. The World Economic Forum will continue to offer a global, regional and national platform to catalyse multi-stakeholder dialogue and action to transition to future production realities.

Lastly, work has commenced on a new transition framework to help governments design new strategies in collaboration with the private sector, civil society and academia. While this assessment will continue to serve as a diagnostic tool the transition framework will support treatment of the diagnosis. The transition framework will provide guidance on the overall process, lessons learned by archetype, stages of excellence across the Drivers of Production and leading practices from which to learn.
1 A technological revolution—characterized by the fusion of technologies blurring the lines between the physical, digital and biological spheres—that will fundamentally alter the way we live, work and relate to one another. For more information on the Fourth Industrial Revolution see: https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/


5 International Labour Organization (ILO), ILOStat database, “Employment by sector-ILO estimates by sector, May 2017”, http://www.ilo.org/ilostat/faces/oracle/webcenter/portalapp/page/portal/ilsd/ru/17253709312153a_afrWindowMode=0&_afrWindowId=skif9msm_17253709312153a_afrWindow%26DiskId=619msm_1%26afrLoop=3D17253709312153a6MBI_ID=3D333%26afrWindowMode%3D0%26adf.ctri-state%3Ddisk%7fr9msm_45


24 Ibid.


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**Endnotes**

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Acknowledgements

The Country Readiness project team collaborated closely with members of the World Economic Forum’s Future of Production community—which consists of over 50 companies, 26 governments and nearly 30 academics—to develop this report. Preliminary findings from the readiness assessment were presented at the Annual Meeting of the New Champions 2017, India Economic Summit, World Manufacturing Forum, Systems Initiatives Workshop in Tokyo, The Fourth Industrial Revolution Forum in Ulsan, and several other regional and country workshops.

We would like to thank members of the Country Readiness for the Future of Production project steering committee and members of the Global Future Council on Production for their contributions. We would like to specifically thank the following individuals:

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Krystyn Van Vliet
Associate Provost, Professor of Materials Science and Engineering, Massachusetts Institute of Technology (MIT), United States

We would also like to thank the many institutions that shared data for analysis:

Harvard University
International Energy Agency (IEA)
International Labour Organization (ILO)
International Telecommunication Union (ITU)
Organisation for Economic Co-operation and Development (OECD)
PitchBook
Quacquarelli Symonds
The Heritage Foundation
Transparency International
United Nations (UN)
United Nations Conference on Trade and Development (UNCTAD)
United Nations Educational, Scientific and Cultural Organization (UNESCO)
United Nations Industrial Development Organization (UNIDO)
United Nations International Children’s Emergency Fund (UNICEF)
World Bank (WB)
World Intellectual Property Organization (WIPO)
World Resources Institute (WRI)
World Trade Organizations (WTO)
Yale University
Appendix A

Regional and Income Group Classifications, 2018

**Table A1: Regional Classifications**
The following regional classifications were used for analysis in the report.

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<tr>
<th>EAST ASIA AND THE PACIFIC</th>
<th>EURASIA</th>
<th>EUROPE</th>
<th>LATIN AMERICA AND THE CARIBBEAN</th>
<th>MIDDLE EAST AND NORTH AFRICA</th>
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Table A2: Income Group Classifications
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Note: Income group categories are taken from the World Bank, which classifies economies into four income categories based on GNI per capita (current US$): high income, upper-middle income, lower-middle income and low income. Classification as of July 2017.
## Appendix B

### Detailed Results by Archetype

The following pages share the scores and global rankings on the Structure of Production and Drivers of Production components for the four different archetypes. Detailed scorecards for all countries are available online at http://wef.ch/fopreadiness18.

### Structure of Production

#### Table B1: Leading Countries

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<th>Region</th>
<th>Country</th>
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- East Asia and the Pacific
- Europe
- North America

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## Structure of Production (continued)

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- East Asia and the Pacific
- Europe
- Latin America and the Caribbean
- Middle East and North Africa
- South Asia

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- East Asia and the Pacific
- Europe
- Middle East and North Africa
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## Drivers of Production

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- North America
### Drivers of Production

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### Drivers of Production (continued)

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## Drivers of Production (continued)

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The data included in the report represents the best available values from various sources at the time the report was prepared. Some data may have been revised or updated by the sources after publication. The following notes provide descriptions and sources for all the indicators listed in the Country Profiles.

The authors of this report developed estimates for missing values where country or economy data was not available for an indicator to calculate the Readiness for the Future of Production assessment. Most scores have been imputed by using an income-regional group approach. This means a score was estimated by taking the average score of the group of countries in both the same region and the same income level (See Appendix A for classifications). Table C1 at the end of this appendix reports the values by indicator and country or economy that corresponds to the imputed score, and the method used for the imputation. Note that in the ranking tables available online at http://wef.ch/fopreadiness18 imputed values are not reported.

Indicators and Data Sources

### Structure of Production

<table>
<thead>
<tr>
<th>Complexity</th>
<th>1.01 Economic complexity</th>
<th>1.02 Manufacturing value added in economy</th>
</tr>
</thead>
</table>

#### Economic complexity
A measure of the knowledge in a society as expressed in the products it makes. The economic complexity of a country is calculated based on the diversity of exports a country produces and their ubiquity, or the number of the countries able to produce them. Countries that are able to sustain a diverse range of productive know-how, including sophisticated, unique know-how, are able to produce a wide diversity of goods, including complex products that few other countries can make.

Unit of measure: (2.5)–2.5 (best)

#### Manufacturing value added in economy
Manufacturing value added (MVA) as a % of Gross Domestic Product (GDP). MVA of an economy is the total estimate of net-output of all resident manufacturing activity units obtained by adding up outputs and subtracting intermediate inputs. The boundary of manufacturing as an economic activity refers to industries belonging to International Standard Industrial Classification (ISIC) divisions 15-37.

Unit of measure: % GDP

### Technology & Innovation

#### Technology Platform

#### Availability of ICT

#### Mobile-cellular telephone subscriptions
Number of mobile-cellular telephone subscriptions per 100 people. This includes postpaid subscriptions, active prepaid accounts (i.e. that have been active during the past three months) and all mobile-cellular subscriptions that offer voice communications.

Unit of measure: Number per 100 people
Source: International Telecommunication Union (ITU), 2016
2.02 LTE mobile network coverage
Percentage of the population covered by at least an LTE/WWMAX mobile network. Refers to the percentage of inhabitants that live within range of LTE/LTE-Advanced, mobile WWMAX/WirelessMAN or other more advanced mobile-cellular networks, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants that are covered by the previously mentioned mobile-cellular technologies by the total population and multiplying by 100. It excludes people covered only by HSPA, UMTS, EVDO and previous 3G technologies, and also excludes fixed WIMAX coverage.

Unit of measure: % population
Source: International Telecommunication Union (ITU), 2016

2.03 Internet users
Percentage of individuals who used the internet from any location and for any purpose, irrespective of the device and network used, in the last three months.

Unit of measure: % population
Source: International Telecommunication Union (ITU), 2016

2.04 FDI and technology transfer
Executive Opinion Survey: “To what extent does foreign direct investment (FDI) bring new technology into your country? (1 = not at all, 7 = to a great extent)”

Unit of measure: 1–7 (best)

2.05 Firm-level technology absorption
Executive Opinion Survey: “In your country, to what extent do businesses adopt the latest technologies? (1 = not at all, 7 = to a great extent)”

Unit of measure: 1–7 (best)

2.06 ICT-enabled business models
Executive Opinion Survey: “In your country, to what extent do ICTs enable new business models? (1=not at all, 7=to a great extent)”

Unit of measure: 1–7 (best)

2.07 Cybersecurity commitment
Score from the 2017 Global Cybersecurity Index, which measures cybersecurity commitment across five pillars:

- **Legal**: Measured based on the existence of legal institutions and frameworks dealing with cybersecurity and cybercrime.
- **Technical**: Measured based on the existence of technical institutions and frameworks dealing with cybersecurity.
- **Organizational**: Measured based on the existence of policy coordination institutions and strategies for cybersecurity development at the national level.
- **Capacity Building**: Measured based on the existence of research and development, education and training programs; certified professionals and public sector agencies fostering capacity building.
- **Cooperation**: Measured based on the existence of partnerships, cooperative frameworks and information sharing networks.


Unit of measure: 0–1 (best)
Source: International Telecommunication Union (ITU), Global Cybersecurity Index, 2017

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### Ability to Innovate

#### Industry Activity

2.08 State of cluster development
Executive Opinion Survey: “In your country, how widespread are well-developed and deep clusters (geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field)? (1 = nonexistent, 7 = widespread in many fields)”

Unit of measure: 1–7 (best)

2.09 Company investment in emerging technology
Executive Opinion Survey: “In your country, to what extent do companies invest in emerging technologies (e.g. Internet of Things, advanced analytics and artificial intelligence, augmented virtual reality and wearables, advanced robotics, 3D printing)? (1=not at all, 7=to a great extent)”

Unit of measure: 1–7 (best)

2.10 Government procurement of advanced technology
Executive Opinion Survey: “In your country, to what extent do government purchasing decisions foster innovation? (1=not at all, 7=to a great extent)”

Unit of measure: 1–7 (best)

2.11 Companies embracing disruptive ideas
Executive Opinion Survey: “In your country, to what extent do companies embrace risky or disruptive business ideas? (1 = not at all, 7 = to a great extent)”

Unit of measure: 1–7 (best)

2.12 Multistakeholder collaboration
Average score of the three following Executive Opinion Survey questions: “In your country, to what extent do people collaborate and share ideas within a company? (1 = not at all, 7 = to a great extent); “In your country, to what extent do companies collaborate in sharing ideas and innovating? (1 = not at all, 7 = to a great extent); and “In your country, to what extent do business and universities collaborate on research and development (R&D)? (1 = not at all, 7 = to a great extent)”

Unit of measure: 1–7 (best)

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### Research Intensity

2.13 R&D expenditures
Expenditure on research and development (R&D) as a percentage of gross domestic product (GDP). Expenditures for research and development are current and capital expenditures (both public and private) on creative work undertaken systematically to increase knowledge, including knowledge of humanity, culture, and society and the use of knowledge for new applications. R&D covers basic research, applied research and experimental development.

Unit of measure: % GDP
2.14 Scientific and technical publications

Number of scientific and technical journal articles published per billion PPP$ GDP. Article counts are from a set of journals covered by the Science Citation Index (SCI) and the Social Sciences Citation Index (SSCI). Articles are classified by year of publication and assigned to each country/economy on the basis of the institutional addresses listed in the article. Articles are counted on a count basis (rather than a fractional basis)—that is, for articles with collaborating institutions from multiple countries/economies, each country/economy receives credit on the basis of its participating institutions.

Unit of measure: Number per billion PPP$ GDP
Sources: Special tabulations from Thomson Reuters, Web of Science, Science Citation Index (SCI) and Social Sciences Citation Index (SSCI); International Monetary Fund, World Economic Outlook Database; data via World Intellectual Property Organization (WIPO), Global Innovation Index, 2016

2.15 Patent applications

Total number of patent families filed in at least two of the major five (IP5) patent offices in the world per million people. The major five (IP5) offices are: the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KPO), the State Intellectual Property Office of the People’s Republic of China (SIPC), and the United States Patent and Trademark Office (USPTO). Data is extracted from the PATSTAT database by earliest filing date and inventor country, using fractional counts. Presented in average number of applications over 2012-2014 and divided by the average population over the same period to get per million population.

Unit of measure: Number per million people
Source: World Economic Forum calculation based on Organisation for Economic Co-operation and Development (OECD) data (patents) and World Bank data (population), 2012–2014 moving average

2.16 Venture capital deal volume

Three-year average value of venture capital deals (US$). Deal status includes: Completed; Announced; In bidding process; Upcoming; Postponed. Deal date from: 1 January 2014 to 31 December 2016.

Unit of measure: US$ millions
Source: Pitchbook, 2014-2016 moving average

2.17 Venture capital deal volume per size of economy

Three-year average value of venture capital deals divided by the three-year average value of GDP (US$). Deal status includes: Completed; Announced; In bidding process; Upcoming; Postponed. Deal date from: 1 January 2014 to 31 December 2016. The data are reported per billion PPP$ GDP.

Unit of measure: US$/GDP (three-year average)
Sources: World Economic Forum calculation using Pitchbook data (VC deals) and World Bank data (GDP), 2014–2014–2016 moving average

3.02 Knowledge-intensive employment

Sum of people in categories 1 to 3 as a percentage of total people employed, according to the International Standard Classification of Occupations (ISCO). Categories included are: ISCO-08: 1 Managers, 2 Professionals, and 3 Technicians and associate professionals (years 2007–15); ISCO-88: 1 Legislators, senior officials and managers, 2 Professionals, 3 Technicians and associate professionals (2007–15); ISCO-88: 1 Professional, technical and related workers (category 0 Armed forces is excluded), 2 Administrative and managerial workers, 3 Clerical and related workers (years 2007–08).

Unit of measure: % working population
Sources: International Labour Organization (ILO); data via World Intellectual Property Organization (WIPO), Global Innovation Index, 2015

3.03 Female participation in labour force

The ratio of the percentage of women aged 15–64 participating in the labour force as workers earning wages and salaries to the percentage of men aged 15–64 participating in the labour force as workers earning wages and salaries.

Unit of measure: Ratio

3.04 Mean years of schooling

Average number of completed years of education of a country's population aged 25 years and older.

Unit of measure: Years

3.05 Availability of scientists and engineers

Executive Opinion Survey: “In your country, to what extent are scientists and engineers available? (1 = not available at all, 7 = widely available)”

Unit of measure: 1–7 (best)

3.06 Digital skills among population

Executive Opinion Survey: “In your country, to what extent does the active population possess sufficient digital skills (e.g. computer skills, basic coding, digital reading)? (1= not at all, 7= to a great extent)”

Unit of measure: 1–7 (best)

3.07 Migration

The measure of net migration (inflows and outflows) in a country over the period from 2010–2015, in 000s of people (in thousands), per 2015 population size.

Unit of measure: Thousands of migrants/population
3.08 Country capacity to attract and retain talent

Average score of the two following Executive Opinion Survey questions:

“For what extent does your country attract talented people from abroad? (1 = not at all, 7 = to a great extent, the country attracts the best and brightest from around the world)” and “To what extent does your country retain talented people? (1 = not at all, 7 = to a great extent, the best and brightest stay and pursue opportunities in the country)”

Unit of measure: 1–7 (best)

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### Agility & Adaptability

3.15 Active labour policies

Executive Opinion Survey: “In your country, to what extent are unemployed people supported in reskilling and finding new employment? (1=not at all, 7=to a great extent)”

Unit of measure: 1–7 (best)

3.16 On-the-job training

Average score of the two following Executive Opinion Survey questions: 1) “In your country, how available are high-quality, professional training services? (1 = not available at all, 7 = widely available)” and 2) “In your country, to what extent do companies invest in training and employee development? (1 = not at all, 7 = to a great extent)”

Unit of measure: 1–7 (best)

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### Education Outcomes

3.09 Quality of universities

The number of universities for each country included in QS World University Ranking 2018 out of 972 universities.

Unit of measure: Number
Source: Quacquarelli Symonds (QS), 2017

3.10 Quality of math and science education

Executive Opinion Survey: “In your country, how do you assess the quality of math and science education? (1 = extremely poor, among the worst in the world; 7 = excellent, among the best in the world)”

Unit of measure: 1–7 (best)

3.11 Quality of vocational training

Executive Opinion Survey: “In your country, how do you assess the quality of vocational training? (1 = extremely poor, among the worst in the world; 7 = excellent, among the best in the world)”

Unit of measure: 1–7 (best)

3.12 School life expectancy

Total number of years of schooling (primary to tertiary) that a child can expect to receive. Based on the assumption that the probability of his or her being enrolled in school at any particular future age is equal to the current enrollment ratio at that age.

Unit of measure: Years

3.13 Pupil-to-teacher ratio in primary education

Average number of pupils per teacher based on the headcounts of both pupils and teachers in a country.

Unit of measure: Ratio

3.14 Critical thinking in teaching

Executive Opinion Survey: “In your country, how do you assess the style of teaching? (1 = frontal, teacher based and focused on memorizing; 7 = encourages creative and critical individual thinking)”

Unit of measure: 1–7 (best)

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### Global Trade & Investment

#### Trade

4.01 Trade

The sum of exports and imports of goods and services measured as a share of GDP.

Unit of measure: % GDP

#### Trade Facilitation and Market Access

4.02 Trade tariffs

Trade-weighted average tariff rate. An applied tariff is a customs duty that is levied on imports of merchandise goods. This indicator is calculated as a weighted average of all the applied tariff rates, including preferential rates that a country applies to the rest of the world. The weights are the trade patterns of the importing country’s reference group.

Unit of measure: % duty
Source: International Trade Centre, Trade Competitiveness Map Data, 2016

4.03 Prevalence of trade barriers

Executive Opinion Survey: “In your country, to what extent do non-tariff barriers (e.g. health and product standards, technical and labeling requirements, etc.) limit the ability of imported goods to compete in the domestic market? (1 = strongly limit, 7 = do not limit at all)”

Unit of measure: 1–7 (best)
4.04 Logistics performance

Average score of five components from the International Logistics Performance Index:

- **Customs**: the efficiency of customs and border management clearance
- **Ease of arranging shipments**: the ease of arranging competitively priced shipments
- **Quality of logistics services**: the competence and quality of logistics services—trucking, forwarding and customs brokerage
- **Tracking and tracing**: the ability to track and trace consignments
- **Timeliness**: the frequency with which shipments reach consignees within scheduled or expected delivery times

Unit of measure: 1–5 (best)


4.05 Greenfield investments

Five-year average value of announced greenfield FDI projects, by destination, in US$ (millions). A greenfield investment is a form of foreign direct investment where a parent company builds its operations in a foreign country from the ground up, organically.

Unit of measure: US$ millions

Source: United Nations Conference on Trade and Development (UNCTAD), 2012–16 moving average

4.06 FDI inflows

Five-year average net FDI flows of country or economy. FDI inflows and outflows comprise capital provided (either directly or through other related enterprises) by a foreign direct investor to a FDI enterprise, or capital received by a foreign direct investor from a FDI enterprise. Data on FDI flows are presented on net bases (capital transactions’ credits less debits between direct investors and their foreign affiliates).

Unit of measure: US$ millions

Source: United Nations Conference on Trade and Development (UNCTAD), 2012–16 moving average

4.07 Domestic credit to private sector

Financial resources provided to the private sector by financial corporations as a percentage of GDP. Financial resources are loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment.

Unit of measure: % GDP


5.01 Regulatory efficiency

Average score of three components from the Index of Economic Freedom:

- **Business Freedom**: the extent to which the regulatory and infrastructure environments constrain the efficient operation of businesses.
- **Labour Freedom**: considers various aspects of the legal and regulatory framework of a country’s labour market, including regulations concerning minimum wages, laws inhibiting layoffs, severance requirements, and measurable regulatory restraints on hiring and hours worked, plus the labour force participation rate as an indicative measure of employment opportunities in the labour market.
- **Monetary Freedom**: combines a measure of price stability with an assessment of price controls.

Unit of measure: 0–100 (best)


5.02 Corruption Perceptions Index

Overall score from the Corruption Perceptions Index (CPI). The CPI scores/ranks countries/territories based on their perceived level of corruption in the country’s public sector. It is a composite index: a combination of surveys and assessments of corruption, collected by a variety of reputable institutions.

Unit of measure: 0–100 (best)


5.03 Future orientation of government

Average score of the following four Executive Opinion Survey questions:

1) “In your country, how fast is the legal framework of your country in adapting to digital business models (e.g. e-commerce, sharing economy, fintech, etc.)? (1 = not fast at all, 7 = very fast);” 2) “In your country, to what extent does the government ensure a stable policy environment for doing business?”; 3) “In your country, to what extent does the government respond effectively to change (e.g. technological changes, societal and demographic trends, security and economic challenges)?”; 4) “In your country, to what extent does the government have a long-term vision in place?”

For the last three questions, the answer ranges from 1 (not at all) to 7 (to a great extent).

Unit of measure: 1–7 (best)


6.01 Alternative and nuclear energy use

Alternative energy includes hydropower and nuclear, geothermal, biomass and solar power, among others. Calculated as a % based on Total Primary Energy Supply.

Unit of measure: % total energy use

Appendix C

Emissions

6.02 CO₂ intensity level
Total CO₂ (carbon dioxide) emissions in a given country, as a ratio of GDP (US$ billions).

Unit of measure: CO₂ emissions in megatons/GDP (US$ billions)
Source: World Economic Forum calculation based on World Resources Institute data (Total CO₂) and World Bank data (GDP), 2014

6.03 CH₄ intensity level
Total CH₄ (methane) emissions in a given country, as a ratio of GDP (US$ billions).

Unit of measure: CH₄ emissions in megatons/GDP (US$ billions)
Source: World Economic Forum calculation based on World Resources Institute data (Total CH₄) and World Bank data (GDP), 2014

6.04 N₂O intensity level
Total N₂O (nitrous oxide) emissions in a given country, as a ratio of GDP (US$ billions).

Unit of measure: N₂O emissions in megatons/GDP (US$ billions)
Source: World Economic Forum calculation based on World Resources Institute data (Total N₂O) and World Bank data (GDP), 2014

Water

6.05 Baseline Water Stress
Score for Baseline Water Stress from the World Resources Institute report. Baseline water stress measures total annual water withdrawals (municipal, industrial and agricultural) expressed as a percentage of the total annual available blue water. Higher values indicate more competition among users. Countries were sorted into 5 respective categories based on their respective scores, low <10% (score from 0–1), low to medium 10-20% (score from 1–2), medium to high (score from 2–3), high 40-80% (score from 3–4), and extremely high >80% (4–5). For more information, visit http://www.wri.org/sites/default/files/aqueduct_country_rankings_010914.pdf.

Unit of measure: 0–5 (worst)
Source: World Resources Institute, 2013

6.06 Wastewater treatment
Score for Wastewater Treatment from the Yale EPI. The indicator measures the proportion of wastewater collected and produced by households, municipalities, and industry that is treated, weighted by the population covered by the sewage network.

Unit of measure: 0–100 (worst)
Source: Yale University, Environmental Performance Index, 2016

Consumer Base

Consumer Sophistication

7.02 Buyer sophistication
Executive Opinion Survey: “In your country, on what basis do buyers make purchasing decisions? [1 = based solely on the lowest price, 7 = based on sophisticated performance attributes]”

Unit of measure: 1–7 (worst)

7.03 Extent of market dominance
Executive Opinion Survey: “In your country, how do you characterize corporate activity? [1 = dominated by a few business groups, 7 = spread among many firms]”

Unit of measure: 1–7 (worst)

Demand Environment

Foreign and Domestic Demand

Market Size

7.01 Market size
This indicator is calculated by the World Economic Forum as an aggregate measure that reflects Gross Domestic Product (GDP) valued at purchasing power parity in billions of international dollars and the imports of goods and services as a percentage of GDP. The score corresponds to the natural logarithm of the sum of GDP and imports, valued at purchasing power parity (PPP). Valuation of imports at PPP is estimated by multiplying the share of exports by the value of GDP. For more information, write to gcpl@weforum.org.

Unit of measure: 0–100 (worst)
Source: World Economic Forum, 2017
Table C1: Imputation Methods and Imputed Values

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Imputation Method</th>
<th>Country/Economy</th>
<th>Imputed Value</th>
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</thead>
<tbody>
<tr>
<td>2.02 LTE mobile network coverage</td>
<td>Average score of countries in the same region and economic group</td>
<td>Egypt</td>
<td>70.50</td>
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<td>Bosnia and Herzegovina</td>
<td>80.60</td>
</tr>
<tr>
<td>2.07 Cybersecurity commitment</td>
<td>Average score of countries/economies in the same region and economic group</td>
<td>Hong Kong SAR</td>
<td>0.81</td>
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<tr>
<td>2.09 Company investment in emerging technology</td>
<td>Average score of countries in the same region and economic group</td>
<td>Bahrain</td>
<td>4.79</td>
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<td></td>
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<td>Oman</td>
<td>4.79</td>
</tr>
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<td></td>
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<td>Turkey</td>
<td>3.14</td>
</tr>
<tr>
<td>2.13 R&amp;D expenditures</td>
<td>Regression on PCT patent. Mean years of schooling, log GDP per capita and GDP growth of over 5 years to develop estimates</td>
<td>Bangladesh</td>
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<td>Cameroon</td>
<td>0.33</td>
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<td>Lebanon</td>
<td>0.59</td>
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<td>2.14 Scientific and technical publications</td>
<td>Average score of countries/economies in the same region and economic group</td>
<td>Ghana</td>
<td>7.50</td>
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<td>2015 value for “Employment Distribution — ILO modelled estimates (% — Manufacturing ISIC rev.4 C” from the International Labour Organization (ILO)</td>
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<td>Kenya</td>
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<td>Average score of countries in the same region and economic group</td>
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<td>3.06 Digital skills among population</td>
<td>Average score of countries in the same region and economic group</td>
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<td>4.04 Logistics performance</td>
<td>Average score of countries in the same region and economic group</td>
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<td>Sri Lanka</td>
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<td>6.01 Alternative and nuclear energy use</td>
<td>Average score of countries in the same region and economic group</td>
<td>Uganda</td>
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<td>Average score of countries/economies in the same region and economic group</td>
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<td>6.04 N₂O intensity level</td>
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<td>6.05 Baseline water stress</td>
<td>Average score of countries/economies in the same region and economic group</td>
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<td>6.06 Wastewater treatment</td>
<td>Average score of countries/economies in the same region and economic group</td>
<td>Hong Kong SAR</td>
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</table>
How to Read the Country Profiles

The Country Profiles section presents a profile for each of the 100 countries and economies covered in the *Readiness for the Future of Production Report 2018*.

1. **Key Indicators**
   This section presents a selection of key economic indicators and key production indicators. All data in this section is from 2016. The economic indicators are sourced from the April 2017 edition of the International Monetary Fund (IMF)*s World Economic Outlook (WEO) Database. The production indicators are sourced from the United Nations Industrial Development Organization (UNIDO) *Statistical Country Briefs* database.

2. **Overall Assessment**
   This section summarizes the performance of a country across the Drivers of Production and Structure of Production components. The table to the left of this section shows the overall Drivers of Production and Structure of Production scores as well as individual scores, ranking and weighting for the six Drivers of Production and the two components of the Structure of Production for that country. The chart on the right of this section shows the country position within the global mapping of results and archetypes. A country or economy is positioned within one of four archetypes based on its weighted Structure of Production score (x axis) and Driver of Production score (y axis) on a 0–10 scale.

3. **Future of Production Scorecard**
   This section details the country’s performance for each of the 59 indicators included in the composition of the Readiness for the Future of Production Assessment. Indicators are organized by sub-category and category under the Drivers of Production and Structure of Production. All values are presented in the corresponding unit of measure displayed next to the indicator name.

**Online Resources**
Interactive profiles with an adjustable weighting scheme and a downloadable dataset are available at [http://wef.ch/fopreadiness18](http://wef.ch/fopreadiness18).
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Albania

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Key economic indicators

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<td>GDP US$ billions</td>
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<td>GDP per capita US$</td>
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<td>Unemployment rate %</td>
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Key production indicators

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<td>Manufacturing value added 2010 millions US$</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 4.1

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<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>84th</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
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<tr>
<td>Sustainable Resources</td>
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<tr>
<td>Demand Environment</td>
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Structure of Production 2.7

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<td>Scale</td>
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Archetype

Albania 2.7, 4.1

Nascent

High-Potential

Leading

Nascent

Legacy

Small / basic

Large / complex

Structure of Production
## Albania

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<table>
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<th>Index Component</th>
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<td>1.01 Economic complexity</td>
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<td><strong>Structure: Scale</strong></td>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>1.03 Manufacturing value added US$ millions</td>
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<td>823.3</td>
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<td><strong>Technology Platform</strong></td>
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<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
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<td>2.02 LTE mobile network coverage % population</td>
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<td>2.03 Internet users % pop.</td>
<td>51</td>
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<td>2.04 FDI and technology transfer 1-7 (best)</td>
<td>32</td>
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<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>61</td>
<td>4.4</td>
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<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
<td>84</td>
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<td>2.07 Cybersecurity commitment 0-1 (best)</td>
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<td><strong>Ability to Innovate</strong></td>
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<td>2.08 State of cluster development 1-7 (best)</td>
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<td>2.09 Company investment in emerging technology 1-7 (best)</td>
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<td>2.10 Gov't procurement of advanced technology products 1-7 (best)</td>
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<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
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<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<td>2.13 R&amp;D expenditures % GDP</td>
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<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
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<td><strong>Driver: Human Capital</strong></td>
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<tr>
<td>Current Labor Force 0-10 (best)</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td>3.03 Female participation in labor force ratio</td>
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<td>3.04 Mean years of schooling Years</td>
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<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
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<td>3.06 Digital skills among population 1-7 (best)</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
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<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.09 Quality of universities Count</td>
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<td>3.10 Quality of math and science education 1-7 (best)</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>3.12 School life expectancy Years</td>
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<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
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<td>4.02 Trade tariffs % duty</td>
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<td>4.06 FDI inflows US$ millions</td>
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<td>Sustainability 0-10 (best)</td>
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>6.04 NO2 intensity level NO2 emissions in megatons/GDP (US$ billions)</td>
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<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>7.01 Market size 0-100 (best)</td>
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<td>Consumer Base 0-10 (best)</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Algeria

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<th>Indicator</th>
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<tr>
<td>GDP US$ billions</td>
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<td>GDP per capita US$</td>
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<tr>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 US$</td>
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<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
<td>2.3</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>9.1</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 3.7

<table>
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<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>92nd</td>
<td>3.0</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>91st</td>
<td>3.6</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>89th</td>
<td>3.3</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>91st</td>
<td>3.6</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>72nd</td>
<td>5.4</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>41st</td>
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Structure of Production 2.8

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<tr>
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<td>88th</td>
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<tr>
<td>Scale</td>
<td>40%</td>
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Archetype

Algeria 2.8, 3.7
## Algeria

### Readiness for the Future of Production Assessment 2018 edition

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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
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<tr>
<td>0-10 (best)</td>
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<tr>
<td><strong>Economic complexity</strong></td>
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<tr>
<td>2.5 – 2.5 (best)</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong></td>
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<tr>
<td>0-10 (best)</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
</tr>
<tr>
<td>US$ millions</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<tr>
<td>0-10 (best)</td>
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<tr>
<td>Technology Platform</td>
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<tr>
<td>0-10 (best)</td>
</tr>
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<td>Mobile-cellular telephone subscriptions /100 pop.</td>
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<tr>
<td>2.02 LTE mobile network coverage % population</td>
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<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
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<tr>
<td>0-10 (best)</td>
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<tr>
<td>State of cluster development 1-7 (best)</td>
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<tr>
<td>Company investment in emerging technology 1-7 (best)</td>
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<td>2.10 Gov't procurement of advanced technology products 1-7 (best)</td>
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<tr>
<td>Companies embracing disruptive ideas 1-7 (best)</td>
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<tr>
<td>Multi-stakeholder collaboration 1-7 (best)</td>
</tr>
<tr>
<td>R&amp;D expenditures % GDP</td>
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<td>Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>Patent applications applications/million pop.</td>
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<td>Venture capital deal volume US$ millions</td>
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<tr>
<td><strong>Driver: Human Capital</strong></td>
</tr>
<tr>
<td>0-10 (best)</td>
</tr>
<tr>
<td>Current Labor Force 0-10 (best)</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
</tr>
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<td>Knowledge-intensive employment % working pop.</td>
</tr>
<tr>
<td>Female participation in labor force ratio</td>
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<tr>
<td>Mean years of schooling Years</td>
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<tr>
<td>Availability of scientists and engineers 1-7 (best)</td>
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<td>Digital skills among population 1-7 (best)</td>
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<td>Future Labor Force 0-10 (best)</td>
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<td>Migration migrants/100,000 pop.</td>
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<td>Country capacity to attract and retain talent 1-7 (best)</td>
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<td>Quality of universities Count</td>
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<td>Quality of vocational training 1-7 (best)</td>
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<td>Critical thinking in teaching 1-7 (best)</td>
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Argentina

Readiness for the Future of Production Assessment 2018 edition

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Key production indicators

<table>
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<tr>
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<th>Value</th>
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<td>Manufacturing employment % working population</td>
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<td>Manufacturing value added growth Annual %</td>
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<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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Readiness Overall Assessment

Drivers of Production 4.2

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<tr>
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<td>Human Capital</td>
<td>20%</td>
<td>56th</td>
<td>4.9</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>92nd</td>
<td>3.1</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>83rd</td>
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<tr>
<td>Sustainable Resources</td>
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<td>63rd</td>
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Structure of Production 4.9

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Archetype

Argentina 4.9, 4.2
## Argentina

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<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<td><strong>Driver: Human Capital</strong></td>
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<td>4.9</td>
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<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
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<td><strong>Investment</strong></td>
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<td>4.06 FDI inflows US$ millions</td>
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<td>4.09 Electricity infrastructure 0-100 (best)</td>
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<td>72.4</td>
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<td><strong>Driver: Institutional Framework</strong></td>
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<td>Sustainability 0-10 (best)</td>
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<td>6.01 Alternative and nuclear energy use % total energy use</td>
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<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
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<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
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<td><strong>Driver: Demand Environment</strong></td>
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<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>7.01 Market size 0-100 (best)</td>
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<td>61.7</td>
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<tr>
<td><strong>Consumer Base</strong></td>
<td>75</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Country Profiles
Armenia

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population (millions)</td>
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<tr>
<td>GDP (US$ billions)</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>3,510.7</td>
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<tr>
<td>Unemployment rate (%)</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010 millions US$)</td>
<td>1,281.0</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>10.8</td>
</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>8.0</td>
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<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>3.3</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>3.7</td>
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<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
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Readiness Overall Assessment

Drivers of Production 4.4

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<th>Driver</th>
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<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>72nd</td>
<td>3.5</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>51st</td>
<td>5.1</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>72nd</td>
<td>4.4</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>58th</td>
<td>4.9</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>62nd</td>
<td>5.8</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 4.1

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<tr>
<td>Complexity</td>
<td>60%</td>
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<tr>
<td>Scale</td>
<td>40%</td>
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Archetype

Armenia

Armenia 4.1, 4.4

High-Potential

Leading

Nascent

Legacy
### Armenia

#### Readiness for the Future of Production Assessment 2018 edition

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<thead>
<tr>
<th>Index Component</th>
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<td><strong>Structure: Complexity</strong></td>
<td>52</td>
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<tr>
<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
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<tr>
<td><strong>Structure: Scale</strong></td>
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<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>10.8</td>
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<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>94</td>
<td>1,281</td>
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<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<tr>
<td>Technology Platform</td>
<td>84</td>
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<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>61</td>
<td>114.8</td>
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<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td>73</td>
<td>52.5</td>
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<tr>
<td>2.03 Internet users % pop.</td>
<td>55</td>
<td>62.0</td>
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<tr>
<td>2.04 FDI and technology transfer 1-7 (best)</td>
<td>74</td>
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<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>66</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
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<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
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<tr>
<td><strong>Ability to Innovate</strong></td>
<td>46</td>
<td>2.5</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
<td>42</td>
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</tr>
<tr>
<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
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<tr>
<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
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<tr>
<td>2.15 Patent applications applications/million pop.</td>
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<td>2.16 Venture capital deal volume USD millions</td>
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<td>2.17 Venture capital deal per size of economy USD/GDP</td>
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<td><strong>Driver: Human Capital</strong></td>
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<td>Current Labor Force 0-10 (best)</td>
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<tr>
<td>3.01 Manufacturing employment % working population</td>
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<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
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<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>56</td>
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<tr>
<td>3.04 Mean years of schooling Years</td>
<td>30</td>
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<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
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<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
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<tr>
<td>Future Labor Force 0-10 (best)</td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>95</td>
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<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.09 Quality of universities Count</td>
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<td>3.10 Quality of math and science education 1-7 (best)</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>3.12 School life expectancy Years</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>56</td>
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<td>3.14 Critical thinking in teaching 1-7 (best)</td>
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<td>3.15 Active labor policies 1-7 (best)</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
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<td>79.6</td>
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<td><strong>Driver: Institutional Framework</strong></td>
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<td><strong>Driver: Sustainable Resources</strong></td>
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Country Profiles
Australia

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<th>Indicator</th>
<th>Value</th>
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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
<td>5.7</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>100,108.8</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>6.6</td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>7.6</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 7.1

<table>
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<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>11th</td>
<td>6.9</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>9th</td>
<td>7.4</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>12th</td>
<td>7.1</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>12th</td>
<td>8.3</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>47th</td>
<td>6.5</td>
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<tr>
<td>Demand Environment</td>
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Structure of Production 4.3

<table>
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<tr>
<td>Complexity</td>
<td>60%</td>
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</tr>
<tr>
<td>Scale</td>
<td>40%</td>
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Archetype

Australia

High-Potential 4.3, 7.1

Readiness for the Future of Production Report 2018
### Australia

#### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
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<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
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<td>1.01 Economic complexity  (2.5) – 2.5 (best)</td>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>1.03 Manufacturing value added US$ millions</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
<td>11</td>
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Austria

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

Population millions 8.7  GDP US$ billions 386.8

GDP per capita US$ 44,498.4  Unemployment rate % 6.0

Key production indicators

Manufacturing value added 2010 millions US$ 71,962.7  Manufacturing value added growth Annual % 1.0
Manufacturing value added in economy % GDP 17.3  Medium hi-tech & hi-tech industries % of manu. value added 45.9
Manufacturing employment % working population 16.0  CO2 emission per unit of value added kg/USD 0.1

Readiness Overall Assessment

Drivers of Production 6.8

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Structure of Production 7.5

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Archetype

Austria 7.5, 6.8

High-Potential

Leading

Nascent

Legacy
### Austria

#### Readiness for the Future of Production Assessment 2018 edition

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<tr>
<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
<td>8</td>
<td>97.2</td>
</tr>
<tr>
<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
<td>31</td>
<td>5.6</td>
</tr>
<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
<td>41</td>
<td>5.6</td>
</tr>
<tr>
<td>7.01 Market size 0-100 (best)</td>
<td>41</td>
<td>56.5</td>
</tr>
<tr>
<td>Consumer Base 0-10 (best)</td>
<td>22</td>
<td>5.6</td>
</tr>
<tr>
<td>7.02 Buyer sophistication 1-7 (best)</td>
<td>39</td>
<td>3.8</td>
</tr>
<tr>
<td>7.03Extent of market dominance 1-7 (best)</td>
<td>11</td>
<td>5.0</td>
</tr>
</tbody>
</table>
Azerbaijan

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>9.5</td>
</tr>
<tr>
<td>GDP US$ billions</td>
<td>37.6</td>
</tr>
<tr>
<td>GDP per capita US$</td>
<td>3,956.4</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>2,860.5</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>5.0</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>4.9</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>-4.6</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>13.7</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Readiness Overall Assessment

Drivers of Production 4.7

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>55th</td>
<td>4.1</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>47th</td>
<td>5.2</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>66th</td>
<td>4.6</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>70th</td>
<td>4.5</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>79th</td>
<td>4.9</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>47th</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Structure of Production 2.2

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>92nd</td>
<td>2.5</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>93rd</td>
<td>1.6</td>
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</table>
## Azerbaijan

Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>0–10 (best)</td>
<td></td>
</tr>
<tr>
<td>1.01 Economic complexity</td>
<td>0.25</td>
<td>-1.1</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong></td>
<td>0–10 (best)</td>
<td></td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td></td>
<td>1.6</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td></td>
<td>5.0</td>
</tr>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
<td>0–10 (best)</td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>0–10 (best)</td>
<td>4.6</td>
</tr>
<tr>
<td>4.01 Trade % GDP</td>
<td></td>
<td>6.8</td>
</tr>
<tr>
<td>4.02 Trade tariffs % duty</td>
<td></td>
<td>90.1</td>
</tr>
<tr>
<td>4.03 Prevalence of non-tariff barriers 1–7 (best)</td>
<td></td>
<td>0.08</td>
</tr>
<tr>
<td>4.04 Logistics performance 1–5 (best)</td>
<td></td>
<td>4.6</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
<td>0–10 (best)</td>
<td></td>
</tr>
<tr>
<td>Technology Platform</td>
<td>0–10 (best)</td>
<td>4.1</td>
</tr>
<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td></td>
<td>6.2</td>
</tr>
<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td></td>
<td>41.0</td>
</tr>
<tr>
<td>2.03 Internet users % pop.</td>
<td></td>
<td>78.2</td>
</tr>
<tr>
<td>2.04 FDI and technology transfer 1–7 (best)</td>
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<td>5.0</td>
</tr>
<tr>
<td>2.05 Firm-level technology absorption 1–7 (best)</td>
<td></td>
<td>4.9</td>
</tr>
<tr>
<td>2.06 Impact of ICTs on new services and products 1–7 (best)</td>
<td></td>
<td>5.0</td>
</tr>
<tr>
<td>2.07 Cybersecurity commitment 0–1 (best)</td>
<td></td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Ability to Innovate</strong></td>
<td>0–10 (best)</td>
<td></td>
</tr>
<tr>
<td>2.08 State of cluster development 1–7 (best)</td>
<td></td>
<td>4.3</td>
</tr>
<tr>
<td>2.09 Company investment in emerging technology 1–7 (best)</td>
<td></td>
<td>4.7</td>
</tr>
<tr>
<td>2.10 Gov’t procurement of advanced technology products 1–7 (best)</td>
<td></td>
<td>4.3</td>
</tr>
<tr>
<td>2.11 Companies embracing disruptive ideas 1–7 (best)</td>
<td></td>
<td>4.2</td>
</tr>
<tr>
<td>2.12 Multi-stakeholder collaboration 1–7 (best)</td>
<td></td>
<td>4.4</td>
</tr>
<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
<td></td>
<td>80.2</td>
</tr>
<tr>
<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
<td></td>
<td>3.2</td>
</tr>
<tr>
<td>2.15 Patent applications applications/million pop.</td>
<td></td>
<td>15.0</td>
</tr>
<tr>
<td>2.16 Venture capital deal volume US$ millions</td>
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<td>42.9</td>
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<tr>
<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
<td></td>
<td>0.8</td>
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<tr>
<td><strong>Driver: Human Capital</strong></td>
<td>0–10 (best)</td>
<td></td>
</tr>
<tr>
<td>Current Labor Force</td>
<td>0–10 (best)</td>
<td>5.9</td>
</tr>
<tr>
<td>3.01 Manufacturing employment % working population</td>
<td></td>
<td>4.9</td>
</tr>
<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
<td></td>
<td>23.4</td>
</tr>
<tr>
<td>3.03 Female participation in labor force ratio</td>
<td></td>
<td>0.70</td>
</tr>
<tr>
<td>3.04 Mean years of schooling Years</td>
<td></td>
<td>10.5</td>
</tr>
<tr>
<td>3.05 Availability of scientists and engineers 1–7 (best)</td>
<td></td>
<td>4.7</td>
</tr>
<tr>
<td>3.06 Digital skills among population 1–7 (best)</td>
<td></td>
<td>5.2</td>
</tr>
<tr>
<td>Future Labor Force</td>
<td>0–10 (best)</td>
<td>4.6</td>
</tr>
<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td></td>
<td>0.0</td>
</tr>
<tr>
<td>3.08 Country capacity to attract and retain talent 1–7 (best)</td>
<td></td>
<td>4.6</td>
</tr>
<tr>
<td>3.09 Quality of universities Count</td>
<td></td>
<td>2.0</td>
</tr>
<tr>
<td>3.10 Quality of math and science education 1–7 (best)</td>
<td></td>
<td>4.2</td>
</tr>
<tr>
<td>3.11 Quality of vocational training 1–7 (best)</td>
<td></td>
<td>4.4</td>
</tr>
<tr>
<td>3.12 School life expectancy Years</td>
<td></td>
<td>12.7</td>
</tr>
<tr>
<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td></td>
<td>13.5</td>
</tr>
<tr>
<td>3.14 Critical thinking in teaching 1–7 (best)</td>
<td></td>
<td>4.2</td>
</tr>
<tr>
<td>3.15 Active labor policies 1–7 (best)</td>
<td></td>
<td>4.2</td>
</tr>
<tr>
<td>3.16 On-the-job training 1–7 (best)</td>
<td></td>
<td>4.4</td>
</tr>
<tr>
<td>3.17 Hiring and firing practices 1–7 (best)</td>
<td></td>
<td>4.7</td>
</tr>
</tbody>
</table>

**Note:** The document contains a summary of readiness metrics for various factors affecting future production in Azerbaijan, including economic, technological, and human capital aspects. Each index component is ranked on a scale of 0–100, with higher values indicating a stronger readiness for future production. The document also highlights specific indicators such as future labor force readiness, technological platform, and human capital, among others, each with associated scores and rankings. The data points are derived from comprehensive assessments and are designed to provide insights into the country's capacity to adapt and innovate for future economic growth.
Bahrain

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>1.3</td>
</tr>
<tr>
<td>GDP US$ billions</td>
<td>31.9</td>
</tr>
<tr>
<td>GDP per capita US$</td>
<td>24,182.9</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drivers of Production Technology &amp; Innovation</td>
<td>48th</td>
<td>4.4</td>
</tr>
<tr>
<td>Drivers of Production Human Capital</td>
<td>38th</td>
<td>5.6</td>
</tr>
<tr>
<td>Drivers of Production Global Trade &amp; Investment</td>
<td>32nd</td>
<td>6.0</td>
</tr>
<tr>
<td>Drivers of Production Institutional Framework</td>
<td>36th</td>
<td>6.3</td>
</tr>
<tr>
<td>Drivers of Production Sustainable Resources</td>
<td>81st</td>
<td>4.8</td>
</tr>
<tr>
<td>Drivers of Production Demand Environment</td>
<td>71st</td>
<td>4.2</td>
</tr>
<tr>
<td>Structure of Production Complexity</td>
<td>46th</td>
<td>5.6</td>
</tr>
<tr>
<td>Structure of Production Scale</td>
<td>65th</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Archetype

Bahrain 4.8, 5.3

Nascent

Complexity 60% 46th 5.6
Scale 40% 65th 3.5

Most future-ready

Least future-ready

High-Potential

Leading

Bahrain

Complexity 60% 46th 5.6
Scale 40% 65th 3.5

Nascent

Legacy

Small / basic

Large / complex

Medium hi-tech & hi-tech industries % of manu. value added 24.4

CO2 emission per unit of value added kg/USD 0.5

Population millions 1.3

GDP US$ billions 31.9

GDP per capita US$ 24,182.9

Unemployment rate % 3.7

Manufacturing value added 2010 millions US$ 4,561.7

Manufacturing value added in economy % GDP 14.5

Manufacturing employment % working population 12.0

Manufacturing value added growth Annual % 2.3

Country Profiles
### Bahrain

#### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>0-10 (best)</td>
<td>46</td>
</tr>
<tr>
<td><strong>Economic complexity</strong></td>
<td>(2.5) – 2.5 (best)</td>
<td>46</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong></td>
<td>0-10 (best)</td>
<td>65</td>
</tr>
<tr>
<td><strong>Manufacturing value added in economy</strong></td>
<td>% GDP</td>
<td>39</td>
</tr>
<tr>
<td><strong>Manufacturing value added</strong></td>
<td>US$ millions</td>
<td>74</td>
</tr>
<tr>
<td><strong>Technology Platform</strong></td>
<td>0-10 (best)</td>
<td>48</td>
</tr>
<tr>
<td><strong>Mobile-cellular telephone subscriptions</strong></td>
<td>/100 pop.</td>
<td>2</td>
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<tr>
<td><strong>LTE mobile network coverage</strong></td>
<td>% population</td>
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</tr>
<tr>
<td><strong>Internet users</strong></td>
<td>% pop.</td>
<td>1</td>
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<tr>
<td><strong>Firm-level technology absorption</strong></td>
<td>1-7 (best)</td>
<td>30</td>
</tr>
<tr>
<td><strong>Impact of ICTs on new services and products</strong></td>
<td>1-7 (best)</td>
<td>35</td>
</tr>
<tr>
<td><strong>Cybersecurity commitment</strong></td>
<td>0-1 (best)</td>
<td>64</td>
</tr>
<tr>
<td><strong>State of cluster development</strong></td>
<td>1-7 (best)</td>
<td>23</td>
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<tr>
<td><strong>Govt procurement of advanced technology products</strong></td>
<td>1-7 (best)</td>
<td>19</td>
</tr>
<tr>
<td><strong>Companies embracing disruptive ideas</strong></td>
<td>1-7 (best)</td>
<td>49</td>
</tr>
<tr>
<td><strong>Multi-stakeholder collaboration</strong></td>
<td>1-7 (best)</td>
<td>33</td>
</tr>
<tr>
<td><strong>R&amp;D expenditures</strong></td>
<td>% GDP</td>
<td>95</td>
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<tr>
<td><strong>Scientific and technical publications</strong></td>
<td>Number per Billion PPP$ GDP</td>
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<tr>
<td><strong>Patent applications</strong></td>
<td>applications/million pop.</td>
<td>55</td>
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<tr>
<td><strong>Venture capital deal volume</strong></td>
<td>US$ millions</td>
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<tr>
<td><strong>Venture capital deal per size of economy</strong></td>
<td>US$/GDP</td>
<td>68</td>
</tr>
<tr>
<td><strong>Current Labor Force</strong></td>
<td>0-10 (best)</td>
<td>38</td>
</tr>
<tr>
<td><strong>Manufacturing employment</strong></td>
<td>% working population</td>
<td>48</td>
</tr>
<tr>
<td><strong>Knowledge-intensive employment</strong></td>
<td>% working pop.</td>
<td>63</td>
</tr>
<tr>
<td><strong>Female participation in labor force</strong></td>
<td>ratio</td>
<td>91</td>
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<td><strong>Mean years of schooling</strong></td>
<td>Years</td>
<td>59</td>
</tr>
<tr>
<td><strong>Availability of scientists and engineers</strong></td>
<td>1-7 (best)</td>
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<tr>
<td><strong>Digital skills among population</strong></td>
<td>1-7 (best)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Future Labor Force</strong></td>
<td>0-10 (best)</td>
<td>21</td>
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<tr>
<td><strong>Migration</strong></td>
<td>migrants/100,000 pop.</td>
<td>18</td>
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<td><strong>Country capacity to attract and retain talent</strong></td>
<td>1-7 (best)</td>
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<tr>
<td><strong>Quality of universities</strong></td>
<td>Count</td>
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<tr>
<td><strong>Quality of math and science education</strong></td>
<td>1-7 (best)</td>
<td>28</td>
</tr>
<tr>
<td><strong>Quality of vocational training</strong></td>
<td>1-7 (best)</td>
<td>25</td>
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<tr>
<td><strong>School life expectancy</strong></td>
<td>Years</td>
<td>32</td>
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<tr>
<td><strong>Pupil-to-teacher ratio in primary education</strong></td>
<td>Ratio</td>
<td>18</td>
</tr>
<tr>
<td><strong>Critical thinking in teaching</strong></td>
<td>1-7 (best)</td>
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<tr>
<td><strong>Active labor policies</strong></td>
<td>1-7 (best)</td>
<td>24</td>
</tr>
<tr>
<td><strong>On-the-job training</strong></td>
<td>1-7 (best)</td>
<td>27</td>
</tr>
<tr>
<td><strong>Hiring and firing practices</strong></td>
<td>1-7 (best)</td>
<td>24</td>
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</table>

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
<td>0-10 (best)</td>
<td>32</td>
</tr>
<tr>
<td><strong>Trade</strong></td>
<td>0-10 (best)</td>
<td>21</td>
</tr>
<tr>
<td><strong>Trade % GDP</strong></td>
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<tr>
<td><strong>Trade tariffs</strong></td>
<td>% duty</td>
<td>4.02</td>
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<tr>
<td><strong>Prevalence of non-tariff barriers</strong></td>
<td>1-7 (best)</td>
<td>4.03</td>
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<tr>
<td><strong>Logistics performance</strong></td>
<td>1 – 5 (best)</td>
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<tr>
<td><strong>Investment</strong></td>
<td>0-10 (best)</td>
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<tr>
<td><strong>Greenfield investments</strong></td>
<td>US$ millions</td>
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<tr>
<td><strong>FDI inflows</strong></td>
<td>US$ millions</td>
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<td><strong>Domestic credit to private sector</strong></td>
<td>% GDP</td>
<td>4.07</td>
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<td><strong>Infrastructure</strong></td>
<td>0-10 (best)</td>
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<tr>
<td><strong>Transport infrastructure</strong></td>
<td>0-100 (best)</td>
<td>4.08</td>
</tr>
<tr>
<td><strong>Electricity infrastructure</strong></td>
<td>0-100 (best)</td>
<td>4.09</td>
</tr>
<tr>
<td><strong>Driver: Institutional Framework</strong></td>
<td>0-10 (best)</td>
<td>36</td>
</tr>
<tr>
<td><strong>Government</strong></td>
<td>0-10 (best)</td>
<td>36</td>
</tr>
<tr>
<td><strong>Regulatory efficiency</strong></td>
<td>0 – 100 (best)</td>
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<td><strong>Incidence of corruption</strong></td>
<td>% GDP</td>
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</tr>
<tr>
<td><strong>Future orientation of government</strong></td>
<td>1-7 (best)</td>
<td>5.03</td>
</tr>
<tr>
<td><strong>Rule of law</strong></td>
<td>(2.5) – 2.0 (best)</td>
<td>5.04</td>
</tr>
<tr>
<td><strong>Driver: Sustainable Resources</strong></td>
<td>0-10 (best)</td>
<td>81</td>
</tr>
<tr>
<td><strong>Sustainability</strong></td>
<td>0-10 (best)</td>
<td>81</td>
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<tr>
<td><strong>Alternative and nuclear energy use</strong></td>
<td>% total energy use</td>
<td>6.01</td>
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<tr>
<td><strong>CO2 intensity level</strong></td>
<td>CO2 emissions in megatons/GDP (US$ billions)</td>
<td>6.02</td>
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<tr>
<td><strong>CH4 intensity level</strong></td>
<td>CH4 emissions in megatons/GDP (US$ billions)</td>
<td>6.03</td>
</tr>
<tr>
<td><strong>N2O intensity level</strong></td>
<td>N2O emissions in megatons/GDP (US$ billions)</td>
<td>6.04</td>
</tr>
<tr>
<td><strong>Baseline water stress</strong></td>
<td>Annual withdrawals, % of annual available blue water</td>
<td>6.05</td>
</tr>
<tr>
<td><strong>Wastewater treatment</strong></td>
<td>% of annual available blue water</td>
<td>6.06</td>
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<tr>
<td><strong>Buyer sophistication</strong></td>
<td>1-7 (best)</td>
<td>7.02</td>
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<tr>
<td><strong>Extent of market dominance</strong></td>
<td>1-7 (best)</td>
<td>7.03</td>
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</table>

Country Profiles: Nascent
Bangladesh

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>161.5</td>
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<tr>
<td>GDP US$ billions</td>
<td>227.9</td>
</tr>
<tr>
<td>GDP per capita US$</td>
<td>1,411.0</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>32,262.1</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>19.3</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>12.4</td>
</tr>
</tbody>
</table>

Manufacturing value added growth Annual % 9.8
Medium hi-tech & hi-tech industries % of manu. value added 9.5
CO2 emission per unit of value added kg/USD 0.4

Readiness Overall Assessment

<table>
<thead>
<tr>
<th>Drivers of Production</th>
<th>3.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20% 86th 3.2</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20% 96th 3.4</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20% 93rd 3.0</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20% 85th 4.0</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5% 84th 4.7</td>
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<tr>
<td>Demand Environment</td>
<td>15% 52nd 4.8</td>
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Archetype

<table>
<thead>
<tr>
<th>Structure of Production</th>
<th>3.6</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60% 97th 2.3</td>
</tr>
<tr>
<td>Scale</td>
<td>40% 24th 5.5</td>
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</table>

Complexity
Scale

Bangladesh 3.6, 3.7

High-Potential
Leading
Nascent
Legacy
# Bangladesh

**Readiness for the Future of Production Assessment 2018 edition**

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>100 (best)</td>
<td>97</td>
</tr>
<tr>
<td>1.01 Economic complexity</td>
<td>(2.5) — 2.5 (best)</td>
<td>-1.2</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong></td>
<td>100 (best)</td>
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<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>% GDP</td>
<td>14</td>
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<tr>
<td>1.03 Manufacturing value added</td>
<td>US$ millions</td>
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<td><strong>Driver: Technology &amp; Innovation</strong></td>
<td>100 (best)</td>
<td>86</td>
</tr>
<tr>
<td>Technology Platform</td>
<td>100 (best)</td>
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<tr>
<td>2.01 Mobile-cellular telephone subscriptions</td>
<td>/100 pop.</td>
<td>94</td>
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<tr>
<td>2.02 LTE mobile network coverage</td>
<td>% population</td>
<td>67</td>
</tr>
<tr>
<td>2.03 Internet users</td>
<td>% pop.</td>
<td>97</td>
</tr>
<tr>
<td>2.04 FDI and technology transfer</td>
<td>1-7 (best)</td>
<td>88</td>
</tr>
<tr>
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<td>81</td>
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<td>1-7 (best)</td>
<td>94</td>
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<td>2.07 Cybersecurity commitment</td>
<td>0-1 (best)</td>
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<tbody>
<tr>
<td><strong>Ability to Innovate</strong></td>
<td>100 (best)</td>
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<tr>
<td>2.08 State of cluster development</td>
<td>1-7 (best)</td>
<td>57</td>
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<tr>
<td>2.09 Company investment in emerging technology</td>
<td>1-7 (best)</td>
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<tr>
<td>2.10 Gov’t procurement of advanced technology products</td>
<td>1-7 (best)</td>
<td>69</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas</td>
<td>1-7 (best)</td>
<td>83</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration</td>
<td>1-7 (best)</td>
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<tr>
<td>2.13 R&amp;D expenditures</td>
<td>% GDP</td>
<td>73</td>
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<tr>
<td>2.14 Scientific and technical publications</td>
<td>Number per Billion PPP$ GDP</td>
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<td>2.15 Patent applications</td>
<td>applications/million pop.</td>
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<tr>
<td>2.16 Venture capital deal volume</td>
<td>US$ millions</td>
<td>93</td>
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<tr>
<td>2.17 Venture capital deal per size of economy</td>
<td>US$/GDP</td>
<td>99</td>
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<tr>
<td><strong>Driver: Human Capital</strong></td>
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<tr>
<td>Current Labor Force</td>
<td>100 (best)</td>
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<tr>
<td>3.01 Manufacturing employment</td>
<td>% working population</td>
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<tr>
<td>3.02 Knowledge-intensive employment</td>
<td>% working pop.</td>
<td>65</td>
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<tr>
<td>3.03 Female participation in labor force</td>
<td>ratio</td>
<td>92</td>
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<tr>
<td>3.04 Mean years of schooling</td>
<td>Years</td>
<td>94</td>
</tr>
<tr>
<td>3.05 Availability of scientists and engineers</td>
<td>1-7 (best)</td>
<td>68</td>
</tr>
<tr>
<td>3.06 Digital skills among population</td>
<td>1-7 (best)</td>
<td>97</td>
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<tr>
<td>Future Labor Force</td>
<td>100 (best)</td>
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<tr>
<td>3.07 Migration</td>
<td>migrants/100,000 pop.</td>
<td>90</td>
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<td>3.08 Country capacity to attract and retain talent</td>
<td>1-7 (best)</td>
<td>74</td>
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<tr>
<td>3.09 Quality of universities</td>
<td>Count</td>
<td>62</td>
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<tr>
<td>3.10 Quality of math and science education</td>
<td>1-7 (best)</td>
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<td>3.11 Quality of vocational training</td>
<td>1-7 (best)</td>
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<tr>
<td>3.12 School life expectancy</td>
<td>Years</td>
<td>95</td>
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<tr>
<td>3.13 Pupil-to-teacher ratio in primary education</td>
<td>Ratio</td>
<td>91</td>
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<tr>
<td>3.14 Critical thinking in teaching</td>
<td>1-7 (best)</td>
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<tr>
<td>3.15 Active labor policies</td>
<td>1-7 (best)</td>
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<tr>
<td>3.16 On-the-job training</td>
<td>1-7 (best)</td>
<td>98</td>
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<tr>
<td>3.17 Hiring and firing practices</td>
<td>1-7 (best)</td>
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<tr>
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<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
<td>100 (best)</td>
<td>93</td>
</tr>
<tr>
<td>Trade</td>
<td>100 (best)</td>
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</tr>
<tr>
<td>4.01 Trade</td>
<td>% GDP</td>
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<tr>
<td>4.02 Trade tariffs</td>
<td>% duty</td>
<td>96</td>
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<tr>
<td>4.03 Prevalence of non-tariff barriers</td>
<td>1-7 (best)</td>
<td>30</td>
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<tr>
<td>4.04 Logistics performance</td>
<td>1 – 5 (best)</td>
<td>76</td>
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<tr>
<td>Investment</td>
<td>100 (best)</td>
<td>73</td>
</tr>
<tr>
<td>4.05 Greenfield investments</td>
<td>US$ millions</td>
<td>49</td>
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<td>4.06 FDI inflows</td>
<td>US$ millions</td>
<td>64</td>
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<tr>
<td>4.07 Domestic credit to private sector</td>
<td>% GDP</td>
<td>70</td>
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<tr>
<td>Infrastructure</td>
<td>100 (best)</td>
<td>87</td>
</tr>
<tr>
<td>4.08 Transport infrastructure</td>
<td>0-100 (best)</td>
<td>83</td>
</tr>
<tr>
<td>4.09 Electricity infrastructure</td>
<td>0-100 (best)</td>
<td>83</td>
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<tbody>
<tr>
<td><strong>Driver: Institutional Framework</strong></td>
<td>100 (best)</td>
<td>85</td>
</tr>
<tr>
<td>Government</td>
<td>100 (best)</td>
<td>85</td>
</tr>
<tr>
<td>5.01 Regulatory efficiency</td>
<td>0 – 100 (best)</td>
<td>71</td>
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<tr>
<td>5.02 Incidence of corruption</td>
<td>0-100 (best)</td>
<td>96</td>
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<tr>
<td>5.03 Future orientation of government</td>
<td>1-7 (best)</td>
<td>49</td>
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<tr>
<td>5.04 Rule of law</td>
<td>(2.5) – 2.0 (best)</td>
<td>86</td>
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<tr>
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<th>Value</th>
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<tr>
<td><strong>Driver: Sustainable Resources</strong></td>
<td>100 (best)</td>
<td>84</td>
</tr>
<tr>
<td>Sustainability</td>
<td>100 (best)</td>
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<tr>
<td>6.01 Alternative and nuclear energy use</td>
<td>% total energy use</td>
<td>46</td>
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<tr>
<td>6.02 CO2 intensity level</td>
<td>CO2 emissions in megatons/GDP (US$ billions)</td>
<td>60</td>
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<td>6.03 CH4 intensity level</td>
<td>CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>6.04 N2O intensity level</td>
<td>N2O emissions in megatons/GDP (US$ billions)</td>
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<tr>
<td>6.05 Baseline water stress</td>
<td>Annual withdrawals, % of annual available blue water</td>
<td>22</td>
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<tr>
<td>6.06 Wastewater treatment</td>
<td>0 – 5 (worst)</td>
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<tr>
<td><strong>Driver: Demand Environment</strong></td>
<td>100 (best)</td>
<td>52</td>
</tr>
<tr>
<td>Foreign and Domestic Demand</td>
<td>100 (best)</td>
<td>37</td>
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<tr>
<td>7.01 Market size</td>
<td>0-100 (best)</td>
<td>37</td>
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<tr>
<td>Consumer Base</td>
<td>0-10 (best)</td>
<td>81</td>
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<tr>
<td>7.02 Buyer sophistication</td>
<td>1-7 (best)</td>
<td>58</td>
</tr>
<tr>
<td>7.03 Extent of market dominance</td>
<td>1-7 (best)</td>
<td>93</td>
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</table>
Belgium

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tbody>
<tr>
<td>Population (millions)</td>
<td>11.3</td>
</tr>
<tr>
<td>GDP (US$ billions)</td>
<td>467.0</td>
</tr>
<tr>
<td>GDP per capita (US$)</td>
<td>41,283.3</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>7.9</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010 millions US$)</td>
<td>68,049.0</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>13.2</td>
</tr>
<tr>
<td>Manufacturing employment (% of working population)</td>
<td>12.9</td>
</tr>
<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>1.0</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
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</tr>
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<td>CO₂ emission per unit of value added (kg/USD)</td>
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Readiness Overall Assessment

Drivers of Production 6.8

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>19th</td>
<td>6.4</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>15th</td>
<td>6.9</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>21st</td>
<td>6.7</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>18th</td>
<td>7.6</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>24th</td>
<td>7.1</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>18th</td>
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Structure of Production 6.5

<table>
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</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>32nd</td>
<td>4.9</td>
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Archetype

Belgium 6.5, 6.8

Belgium

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### Readiness for the Future of Production Assessment 2018 edition

**Belgium**

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<td>7.01 Market size 0-100 (best)</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
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Key production indicators

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<thead>
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<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
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<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production

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<th>Score /10</th>
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</thead>
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<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>70th</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>64th</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>82nd</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>86th</td>
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<tr>
<td>Demand Environment</td>
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Structure of Production

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<tr>
<td>Scale</td>
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Archetype

Bosnia and Herzegovina

Population: 3.9 millions
GDP: 16.6 US$ billions
GDP per capita: 4,308.2 US$
Unemployment rate: 25.4%

Manufacturing value added: 2,080.9 millions US$
Manufacturing value added in economy: 11.0%
Manufacturing employment: 16.0%
Manufacturing value added growth: 3.6 annual%
Medium hi-tech & hi-tech industries: 17.5% of manufacturing value added
CO2 emission per unit of value added: 1.0 kg/USD

Key economic indicators

Population: 3.9 millions
GDP: 16.6 US$ billions
GDP per capita: 4,308.2 US$
Unemployment rate: 25.4%

Manufacturing value added: 2,080.9 millions US$
Manufacturing value added in economy: 11.0%
Manufacturing employment: 16.0%
Manufacturing value added growth: 3.6 annual%
Medium hi-tech & hi-tech industries: 17.5% of manufacturing value added
CO2 emission per unit of value added: 1.0 kg/USD

Readiness for the Future of Production Report 2018
**Bosnia and Herzegovina**

**Readiness for the Future of Production Assessment 2018 edition**

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<td>Technology Platform 0-10 (best)</td>
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<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
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<td>2.02 LTE mobile network coverage % population</td>
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<td>2.05 Firm-level technology absorption 1-7 (best)</td>
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<td>2.07 Cybersecurity commitment 0-1 (best)</td>
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<td>7.01 Market size 0-100 (best)</td>
<td>90</td>
<td>29.7</td>
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<tr>
<td>Consumer Base 0-10 (best)</td>
<td>99</td>
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<tr>
<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
<td>84</td>
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</table>
Botswana

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Population (millions)</td>
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<tr>
<td>GDP (US$ billions)</td>
<td>15.0</td>
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<tr>
<td>GDP per capita (US$)</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010)</td>
<td>1,068.8</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>6.4</td>
</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>2.5</td>
</tr>
<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>4.0</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>16.5</td>
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<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
<td>0.1</td>
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Readiness Overall Assessment

Drivers of Production 4.4

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>79th</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>75th</td>
<td>4.4</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>73rd</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>37th</td>
<td>6.2</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>68th</td>
<td>5.5</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 3.2

<table>
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<tr>
<td>Scale</td>
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Archetype

High-Potential

Leading

Nascent

Botswana

3.2, 4.4
### Botswana

#### Readiness for the Future of Production Assessment 2018 edition

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<thead>
<tr>
<th>Index Component</th>
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<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
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<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
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<td><strong>Structure: Scale</strong> 0-10 (best)</td>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<tr>
<td>1.03 Manufacturing value added US$ millions</td>
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<td>1,068.8</td>
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<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
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<td>2.02 LTE mobile network coverage % population</td>
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<td>2.03 Internet users % pop.</td>
<td>79</td>
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<td>2.04 FDI and technology transfer 1-7 (best)</td>
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<td>2.08 State of cluster development 1-7 (best)</td>
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<td>2.09 Company investment in emerging technology 1-7 (best)</td>
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<tr>
<td>2.10 Gov't procurement of advanced technology products 1-7 (best)</td>
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<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<td>2.13 R&amp;D expenditures % GDP</td>
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<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal per size of economy US$/GDP</td>
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<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
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<td>Current Labor Force 0-10 (best)</td>
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<td>3.01 Manufacturing employment % working population</td>
<td>100</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td>17.8</td>
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<td>3.03 Female participation in labor force ratio</td>
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<td>3.04 Mean years of schooling Years</td>
<td>60</td>
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<tr>
<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
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<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>80</td>
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<td>Future Labor Force 0-10 (best)</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
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<tr>
<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.09 Quality of universities Count</td>
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<td>3.10 Quality of math and science education 1-7 (best)</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>3.12 School life expectancy Years</td>
<td>79</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>71</td>
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<td>3.14 Critical thinking in teaching 1-7 (best)</td>
<td>53</td>
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<tr>
<td>3.15 Active labor policies 1-7 (best)</td>
<td>63</td>
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<tr>
<td>3.16 On-the-job training 1-7 (best)</td>
<td>57</td>
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<tr>
<td>3.17 Hiring and firing practices 1-7 (best)</td>
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### Index Component

<table>
<thead>
<tr>
<th>Index Component</th>
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<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong> 0-10 (best)</td>
<td>73</td>
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<tr>
<td>4.01 Trade % GDP</td>
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<td>4.02 Trade tariffs % duty</td>
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<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
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<td>4.04 Logistics performance 1–5 (best)</td>
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<td>Investment 0-10 (best)</td>
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<td>4.05 Greenfield investments US$ millions</td>
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<tr>
<td>4.06 FDI inflows US$ millions</td>
<td>93</td>
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<td>4.07 Domestic credit to private sector % GDP</td>
<td>83</td>
<td>31.7</td>
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<td><strong>Infrastructure</strong> 0-10 (best)</td>
<td>84</td>
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<td>4.08 Transport infrastructure 0-100 (best)</td>
<td>73</td>
<td>38.3</td>
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<td>4.09 Electricity infrastructure 0-100 (best)</td>
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<td>58.8</td>
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<tr>
<td><strong>Driver: Institutional Framework</strong> 0-10 (best)</td>
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<tr>
<td>Government 0-10 (best)</td>
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<td>42</td>
<td>71.8</td>
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<td>5.02 Incidence of corruption 0-100 (best)</td>
<td>29</td>
<td>60.0</td>
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<td>5.03 Future orientation of government 1-7 (best)</td>
<td>29</td>
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<td>5.04 Rule of law (2.5) – 2.0 (best)</td>
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<tr>
<td><strong>Driver: Sustainable Resources</strong> 0-10 (best)</td>
<td>68</td>
<td>5.5</td>
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<tr>
<td>Sustainability 0-10 (best)</td>
<td>68</td>
<td>5.5</td>
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<tr>
<td>6.01 Alternative and nuclear energy use % total energy use</td>
<td>53</td>
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<tr>
<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
<td>63</td>
<td>0.4</td>
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<tr>
<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
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<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
<td>41</td>
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<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
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<td>41.0</td>
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<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
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<td>Foreign and Domestic Demand 0-10 (best)</td>
<td>94</td>
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<td>7.01 Market size 0-100 (best)</td>
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<td><strong>Consumer Base</strong> 0-10 (best)</td>
<td>77</td>
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<td>60</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Brazil

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Key economic indicators

<table>
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<th>Value</th>
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<tbody>
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<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
<td>1,798.6</td>
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<tr>
<td>GDP per capita US$</td>
<td>8,726.9</td>
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<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
<td>-9.4</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>35.2</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production

<table>
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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>45th</td>
<td>4.5</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>74th</td>
<td>4.4</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>54th</td>
<td>5.3</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>72nd</td>
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</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>19th</td>
<td>7.6</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>21st</td>
<td>6.1</td>
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Structure of Production

<table>
<thead>
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<th>Structure</th>
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<tr>
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<td>60%</td>
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<tr>
<td>Scale</td>
<td>40%</td>
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Archetype

Brazil 5.2, 5.0
Brazil

Readiness for the Future of Production Assessment 2018 edition

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<thead>
<tr>
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<tr>
<td>Structure: Complexity 0-10 (best)</td>
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<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
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<td>Technology Platform 0-10 (best)</td>
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<td>3.15 Active labor policies 1-7 (best)</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
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<tr>
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<td>4.04 Logistics performance 1–5 (best)</td>
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<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
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<td>Driver: Demand Environment 0-10 (best)</td>
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<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>7.01 Market size 0-100 (best)</td>
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<tr>
<td>Consumer Base 0-10 (best)</td>
<td>45</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Bulgaria

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<th>Indicator</th>
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<tbody>
<tr>
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<tr>
<td>GDP (US$ billions)</td>
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<tr>
<td>GDP per capita (US$)</td>
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<tr>
<td>Unemployment rate (%)</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010) US$</td>
<td>7,293.7</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>13.1</td>
</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>19.7</td>
</tr>
<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>4.1</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>30.0</td>
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<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
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Readiness Overall Assessment

Drivers of Production 5.0

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<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>36th</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>52nd</td>
<td>5.1</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>51st</td>
<td>5.4</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>55th</td>
<td>5.0</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>30th</td>
<td>6.9</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 5.2

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<tr>
<td>Complexity</td>
<td>60%</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>61st</td>
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# Bulgaria

Readiness for the Future of Production Assessment 2018 edition

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<td>Driver: Technology &amp; Innovation</td>
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<td>2.02 LTE mobile network coverage</td>
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<td>2.03 Internet users</td>
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<td>59.8</td>
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<tr>
<td>2.04 FDI and technology transfer</td>
<td>43</td>
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<td>2.05 Firm-level technology absorption</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products</td>
<td>51</td>
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<td>2.07 Cybersecurity commitment</td>
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<td>Ability to Innovate</td>
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<td>2.08 State of cluster development</td>
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<td>2.09 Company investment in emerging technology</td>
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<td>2.11 Companies embracing disruptive ideas</td>
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<td>2.12 Multi-stakeholder collaboration</td>
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<td>2.13 R&amp;D expenditures</td>
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<td>2.14 Scientific and technical publications</td>
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<td>3.02 Knowledge-intensive employment</td>
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<td>3.03 Female participation in labor force</td>
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<td>3.06 Digital skills among population</td>
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<th>Index Component</th>
<th>Rank /100</th>
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<td>4.06 FDI inflows</td>
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<td>4.07 Domestic credit to private sector</td>
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<td>Driver: Institutional Framework</td>
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<td>41.0</td>
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<td>5.04 Rule of law</td>
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<td>6.03 CH4 intensity level</td>
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<td>6.04 N2O intensity level</td>
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<tr>
<td>Foreign and Domestic Demand</td>
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<tr>
<td>7.01 Market size</td>
<td>61</td>
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<tr>
<td>Consumer Base</td>
<td>68</td>
<td>4.1</td>
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<td>7.02 Buyer sophistication</td>
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<td>3.1</td>
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<td>7.03 Extent of market dominance</td>
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Cambodia

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population (millions)</td>
<td>15.8</td>
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<tr>
<td>GDP (US$ billions)</td>
<td>19.4</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>1,229.6</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 (millions US$)</td>
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<td>Manufacturing value added in economy (% GDP)</td>
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<td>Manufacturing employment (% working population)</td>
<td>10.9</td>
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<tr>
<td>Manufacturing value added growth (Annual %)</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
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</tr>
<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
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Readiness Overall Assessment

Drivers of Production

<table>
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<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>83rd</td>
<td>3.3</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>86th</td>
<td>3.7</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>79th</td>
<td>4.0</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>100th</td>
<td>3.1</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>90th</td>
<td>4.5</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>75th</td>
<td>3.9</td>
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Structure of Production

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>84th</td>
<td>3.4</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>58th</td>
<td>3.8</td>
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</table>

Archetype

Cambodia 3.6, 3.6

Country Profiles
## Cambodia

### Readiness for the Future of Production Assessment 2018 edition

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Cameroon

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Key economic indicators

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<th>Indicator</th>
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<tr>
<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
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<td>GDP per capita US$</td>
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Key production indicators

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<td>Manufacturing value added 2010 millions US$</td>
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<td>Manufacturing value added in economy % GDP</td>
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<td>Manufacturing value added growth Annual %</td>
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<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<td>CO2 emission per unit of value added kg/USD</td>
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Drivers of Production

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<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
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<tr>
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<td>20%</td>
<td>89th</td>
<td>3.1</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>97th</td>
<td>3.2</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>95th</td>
<td>2.6</td>
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<td>Institutional Framework</td>
<td>20%</td>
<td>95th</td>
<td>3.4</td>
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<td>Sustainable Resources</td>
<td>5%</td>
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<td>Demand Environment</td>
<td>15%</td>
<td>83rd</td>
<td>3.6</td>
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Structure of Production

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<tr>
<td>Complexity</td>
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<td>Scale</td>
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Archetype

Cameroon 1.8, 3.2

Complexity 60% 99th 0.8

Scale 40% 69th 3.4
# Cameroons

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Canada

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<td>GDP per capita US$</td>
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Key production indicators

<table>
<thead>
<tr>
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<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>170,959.2</td>
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<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 7.5

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<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>4th</td>
<td>7.9</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>6th</td>
<td>7.5</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>10th</td>
<td>8.5</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>16th</td>
<td>7.7</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 5.8

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<td>Scale</td>
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</table>

Archetype

[Graph showing Canada's placement in the Drivers of Production and Structure of Production categories]

Leading

Canada 5.8, 7.5

Nascent

Legacy

Small / basic

Large / complex

Canada

Key production indicators

Country Profiles
Canada

Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
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<th>Value</th>
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<td><strong>Structure: Scale</strong> 0-10 (best)</td>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>1.03 Manufacturing value added US$ millions</td>
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<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
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<td>Technology Platform 0-10 (best)</td>
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<td>2.03 Internet users % pop.</td>
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<td>89.8</td>
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<td>2.04 FDI and technology transfer 1-7 (best)</td>
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<td>2.05 Firm-level technology absorption 1-7 (best)</td>
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<td>5.3</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
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<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
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<tr>
<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
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<td>4.6</td>
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<tr>
<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
<td>52</td>
<td>3.3</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>24</td>
<td>4.0</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
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<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
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<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
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<td>Current Labor Force 0-10 (best)</td>
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<td>3.01 Manufacturing employment % working population</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td>43.7</td>
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<td>3.03 Female participation in labor force ratio</td>
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<td>3.04 Mean years of schooling Years</td>
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<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
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<td>5.4</td>
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<td>3.06 Digital skills among population 1-7 (best)</td>
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<tr>
<td><strong>Future Labor Force</strong> 0-10 (best)</td>
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<td>7.3</td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
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<td>30.7</td>
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<tr>
<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<tr>
<td>3.09 Quality of universities Count</td>
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<td>3.10 Quality of math and science education 1-7 (best)</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>5.3</td>
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<tr>
<td>3.12 School life expectancy Years</td>
<td>23</td>
<td>16.3</td>
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<tr>
<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
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<td>3.14 Critical thinking in teaching 1-7 (best)</td>
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<td>3.15 Active labor policies 1-7 (best)</td>
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<td>4.7</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
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Chile

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<td>Population (millions)</td>
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<td>GDP (US$ billions)</td>
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<tr>
<td>Unemployment rate (%)</td>
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Key production indicators

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<thead>
<tr>
<th>Indicator</th>
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<th>Score /10</th>
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<tr>
<td>Manufacturing value added (2010 millions US$)</td>
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<td>Manufacturing value added in economy (% GDP)</td>
<td>60th</td>
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</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>48th</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>31st</td>
<td>6.9</td>
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<td>CO2 emission per unit of value added (kg/USD)</td>
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Drivers of Production 5.6

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<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
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<td>Human Capital</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>31st</td>
<td>6.0</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>24th</td>
<td>6.9</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>31st</td>
<td>6.9</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 4.2

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<tr>
<td>Scale</td>
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Archetype

Chile 4.2, 5.6

### Chile

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<td><strong>Structure: Scale</strong></td>
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<tr>
<td><strong>Manufacturing value added in economy % GDP</strong></td>
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<tr>
<td><strong>Manufacturing value added US$ millions</strong></td>
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<td><strong>Technology Platform</strong></td>
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<td><strong>LTE mobile network coverage % population</strong></td>
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<td><strong>Internet users % pop.</strong></td>
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<td>66.0</td>
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<td><strong>FDI and technology transfer 1-7 (best)</strong></td>
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<td><strong>Firm-level technology absorption 1-7 (best)</strong></td>
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<td><strong>Impact of ICTs on new services and products 1-7 (best)</strong></td>
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<td><strong>Cybersecurity commitment 0-1 (best)</strong></td>
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<td><strong>Company investment in emerging technology 1-7 (best)</strong></td>
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<td><strong>Gov't procurement of advanced technology products 1-7 (best)</strong></td>
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<td><strong>Companies embracing disruptive ideas 1-7 (best)</strong></td>
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<td><strong>Multi-stakeholder collaboration 1-7 (best)</strong></td>
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<td><strong>R&amp;D expenditures % GDP</strong></td>
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<td><strong>Driver: Human Capital</strong></td>
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<td><strong>Current Labor Force 0-10 (best)</strong></td>
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<td><strong>Knowledge-intensive employment % working pop.</strong></td>
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<td><strong>Mean years of schooling Years</strong></td>
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<tr>
<td><strong>Availability of scientists and engineers 1-7 (best)</strong></td>
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<td><strong>Digital skills among population 1-7 (best)</strong></td>
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<td>4.2</td>
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<td><strong>Future Labor Force 0-10 (best)</strong></td>
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<td><strong>Migration migrants/100,000 pop.</strong></td>
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<td><strong>School life expectancy Years</strong></td>
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<td><strong>Pupil-to-teacher ratio in primary education Ratio</strong></td>
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<tr>
<td><strong>Critical thinking in teaching 1-7 (best)</strong></td>
<td>79</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Active labor policies 1-7 (best)</strong></td>
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<td>3.1</td>
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<td><strong>On-the-job training 1-7 (best)</strong></td>
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<td>4.6</td>
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<td><strong>Hiring and firing practices 1-7 (best)</strong></td>
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### Country Profiles

<table>
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<tr>
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<th>Value</th>
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<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment 0-10 (best)</strong></td>
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<td><strong>Trade 0-10 (best)</strong></td>
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<td><strong>Logistics performance 1 – 5 (best)</strong></td>
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<td><strong>Investment 0-10 (best)</strong></td>
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<td><strong>Driver: Institutional Framework 0-10 (best)</strong></td>
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<td>6.9</td>
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<td><strong>Government 0-10 (best)</strong></td>
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<td><strong>Regulatory efficiency 0 – 100 (best)</strong></td>
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<td><strong>Future orientation of government 1-7 (best)</strong></td>
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<td><strong>Rule of law (2.5) – 2.0 (best)</strong></td>
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<td><strong>Alternative and nuclear energy use % total energy use</strong></td>
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<tr>
<td><strong>N2O intensity level N2O emissions in megatons/GDP (US$ billions)</strong></td>
<td>31</td>
<td>0.0</td>
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<tr>
<td><strong>Baseline water stress Annual withdrawals, % of annual available blue water</strong></td>
<td>68</td>
<td>3.2</td>
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<tr>
<td><strong>Wastewater treatment % duty</strong></td>
<td>15</td>
<td>94.3</td>
</tr>
<tr>
<td><strong>Driver: Demand Environment 0-10 (best)</strong></td>
<td>48</td>
<td>4.9</td>
</tr>
<tr>
<td><strong>Foreign and Domestic Demand 0-10 (best)</strong></td>
<td>44</td>
<td>5.5</td>
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<tr>
<td><strong>Market size 0-100 (best)</strong></td>
<td>44</td>
<td>55.0</td>
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<tr>
<td><strong>Consumer Base 0-10 (best)</strong></td>
<td>56</td>
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<td><strong>Buyer sophistication 1-7 (best)</strong></td>
<td>29</td>
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<tr>
<td><strong>Extent of market dominance 1-7 (best)</strong></td>
<td>86</td>
<td>3.2</td>
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</tbody>
</table>
China

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population millions</td>
<td>1,382.7</td>
</tr>
<tr>
<td>GDP US$ billions</td>
<td>11,218.3</td>
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<tr>
<td>GDP per capita US$</td>
<td>8,113.3</td>
</tr>
<tr>
<td>Unemployment rate %</td>
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</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010</td>
<td>2,999,885.2</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>32.1</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Medium hi-tech & hi-tech industries % of manu. value added | 41.4

CO2 emission per unit of value added kg/USD | 1.1

Readiness Overall Assessment

Drivers of Production 6.1

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>25th</td>
<td>5.7</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>40th</td>
<td>5.6</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>9th</td>
<td>7.2</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>61st</td>
<td>4.9</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>66th</td>
<td>5.5</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>2nd</td>
<td>7.9</td>
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</table>

Structure of Production 8.2

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>27th</td>
<td>7.1</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>1st</td>
<td>10.0</td>
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</table>

Archetype

High-Potential

Leading

Nascent

Legacy
## China

### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>27</td>
<td>7.1</td>
</tr>
<tr>
<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
<td>27</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong></td>
<td>1</td>
<td>10.0</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>1</td>
<td>32.1</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>1</td>
<td>2,999,885.2</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
<td>25</td>
<td>5.7</td>
</tr>
<tr>
<td>Technology Platform 0-10 (best)</td>
<td>43</td>
<td>6.4</td>
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<td>2.01 Mobile-cellular telephone subscriptions/100 pop.</td>
<td>82</td>
<td>96.9</td>
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<td>2.02 LTE mobile network coverage % population</td>
<td>30</td>
<td>97.0</td>
</tr>
<tr>
<td>2.03 Internet users % pop.</td>
<td>70</td>
<td>53.2</td>
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<tr>
<td>2.04 FDI and technology transfer 1-7 (best)</td>
<td>45</td>
<td>4.7</td>
</tr>
<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>51</td>
<td>4.6</td>
</tr>
<tr>
<td>2.06 Impact of ICTs on new services and products 1-7(best)</td>
<td>49</td>
<td>4.7</td>
</tr>
<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
<td>35</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Ability to Innovate</strong></td>
<td>20</td>
<td>5.0</td>
</tr>
<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
<td>25</td>
<td>4.6</td>
</tr>
<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
<td>25</td>
<td>4.4</td>
</tr>
<tr>
<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
<td>8</td>
<td>4.5</td>
</tr>
<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>20</td>
<td>4.2</td>
</tr>
<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
<td>23</td>
<td>4.4</td>
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<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
<td>18</td>
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<tr>
<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
<td>46</td>
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<tr>
<td>2.15 Patent applications applications/million pop.</td>
<td>28</td>
<td>10.77</td>
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<tr>
<td>2.16 Venture capital deal volume US$ millions</td>
<td>3</td>
<td>212,728.4</td>
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<tr>
<td>2.17 Venture capital deal per size of economy US$/GDP</td>
<td>47</td>
<td>19.5</td>
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<tr>
<td><strong>Driver: Human Capital</strong></td>
<td>40</td>
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<tr>
<td>Current Labor Force 0-10 (best)</td>
<td>48</td>
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<tr>
<td>3.01 Manufacturing employment % working population</td>
<td>69</td>
<td>10.2</td>
</tr>
<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
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<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>55</td>
<td>0.74</td>
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<tr>
<td>3.04 Mean years of schooling Years</td>
<td>79</td>
<td>7.6</td>
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<tr>
<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>28</td>
<td>4.7</td>
</tr>
<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>34</td>
<td>4.7</td>
</tr>
<tr>
<td>Future Labor Force 0-10 (best)</td>
<td>31</td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>55</td>
<td>-1.1</td>
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<tr>
<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<tr>
<td>3.09 Quality of universities Count</td>
<td>6</td>
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<td>3.10 Quality of math and science education 1-7 (best)</td>
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<tr>
<td>3.11 Quality of vocational training 1-7 (best)</td>
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<tr>
<td>3.12 School life expectancy Years</td>
<td>58</td>
<td>14.0</td>
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<tr>
<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>40</td>
<td>16.3</td>
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<td>3.14 Critical thinking in teaching 1-7 (best)</td>
<td>20</td>
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<tr>
<td>3.15 Active labor policies 1-7 (best)</td>
<td>21</td>
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<tr>
<td>3.16 On-the-job training 1-7 (best)</td>
<td>36</td>
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<tr>
<td>3.17 Hiring and firing practices 1-7 (best)</td>
<td>19</td>
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<table>
<thead>
<tr>
<th>Index Component</th>
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<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
<td>9</td>
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<tr>
<td>Trade 0-10 (best)</td>
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<td>4.01 Trade % GDP</td>
<td>90</td>
<td>37.1</td>
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<tr>
<td>4.02 Trade tariffs % duty</td>
<td>90</td>
<td>0.12</td>
</tr>
<tr>
<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
<td>49</td>
<td>4.5</td>
</tr>
<tr>
<td>4.04 Logistics performance 1 – 5 (best)</td>
<td>27</td>
<td>3.6</td>
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<tr>
<td>Investment 0-10 (best)</td>
<td>1</td>
<td>10.0</td>
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<tr>
<td>4.05 Greenfield investments US$ millions</td>
<td>1</td>
<td>73,665.5</td>
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<tr>
<td>4.06 FDI inflows US$ millions</td>
<td>2</td>
<td>128,560.2</td>
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<tr>
<td>4.07 Domestic credit to private sector % GDP</td>
<td>9</td>
<td>156.7</td>
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<tr>
<td><strong>Infrastructure</strong></td>
<td>16</td>
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<td>4.08 Transport infrastructure 0-100 (best)</td>
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<td>68.0</td>
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<td>4.09 Electricity infrastructure 0-100 (best)</td>
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<td>94.4</td>
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<td><strong>Driver: Institutional Framework</strong></td>
<td>61</td>
<td>4.9</td>
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<tr>
<td>Government 0-10 (best)</td>
<td>61</td>
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<tr>
<td>5.01 Regulatory efficiency 0 – 100 (best)</td>
<td>73</td>
<td>63.0</td>
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<tr>
<td>5.02 Incidence of corruption 0-100 (best)</td>
<td>58</td>
<td>40.0</td>
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<td>5.03 Future orientation of government 1-7 (best)</td>
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<td>5.04 Rule of law (2.5) - 2.0 (best)</td>
<td>67</td>
<td>-0.2</td>
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<tr>
<td><strong>Driver: Sustainable Resources</strong></td>
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<td>5.5</td>
</tr>
<tr>
<td>Sustainability 0-10 (best)</td>
<td>66</td>
<td>5.5</td>
</tr>
<tr>
<td>6.01 Alternative and nuclear energy use % total energy use</td>
<td>68</td>
<td>0.1</td>
</tr>
<tr>
<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
<td>91</td>
<td>1.0</td>
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<tr>
<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
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<tr>
<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
<td>60</td>
<td>2.9</td>
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<tr>
<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
<td>51</td>
<td>78.1</td>
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<tr>
<td><strong>Driver: Demand Environment</strong></td>
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<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>10.0</td>
</tr>
<tr>
<td>7.01 Market size 0-100 (best)</td>
<td>1</td>
<td>100.0</td>
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<tr>
<td>Consumer Base 0-10 (best)</td>
<td>15</td>
<td>5.9</td>
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<tr>
<td>7.02 Buyer sophistication 1-7 (best)</td>
<td>14</td>
<td>4.5</td>
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<tr>
<td>7.03 Extent of market dominance 1-7 (best)</td>
<td>20</td>
<td>4.5</td>
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</table>
Colombia

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>48.7</td>
</tr>
<tr>
<td>GDP US$ billions</td>
<td>282.4</td>
</tr>
<tr>
<td>GDP per capita US$</td>
<td>5,792.2</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>9.2</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>39,313.1</td>
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<td>Manufacturing value added in economy % GDP</td>
<td>10.7</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>11.8</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>0.2</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>20.9</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.3</td>
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Readiness Overall Assessment

Drivers of Production 4.5

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>60th</td>
<td>4.0</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>65th</td>
<td>4.6</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>80th</td>
<td>3.9</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>67th</td>
<td>4.6</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>20th</td>
<td>7.5</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>46th</td>
<td>4.9</td>
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</table>

Structure of Production 4.6

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>59th</td>
<td>4.9</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>51st</td>
<td>4.1</td>
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</table>

Archetype

Colombia 4.6, 4.5

High-Potential

Leading

Nascent

Legacy

Complexity

Scale

Small / basic

Structure of Production

Large / complex
# Colombia

## Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-10 (best)</td>
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<td></td>
</tr>
<tr>
<td>1.01 Economic complexity</td>
<td>59</td>
<td>4.9</td>
</tr>
<tr>
<td>0.5 – 2.5 (best)</td>
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<td></td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>68</td>
<td>10.7</td>
</tr>
<tr>
<td>% GDP</td>
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<td></td>
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<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>36</td>
<td>3,931.1</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<td>0-10 (best)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.01 Mobile-cellular telephone subscriptions</td>
<td>56</td>
<td>117.1</td>
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<tr>
<td>/100 pop.</td>
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<td>2.02 LTE mobile network coverage</td>
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<td>92.0</td>
</tr>
<tr>
<td>% population</td>
<td></td>
<td></td>
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<tr>
<td>2.03 Internet users</td>
<td>64</td>
<td>58.1</td>
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<tr>
<td>% pop.</td>
<td></td>
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<tr>
<td>2.04 FDI and technology transfer</td>
<td>62</td>
<td>4.3</td>
</tr>
<tr>
<td>1-7 (best)</td>
<td></td>
<td></td>
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<tr>
<td>2.05 Firm-level technology absorption</td>
<td>70</td>
<td>4.3</td>
</tr>
<tr>
<td>1-7 (best)</td>
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<td></td>
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<tr>
<td>2.06 Impact of ICTs on new services and products</td>
<td>58</td>
<td>4.6</td>
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<tr>
<td>1-7 (best)</td>
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<td>2.07 Cybersecurity commitment</td>
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<td>0-1 (best)</td>
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<tr>
<td><strong>Ability to Innovate</strong></td>
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<td></td>
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<td>0-10 (best)</td>
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<tr>
<td>2.08 State of cluster development</td>
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<td>1-7 (best)</td>
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<td></td>
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<tr>
<td>2.09 Company investment in emerging technology</td>
<td>57</td>
<td>3.6</td>
</tr>
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<td>1-7 (best)</td>
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<td></td>
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<tr>
<td>2.10 Gov’t procurement of advanced technology products</td>
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<td>3.2</td>
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<tr>
<td>1-7 (best)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.11 Companies embracing disruptive ideas</td>
<td>66</td>
<td>3.4</td>
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<tr>
<td>1-7 (best)</td>
<td></td>
<td></td>
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<td>3.12 School life expectancy</td>
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<td>3.16 On-the-job training</td>
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Costa Rica

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
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<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
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<tr>
<td>GDP US$ billions</td>
<td>58.1</td>
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<td>GDP per capita US$</td>
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<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>10.9</td>
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<td>Manufacturing value added growth Annual %</td>
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<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 4.9

<table>
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<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>66th</td>
<td>3.9</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>35th</td>
<td>5.7</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>76th</td>
<td>4.2</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>43rd</td>
<td>5.9</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>26th</td>
<td>6.9</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>64th</td>
<td>4.2</td>
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Structure of Production 5.0

<table>
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<tr>
<th>Structure</th>
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<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
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<td>60%</td>
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<tr>
<td>Scale</td>
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Archetype

Costa Rica 5.0, 4.9

Nascent

Legacy
Costa Rica

Readiness for the Future of Production Assessment 2018 edition

Index Component | Rank /100 | Value
--- | --- | ---
**Structure: Complexity** 0-10 (best) | 47 | 5.6
1.01 Economic complexity (2.5) – 2.5 (best) | 47 | 0.3
**Structure: Scale** 0-10 (best) | 53 | 4.0
1.02 Manufacturing value added in economy % GDP | 33 | 15.8
1.03 Manufacturing value added US$ millions | 65 | 7,308.5
**Driver: Technology & Innovation** 0-10 (best) | 66 | 3.9
Technology Platform 0-10 (best) | 62 | 5.8
2.01 Mobile-cellular telephone subscriptions /100 pop. | 9 | 159.2
2.02 LTE mobile network coverage % population | 69 | 64.1
2.03 Internet users % pop. | 52 | 66.0
2.04 FDI and technology transfer 1-7 (best) | 17 | 5.2
2.05 Firm-level technology absorption 1-7 (best) | 36 | 5.0
2.06 Impact of ICTs on new services and products 1-7 (best) | 32 | 5.1
2.07 Cybersecurity commitment 0-1 (best) | 78 | 0.3
**Ability to Innovate** 0-10 (best) | 74 | 1.9
2.08 State of cluster development 1-7 (best) | 40 | 4.1
2.09 Company investment in emerging technology 1-7 (best) | 38 | 4.0
2.10 Gov’t procurement of advanced technology products 1-7 (best) | 87 | 2.8
2.11 Companies embracing disruptive ideas 1-7 (best) | 48 | 3.6
2.12 Multi-stakeholder collaboration 1-7 (best) | 39 | 3.8
2.13 R&D expenditures % GDP | 57 | 0.6
2.14 Scientific and technical publications Number per Billion PPP$ GDP | 63 | 7.5
2.15 Patent applications applications/million pop. | 59 | 0.80
2.16 Venture capital deal volume US$ millions | 78 | 265.0
2.17 Venture capital deal volume per size of economy US$/GDP | 82 | 4.9
**Driver: Human Capital** 0-10 (best) | 35 | 5.7
Current Labor Force 0-10 (best) | 46 | 6.2
3.01 Manufacturing employment % working population | 62 | 10.9
3.02 Knowledge-intensive employment % working pop. | 58 | 21.6
3.03 Female participation in labor force ratio | 65 | 0.63
3.04 Mean years of schooling Years | 69 | 8.6
3.05 Availability of scientists and engineers 1-7 (best) | 26 | 4.7
3.06 Digital skills among population 1-7 (best) | 24 | 5.0
**Future Labor Force** 0-10 (best) | 29 | 5.1
3.07 Migration migrants/100,000 pop. | 24 | 13.3
3.08 Country capacity to attract and retain talent 1-7 (best) | 29 | 4.2
3.09 Quality of universities Count | 53 | 2.0
3.10 Quality of math and science education 1-7 (best) | 45 | 4.4
3.11 Quality of vocational training 1-7 (best) | 17 | 5.0
3.12 School life expectancy Years | 42 | 15.2
3.13 Pupil-to-teacher ratio in primary education Ratio | 25 | 12.7
3.14 Critical thinking in teaching 1-7 (best) | 37 | 3.7
3.15 Active labor policies 1-7 (best) | 58 | 3.2
3.16 On-the-job training 1-7 (best) | 26 | 4.9
3.17 Hiring and firing practices 1-7 (best) | 45 | 3.9

Index Component | Rank /100 | Value
--- | --- | ---
**Driver: Global Trade & Investment** 0-10 (best) | 76 | 4.2
Trade 0-10 (best) | 70 | 5.5
4.01 Trade % GDP | 62 | 63.5
4.02 Trade tariffs % duty | 45 | 0.04
4.03 Prevalence of non-tariff barriers 1-7 (best) | 94 | 3.8
4.04 Logistics performance 1 – 5 (best) | 75 | 2.7
**Investment** 0-10 (best) | 64 | 1.5
4.05 Greenfield investments US$ millions | 81 | 787.4
4.06 FDI inflows US$ millions | 53 | 2,741.8
4.07 Domestic credit to private sector % GDP | 50 | 59.3
**Infrastructure** 0-10 (best) | 76 | 5.6
4.08 Transport infrastructure 0-100 (best) | 89 | 29.6
4.09 Electricity infrastructure 0-100 (best) | 53 | 82.0
**Driver: Institutional Framework** 0-10 (best) | 43 | 5.9
Government 0-10 (best) | 43 | 5.9
5.01 Regulatory efficiency 0 – 100 (best) | 62 | 67.6
5.02 Incidence of corruption 0-100 (best) | 31 | 58.0
5.03 Future orientation of government 1-7 (best) | 58 | 3.5
5.04 Rule of law (2.5) - 2.0 (best) | 41 | 0.5
**Driver: Sustainable Resources** 0-10 (best) | 26 | 6.9
Sustainability 0-10 (best) | 26 | 6.9
6.01 Alternative and nuclear energy use % total energy use | 16 | 0.5
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 12 | 0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 38 | 0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 41 | 0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 52 | 1.9
6.06 Wastewater treatment 0 – 5 (worst) | 74 | 56.7
**Driver: Demand Environment** 0-10 (best) | 64 | 4.2
Foreign and Domestic Demand 0-10 (best) | 79 | 3.5
7.01 Market size 0-100 (best) | 79 | 35.2
Consumer Base 0-10 (best) | 34 | 5.0
7.02 Buyer sophistication 1-7 (best) | 36 | 3.8
7.03 Extent of market dominance 1-7 (best) | 34 | 4.2
Croatia

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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Key production indicators

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<tr>
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<tbody>
<tr>
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<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
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Drivers of Production 4.9

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<tr>
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<td>Human Capital</td>
<td>20%</td>
<td>58th</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>46th</td>
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<td>Institutional Framework</td>
<td>20%</td>
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Structure of Production 5.5

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Archetype

Nascent

Croatia 5.5, 4.9
## Croatia

### Readiness for the Future of Production Assessment 2018 edition

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<td>7,004.5</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
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<td><strong>Driver: Human Capital</strong></td>
<td>58</td>
<td>4.9</td>
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<td>Current Labor Force</td>
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<td>6.9</td>
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<td>3.01 Manufacturing employment % working population</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td>35.6</td>
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<td>3.03 Female participation in labor force ratio</td>
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<td>0.92</td>
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<td>3.06 Digital skills among population 1-7 (best)</td>
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<td>Future Labor Force</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
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<td>1.0</td>
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<td>3.12 School life expectancy Years</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
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### Index Component

<table>
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Cyprus

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
<td>23,351.9</td>
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<tr>
<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>969.6</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>4.1</td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>7.8</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>-1.3</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>22.7</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 5.7

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>33rd</td>
<td>5.0</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>24th</td>
<td>6.4</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>24th</td>
<td>6.4</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>35th</td>
<td>6.3</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>74th</td>
<td>5.3</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>79th</td>
<td>3.8</td>
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</table>

Structure of Production 4.1

<table>
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<th>Structure</th>
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<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Complexity</td>
<td>60%</td>
<td>36th</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>99th</td>
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</table>

Archetype

Cyprus 4.1, 5.7

Country Profiles
## Cyprus

### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure: Complexity</strong>&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
<td>36</td>
<td>6.3</td>
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<tr>
<td>1.01 Economic complexity&lt;sup&gt;(2.5) – 2.5 (best)&lt;/sup&gt;</td>
<td>36</td>
<td>0.6</td>
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<tr>
<td><strong>Structure: Scale</strong>&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>96</td>
<td>969.6</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong>&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
<td>33</td>
<td>5.0</td>
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<tr>
<td>Technology Platform&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>30</td>
<td>134.5</td>
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<td>2.02 LTE mobile network coverage % population</td>
<td>62</td>
<td>73.0</td>
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<td>2.03 Internet users % pop.</td>
<td>37</td>
<td>75.9</td>
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<td>2.04 FDI and technology transfer 1-7 (best)</td>
<td>64</td>
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<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>55</td>
<td>4.5</td>
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<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
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<td>2.07 Cybersecurity commitment 0-1 (best)</td>
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<td><strong>Ability to Innovate</strong>&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>4.0</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
<td>67</td>
<td>3.6</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
<td>79</td>
<td>3.2</td>
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<tr>
<td>2.10 Gov't procurement of advanced technology products 1-7 (best)</td>
<td>65</td>
<td>3.1</td>
</tr>
<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>64</td>
<td>3.4</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<td>3.5</td>
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<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
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<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
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<td><strong>Driver: Human Capital</strong>&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>Current Labor Force&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>3.01 Manufacturing employment % working population</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td>3.03 Female participation in labor force ratio</td>
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<td>3.04 Mean years of schooling Years</td>
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<td>11.9</td>
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<tr>
<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>31</td>
<td>4.6</td>
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<td>3.06 Digital skills among population 1-7 (best)</td>
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<td>Future Labor Force&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
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<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.09 Quality of universities Count</td>
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<td>3.10 Quality of math and science education 1-7 (best)</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>3.12 School life expectancy Years</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
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<td>3.14 Critical thinking in teaching 1-7 (best)</td>
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<td>3.15 Active labor policies 1-7 (best)</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
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<tr>
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<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong>&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>4.01 Trade % GDP</td>
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<td>4.02 Trade tariffs % duty</td>
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<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
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<td>4.04 Logistics performance 1 – 5 (best)</td>
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<td>Investment&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>4.05 Greenfield investments US$ millions</td>
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<td>4.06 FDI inflows US$ millions</td>
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<td><strong>Driver: Institutional Framework</strong>&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<tr>
<td>Government&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>6.3</td>
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<td>5.01 Regulatory efficiency 0 – 100 (best)</td>
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<td>72.6</td>
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<td>5.02 Incidence of corruption 0-100 (best)</td>
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<td>55.0</td>
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<td>5.03 Future orientation of government 1-7 (best)</td>
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<td>5.04 Rule of law (2.5) - 2.0 (best)</td>
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<td>0.7</td>
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<td><strong>Driver: Sustainable Resources</strong>&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>Sustainability&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>6.01 Alternative and nuclear energy use % total energy use</td>
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<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
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<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
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<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
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<td><strong>Driver: Demand Environment</strong>&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>3.8</td>
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<tr>
<td>Foreign and Domestic Demand&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>2.6</td>
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<td>7.01 Market size 0-100 (best)</td>
<td>96</td>
<td>25.7</td>
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<tr>
<td>Consumer Base&lt;sup&gt;0-10 (best)&lt;/sup&gt;</td>
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<td>5.0</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<tr>
<td>7.03 Extent of market dominance 1-7 (best)</td>
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<td>4.1</td>
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Czech Republic

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Population (millions)</td>
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<tr>
<td>GDP (US$ billions)</td>
<td>193.0</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>18,286.3</td>
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<tr>
<td>Unemployment rate (%)</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010 millions US$)</td>
<td>56,342.3</td>
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Readiness Overall Assessment

Drivers of Production 6.0

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>31st</td>
<td>5.1</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>22nd</td>
<td>6.5</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>26th</td>
<td>6.2</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>29th</td>
<td>6.7</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>18th</td>
<td>7.6</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>43rd</td>
<td>5.0</td>
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Structure of Production 7.9

<table>
<thead>
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<th>Structure</th>
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<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Complexity</td>
<td>60%</td>
<td>5th</td>
<td>8.7</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>8th</td>
<td>6.8</td>
</tr>
</tbody>
</table>

Archetype

High-Potential

Czech Republic 7.9, 6.0

Leading

Nascent

Legacy

Small / basic

Structure of Production

Large / complex

Unemployment rate %

Population millions

GDP US$ billions

GDP per capita US$

Unemployment rate %

Readiness for the Future of Production Report 2018
Czech Republic

Readiness for the Future of Production Assessment 2018 edition

Index Component | Rank /100 | Value
--- | --- | ---
**Structure: Complexity** 0-10 (best) | 5 | 8.7
1.01 Economic complexity (2.5) – 2.5 (best) | 5 | 1.7
**Structure: Scale** 0-10 (best) | 8 | 6.8
1.02 Manufacturing value added in economy % GDP | 4 | 24.8
1.03 Manufacturing value added US$ millions | 30 | 56,342.3
**Driver: Technology & Innovation** 0-10 (best) | 31 | 5.1
Technology Platform 0-10 (best) | 28 | 7.0
2.01 Mobile-cellular telephone subscriptions /100 pop. | 59 | 115.5
2.02 LTE mobile network coverage % population | 8 | 99.7
2.03 Internet users % pop. | 33 | 76.5
2.04 FDI and technology transfer 1-7 (best) | 28 | 5.0
2.05 Firm-level technology absorption 1-7 (best) | 29 | 5.1
2.06 Impact of ICTs on new services and products 1-7 (best) | 33 | 5.1
2.07 Cybersecurity commitment 0-1 (best) | 38 | 0.6
**Ability to Innovate** 0-10 (best) | 36 | 3.1
2.08 State of cluster development 1-7 (best) | 45 | 3.9
2.09 Company investment in emerging technology 1-7 (best) | 34 | 4.1
2.10 Gov’t procurement of advanced technology products 1-7 (best) | 73 | 3.0
2.11 Companies embracing disruptive ideas 1-7 (best) | 36 | 3.7
2.12 Multi-stakeholder collaboration 1-7 (best) | 34 | 3.9
2.13 R&D expenditures % GDP | 66 | 0.5
2.14 Scientific and technical publications Number per Billion PPP$ GDP | 20 | 34.7
2.15 Patent applications applications/million pop. | 24 | 23.32
2.16 Venture capital deal volume US$ millions | 39 | 5,412.7
2.17 Venture capital deal volume per size of economy US$/GDP | 32 | 27.7
**Driver: Human Capital** 0-10 (best) | 22 | 6.5
Current Labor Force 0-10 (best) | 25 | 7.6
3.01 Manufacturing employment % working population | 1 | 27.3
3.02 Knowledge-intensive employment % working pop. | 27 | 37.8
3.03 Female participation in labor force ratio | 39 | 0.86
3.04 Mean years of schooling Years | 7 | 12.8
3.05 Availability of scientists and engineers 1-7 (best) | 65 | 3.8
3.06 Digital skills among population 1-7 (best) | 15 | 5.3
Future Labor Force 0-10 (best) | 25 | 5.4
3.07 Migration migrants/100,000 pop. | 15 | 19.0
3.08 Country capacity to attract and retain talent 1-7 (best) | 45 | 3.5
3.09 Quality of universities Count | 38 | 6.0
3.10 Quality of math and science education 1-7 (best) | 41 | 4.5
3.11 Quality of vocational training 1-7 (best) | 22 | 4.8
3.12 School life expectancy Years | 17 | 16.9
3.13 Pupil-to-teacher ratio in primary education Ratio | 61 | 18.9
3.14 Critical thinking in teaching 1-7 (best) | 51 | 3.4
3.15 Active labor policies 1-7 (best) | 22 | 4.4
3.16 On-the-job training 1-7 (best) | 24 | 5.1
3.17 Hiring and firing practices 1-7 (best) | 76 | 3.3

Index Component | Rank /100 | Value
--- | --- | ---
**Driver: Global Trade & Investment** 0-10 (best) | 26 | 6.2
Trade 0-10 (best) | 7 | 8.8
4.01 Trade % GDP | 10 | 153.3
4.02 Trade tariffs % duty | 6 | 0.01
4.03 Prevalence of non-tariff barriers 1-7 (best) | 13 | 5.1
4.04 Logistics performance 1 – 5 (best) | 21 | 3.7
**Investment** 0-10 (best) | 57 | 1.8
4.05 Greenfield investments US$ millions | 45 | 3,365.5
4.06 FDI inflows US$ millions | 39 | 5,018.0
4.07 Domestic credit to private sector % GDP | 60 | 51.2
Infrastructure 0-10 (best) | 20 | 8.0
4.08 Transport infrastructure 0-100 (best) | 21 | 63.4
4.09 Electricity infrastructure 0-100 (best) | 10 | 96.5
**Driver: Institutional Framework** 0-10 (best) | 29 | 6.7
Government 0-10 (best) | 29 | 6.7
5.01 Regulatory efficiency 0 – 100 (best) | 21 | 76.9
5.02 Incidence of corruption 0-100 (best) | 35 | 55.0
5.03 Future orientation of government 1-7 (best) | 79 | 3.2
5.04 Rule of law (2.5) – 2.0 (best) | 24 | 1.1
**Driver: Sustainable Resources** 0-10 (best) | 18 | 7.6
Sustainability 0-10 (best) | 18 | 7.6
6.01 Alternative and nuclear energy use % total energy use | 40 | 0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 67 | 0.5
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 28 | 0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 34 | 0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 32 | 1.1
6.06 Wastewater treatment 0 – 5 (worst) | 28 | 89.0
**Driver: Demand Environment** 0-10 (best) | 43 | 5.0
Foreign and Domestic Demand 0-10 (best) | 39 | 5.7
7.01 Market size 0-100 (best) | 39 | 56.6
Consumer Base 0-10 (best) | 54 | 4.3
7.02 Buyer sophistication 1-7 (best) | 87 | 2.9
7.03 Extent of market dominance 1-7 (best) | 29 | 4.3

Country Profiles
Denmark

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
<td>306.7</td>
</tr>
<tr>
<td>GDP per capita US$</td>
<td>53,744.0</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>6.2</td>
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</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>39,348.5</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>11.8</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>11.9</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>0.3</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>53.4</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.1</td>
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Readiness Overall Assessment

Drivers of Production

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>12th</td>
<td>6.9</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>12th</td>
<td>7.3</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>18th</td>
<td>6.8</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>4th</td>
<td>8.8</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>8th</td>
<td>8.4</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>34th</td>
<td>5.4</td>
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Structure of Production

<table>
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<tr>
<th>Structure</th>
<th>Weighting</th>
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<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>19th</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>46th</td>
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Archetype

Denmark 6.3, 7.2

Country Profiles
# Denmark

## Readiness for the Future of Production Assessment 2018 edition

### Index Component

<table>
<thead>
<tr>
<th>Rank /100</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
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<tr>
<td><strong>Economic complexity</strong></td>
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<tr>
<td><strong>Structure: Scale</strong></td>
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<tr>
<td><strong>Manufacturing value added in economy</strong></td>
<td>57</td>
</tr>
<tr>
<td><strong>Manufacturing value added US$ millions</strong></td>
<td>35</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
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### Technology Platform

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<thead>
<tr>
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<th>Value</th>
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<tbody>
<tr>
<td><strong>Mobile-cellular telephone subscriptions /100 pop.</strong></td>
<td>48</td>
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<tr>
<td><strong>LTE mobile network coverage % population</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Internet users % pop.</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Firm-level technology adoption 1-7 (best)</strong></td>
<td>31</td>
</tr>
<tr>
<td><strong>Impact of ICTs on new services and products 1-7 (best)</strong></td>
<td>21</td>
</tr>
<tr>
<td><strong>Cybersecurity commitment 0-1 (best)</strong></td>
<td>37</td>
</tr>
<tr>
<td><strong>Ability to Innovate 0-10 (best)</strong></td>
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### Consumer Base

<table>
<thead>
<tr>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Companies embracing disruptive ideas 1-7 (best)</strong></td>
<td>15</td>
</tr>
<tr>
<td><strong>Multi-stakeholder collaboration 1-7 (best)</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>R&amp;D expenditures % GDP</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Scientific and technical publications Number per Billion PPP$ GDP</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Patent applications applications/million pop.</strong></td>
<td>8</td>
</tr>
<tr>
<td><strong>Venture capital deal volume US$ millions</strong></td>
<td>28</td>
</tr>
<tr>
<td><strong>Venture capital deal per size of economy US$/GDP</strong></td>
<td>21</td>
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### Driver: Human Capital

<table>
<thead>
<tr>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Current Labor Force 0-10 (best)</strong></td>
<td>14</td>
</tr>
<tr>
<td><strong>Manufacturing employment % working population</strong></td>
<td>49</td>
</tr>
<tr>
<td><strong>Knowledge-intensive employment % working pop.</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Female participation in labor force ratio</strong></td>
<td>17</td>
</tr>
<tr>
<td><strong>Mean years of schooling Years</strong></td>
<td>17</td>
</tr>
<tr>
<td><strong>Availability of scientists and engineers 1-7 (best)</strong></td>
<td>41</td>
</tr>
<tr>
<td><strong>Digital skills among population 1-7 (best)</strong></td>
<td>18</td>
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### Future Labor Force

<table>
<thead>
<tr>
<th>Rank /100</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td><strong>Migration migrants/100,000 pop.</strong></td>
<td>25</td>
</tr>
<tr>
<td><strong>Country capacity to attract and retain talent 1-7 (best)</strong></td>
<td>27</td>
</tr>
<tr>
<td><strong>Quality of universities Count</strong></td>
<td>38</td>
</tr>
<tr>
<td><strong>Quality of math and science education 1-7 (best)</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>Quality of vocational training 1-7 (best)</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>School life expectancy Years</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>Pupil-to-teacher ratio in primary education Ratio</strong></td>
<td>8</td>
</tr>
<tr>
<td><strong>Critical thinking in teaching 1-7 (best)</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Active labor policies 1-7 (best)</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>On-the-job training 1-7 (best)</strong></td>
<td>7</td>
</tr>
<tr>
<td><strong>Hiring and firing practices 1-7 (best)</strong></td>
<td>6</td>
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</table>
Dominican Republic

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population (millions)</td>
<td>10.1</td>
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<tr>
<td>GDP (US$ billions)</td>
<td>72.2</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>7,159.5</td>
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<tr>
<td>Unemployment rate (%)</td>
<td>5.5</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010 millions US$)</td>
<td>10,199.6</td>
</tr>
<tr>
<td>Manufacturing value added in economy (%)</td>
<td>2.5</td>
</tr>
<tr>
<td>Manufacturing employment (%)</td>
<td>7.8</td>
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<tr>
<td>Manufacturing value added growth (Annual %)</td>
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<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
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Readiness Overall Assessment

Drivers of Production 4.0

<table>
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<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>76th</td>
<td>3.5</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>76th</td>
<td>4.3</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>82nd</td>
<td>3.9</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>81st</td>
<td>4.2</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>59th</td>
<td>6.0</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>82nd</td>
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Structure of Production 4.0

<table>
<thead>
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<th>Structure</th>
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<th>Score /10</th>
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<tr>
<td>Complexity</td>
<td>60%</td>
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<tr>
<td>Scale</td>
<td>40%</td>
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## Dominican Republic

### Readiness for the Future of Production Assessment 2018 edition

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<tbody>
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<td>1.01 Economic complexity</td>
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<tr>
<td><strong>Structure: Scale</strong></td>
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<td>3.9</td>
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<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>41</td>
<td>14.3</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>58</td>
<td>10,199.6</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
<td>76</td>
<td>3.5</td>
</tr>
<tr>
<td>Technology Platform</td>
<td>82</td>
<td>4.7</td>
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<tr>
<td>2.01 Mobile-cellular telephone subscriptions %100 pop.</td>
<td>93</td>
<td>80.8</td>
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<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td>49</td>
<td>86.8</td>
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<tr>
<td>2.03 Internet users % pop.</td>
<td>56</td>
<td>61.3</td>
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<tr>
<td>2.04 FDI and technology transfer 1-7 (best)</td>
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<td>4.7</td>
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<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>69</td>
<td>4.3</td>
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<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
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<td>2.07 Cybersecurity commitment 0-1 (best)</td>
<td>95</td>
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<tr>
<td><strong>Ability to Innovate</strong></td>
<td>52</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
<td>96</td>
<td>2.8</td>
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<tr>
<td>2.10 Govt procurement of advanced technology products 1-7 (best)</td>
<td>94</td>
<td>2.6</td>
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<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
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<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<td>2.13 R&amp;D expenditures % GDP</td>
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<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>0.5</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GD</td>
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<tr>
<td><strong>Driver: Human Capital</strong></td>
<td>76</td>
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<tr>
<td>Current Labor Force 0-10 (best)</td>
<td>63</td>
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<tr>
<td>3.01 Manufacturing employment % working population</td>
<td>71</td>
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<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
<td>70</td>
<td>17.9</td>
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<td>0.86</td>
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<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>90</td>
<td>3.4</td>
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<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>92</td>
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<td>Future Labor Force 0-10 (best)</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
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<td>-13.3</td>
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<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.09 Quality of universities Count</td>
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<tr>
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<tr>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<td>3.8</td>
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<tr>
<td>3.17 Hiring and firing practices 1-7 (best)</td>
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### Country Profiles

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
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<tr>
<td>Trade 0-10 (best)</td>
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<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
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<tr>
<td>4.04 Logistics performance 1-5 (best)</td>
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<tr>
<td>Investment 0-10 (best)</td>
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<tr>
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<tr>
<td>4.06 FDI inflows US$ millions</td>
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<td>4.08 Transport infrastructure 0-100 (best)</td>
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<td>45.4</td>
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<tr>
<td>4.09 Electricity infrastructure 0-100 (best)</td>
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<td>79.0</td>
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<tr>
<td><strong>Driver: Institutional Framework</strong></td>
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<tr>
<td>Government 0-10 (best)</td>
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<td>5.02 Incidence of corruption 0-100 (best)</td>
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<td>5.03 Future orientation of government 1-7 (best)</td>
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<td><strong>Driver: Sustainable Resources</strong></td>
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<td>Sustainability 0-10 (best)</td>
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<td>Consumer Base 0-10 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Ecuador

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tbody>
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<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
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<td>GDP per capita US$</td>
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Key production indicators

<table>
<thead>
<tr>
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<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>10.6</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
<td>-2.9</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 3.7

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<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>71st</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>83rd</td>
<td>4.0</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>91st</td>
<td>3.2</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>92nd</td>
<td>3.6</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>85th</td>
<td>4.7</td>
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<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 2.9

<table>
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Archetype

Ecuador 2.9, 3.7

Nascent

Leading

High-Potential

Ecuador

Least future-ready

Most future-ready

Small / basic

Large / complex

Readiness for the Future of Production Report 2018
## Readiness for the Future of Production Assessment 2018 edition

### Ecuador

<table>
<thead>
<tr>
<th>Index Component</th>
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<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>1.03 Manufacturing value added US$ millions</td>
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<td>9,955.4</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
<td>71</td>
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<td>Technology Platform 0-10 (best)</td>
<td>73</td>
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<td>89</td>
<td>84.3</td>
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<td>2.02 LTE mobile network coverage % population</td>
<td>74</td>
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<td>2.03 Internet users % pop.</td>
<td>66</td>
<td>54.1</td>
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<td>2.04 FDI and technology transfer 1-7 (best)</td>
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<td>3.5</td>
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<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>79</td>
<td>4.2</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
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<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
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<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
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<td>2.0</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
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<tr>
<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
<td>85</td>
<td>2.8</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>93</td>
<td>3.0</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<td>2.13 R&amp;D expenditures % GDP</td>
<td>22</td>
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<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<tr>
<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
<td>83</td>
<td>4.0</td>
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<tr>
<td>Current Labor Force 0-10 (best)</td>
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<td>3.01 Manufacturing employment % working population</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td>14.7</td>
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<td>3.03 Female participation in labor force ratio</td>
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<td>3.04 Mean years of schooling Years</td>
<td>66</td>
<td>8.7</td>
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<tr>
<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>93</td>
<td>3.4</td>
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<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>70</td>
<td>3.9</td>
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<tr>
<td>Future Labor Force 0-10 (best)</td>
<td>82</td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>61</td>
<td>-1.9</td>
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<tr>
<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
<td>71</td>
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<tr>
<td>3.09 Quality of universities Count</td>
<td>53</td>
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<tr>
<td>3.10 Quality of math and science education 1-7 (best)</td>
<td>73</td>
<td>3.6</td>
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<tr>
<td>3.11 Quality of vocational training 1-7 (best)</td>
<td>57</td>
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<tr>
<td>3.12 School life expectancy Years</td>
<td>44</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>78</td>
<td>24.7</td>
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<td>3.14 Critical thinking in teaching 1-7 (best)</td>
<td>52</td>
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<td>3.15 Active labor policies 1-7 (best)</td>
<td>96</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<td>3.8</td>
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<tr>
<td>3.17 Hiring and firing practices 1-7 (best)</td>
<td>98</td>
<td>2.3</td>
</tr>
</tbody>
</table>

### Readiness for the Future of Production

- **Driver: Global Trade & Investment** 0-10 (best) | 91 | 3.2 |
- **Trade** 0-10 (best) | 94 | 2.9 |
- 4.01 Trade % GDP | 86 | 39.0 |
- 4.02 Trade tariffs % duty | 88 | 0.11 |
- 4.03 Prevalence of non-tariff barriers 1-7 (best) | 100 | 2.9 |
- 4.04 Logistics performance 1 – 5 (best) | 68 | 2.8 |
- **Investment** 0-10 (best) | 93 | 0.5 |
- 4.05 Greenfield investments US$ millions | 83 | 774.8 |
- 4.06 FDI inflows US$ millions | 80 | 74.2 |
- 4.07 Domestic credit to private sector % GDP | 85 | 29.2 |
- **Infrastructure** 0-10 (best) | 64 | 6.1 |
- 4.08 Transport infrastructure 0-100 (best) | 58 | 45.5 |
- 4.09 Electricity infrastructure 0-100 (best) | 70 | 76.0 |

### driver: institutional framework

- **Government** 0-10 (best) | 92 | 3.6 |
- 5.01 Regulatory efficiency 0 – 100 (best) | 95 | 56.8 |
- 5.02 Incidence of corruption 0-100 (best) | 82 | 31.0 |
- 5.03 Future orientation of government 1-7 (best) | 90 | 2.7 |
- 5.04 Rule of law (2.5) - 2.0 (best) | 88 | -0.7 |

### Driver: Sustainable Resources

- **Sustainability** 0-10 (best) | 85 | 4.7 |
- 6.01 Alternative and nuclear energy use % total energy use | 67 | 0.1 |
- 6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 62 | 0.4 |
- 6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 46 | 0.1 |
- 6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 55 | 0.1 |
- 6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 49 | 1.9 |
- 6.06 Wastewater treatment 0 – 5 (worst) | 92 | 0.0 |

### Driver: Demand Environment

- **Foreign and Domestic Demand** 0-10 (best) | 78 | 3.8 |
- **Market size** 0-100 (best) | 64 | 43.8 |
- **Consumer Base** 0-10 (best) | 93 | 3.2 |
- 7.02 Buyer sophistication 1-7 (best) | 89 | 2.9 |
- 7.03 Extent of market dominance 1-7 (best) | 95 | 3.0 |
Egypt

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

- **Population** (millions): 90.2
- **GDP** (US$ billions): 332.3
- **GDP per capita** (US$): 3,684.6
- **Unemployment rate** (%): 12.7

Key production indicators

- **Manufacturing value added** (2010 millions US$): 41,659.5
- **Manufacturing value added in economy** (% GDP): 16.4
- **Manufacturing employment** (% working population): 11.2

Readiness Overall Assessment

<table>
<thead>
<tr>
<th>Drivers of Production</th>
<th>4.5</th>
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</thead>
<tbody>
<tr>
<td><strong>Technology &amp; Innovation</strong></td>
<td>20%</td>
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<tr>
<td><strong>Human Capital</strong></td>
<td>20%</td>
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<td><strong>Global Trade &amp; Investment</strong></td>
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<tr>
<td><strong>Institutional Framework</strong></td>
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<td><strong>Sustainable Resources</strong></td>
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</tr>
<tr>
<td><strong>Demand Environment</strong></td>
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Structure of Production | 5.0 |

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<td><strong>Scale</strong></td>
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Archetype

- **High-Potential**
- **Leading**
- **Nascent**
- **Legacy**
## Readiness for the Future of Production Assessment 2018 edition

### Index Component

<table>
<thead>
<tr>
<th>Rank /100</th>
<th>Value</th>
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</table>

#### Structure: Complexity
- 1.01 Economic complexity (2.5) – 2.5 (best)
- 1.02 Manufacturing value added in economy % GDP
- 1.03 Manufacturing value added US$ millions

#### Structure: Scale
- 2018 edition
- 1.29 Readiness for the Future of Production Assessment
- 2.01 Mobile-cellular telephone subscriptions /100 pop.
- 2.02 LTE mobile network coverage % population
- 2.03 Internet users % pop.
- 2.04 FDI and technology transfer 1-7 (best)
- 2.05 Firm-level technology absorption 1-7 (best)
- 2.06 Impact of ICTs on new services and products 1-7 (best)
- 2.07 Cybersecurity commitment 0-1 (best)

#### Ability to Innovate
- 1.21 Companies embracing disruptive ideas 1-7 (best)
- 1.22 Multi-stakeholder collaboration 1-7 (best)
- 1.23 R&D expenditures % GDP
- 1.24 Scientific and technical publications Number per Billion PPP$ GDP
- 1.25 Patent applications applications/million pop.
- 1.26 Venture capital deal volume US$ millions
- 1.27 Venture capital deal volume per size of economy US$/GDP

#### Driver: Human Capital
- 1.01 Manufacturing employment % working population
- 1.02 Knowledge-intensive employment % working pop.
- 1.03 Female participation in labor force ratio
- 1.04 Mean years of schooling Years
- 1.05 Availability of scientists and engineers 1-7 (best)
- 1.06 Digital skills among population 1-7 (best)

#### Future Labor Force
- 1.07 Migration migrants/100,000 pop.
- 1.08 Country capacity to attract and retain talent 1-7 (best)
- 1.09 Quality of universities Count
- 1.10 Quality of math and science education 1-7 (best)
- 1.11 Quality of vocational training 1-7 (best)
- 1.12 School life expectancy Years
- 1.13 Pupil-to-teacher ratio in primary education Ratio
- 1.14 Critical thinking in teaching 1-7 (best)
- 1.15 Active labor policies 1-7 (best)
- 1.16 On-the-job training 1-7 (best)
- 1.17 Hiring and firing practices 1-7 (best)
El Salvador

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<td>GDP US$ billions</td>
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<td>GDP per capita US$</td>
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<td>Unemployment rate %</td>
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Key production indicators

<table>
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<td>Manufacturing value added 2010 millions US$</td>
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<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>19.1</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 3.5

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<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
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<td>Human Capital</td>
<td>20%</td>
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<td>Global Trade &amp; Investment</td>
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<td>Institutional Framework</td>
<td>20%</td>
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<td>Sustainable Resources</td>
<td>5%</td>
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<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 4.8

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Archetype

El Salvador 4.8, 3.5
## El Salvador

### Readiness for the Future of Production Assessment 2018 edition

#### Index Component

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<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
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<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
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<td><strong>Structure: Scale</strong> 0-10 (best)</td>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>73</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
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<td>Technology Platform 0-10 (best)</td>
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Estonia

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Key economic indicators

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<tr>
<td>GDP (US$ billions)</td>
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<td>GDP per capita (US$)</td>
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<td>Unemployment rate (%)</td>
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Key production indicators

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<td>Manufacturing value added in economy (%) GDP</td>
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<tr>
<td>Manufacturing employment (%) working population</td>
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<tr>
<td>Manufacturing value added growth, Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<td>CO2 emission per unit of value added (kg/USD)</td>
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Readiness Overall Assessment

Drivers of Production 6.0

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<tr>
<td>Human Capital</td>
<td>20%</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
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<td>Sustainable Resources</td>
<td>5%</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 5.8

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<tr>
<td>Scale</td>
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Archetype

Estonia 5.8, 6.0
## Estonia

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Ethiopia

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Key economic indicators

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GDP per capita US$ 795.2

Key production indicators

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<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 3.3

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<tr>
<td>Technology &amp; Innovation</td>
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<td>Human Capital</td>
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<tr>
<td>Global Trade &amp; Investment</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
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<tr>
<td>Demand Environment</td>
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Structure of Production 2.0

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<td>Scale</td>
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Archetype

Ethiopia 2.0, 3.3
### Ethiopia

Readiness for the Future of Production Assessment 2018 edition

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<td>2.05 Firm-level technology absorption</td>
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<td>1-7 (best)</td>
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<td>2.07 Cybersecurity commitment</td>
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<td>2.08 State of cluster development</td>
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<td>2.09 Company investment in emerging technology</td>
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<td>2.11 Companies embracing disruptive ideas</td>
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<td>2.12 Multi-stakeholder collaboration</td>
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<td>2.13 R&amp;D expenditures</td>
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<td><strong>Driver: Human Capital</strong></td>
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<td>Current Labor Force</td>
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<td>3.03 Female participation in labor force</td>
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<td>3.14 Critical thinking in teaching</td>
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<td>3.15 Active labor policies</td>
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<td>3.17 Hiring and firing practices</td>
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<tr>
<th>Index Component</th>
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<td>4.03 Prevalence of non-tariff barriers</td>
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<td>Investment</td>
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<td>4.06 FDI inflows</td>
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<td>4.07 Domestic credit to private sector</td>
<td>% GDP</td>
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<td>5.02 Incidence of corruption</td>
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<td>5.03 Future orientation of government</td>
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<td>5.04 Rule of law</td>
<td>(2.5) - 2.0 (best)</td>
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<td>6.02 CO2 intensity level</td>
<td>CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>6.03 CH4 intensity level</td>
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<td>6.04 N2O intensity level</td>
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<td>6.05 Baseline water stress</td>
<td>Annual withdrawals, % of annual available blue water</td>
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<td>6.06 Wastewater treatment</td>
<td>0 – 5 (worst)</td>
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<td>0-10 (best)</td>
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<td>Foreign and Domestic Demand</td>
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<td>7.01 Market size</td>
<td>0-100 (best)</td>
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<tr>
<td>Consumer Base</td>
<td>0-10 (best)</td>
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<td>7.02 Buyer sophistication</td>
<td>1-7 (best)</td>
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<tr>
<td>7.03 Extent of market dominance</td>
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Finland

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<th>Value</th>
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<td>Population (millions)</td>
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<td>GDP (US$ billions)</td>
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<td>GDP per capita (US$)</td>
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<td>Unemployment rate (%)</td>
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Key production indicators

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<thead>
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<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 (US$)</td>
<td>37,661.6</td>
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<td>Manufacturing value added in economy %</td>
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<tr>
<td>Manufacturing employment %</td>
<td>13.5</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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Readiness Overall Assessment

Drivers of Production 7.2

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<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>5th</td>
<td>7.4</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>11th</td>
<td>7.3</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>29th</td>
<td>6.1</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>3rd</td>
<td>8.9</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>6th</td>
<td>8.5</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>37th</td>
<td>5.3</td>
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Structure of Production 7.0

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<th>Score /10</th>
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<td>60%</td>
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<tr>
<td>Scale</td>
<td>40%</td>
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Archetype

Finland 7.0, 7.2

High-Potential

Leading

Nascent

Legacy
Finland

Readiness for the Future of Production Assessment 2018 edition

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<tr>
<th>Index Component</th>
<th>Rank /100</th>
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<td>0.5 – 2.5 (best)</td>
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<td>Structure: Scale</td>
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<td>%GDP</td>
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<td>US$ millions</td>
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<td>Technology Platform</td>
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<td>Mobile-cellular telephone subscriptions</td>
<td>/100 pop.</td>
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<td>LTE mobile network coverage</td>
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<td>Internet users</td>
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<td>FDI and technology transfer</td>
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<td>Firm-level technology absorption</td>
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<td>Cybersecurity commitment</td>
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<td>Ability to Innovate</td>
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<td>Scientific and technical publications</td>
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<td>Venture capital deal volume</td>
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<td>Venture capital deal volume per size of economy US$/GDP</td>
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<td>Current Labor Force</td>
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<td>Manufacturing employment</td>
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<td>Knowledge-intensive employment</td>
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<tr>
<td>Female participation in labor force</td>
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<td>Availability of scientists and engineers</td>
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<td>Digital skills among population</td>
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<td>Future Labor Force</td>
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<td>Country capacity to attract and retain talent</td>
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<td>Quality of math and science education</td>
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<td>School life expectancy</td>
<td>Years</td>
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<tr>
<td>Pupil-to-teacher ratio in primary education</td>
<td>Ratio</td>
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<td>Critical thinking in teaching</td>
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<td>Hiring and firing practices</td>
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<tr>
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<th>Rank /100</th>
<th>Value</th>
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<td>Logistics performance</td>
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<td>Domestic credit to private sector</td>
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<td>Infrastructure</td>
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<td>21</td>
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<tr>
<td>Transport infrastructure</td>
<td>0-100 (best)</td>
<td>28</td>
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<tr>
<td>Electricity infrastructure</td>
<td>0-100 (best)</td>
<td>8</td>
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<tr>
<td>Driver: Institutional Framework</td>
<td>0-10 (best)</td>
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<tr>
<td>Government</td>
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<td>Regulatory efficiency</td>
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<td>Incidence of corruption</td>
<td>0-100 (best)</td>
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<td>Future orientation of government</td>
<td>1-7 (best)</td>
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<td>Rule of law</td>
<td>(2.5) – 2.0 (best)</td>
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<td>Driver: Sustainable Resources</td>
<td>0-10 (best)</td>
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<td>Sustainability</td>
<td>0-10 (best)</td>
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<td>% total energy use</td>
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<td>CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>CH4 intensity level</td>
<td>CH4 emissions in megatons/GDP (US$ billions)</td>
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<tr>
<td>N2O intensity level</td>
<td>N2O emissions in megatons/GDP (US$ billions)</td>
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<td>Baseline water stress</td>
<td>Annual withdrawals, % of annual available blue water</td>
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<td>Wastewater treatment</td>
<td>0 – 5 (worst)</td>
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<td>Foreign and Domestic Demand</td>
<td>0-10 (best)</td>
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<tr>
<td>Market size</td>
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<td>Buyer sophistication</td>
<td>1-7 (best)</td>
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<td>Extent of market dominance</td>
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France

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tbody>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>283,278.8</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>10.1</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>12.2</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>1.1</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 6.9

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<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>14th</td>
<td>6.8</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>23rd</td>
<td>6.5</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>14th</td>
<td>6.9</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>21st</td>
<td>7.3</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>10th</td>
<td>8.2</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>10th</td>
<td>6.5</td>
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Structure of Production 6.9

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
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<td>Scale</td>
<td>40%</td>
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Archetype

High-Potential

Leading

France 6.9, 6.9

Nascent

Legacy

34.6

12

64.6

2,463.2

38,127.7

10.0

283,278.8

10.1

12.2

1.1

49.4

0.2

Readiness for the Future of Production Report 2018
### France

**Readiness for the Future of Production Assessment 2018 edition**

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<thead>
<tr>
<th>Index Component</th>
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<tr>
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<td>Technology Platform</td>
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<tr>
<td>Hiring and firing practices</td>
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<td>0.8</td>
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<td>Driver: Human Capital</td>
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<tr>
<td>Current Labor Force</td>
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<tr>
<td>Manufacturing employment</td>
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<td>Knowledge-intensive employment</td>
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<td>Female participation in labor force</td>
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<td>Mean years of schooling</td>
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<td>Availability of scientists and engineers</td>
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<td>Digital skills among population</td>
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<td>Future Labor Force</td>
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<td>Migration</td>
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<td>Country capacity to attract and retain talent</td>
<td>56</td>
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<td>Quality of universities</td>
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<td>Quality of math and science education</td>
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<td>Quality of vocational training</td>
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<td>4.9</td>
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<td>School life expectancy</td>
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<td>Pupil-to-teacher ratio in primary education</td>
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<td>On-the-job training</td>
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<td>Trade</td>
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<td>0.01 Trade</td>
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<tr>
<td>0.03 Prevalence of non-tariff barriers</td>
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<td>0.04 Logistics performance</td>
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<td>0.05 Greenfield investments</td>
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<td>0.07 Domestic credit to private sector</td>
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<td>21</td>
<td>7.3</td>
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<td>Government</td>
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<td>7.3</td>
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<td>0.01 Regulatory efficiency</td>
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<td>0.02 Incidence of corruption</td>
<td>21</td>
<td>69.0</td>
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<td>0.03 Future orientation of government</td>
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<td>0.04 Rule of law</td>
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<td>Driver: Sustainable Resources</td>
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<td>0.06 Wastewater treatment</td>
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<td>Driver: Demand Environment</td>
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<td>6.5</td>
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<tr>
<td>Foreign and Domestic Demand</td>
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<td>Market size</td>
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<td>4.0</td>
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<tr>
<td>0.03 Extent of market dominance</td>
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Georgia

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<td>GDP US$ billions</td>
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<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
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<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>15.7</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production

<table>
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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>71st</td>
<td>4.5</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>47th</td>
<td>5.5</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>41st</td>
<td>5.9</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>92nd</td>
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<tr>
<td>Demand Environment</td>
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Structure of Production

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Archetype

Georgia 3.6, 4.9

Nascent
## Georgia

### Readiness for the Future of Production Report 2018 edition

#### Index Component

<table>
<thead>
<tr>
<th>Index Component</th>
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<tr>
<td>Manufacturing value added in economy</td>
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<tr>
<td>Manufacturing value added US$ millions</td>
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<tr>
<td>Driver: Technology &amp; Innovation</td>
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<tr>
<td>Technology Platform</td>
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<tr>
<td>Mobile-cellular telephone subscriptions /100 pop.</td>
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<td>LTE mobile network coverage % population</td>
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<td>FDI and technology transfer 1-7 (best)</td>
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<td>Firm-level technology absorption 1-7 (best)</td>
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<td>Impact of ICTs on new services and products 1-7 (best)</td>
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<td>Cybersecurity commitment 0-1 (best)</td>
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<td>Ability to Innovate 0-10 (best)</td>
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<td>3.2</td>
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<tr>
<td>State of cluster development 1-7 (best)</td>
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<td>Company investment in emerging technology 1-7 (best)</td>
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<td>Gov't procurement of advanced technology products 1-7 (best)</td>
<td>57</td>
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<tr>
<td>Companies embracing disruptive ideas 1-7 (best)</td>
<td>56</td>
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<td>Multi-stakeholder collaboration 1-7 (best)</td>
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<td>R&amp;D expenditures % GDP</td>
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<td>Patent applications applications/million pop.</td>
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<td>Venture capital deal volume US$ millions</td>
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<td>Venture capital deal volume per size of economy US$/GDP</td>
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<td>65.5</td>
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<tr>
<td>Driver: Human Capital</td>
<td>71</td>
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<tr>
<td>Current Labor Force 0-10 (best)</td>
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<tr>
<td>Manufacturing employment % working population</td>
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<tr>
<td>Knowledge-intensive employment % working pop.</td>
<td>57</td>
<td>22.3</td>
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<tr>
<td>Female participation in labor force ratio</td>
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<td>Mean years of schooling Years</td>
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<td>Availability of scientists and engineers 1-7 (best)</td>
<td>98</td>
<td>3.0</td>
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<tr>
<td>Digital skills among population 1-7 (best)</td>
<td>81</td>
<td>3.6</td>
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<td>Future Labor Force 0-10 (best)</td>
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<td>Migration migrants/100,000 pop.</td>
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<td>Country capacity to attract and retain talent 1-7 (best)</td>
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<td>Quality of vocational training 1-7 (best)</td>
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<td>School life expectancy Years</td>
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<td>Pupil-to-teacher ratio in primary education Ratio</td>
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<td>Hiring and firing practices 1-7 (best)</td>
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#### Index Component

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<tr>
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<td>Greenfield investments US$ millions</td>
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<td>Sustainability 0-10 (best)</td>
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<td>Alternative and nuclear energy use % total energy use</td>
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<td>CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>Baseline water stress Annual withdrawals, % of annual available blue water</td>
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<td>Driver: Demand Environment</td>
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<td>Foreign and Domestic Demand 0-10 (best)</td>
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<tr>
<td>Market size 0-100 (best)</td>
<td>91</td>
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<td>Consumer Base 0-10 (best)</td>
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<td>Buyer sophistication 1-7 (best)</td>
<td>72</td>
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<tr>
<td>Extent of market dominance 1-7 (best)</td>
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Germany

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
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<tbody>
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<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
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<td>GDP per capita US$</td>
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<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>774,149.7</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>20.6</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>19.3</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>1.7</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>61.4</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 7.6

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>8th</td>
<td>7.2</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>7th</td>
<td>7.5</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>8th</td>
<td>7.3</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>14th</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>13th</td>
<td>7.8</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>4th</td>
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Structure of Production 8.7

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<thead>
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<th>Structure</th>
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<tr>
<td>Complexity</td>
<td>60%</td>
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<td>Scale</td>
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Archetype

Germany 8.7, 7.6
## Germany

### Readiness for the Future of Production Assessment 2018 edition

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<thead>
<tr>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
<td>3</td>
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<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
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<td><strong>Structure: Scale</strong> 0-10 (best)</td>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>1.03 Manufacturing value added US$ millions</td>
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<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
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<td>Technology Platform 0-10 (best)</td>
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<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>63</td>
<td>114.5</td>
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<td>2.02 LTE mobile network coverage % population</td>
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<td>2.03 Internet users % pop.</td>
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<td>89.6</td>
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<td>2.04 FDI and technology transfer 1-7 (best)</td>
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<td>2.05 Firm-level technology absorption 1-7 (best)</td>
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<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
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<td>0.7</td>
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<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
<td>6</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
<td>7</td>
<td>5.5</td>
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<tr>
<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
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<td>4.9</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
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<td>4.8</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
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<tr>
<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
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<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
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<tr>
<td>Current Labor Force 0-10 (best)</td>
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<td>3.01 Manufacturing employment % working population</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
<td>14</td>
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<td>3.03 Female participation in labor force ratio</td>
<td>25</td>
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<td>3.04 Mean years of schooling Years</td>
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<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
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<td>3.06 Digital skills among population 1-7 (best)</td>
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<td>Future Labor Force 0-10 (best)</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
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<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>3.12 School life expectancy Years</td>
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<th>Rank /100</th>
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<td>Investment 0-10 (best)</td>
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<td>4.05 Greenfield investments US$ millions</td>
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<td>4.06 FDI inflows US$ millions</td>
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<td>71.8</td>
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<td>5.02 Incidence of corruption 0-100 (best)</td>
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<td>81.0</td>
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<td>5.03 Future orientation of government 1-7 (best)</td>
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<td>5.04 Rule of law (2.5) - 2.0 (best)</td>
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<td><strong>Driver: Sustainable Resources</strong> 0-10 (best)</td>
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<tr>
<td>Sustainability 0-10 (best)</td>
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<td>7.8</td>
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<td>6.01 Alternative and nuclear energy use % total energy use</td>
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
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<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
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<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>7.01 Market size 0-100 (best)</td>
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<td>82.1</td>
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<td>Consumer Base 0-10 (best)</td>
<td>4</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Ghana

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
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<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
<td>43.3</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>2,524.7</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>5.3</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>10.7</td>
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</table>

Manufacturing value added growth Annual % 1.7
Medium hi-tech & hi-tech industries % of manu. value added 0.8
CO2 emission per unit of value added kg/USD 0.7

Readiness Overall Assessment

Drivers of Production 4.1

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>82nd</td>
<td>3.3</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>81st</td>
<td>4.1</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>86th</td>
<td>3.5</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>50th</td>
<td>5.0</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>40th</td>
<td>6.7</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>72nd</td>
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Structure of Production 2.0

<table>
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<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>98th</td>
<td>2.2</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>94th</td>
<td>1.6</td>
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Archetype

Ghana 2.0, 4.1
## Readiness for the Future of Production Assessment 2018 edition

**Index Component** | Rank | Value | **Index Component** | Rank | Value |
--- | --- | --- | --- | --- | --- |
Structure: Complexity | 98 | 2.2 | Driver: Global Trade & Investment | 86 | 3.5 |
1.01 Economic complexity | 98 | -1.2 | Trade | 51 | 6.4 |
Structure: Scale | 94 | 1.6 | 4.01 Trade | 44 | 88.6 |
1.02 Manufacturing value added in economy | 96 | 5.3 | 4.02 Trade tariffs | 86 | 0.11 |
1.03 Manufacturing value added US$ millions | 85 | 2,524.7 | 4.03 Prevalence of non-tariff barriers | 61 | 4.3 |
2.01 Mobile-cellular telephone subscriptions | 28 | 139.1 | 4.04 Logistics performance | 77 | 2.7 |
2.02 LTE mobile network coverage | 85 | 34.9 | Investment | 88 | 0.6 |
2.03 Internet users | 81 | 34.7 | 4.05 Greenfield investments US$ millions | 55 | 2,164.3 |
2.04 FDI and technology transfer | 63 | 4.3 | 4.06 FDI inflows US$ millions | 50 | 3,310.9 |
2.05 Firm-level technology absorption | 82 | 4.2 | 4.07 Domestic credit to private sector % GDP | 92 | 19.8 |
2.06 Impact of ICTs on new services and products | 69 | 4.4 | Driver: Institutional Framework | 50 | 5.0 |
2.07 Cybersecurity commitment | 79 | 0.3 | Government | 50 | 5.0 |
Ability to Innovate | 76 | 1.9 | 5.01 Regulatory efficiency | 84 | 60.5 |
2.08 State of cluster development | 37 | 4.2 | 5.02 Incidence of corruption | 51 | 43.0 |
2.09 Company investment in emerging technology | 37 | 4.0 | 5.03 Future orientation of government | 36 | 3.9 |
2.10 Gov't procurement of advanced technology products | 27 | 3.7 | 5.04 Rule of law (2.5 - 2.0) | 56 | 0.0 |
2.11 Companies embracing disruptive ideas | 34 | 3.8 | Driver: Sustainable Resources | 40 | 6.7 |
2.12 Multi-stakeholder collaboration | 53 | 3.6 | Sustainability | 40 | 6.7 |
2.13 R&D expenditures % GDP | 72 | 60.5 | 6.01 Alternative and nuclear energy use % total energy use | 18 | 0.5 |
2.14 Scientific and technical publications Number per Billion PPP$ GDP | - | | 6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 56 | 0.4 |
2.15 Patent applications applications/million pop. | 90 | 0.02 | 6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 75 | 0.3 |
2.16 Venture capital deal volume US$ millions | 88 | 106.9 | 6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 82 | 0.1 |
2.17 Venture capital deal volume per size of economy US$/GDP | 87 | 2.7 | 6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 9 | 0.1 |
2.18 Venture capital deal volume per size of economy US$/GDP | 87 | 2.7 | 6.06 Wastewater treatment | 82 | 43.3 |
Structure: Demand Environment | 84 | 4.5 | Driver: Demand Environment | 72 | 4.1 |
3.01 Manufacturing employment % working population | 65 | 10.7 | Foreign and Domestic Demand | 69 | 4.1 |
3.02 Knowledge-intensive employment % working pop. | No data | | 7.01 Market size | 69 | 41.1 |
3.03 Female participation in labor force ratio | 81 | 0.42 | Consumer Base | 65 | 4.1 |
3.04 Mean years of schooling Years | 84 | 6.9 | 7.02 Buyer sophistication | 82 | 3.0 |
3.05 Availability of scientists and engineers 1-7 (best) | 73 | 3.8 | 7.03Extent of market dominance | 40 | 4.0 |
3.06 Digital skills among population 1-7 (best) | 63 | 4.0 |
Greece

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>10.9</td>
</tr>
<tr>
<td>GDP US$ billions</td>
<td>194.2</td>
</tr>
<tr>
<td>GDP per capita US$</td>
<td>17,900.7</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>23.6</td>
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</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 US$</td>
<td>16,749.2</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>6.8</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>9.3</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>-1.6</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>20.9</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.3</td>
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</table>

Drivers of Production 5.0

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>57th</td>
<td>4.1</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>44th</td>
<td>5.3</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>52nd</td>
<td>5.4</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>59th</td>
<td>4.9</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>41st</td>
<td>6.6</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>54th</td>
<td>4.6</td>
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Structure of Production 4.4

<table>
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<tr>
<th>Structure</th>
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<th>Score /10</th>
</tr>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>51st</td>
<td>5.4</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>75th</td>
<td>3.0</td>
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</table>

Archetype

Greece 4.4, 5.0

Nascent

Legacy
# Greece

## Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure:</strong> Complexity</td>
<td>51</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Economic complexity</strong> (2.5)</td>
<td>51</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Structure:</strong> Scale</td>
<td>75</td>
<td>3.0</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>88</td>
<td>6.8</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>53</td>
<td>16,749.2</td>
</tr>
</tbody>
</table>

**Driver:** Technology & Innovation 0-10 (best)

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Platform</td>
<td>63</td>
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</tr>
<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>66</td>
<td>112.8</td>
</tr>
<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td>35</td>
<td>93.0</td>
</tr>
<tr>
<td>2.03 Internet users % pop.</td>
<td>48</td>
<td>69.1</td>
</tr>
<tr>
<td>2.04 FDI and technology transfer</td>
<td>90</td>
<td>3.7</td>
</tr>
<tr>
<td>2.05 Firm-level technology absorption</td>
<td>64</td>
<td>4.3</td>
</tr>
<tr>
<td>2.06 Impact of ICTs on new services and products</td>
<td>81</td>
<td>4.2</td>
</tr>
<tr>
<td>2.07 Cybersecurity commitment</td>
<td>63</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
<td>50</td>
<td>2.4</td>
</tr>
<tr>
<td>2.08 State of cluster development</td>
<td>93</td>
<td>3.0</td>
</tr>
<tr>
<td>2.09 Company investment in emerging technology</td>
<td>93</td>
<td>2.9</td>
</tr>
<tr>
<td>2.10 Gov’t procurement of advanced technology products</td>
<td>97</td>
<td>2.5</td>
</tr>
<tr>
<td>2.11 Companies embracing disruptive ideas</td>
<td>80</td>
<td>3.2</td>
</tr>
<tr>
<td>2.12 Multi-stakeholder collaboration</td>
<td>90</td>
<td>3.1</td>
</tr>
<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
<td>42</td>
<td>0.8</td>
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<tr>
<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
<td>21</td>
<td>33.4</td>
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<tr>
<td>2.15 Patent applications applications/million pop.</td>
<td>32</td>
<td>7.77</td>
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<tr>
<td>2.16 Venture capital deal volume US$ millions</td>
<td>45</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
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<td>16.3</td>
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</table>

**Driver:** Human Capital 0-10 (best)

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Labor Force 0-10 (best)</td>
<td>35</td>
<td>7.0</td>
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<tr>
<td>3.01 Manufacturing employment % working population</td>
<td>75</td>
<td>9.3</td>
</tr>
<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
<td>41</td>
<td>29.9</td>
</tr>
<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>46</td>
<td>0.81</td>
</tr>
<tr>
<td>3.04 Mean years of schooling Years</td>
<td>43</td>
<td>10.7</td>
</tr>
<tr>
<td>3.05 Availability of scientists and engineers</td>
<td>10</td>
<td>5.2</td>
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<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>56</td>
<td>4.3</td>
</tr>
<tr>
<td>Future Labor Force 0-10 (best)</td>
<td>55</td>
<td>3.7</td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>39</td>
<td>4.6</td>
</tr>
<tr>
<td>3.08 Country capacity to attract and retain talent</td>
<td>95</td>
<td>2.2</td>
</tr>
<tr>
<td>3.09 Quality of universities Count</td>
<td>38</td>
<td>6.0</td>
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<tr>
<td>3.10 Quality of math and science education 1-7 (best)</td>
<td>46</td>
<td>4.4</td>
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<tr>
<td>3.11 Quality of vocational training 1-7 (best)</td>
<td>84</td>
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<td>3.12 School life expectancy Years</td>
<td>11</td>
<td>17.8</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>4</td>
<td>9.4</td>
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<tr>
<td>3.14 Critical thinking in teaching 1-7 (best)</td>
<td>85</td>
<td>2.8</td>
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<tr>
<td>3.15 Active labor policies 1-7 (best)</td>
<td>79</td>
<td>2.8</td>
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<tr>
<td>3.16 On-the-job training 1-7 (best)</td>
<td>75</td>
<td>3.8</td>
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<tr>
<td>3.17 Hiring and firing practices 1-7 (best)</td>
<td>65</td>
<td>3.5</td>
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<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Driver:</strong> Global Trade &amp; Investment 0-10 (best)</td>
<td>52</td>
<td>5.4</td>
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<tr>
<td>Trade 0-10 (best)</td>
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<tr>
<td>4.01 Trade % GDP</td>
<td>65</td>
<td>61.0</td>
</tr>
<tr>
<td>4.02 Trade tariffs % duty</td>
<td>24</td>
<td>0.01</td>
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<tr>
<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
<td>23</td>
<td>4.9</td>
</tr>
<tr>
<td>4.04 Logistics performance 1-5 (best)</td>
<td>44</td>
<td>3.2</td>
</tr>
<tr>
<td>Investment 0-10 (best)</td>
<td>39</td>
<td>3.0</td>
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<tr>
<td>4.05 Greenfield investments US$ millions</td>
<td>66</td>
<td>1,394.0</td>
</tr>
<tr>
<td>4.06 FDI inflows US$ millions</td>
<td>60</td>
<td>1,812.9</td>
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<td>4.07 Domestic credit to private sector % GDP</td>
<td>24</td>
<td>108.8</td>
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<tr>
<td>Infrastructure 0-10 (best)</td>
<td>40</td>
<td>7.0</td>
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<td>4.08 Transport infrastructure 0-100 (best)</td>
<td>43</td>
<td>51.7</td>
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<tr>
<td>4.09 Electricity infrastructure 0-100 (best)</td>
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<td>88.1</td>
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**Driver:** Institutional Framework 0-10 (best)

<table>
<thead>
<tr>
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<th>Rank /100</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Government 0-10 (best)</td>
<td>59</td>
<td>4.9</td>
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<tr>
<td>5.01 Regulatory efficiency</td>
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<td>67.8</td>
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<tr>
<td>5.02 Incidence of corruption 0-100 (best)</td>
<td>50</td>
<td>44.0</td>
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<tr>
<td>5.03 Future orientation of government</td>
<td>100</td>
<td>2.0</td>
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<tr>
<td>5.04 Rule of law (2.5) - 2.0 (best)</td>
<td>49</td>
<td>0.2</td>
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**Driver:** Sustainable Resources 0-10 (best)

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Sustainability 0-10 (best)</td>
<td>41</td>
<td>6.6</td>
</tr>
<tr>
<td>6.01 Alternative and nuclear energy use % total energy use</td>
<td>70</td>
<td>0.1</td>
</tr>
<tr>
<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
<td>42</td>
<td>0.3</td>
</tr>
<tr>
<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
<td>20</td>
<td>0.0</td>
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<tr>
<td>6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
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<td>0.0</td>
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<tr>
<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
<td>70</td>
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<tr>
<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
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<td>92.0</td>
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**Driver:** Demand Environment 0-10 (best)

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<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
<td>55</td>
<td>5.0</td>
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<tr>
<td>7.01 Market size 0-100 (best)</td>
<td>55</td>
<td>50.2</td>
</tr>
<tr>
<td>Consumer Base 0-10 (best)</td>
<td>58</td>
<td>4.2</td>
</tr>
<tr>
<td>7.02 Buyer sophistication 1-7 (best)</td>
<td>70</td>
<td>3.2</td>
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<tr>
<td>7.03 Extent of market dominance 1-7 (best)</td>
<td>48</td>
<td>3.9</td>
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**Country Profiles**
Guatemala

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
<td>68.2</td>
</tr>
<tr>
<td>GDP per capita US$</td>
<td>4,088.9</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>9,229.6</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>17.9</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>12.7</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>2.5</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>22.4</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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</tbody>
</table>

Readiness Overall Assessment

Drivers of Production 3.7

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>94th</td>
<td>2.9</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>82nd</td>
<td>4.0</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>87th</td>
<td>3.5</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>98th</td>
<td>3.2</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>27th</td>
<td>6.9</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>63rd</td>
<td>4.2</td>
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Structure of Production 4.0

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>79th</td>
<td>3.7</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>42nd</td>
<td>4.5</td>
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</table>

Archetype

Guatemala 4.0, 3.7
## Guatemala

### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>0-10 (best)</td>
<td>79</td>
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<tr>
<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
<td>79</td>
<td>-0.6</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong></td>
<td>0-10 (best)</td>
<td>42</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>22</td>
<td>17.9</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>61</td>
<td>9,229.6</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
<td>0-10 (best)</td>
<td>94</td>
</tr>
<tr>
<td>Technology Platform</td>
<td>0-10 (best)</td>
<td>91</td>
</tr>
<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>60</td>
<td>115.3</td>
</tr>
<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td>80</td>
<td>40.4</td>
</tr>
<tr>
<td>2.03 Internet users % pop.</td>
<td>82</td>
<td>34.5</td>
</tr>
<tr>
<td>2.04 FDI and technology transfer 1-7 (best)</td>
<td>57</td>
<td>4.4</td>
</tr>
<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>37</td>
<td>4.9</td>
</tr>
<tr>
<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
<td>42</td>
<td>4.9</td>
</tr>
<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
<td>97</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Ability to Innovate</strong></td>
<td>0-10 (best)</td>
<td>95</td>
</tr>
<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
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Honduras

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**Key economic indicators**

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<tr>
<td>GDP US$ billions</td>
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**Key production indicators**

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<td>Manufacturing value added in economy % GDP</td>
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<td>Manufacturing employment % working population</td>
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**Readiness Overall Assessment**

**Drivers of Production** 3.6

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<tr>
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<td>96th</td>
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<tr>
<td>Human Capital</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>74th</td>
<td>4.3</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>99th</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>33rd</td>
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<td>Demand Environment</td>
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**Structure of Production** 3.4

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<td>Scale</td>
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**Archetype**

Honduras 3.4, 3.6

High-Potential

Leading

Nascent

Legacy
Honduras

Readiness for the Future of Production Assessment 2018 edition

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<tr>
<th>Index Component</th>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>1.03 Manufacturing value added US$ millions</td>
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<td>Technology Platform</td>
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<td>2.03 Internet users % pop.</td>
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<td>Consumer Base 0-10 (best)</td>
<td>89</td>
<td>3.5</td>
</tr>
<tr>
<td>7.02 Buyer sophistication 1-7 (best)</td>
<td>86</td>
<td>2.9</td>
</tr>
<tr>
<td>7.03 Extent of market dominance 1-7 (best)</td>
<td>80</td>
<td>3.3</td>
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</table>

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Hong Kong SAR

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Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>Population millions</td>
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</tr>
<tr>
<td>GDP US$ billions</td>
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</tr>
<tr>
<td>GDP per capita US$</td>
<td>43,528.0</td>
</tr>
<tr>
<td>Unemployment rate %</td>
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</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>3,434.2</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>1.3</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
<td>-6.6</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>36.1</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>2.1</td>
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Readiness Overall Assessment

Drivers of Production 7.5

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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>9th</td>
<td>7.1</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>16th</td>
<td>6.9</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>2nd</td>
<td>8.4</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>11th</td>
<td>8.4</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>43rd</td>
<td>6.5</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>16th</td>
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Structure of Production 4.5

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Complexity</td>
<td>60%</td>
<td>31st</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>97th</td>
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</tbody>
</table>

Archetype

High-Potential

Hong Kong SAR 4.5, 7.5

Nascent

Legacy
# Hong Kong SAR

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## Index Component

<table>
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<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
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<td><strong>Economic complexity</strong> (2.5) – 2.5 (best)</td>
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</tr>
<tr>
<td><strong>Structure: Scale</strong> 0-10 (best)</td>
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<tr>
<td><strong>Manufacturing value added in economy</strong> % GDP</td>
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<tr>
<td><strong>Manufacturing value added</strong> US$ millions</td>
<td>78</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
<td>9</td>
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<tr>
<td><strong>Technology Platform</strong> 0-10 (best)</td>
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<tr>
<td><strong>Mobile-cellular telephone subscriptions</strong> /100 pop.</td>
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<tr>
<td><strong>LTE mobile network coverage</strong> % population</td>
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<tr>
<td><strong>Internet users</strong> % pop.</td>
<td>17</td>
</tr>
<tr>
<td><strong>FDI and technology transfer</strong> 1-7 (best)</td>
<td>9</td>
</tr>
<tr>
<td><strong>Firm-level technology absorption</strong> 1-7 (best)</td>
<td>25</td>
</tr>
<tr>
<td><strong>Impact of ICTs on new services and products</strong> 1-7 (best)</td>
<td>23</td>
</tr>
<tr>
<td><strong>Cybersecurity commitment</strong> 0-1 (best)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
<td>10</td>
</tr>
<tr>
<td><strong>State of cluster development</strong> 1-7 (best)</td>
<td>6</td>
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<tr>
<td><strong>Company investment in emerging technology</strong> 1-7 (best)</td>
<td>15</td>
</tr>
<tr>
<td><strong>Gov’t procurement of advanced technology products</strong> 1-7 (best)</td>
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</tr>
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<td><strong>Companies embracing disruptive ideas</strong> 1-7 (best)</td>
<td>10</td>
</tr>
<tr>
<td><strong>Multi-stakeholder collaboration</strong> 1-7 (best)</td>
<td>15</td>
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<tr>
<td><strong>R&amp;D expenditures</strong> % GDP</td>
<td>11</td>
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<tr>
<td><strong>Scientific and technical publications</strong> Number per Billion PPP$ GDP</td>
<td>-</td>
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<tr>
<td><strong>Patent applications</strong> applications/million pop.</td>
<td>23</td>
</tr>
<tr>
<td><strong>Venture capital deal volume</strong> US$ millions</td>
<td>16</td>
</tr>
<tr>
<td><strong>Venture capital deal volume per size of economy</strong> US$/PPP$</td>
<td>6</td>
</tr>
<tr>
<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
<td>16</td>
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<tr>
<td><strong>Current Labor Force</strong> 0-10 (best)</td>
<td>34</td>
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<tr>
<td><strong>Manufacturing employment</strong> % working population</td>
<td>98</td>
</tr>
<tr>
<td><strong>Knowledge-intensive employment</strong> % working pop.</td>
<td>23</td>
</tr>
<tr>
<td><strong>Female participation in labor force</strong> ratio</td>
<td>10</td>
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<tr>
<td><strong>Mean years of schooling</strong> Years</td>
<td>25</td>
</tr>
<tr>
<td><strong>Availability of scientists and engineers</strong> 1-7 (best)</td>
<td>22</td>
</tr>
<tr>
<td><strong>Digital skills among population</strong> 1-7 (best)</td>
<td>10</td>
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<tr>
<td><strong>Future Labor Force</strong> 0-10 (best)</td>
<td>10</td>
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<tr>
<td><strong>Migration migrants/100,000 pop.</strong></td>
<td>13</td>
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<tr>
<td><strong>Country capacity to attract and retain talent</strong> 1-7 (best)</td>
<td>7</td>
</tr>
<tr>
<td><strong>Quality of universities</strong> Count</td>
<td>35</td>
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<tr>
<td><strong>Quality of math and science education</strong> 1-7 (best)</td>
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</tr>
<tr>
<td><strong>Quality of vocational training</strong> 1-7 (best)</td>
<td>15</td>
</tr>
<tr>
<td><strong>School life expectancy</strong> Years</td>
<td>33</td>
</tr>
<tr>
<td><strong>Pupil-to-teacher ratio in primary education</strong> Ratio</td>
<td>31</td>
</tr>
<tr>
<td><strong>Critical thinking in teaching</strong> 1-7 (best)</td>
<td>33</td>
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<tr>
<td><strong>Active labor policies</strong> 1-7 (best)</td>
<td>10</td>
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<tr>
<td><strong>On-the-job training</strong> 1-7 (best)</td>
<td>14</td>
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<tr>
<td><strong>Hiring and firing practices</strong> 1-7 (best)</td>
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<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong> 0-10 (best)</td>
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<tr>
<td><strong>Trade</strong> 0-10 (best)</td>
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<tr>
<td><strong>Trade</strong> % GDP</td>
<td>1</td>
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<tr>
<td><strong>Trade tariffs</strong> % duty</td>
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<tr>
<td><strong>Prevalence of non-tariff barriers</strong> 1-7 (best)</td>
<td>2</td>
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<tr>
<td><strong>Logistics performance</strong> 1 – 5 (best)</td>
<td>7</td>
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<tr>
<td><strong>Investment</strong> 0-10 (best)</td>
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<tr>
<td><strong>Greenfield investments</strong> US$ millions</td>
<td>33</td>
</tr>
<tr>
<td><strong>FDI inflows</strong> US$ millions</td>
<td>3</td>
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<tr>
<td><strong>Domestic credit to private sector</strong> % GDP</td>
<td>3</td>
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<tr>
<td><strong>Infrastructure</strong> 0-10 (best)</td>
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<tr>
<td><strong>Transport infrastructure</strong> 0-100 (best)</td>
<td>1</td>
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<tr>
<td><strong>Electricity infrastructure</strong> 0-100 (best)</td>
<td>65</td>
</tr>
<tr>
<td><strong>Driver: Institutional Framework</strong> 0-10 (best)</td>
<td>11</td>
</tr>
<tr>
<td><strong>Government</strong> 0-10 (best)</td>
<td>11</td>
</tr>
<tr>
<td><strong>Regulatory efficiency</strong> 0 – 100 (best)</td>
<td>3</td>
</tr>
<tr>
<td><strong>Incidence of corruption</strong> 0-100 (best)</td>
<td>13</td>
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<tr>
<td><strong>Future orientation of government</strong> 1-7 (best)</td>
<td>16</td>
</tr>
<tr>
<td><strong>Rule of law</strong> (2.5) – 2.0 (best)</td>
<td>12</td>
</tr>
<tr>
<td><strong>Driver: Sustainable Resources</strong> 0-10 (best)</td>
<td>43</td>
</tr>
<tr>
<td><strong>Sustainability</strong> 0-10 (best)</td>
<td>43</td>
</tr>
<tr>
<td><strong>Alternative and nuclear energy use</strong> % total energy use</td>
<td>91</td>
</tr>
<tr>
<td><strong>CO2 intensity level</strong> CO2 emissions in megatons/GDP (US$ billions)</td>
<td>-</td>
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<tr>
<td><strong>CH4 intensity level</strong> CH4 emissions in megatons/GDP (US$ billions)</td>
<td>-</td>
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<tr>
<td><strong>N2O intensity level</strong> N2O emissions in megatons/GDP (US$ billions)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Baseline water stress</strong> Annual withdrawals, % of annual available blue water</td>
<td>-</td>
</tr>
<tr>
<td><strong>Wastewater treatment</strong> 0 – 5 (worst)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
<td>16</td>
</tr>
<tr>
<td><strong>Foreign and Domestic Demand</strong> 0-10 (best)</td>
<td>24</td>
</tr>
<tr>
<td><strong>Market size</strong> 0-100 (best)</td>
<td>24</td>
</tr>
<tr>
<td><strong>Consumer Base</strong> 0-10 (best)</td>
<td>9</td>
</tr>
<tr>
<td><strong>Buyer sophistication</strong> 1-7 (best)</td>
<td>4</td>
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<tr>
<td><strong>Extent of market dominance</strong> 1-7 (best)</td>
<td>19</td>
</tr>
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</table>
# Hungary

Readiness for the Future of Production Assessment 2018 edition

## Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (millions)</td>
<td>9.8</td>
</tr>
<tr>
<td>GDP (US$ billions)</td>
<td>125.7</td>
</tr>
<tr>
<td>GDP per capita (US$)</td>
<td>12,778.3</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>5.1</td>
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## Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added</td>
<td>27,484.7</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>18.9</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>21.4</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>58.8</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.2</td>
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## Readiness Overall Assessment

### Drivers of Production 5.3

<table>
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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>49th</td>
<td>4.4</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>42nd</td>
<td>5.5</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>44th</td>
<td>5.6</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>44th</td>
<td>5.7</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>12th</td>
<td>8.0</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>59th</td>
<td>4.5</td>
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</table>

### Structure of Production 7.0

<table>
<thead>
<tr>
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<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>14th</td>
<td>8.0</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>26th</td>
<td>5.3</td>
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</tbody>
</table>

## Archetype

- High-Potential
- Leading
- Nascent
- Legacy

- Hungary 7.0, 5.3
## Hungary

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<th>Value</th>
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</thead>
<tbody>
<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
<td>14</td>
<td>8.0</td>
</tr>
<tr>
<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
<td>14</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong> 0-10 (best)</td>
<td>26</td>
<td>5.3</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>16</td>
<td>18.9</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>45</td>
<td>27,484.7</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
<td>49</td>
<td>4.4</td>
</tr>
<tr>
<td>Technology Platform 0-10 (best)</td>
<td>45</td>
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</tr>
<tr>
<td>2.1 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>53</td>
<td>119.1</td>
</tr>
<tr>
<td>2.2 LTE mobile network coverage % population</td>
<td>21</td>
<td>98.0</td>
</tr>
<tr>
<td>2.3 Internet users % pop.</td>
<td>28</td>
<td>79.3</td>
</tr>
<tr>
<td>2.4 FDI and technology transfer 1-7 (best)</td>
<td>44</td>
<td>4.7</td>
</tr>
<tr>
<td>2.5 Targeted technology absorption 1-7 (best)</td>
<td>91</td>
<td>4.0</td>
</tr>
<tr>
<td>2.6 Impact of ICTs on new services and products 1-7 (best)</td>
<td>45</td>
<td>4.8</td>
</tr>
<tr>
<td>2.7 Cybersecurity commitment 0-1 (best)</td>
<td>54</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
<td>48</td>
<td>2.4</td>
</tr>
<tr>
<td>2.8 State of cluster development 1-7 (best)</td>
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<td>3.5</td>
</tr>
<tr>
<td>2.9 Company investment in emerging technology 1-7 (best)</td>
<td>85</td>
<td>3.0</td>
</tr>
<tr>
<td>2.10 Gov't procurement of advanced technology products 1-7 (best)</td>
<td>81</td>
<td>2.8</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>99</td>
<td>2.9</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
<td>82</td>
<td>3.2</td>
</tr>
<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
<td>29</td>
<td>1.4</td>
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<tr>
<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
<td>29</td>
<td>25.3</td>
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<tr>
<td>2.15 Patent applications applications/million pop.</td>
<td>27</td>
<td>15.76</td>
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<tr>
<td>2.16 Venture capital deal volume US$ millions</td>
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<td>943.5</td>
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<tr>
<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
<td>72</td>
<td>7.3</td>
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<tr>
<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
<td>42</td>
<td>5.5</td>
</tr>
<tr>
<td>Current Labor Force 0-10 (best)</td>
<td>36</td>
<td>6.9</td>
</tr>
<tr>
<td>3.01 Manufacturing employment % working population</td>
<td>4</td>
<td>21.4</td>
</tr>
<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
<td>33</td>
<td>34.9</td>
</tr>
<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>32</td>
<td>0.89</td>
</tr>
<tr>
<td>3.04 Mean years of schooling Years</td>
<td>21</td>
<td>12.3</td>
</tr>
<tr>
<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>78</td>
<td>3.6</td>
</tr>
<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>93</td>
<td>3.3</td>
</tr>
<tr>
<td>Future Labor Force 0-10 (best)</td>
<td>49</td>
<td>4.0</td>
</tr>
<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>35</td>
<td>7.6</td>
</tr>
<tr>
<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
<td>86</td>
<td>2.5</td>
</tr>
<tr>
<td>3.09 Quality of universities Count</td>
<td>38</td>
<td>6.0</td>
</tr>
<tr>
<td>3.10 Quality of math and science education 1-7 (best)</td>
<td>61</td>
<td>3.9</td>
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<tr>
<td>3.11 Quality of vocational training 1-7 (best)</td>
<td>96</td>
<td>3.2</td>
</tr>
<tr>
<td>3.12 School life expectancy Years</td>
<td>39</td>
<td>15.4</td>
</tr>
<tr>
<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>10</td>
<td>11.0</td>
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<tr>
<td>3.14 Critical thinking in teaching 1-7 (best)</td>
<td>62</td>
<td>3.2</td>
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<tr>
<td>3.15 Active labor policies 1-7 (best)</td>
<td>59</td>
<td>3.2</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<td>3.7</td>
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<tr>
<td>3.17 Hiring and firing practices 1-7 (best)</td>
<td>22</td>
<td>4.5</td>
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</table>

### Legacy

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong> 0-10 (best)</td>
<td>44</td>
<td>5.6</td>
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<tr>
<td>Trade 0-10 (best)</td>
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<tr>
<td>4.01 Trade % GDP</td>
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<td>4.02 Trade tariffs % duty</td>
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<td>4.04 Logistics performance 1 – 5 (best)</td>
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<td>Investment 0-10 (best)</td>
<td>76</td>
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<td>4.05 Greenfield investments US$ millions</td>
<td>47</td>
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<td>4.06 FDI inflows US$ millions</td>
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<td>4,251.9</td>
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<td>4.07 Domestic credit to private sector % GDP</td>
<td>77</td>
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<tr>
<td><strong>Infrastructure</strong> 0-10 (best)</td>
<td>41</td>
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<tr>
<td>4.08 Transport infrastructure 0-100 (best)</td>
<td>25</td>
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<td>4.09 Electricity infrastructure 0-100 (best)</td>
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<td>78.7</td>
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<td>5.7</td>
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<td>Government 0-10 (best)</td>
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<td>5.01 Regulatory efficiency 0 – 100 (best)</td>
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<td>5.02 Incidence of corruption 0-100 (best)</td>
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<td>48.0</td>
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<tr>
<td>5.03 Future orientation of government 1-7 (best)</td>
<td>85</td>
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<tr>
<td>5.04 Rule of law (2.5) – 2.0 (best)</td>
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<tr>
<td><strong>Driver: Sustainable Resources</strong> 0-10 (best)</td>
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<tr>
<td>Sustainability 0-10 (best)</td>
<td>12</td>
<td>8.0</td>
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<tr>
<td>6.01 Alternative and nuclear energy use % total energy use</td>
<td>38</td>
<td>0.3</td>
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<tr>
<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
<td>43</td>
<td>0.3</td>
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<tr>
<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
<td>29</td>
<td>0.1</td>
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<tr>
<td>6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
<td>46</td>
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<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
<td>19</td>
<td>0.5</td>
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<tr>
<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
<td>38</td>
<td>84.6</td>
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<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
<td>59</td>
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<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>5.4</td>
</tr>
<tr>
<td>7.01 Market size 0-100 (best)</td>
<td>46</td>
<td>53.7</td>
</tr>
<tr>
<td><strong>Consumer Base</strong> 0-10 (best)</td>
<td>83</td>
<td>3.7</td>
</tr>
<tr>
<td>7.02 Buyer sophistication 1-7 (best)</td>
<td>73</td>
<td>3.2</td>
</tr>
<tr>
<td>7.03 Extent of market dominance 1-7 (best)</td>
<td>85</td>
<td>3.2</td>
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*Readiness for the Future of Production Report 2018*  
*Country Profiles*
India

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>1,309.3</td>
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<tr>
<td>GDP US$ billions</td>
<td>2,256.4</td>
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<tr>
<td>GDP per capita US$</td>
<td>1,723.3</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>423,721.9</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>17.0</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>11.4</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>8.4</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>37.9</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>1.5</td>
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Readiness Overall Assessment

Drivers of Production 5.2

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>34th</td>
<td>4.8</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>63rd</td>
<td>4.7</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>55th</td>
<td>5.2</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>54th</td>
<td>5.0</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>96th</td>
<td>4.0</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>5th</td>
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Structure of Production 6.0

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>48th</td>
<td>5.6</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>9th</td>
<td>6.6</td>
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</table>

Archetype

- High-Potential
- Leading
- Nascent
- Legacy

India 6.0, 5.2
Readiness for the Future of Production Assessment 2018 edition

Index Component | Rank /100 | Value
--- | --- | ---
Structure: Complexity | 0-10 (best) | 48 | 5.6
1.01 Economic complexity (2.5) – 2.5 (best) | 48 | 0.3
Structure: Technology | 0-10 (best) | 9 | 6.6
1.02 Manufacturing value added in economy % GDP | 26 | 17.0
1.03 Manufacturing value added US$ millions | 5 | 423,721.9
Driver: Technology & Innovation | 0-10 (best) | 34 | 4.8
Technology Platform | 0-10 (best) | 59 | 6.0
2.01 Mobile-cellular telephone subscriptions /100 pop. | 88 | 87.0
2.02 LTE mobile network coverage % population | 61 | 73.5
2.03 Internet users % pop. | 86 | 29.5
2.04 FDI and technology transfer 1-7 (best) | 52 | 4.5
2.05 Firm-level technology absorption 1-7 (best) | 63 | 4.4
2.06 Impact of ICTs on new services and products 1-7 (best) | 72 | 4.4
2.07 Cybersecurity commitment 0-1 (best) | 26 | 0.7
Ability to Innovate | 0-10 (best) | 29 | 3.7
2.08 State of cluster development 1-7 (best) | 29 | 4.4
2.09 Company investment in emerging technology 1-7 (best) | 28 | 4.3
2.10 Gov’t procurement of advanced technology products 1-7 (best) | 7 | 4.7
2.11 Companies embracing disruptive ideas 1-7 (best) | 12 | 4.5
2.12 Multi-stakeholder collaboration 1-7 (best) | 25 | 4.4
2.13 R&D expenditures % GDP | 43 | 0.8
2.14 Scientific and technical publications Number per Billion PPP$ GDP | 66 | 6.9
2.15 Patent applications applications/million pop. | 54 | 1.21
2.16 Venture capital deal volume US$ millions | 8 | 83,342.4
2.17 Venture capital deal volume per size of economy US$GDP | 27 | 39.0
Driver: Human Capital | 0-10 (best) | 63 | 4.7
Current Labor Force | 0-10 (best) | 80 | 4.8
3.01 Manufacturing employment % working population | 52 | 11.4
3.02 Knowledge-intensive employment % working pop. | No data
3.03 Female participation in labor force ratio | 90 | 0.25
3.04 Mean years of schooling Years | 88 | 6.3
3.05 Availability of scientists and engineers 1-7 (best) | 30 | 4.6
3.06 Digital skills among population 1-7 (best) | 50 | 4.4
Future Labor Force | 0-10 (best) | 42 | 4.5
3.07 Migration migrants/100,000 pop. | 59 | -1.7
3.08 Country capacity to attract and retain talent 1-7 (best) | 19 | 4.6
3.09 Quality of universities Count | 14 | 21.0
3.10 Quality of math and science education 1-7 (best) | 32 | 4.6
3.11 Quality of vocational training 1-7 (best) | 39 | 4.4
3.12 School life expectancy Years | 86 | 12.0
3.13 Pupil-to-teacher ratio in primary education Ratio | 88 | 31.5
3.14 Critical thinking in teaching 1-7 (best) | 16 | 4.5
3.15 Active labor policies 1-7 (best) | 26 | 4.2
3.16 On-the-job training 1-7 (best) | 33 | 4.6
3.17 Hiring and firing practices 1-7 (best) | 16 | 4.6

Index Component | Rank /100 | Value
--- | --- | ---
Driver: Global Trade & Investment | 0-10 (best) | 55 | 5.2
Trade | 0-10 (best) | 89 | 3.5
4.01 Trade % GDP | 85 | 39.8
4.02 Trade tariffs % duty | 94 | 0.13
4.03 Prevalence of non-tariff barriers 1-7 (best) | 46 | 4.5
4.04 Logistics performance 1 – 5 (best) | 31 | 3.4
Investment | 0-10 (best) | 11 | 6.3
4.05 Greenfield investments US$ millions | 4 | 41,209.5
4.06 FDI inflows US$ millions | 11 | 35,134.2
4.07 Domestic credit to private sector % GDP | 61 | 49.8
Infrastructure | 0-10 (best) | 72 | 5.8
4.08 Transport infrastructure 0-100 (best) | 23 | 61.9
4.09 Electricity infrastructure 0-100 (best) | 89 | 53.2
Driver: Institutional Framework | 0-10 (best) | 54 | 5.0
Government | 0-10 (best) | 54 | 5.0
5.01 Regulatory efficiency 0 – 100 (best) | 96 | 56.5
5.02 Incidence of corruption 0-100 (best) | 58 | 40.0
5.03 Future orientation of government 1-7 (best) | 22 | 4.5
5.04 Rule of law (2.5) – 2.0 (best) | 59 | -0.1
Driver: Sustainable Resources | 0-10 (best) | 96 | 4.0
Sustainability | 0-10 (best) | 96 | 4.0
6.01 Alternative and nuclear energy use % total energy use | 44 | 0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 94 | 1.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 76 | 0.3
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 78 | 0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 81 | 3.6
6.06 Wastewater treatment 0 – 5 (worst) | 78 | 48.4
Driver: Demand Environment | 0-10 (best) | 5 | 7.4
Foreign and Domestic Demand | 0-10 (best) | 3 | 9.0
7.01 Market size 0-100 (best) | 3 | 89.7
Consumer Base | 0-10 (best) | 14 | 5.9
7.02 Buyer sophistication 1-7 (best) | 13 | 4.6
7.03Extent of market dominance 1-7 (best) | 21 | 4.4
Indonesia

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
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<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
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<td>GDP US$ billions</td>
<td>932.4</td>
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<tr>
<td>GDP per capita US$</td>
<td>3,604.3</td>
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<tr>
<td>Unemployment rate %</td>
<td>5.6</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>225,673.8</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>21.8</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>13.5</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>35.1</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 4.9

<table>
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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>61st</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>55th</td>
<td>5.0</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>61st</td>
<td>5.1</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>69th</td>
<td>4.6</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>94th</td>
<td>4.1</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 5.4

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<td>Scale</td>
<td>40%</td>
<td>6th</td>
<td>7.1</td>
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Archetype

Indonesia 5.4, 4.9

Nascent
## Indonesia

### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Value</th>
<th>Rank</th>
<th>Value</th>
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<tbody>
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<td><strong>Structure: Complexity</strong></td>
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<td>-0.3</td>
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<td><strong>Structure: Scale</strong></td>
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<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>% GDP</td>
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<td>21.8</td>
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<td>1.03 Manufacturing value added</td>
<td>US$ millions</td>
<td>11</td>
<td>225,673.8</td>
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<tr>
<td><strong>Technology Platform</strong></td>
<td>0-10 (best)</td>
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<td>5.4</td>
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<td>2.01 Mobile-cellular telephone subscriptions</td>
<td>/100 pop.</td>
<td>15</td>
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<td>2.02 LTE mobile network coverage</td>
<td>% population</td>
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<td>2.03 Internet users</td>
<td>% pop.</td>
<td>93</td>
<td>25.4</td>
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<td>2.04 FDI and technology transfer</td>
<td>1-7 (best)</td>
<td>41</td>
<td>4.7</td>
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<td>2.05 Firm-level technology absorption</td>
<td>1-7 (best)</td>
<td>35</td>
<td>5.0</td>
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<td>2.06 Impact of ICTs on new services and products</td>
<td>1-7 (best)</td>
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<td>4.9</td>
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<tr>
<td>2.07 Cybersecurity commitment</td>
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<td>0.4</td>
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<td><strong>Ability to Innovate</strong></td>
<td>0-10 (best)</td>
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<tr>
<td>2.08 State of cluster development</td>
<td>1-7 (best)</td>
<td>24</td>
<td>4.6</td>
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<tr>
<td>2.09 Company investment in emerging technology</td>
<td>1-7 (best)</td>
<td>30</td>
<td>4.3</td>
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<tr>
<td>2.10 Gov’t procurement of advanced technology products</td>
<td>1-7 (best)</td>
<td>10</td>
<td>4.4</td>
</tr>
<tr>
<td>2.11 Companies embracing disruptive ideas</td>
<td>1-7 (best)</td>
<td>18</td>
<td>4.3</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration</td>
<td>1-7 (best)</td>
<td>22</td>
<td>4.5</td>
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<td>2.13 R&amp;D expenditures</td>
<td>% GDP</td>
<td>96</td>
<td>0.1</td>
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<tr>
<td>2.14 Scientific and technical publications</td>
<td>Number per Billion PPP$ GDP</td>
<td>97</td>
<td>0.7</td>
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<tr>
<td>2.15 Patent applications</td>
<td>applications/million pop.</td>
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<td>2.16 Venture capital deal volume</td>
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<td>22</td>
<td>23,809.4</td>
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<tr>
<td>2.17 Venture capital deal per size of economy</td>
<td>US$/GDP</td>
<td>34</td>
<td>26.6</td>
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<tr>
<td><strong>Driver: Human Capital</strong></td>
<td>0-10 (best)</td>
<td>55</td>
<td>5.0</td>
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<tr>
<td><strong>Current Labor Force</strong></td>
<td>0-10 (best)</td>
<td>71</td>
<td>5.4</td>
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<tr>
<td>3.01 Manufacturing employment</td>
<td>% working population</td>
<td>33</td>
<td>13.5</td>
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<tr>
<td>3.02 Knowledge-intensive employment</td>
<td>% working pop.</td>
<td>83</td>
<td>9.8</td>
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<td>3.03 Female participation in labor force</td>
<td>ratio</td>
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<td>3.04 Mean years of schooling</td>
<td>Years</td>
<td>75</td>
<td>7.9</td>
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<tr>
<td>3.05 Availability of scientists and engineers</td>
<td>1-7 (best)</td>
<td>33</td>
<td>4.5</td>
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<tr>
<td>3.06 Digital skills among population</td>
<td>1-7 (best)</td>
<td>30</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Future Labor Force</strong></td>
<td>0-10 (best)</td>
<td>40</td>
<td>4.6</td>
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<tr>
<td>3.07 Migration</td>
<td>migrants/100,000 pop.</td>
<td>69</td>
<td>-2.7</td>
</tr>
<tr>
<td>3.08 Country capacity to attract and retain talent</td>
<td>1-7 (best)</td>
<td>24</td>
<td>4.4</td>
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<tr>
<td>3.09 Quality of universities</td>
<td>Count</td>
<td>23</td>
<td>9.0</td>
</tr>
<tr>
<td>3.10 Quality of math and science education</td>
<td>1-7 (best)</td>
<td>35</td>
<td>4.6</td>
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<tr>
<td>3.11 Quality of vocational training</td>
<td>1-7 (best)</td>
<td>33</td>
<td>4.4</td>
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<tr>
<td>3.12 School life expectancy</td>
<td>Years</td>
<td>75</td>
<td>12.8</td>
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<tr>
<td>3.13 Pupil-to-teacher ratio in primary education</td>
<td>Ratio</td>
<td>43</td>
<td>16.6</td>
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<tr>
<td>3.14 Critical thinking in teaching</td>
<td>1-7 (best)</td>
<td>25</td>
<td>4.1</td>
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<tr>
<td>3.15 Active labor policies</td>
<td>1-7 (best)</td>
<td>30</td>
<td>4.2</td>
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<tr>
<td>3.16 On-the-job training</td>
<td>1-7 (best)</td>
<td>29</td>
<td>4.7</td>
</tr>
<tr>
<td>3.17 Hiring and firing practices</td>
<td>1-7 (best)</td>
<td>20</td>
<td>4.5</td>
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### Country Profiles

#### Nascent

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<tr>
<th>Index Component</th>
<th>Rank</th>
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<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
<td>0-10 (best)</td>
<td>61</td>
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<tr>
<td><strong>Trade</strong></td>
<td>0-10 (best)</td>
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</tr>
<tr>
<td>4.01 Trade</td>
<td>% GDP</td>
<td>89</td>
</tr>
<tr>
<td>4.02 Trade tariffs</td>
<td>% duty</td>
<td>60</td>
</tr>
<tr>
<td>4.03 Prevalence of non-tariff barriers</td>
<td>1-7 (best)</td>
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</tr>
<tr>
<td>4.04 Logistics performance</td>
<td>1 – 5 (best)</td>
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<tr>
<td><strong>Investment</strong></td>
<td>0-10 (best)</td>
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<tr>
<td>4.05 Greenfield investments</td>
<td>US$ millions</td>
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<tr>
<td>4.06 FDI inflows</td>
<td>US$ millions</td>
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<tr>
<td>4.07 Domestic credit to private sector</td>
<td>% GDP</td>
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<tr>
<td><strong>Infrastructure</strong></td>
<td>0-10 (best)</td>
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</tr>
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<td>4.08 Transport infrastructure</td>
<td>0-100 (best)</td>
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<tr>
<td>4.09 Electricity infrastructure</td>
<td>0-100 (best)</td>
<td>67</td>
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<tr>
<td><strong>Driver: Institutional Framework</strong></td>
<td>0-10 (best)</td>
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</tr>
<tr>
<td><strong>Government</strong></td>
<td>0-10 (best)</td>
<td>69</td>
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<tr>
<td>5.01 Regulatory efficiency</td>
<td>0 – 100 (best)</td>
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<tr>
<td>5.02 Incidence of corruption</td>
<td>0-100 (best)</td>
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<td>5.03 Future orientation of government</td>
<td>1-7 (best)</td>
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<td>5.04 Rule of law</td>
<td>(2.5) – 2.0 (best)</td>
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<td><strong>Driver: Sustainable Resources</strong></td>
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<td><strong>Sustainability</strong></td>
<td>0-10 (best)</td>
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</tr>
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<td>6.01 Alternative and nuclear energy use</td>
<td>% total energy use</td>
<td>29</td>
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<td>6.02 CO2 intensity level</td>
<td>CO2 emissions in megatons/GDP (US$ billions)</td>
<td>71</td>
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<td>6.03 CH4 intensity level</td>
<td>CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>6.04 N2O intensity level</td>
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<td>6.05 Baseline water stress</td>
<td>Annual withdrawals, % of annual available blue water</td>
<td>69</td>
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<td>6.06 Wastewater treatment</td>
<td>0 – 5 (worst)</td>
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<td><strong>Driver: Demand Environment</strong></td>
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<td><strong>Foreign and Domestic Demand</strong></td>
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<td>7.01 Market size</td>
<td>0-100 (best)</td>
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<tr>
<td><strong>Consumer Base</strong></td>
<td>0-10 (best)</td>
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<td>7.02 Buyer sophistication</td>
<td>1-7 (best)</td>
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<tr>
<td>7.03 Extent of market dominance</td>
<td>1-7 (best)</td>
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Ireland

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>63,103.5</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>11.2</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % manu. value added</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 6.8

<table>
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<tr>
<th>Driver</th>
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<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>14th</td>
<td>7.0</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>16th</td>
<td>6.8</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>16th</td>
<td>7.9</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>36th</td>
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<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 7.3

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<td>Scale</td>
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Archetype

Ireland 7.3, 6.8

High-Potential

Leading

Nascent

Legacy

Readiness for the Future of Production Report 2018
## Ireland

### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
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<th>Value</th>
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<td><strong>Structure:</strong> Complexity 0-10 (best)</td>
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<tr>
<td>0.1 Economic complexity (2.5) – 2.5 (best)</td>
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<td><strong>Structure:</strong> Scale 0-10 (best)</td>
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<td>1.02 Manufacturing value added in economy % GDP</td>
<td>11</td>
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<tr>
<td>1.03 Manufacturing value added US$ millions</td>
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<td>63,103.5</td>
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<tr>
<td><strong>Driver:</strong> Technology &amp; Innovation 0-10 (best)</td>
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<td>6.6</td>
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<tr>
<td>Technology Platform 0-10 (best)</td>
<td>24</td>
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<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>79</td>
<td>103.6</td>
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<td>2.02 LTE mobile network coverage % population</td>
<td>39</td>
<td>90.0</td>
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<td>2.03 Internet users % pop.</td>
<td>22</td>
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<td>2.04 FDI and technology transfer 1-7 (best)</td>
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<td>2.05 Firm-level technology absorption 1-7 (best)</td>
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<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
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<td>2.07 Cybersecurity commitment 0-1 (best)</td>
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<td>0.7</td>
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<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
<td>15</td>
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<td>2.08 State of cluster development 1-7 (best)</td>
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<td>2.09 Company investment in emerging technology 1-7 (best)</td>
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<tr>
<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
<td>46</td>
<td>3.4</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>19</td>
<td>4.3</td>
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<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
<td>16</td>
<td>4.8</td>
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<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
<td>27</td>
<td>1.5</td>
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<tr>
<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
<td>33</td>
<td>23.3</td>
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<tr>
<td>2.15 Patent applications applications/million pop.</td>
<td>18</td>
<td>63.60</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal per size of economy US$/GDP</td>
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<td><strong>Driver:</strong> Human Capital 0-10 (best)</td>
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<td>Current Labor Force 0-10 (best)</td>
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<tr>
<td>3.01 Manufacturing employment % working population</td>
<td>54</td>
<td>11.2</td>
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<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
<td>22</td>
<td>40.6</td>
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<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>11</td>
<td>0.98</td>
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<tr>
<td>3.04 Mean years of schooling Years</td>
<td>20</td>
<td>12.3</td>
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<tr>
<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
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<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>22</td>
<td>5.1</td>
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<td>Future Labor Force 0-10 (best)</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
<td>27</td>
<td>10.8</td>
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<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.09 Quality of universities Count</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>3.12 School life expectancy Years</td>
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<td>19.7</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>38</td>
<td>16.1</td>
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<tr>
<td>3.14 Critical thinking in teaching 1-7 (best)</td>
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<td>3.15 Active labor policies 1-7 (best)</td>
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<td>4.7</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
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Israel

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population millions</td>
<td>8.5</td>
</tr>
<tr>
<td>GDP US$ billions</td>
<td>318.4</td>
</tr>
<tr>
<td>GDP per capita US$</td>
<td>37,262.4</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>4.8</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
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<tbody>
<tr>
<td>Manufacturing value added</td>
<td>20%</td>
<td>15th</td>
<td>6.8</td>
</tr>
<tr>
<td>Manufacturing value added in economy</td>
<td>40%</td>
<td>17th</td>
<td>6.8</td>
</tr>
<tr>
<td>Manufacturing employment</td>
<td>20%</td>
<td>53rd</td>
<td>5.3</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries</td>
<td>20%</td>
<td>23rd</td>
<td>7.0</td>
</tr>
<tr>
<td>CO2 emission per unit of value added</td>
<td>20%</td>
<td>58th</td>
<td>6.0</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>44th</td>
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Drivers of Production 6.2

<table>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
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<tr>
<td>Human Capital</td>
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<td>17th</td>
<td>6.8</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>53rd</td>
<td>5.3</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>23rd</td>
<td>7.0</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>58th</td>
<td>6.0</td>
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<tr>
<td>Demand Environment</td>
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Structure of Production 6.4

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<tbody>
<tr>
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</tr>
<tr>
<td>Scale</td>
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Archetype

Complexity 6.4, 6.2

Readiness Overall Assessment

High-Potential  Leading

Nascent  Legacy

Population 8.5  GDP per capita 37,262.4  Unemployment rate 4.8

Manufacturing value added in economy 12.1  Medium hi-tech & hi-tech industries 42.8

Manufacturing value added growth 1.1

CO2 emission per unit of value added 0.1

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population millions</td>
<td>8.5</td>
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<td>Unemployment rate %</td>
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Key production indicators

<table>
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<tr>
<th>Indicator</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Manufacturing value added</td>
<td>20%</td>
<td>15th</td>
<td>6.8</td>
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<td>Manufacturing value added in economy</td>
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</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries</td>
<td>20%</td>
<td>23rd</td>
<td>7.0</td>
</tr>
<tr>
<td>CO2 emission per unit of value added</td>
<td>20%</td>
<td>58th</td>
<td>6.0</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>44th</td>
<td>5.0</td>
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Drivers of Production 6.2

<table>
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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>15th</td>
<td>6.8</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>17th</td>
<td>6.8</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>53rd</td>
<td>5.3</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>23rd</td>
<td>7.0</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>58th</td>
<td>6.0</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 6.4

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<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>16th</td>
<td>7.9</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>48th</td>
<td>4.3</td>
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Archetype

Complexity 6.4, 6.2

Readiness Overall Assessment

High-Potential  Leading

Nascent  Legacy

Population 8.5  GDP per capita 37,262.4  Unemployment rate 4.8

Manufacturing value added in economy 12.1  Medium hi-tech & hi-tech industries 42.8

Manufacturing value added growth 1.1

CO2 emission per unit of value added 0.1
### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
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<td>7.9</td>
</tr>
<tr>
<td>1.01 Economic complexity</td>
<td>16</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong></td>
<td>48</td>
<td>4.3</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>53</td>
<td>12.1</td>
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<tr>
<td>1.03 Manufacturing value added</td>
<td>41</td>
<td>33,962.4</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
<td>15</td>
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<td>7.02 Buyer sophistication</td>
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<td>7.03 Extent of market dominance</td>
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Italy

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<td>Unemployment rate %</td>
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Key production indicators

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<th>Value</th>
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<td>Manufacturing value added in economy % GDP</td>
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<td>Manufacturing employment % working population</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 5.9

<table>
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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>27th</td>
<td>5.7</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>32nd</td>
<td>5.9</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>30th</td>
<td>6.0</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>48th</td>
<td>5.2</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>28th</td>
<td>6.9</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>8th</td>
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Structure of Production 7.0

<table>
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<th>Score /10</th>
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<tr>
<td>Scale</td>
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Archetype

[Graph showing the archetypal positioning of Italy with scores for Technology & Innovation (5.7), Human Capital (5.9), Global Trade & Investment (6.0), Institutional Framework (5.2), Sustainable Resources (6.9), Demand Environment (6.6), Complexity (7.7), Scale (5.9), Complexity (7.7), Scale (5.9)]

### Country Profiles

#### Italy

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<th>Rank /100</th>
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<td>1.01 Economic complexity</td>
<td>(2.5) – 2.5 (best)</td>
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<td><strong>Structure: Scale</strong></td>
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<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>% GDP</td>
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<tr>
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<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<td>Technology Platform</td>
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<td>2.01 Mobile-cellular telephone subscriptions</td>
<td>/100 pop.</td>
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<tr>
<td>2.02 LTE mobile network coverage</td>
<td>% population</td>
<td>33</td>
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<tr>
<td>2.03 Internet users</td>
<td>% pop.</td>
<td>57</td>
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<tr>
<td>2.04 FDI and technology transfer</td>
<td>1-7 (best)</td>
<td>79</td>
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<td>2.05 Firm-level technology absorption</td>
<td>1-7 (best)</td>
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<td>2.06 Impact of ICTs on new services and products</td>
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<td>2.09 Company investment in emerging technology</td>
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<td>Current Labor Force</td>
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<td>% working population</td>
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### Leading Index Component Rankings

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<td>Foreign and Domestic Demand</td>
<td>0-10 (best)</td>
<td>12</td>
</tr>
<tr>
<td>7.01 Market size</td>
<td>0-100 (best)</td>
<td>12</td>
</tr>
<tr>
<td>Consumer Base</td>
<td>0-10 (best)</td>
<td>16</td>
</tr>
<tr>
<td>7.02 Buyer sophistication</td>
<td>1-7 (best)</td>
<td>32</td>
</tr>
<tr>
<td>7.03Extent of market dominance</td>
<td>1-7 (best)</td>
<td>6</td>
</tr>
</tbody>
</table>
Japan

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
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<tbody>
<tr>
<td>Population millions</td>
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<td>GDP US$ billions</td>
<td>4,938.6</td>
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<tr>
<td>GDP per capita US$</td>
<td>38,917.3</td>
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<tr>
<td>Unemployment rate %</td>
<td>3.1</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>1,075,547.5</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>18.8</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>16.2</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>0.0</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>55.3</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.2</td>
</tr>
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</table>

Readiness Overall Assessment

Drivers of Production 6.8

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>16th</td>
<td>6.6</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>28th</td>
<td>6.0</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>27th</td>
<td>6.2</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>17th</td>
<td>7.8</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>39th</td>
<td>6.7</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>3rd</td>
<td>7.8</td>
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</table>

Structure of Production 9.0

<table>
<thead>
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<th>Weighting</th>
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<th>Score /10</th>
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<tr>
<td>Complexity</td>
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<td>Scale</td>
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<td>7.5</td>
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</table>

Archetype

- High-Potential
- Leading

Japan 9.0, 6.8
Japan

Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tr>
<td><strong>Structure: Complexity</strong></td>
<td>0-10 (best)</td>
<td>1</td>
</tr>
<tr>
<td>1.01 Economic complexity</td>
<td>(2.5) – 2.5 (best)</td>
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<tr>
<td><strong>Structure: Scale</strong></td>
<td>0-10 (best)</td>
<td>5</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>% GDP</td>
<td>17</td>
</tr>
<tr>
<td>1.03 Manufacturing value added</td>
<td>US$ millions</td>
<td>3</td>
</tr>
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</table>

| Driver: Technology & Innovation | 0-10 (best) | 16    |
| Technology Platform | 0-10 (best) | 12    |
| 2.01 Mobile-cellular telephone subscriptions | /100 pop. | 37   |
| 2.02 LTE mobile network coverage | % population | 11   |
| 2.03 Internet users | % pop. | 7    |
| 2.04 FDI and technology transfer | 1-7 (best) | 23   |
| 2.05 Firm-level technology absorption | 1-7 (best) | 13   |
| 2.06 Impact of ICTs on new services and products | 1-7 (best) | 25   |
| 2.07 Cybersecurity commitment | 0-1 (best) | 12   |

| Ability to Innovate | 0-10 (best) | 19   |
| 2.08 State of cluster development | 1-7 (best) | 10   |
| 2.09 Company investment in emerging technology | 1-7 (best) | 13   |
| 2.10 Gov't procurement of advanced technology products | 1-7 (best) | 20   |
| 2.11 Companies embracing disruptive ideas | 1-7 (best) | 42   |
| 2.12 Multi-stakeholder collaboration | 1-7 (best) | 20   |
| 2.13 R&D expenditures | % GDP | 3    |
| 2.14 Scientific and technical publications | Number per Billion PPP$ GDP | 44   |
| 2.15 Patent applications | applications/million pop. | 1   |
| 2.16 Venture capital deal volume | US$ millions | 13   |
| 2.17 Venture capital deal volume per size of economy US$/GDP | 63   |

| Driver: Human Capital | 0-10 (best) | 28   |
| Current Labor Force | 0-10 (best) | 29   |
| 3.01 Manufacturing employment | % working population | 16   |
| 3.02 Knowledge-intensive employment | % working pop. | 47   |
| 3.03 Female participation in labor force | ratio | 49   |
| 3.04 Mean years of schooling | Years | 14   |
| 3.05 Availability of scientists and engineers | 1-7 (best) | 8    |
| 3.06 Digital skills among population | 1-7 (best) | 44   |

| Future Labor Force | 0-10 (best) | 34   |
| 3.07 Migration | migrants/100,000 pop. | 43   |
| 3.08 Country capacity to attract and retain talent | 1-7 (best) | 40   |
| 3.09 Quality of universities | Count | 5    |
| 3.10 Quality of math and science education | 1-7 (best) | 20   |
| 3.11 Quality of vocational training | 1-7 (best) | 18   |
| 3.12 School life expectancy | Years | 40   |
| 3.13 Pupil-to-teacher ratio in primary education | Ratio | 41   |
| 3.14 Critical thinking in teaching | 1-7 (best) | 84   |
| 3.15 Active labor policies | 1-7 (best) | 25   |
| 3.16 On-the-job training | 1-7 (best) | 20   |
| 3.17 Hiring and firing practices | 1-7 (best) | 80   |

| Driver: Global Trade & Investment | 0-10 (best) | 27   |
| Trade | 0-10 (best) | 78   |
| 4.01 Trade | % GDP | 93   |
| 4.02 Trade tariffs | % duty | 33   |
| 4.03 Prevalence of non-tariff barriers | 1-7 (best) | 50   |
| 4.04 Logistics performance | 1 – 5 (best) | 11   |

| Investment | 0-10 (best) | 21   |
| 4.05 Greenfield investments | US$ millions | 26   |
| 4.06 FDI inflows | US$ millions | 51   |
| 4.07 Domestic credit to private sector | % GDP | 5   |

| Infrastructure | 0-10 (best) | 3   |
| 4.08 Transport infrastructure | 0-100 (best) | 3   |

| 4.09 Electricity infrastructure | 0-100 (best) | 9   |

| Driver: Institutional Framework | 0-10 (best) | 17   |
| Government | 0-10 (best) | 17   |
| 5.01 Regulatory efficiency | 0 – 100 (best) | 9   |
| 5.02 Incidence of corruption | 0-100 (best) | 18   |
| 5.03 Future orientation of government | 1-7 (best) | 20   |
| 5.04 Rule of law | (2.5) – 2.0 (best) | 19   |

| Driver: Sustainable Resources | 0-10 (best) | 39   |
| Sustainability | 0-10 (best) | 39   |
| 6.01 Alternative and nuclear energy use | % total energy use | 82   |
| 6.02 CO2 intensity level | CO2 emissions in megatons/GDP (US$ billions) | 35   |
| 6.03 CH4 intensity level | CH4 emissions in megatons/GDP (US$ billions) | 1   |
| 6.04 N2O intensity level | N2O emissions in megatons/GDP (US$ billions) | 4   |
| 6.05 Baseline water stress | Annual withdrawals, % of annual available blue water | 64   |
| 6.06 Wastewater treatment | 0 – 5 (worst) | 32   |

| Driver: Demand Environment | 0-10 (best) | 3   |
| Foreign and Domestic Demand | 0-10 (best) | 4   |
| 7.01 Market size | 0-100 (best) | 4   |

| Consumer Base | 0-10 (best) | 2   |
| 7.02 Buyer sophistication | 1-7 (best) | 6   |
| 7.03 Extent of market dominance | 1-7 (best) | 2   |
Jordan

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>7.0</td>
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<tr>
<td>GDP US$ billions</td>
<td>38.7</td>
</tr>
<tr>
<td>GDP per capita US$</td>
<td>5,554.0</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>15.3</td>
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</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>5,038.8</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>14.2</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>2.0</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>27.4</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.5</td>
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Readiness Overall Assessment

Drivers of Production 4.9

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>63rd</td>
<td>3.9</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>41st</td>
<td>5.5</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>56th</td>
<td>5.1</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>45th</td>
<td>5.6</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>80th</td>
<td>4.8</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>70th</td>
<td>4.2</td>
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</table>

Structure of Production 4.0

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>76th</td>
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<tr>
<td>Scale</td>
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<td>56th</td>
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Archetype

Jordan 4.0, 4.9

Nascent

Legacy

Complexity

Scale
## Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
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<tr>
<td>1.01 Economic complexity</td>
<td>(2.5) – 2.5 (best)</td>
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<tr>
<td><strong>Structure: Scale</strong></td>
<td>0-10 (best)</td>
<td>56</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>% GDP</td>
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<td>1.03 Manufacturing value added</td>
<td>US$ millions</td>
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<td><strong>Driver: Technology &amp; Innovation</strong></td>
<td>0-10 (best)</td>
<td>63</td>
</tr>
<tr>
<td>Technology Platform</td>
<td>0-10 (best)</td>
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<tr>
<td>2.01 Mobile-cellular telephone subscriptions</td>
<td>/100 pop.</td>
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<tr>
<td>2.02 LTE mobile network coverage</td>
<td>% population</td>
<td>47</td>
</tr>
<tr>
<td>2.03 Internet users</td>
<td>% pop.</td>
<td>54</td>
</tr>
<tr>
<td>2.04 FDI and technology transfer</td>
<td>1-7 (best)</td>
<td>51</td>
</tr>
<tr>
<td>2.05 Firm-level technology absorption</td>
<td>1-7 (best)</td>
<td>39</td>
</tr>
<tr>
<td>2.06 Impact of ICTs on new services and products</td>
<td>1-7 (best)</td>
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</tr>
<tr>
<td>2.07 Cybersecurity commitment</td>
<td>0-1 (best)</td>
<td>87</td>
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<tr>
<td><strong>Ability to Innovate</strong></td>
<td>0-10 (best)</td>
<td>53</td>
</tr>
<tr>
<td>2.08 State of cluster development</td>
<td>1-7 (best)</td>
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</tr>
<tr>
<td>2.09 Company investment in emerging technology</td>
<td>1-7 (best)</td>
<td>40</td>
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<tr>
<td>2.10 Gov’t procurement of advanced technology products</td>
<td>1-7 (best)</td>
<td>40</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas</td>
<td>1-7 (best)</td>
<td>54</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration</td>
<td>1-7 (best)</td>
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<tr>
<td>2.13 R&amp;D expenditures</td>
<td>% GDP</td>
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<tr>
<td>2.14 Scientific and technical publications</td>
<td>Number per Billion PPP$ GDP</td>
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<tr>
<td>2.15 Patent applications</td>
<td>applications/million pop.</td>
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<tr>
<td>2.16 Venture capital deal volume</td>
<td>US$ millions</td>
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<td>2.17 Venture capital deal volume per size of economy</td>
<td>US$/GDP</td>
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<tr>
<td><strong>Driver: Human Capital</strong></td>
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<tr>
<td>Current Labor Force</td>
<td>0-10 (best)</td>
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<tr>
<td>3.01 Manufacturing employment</td>
<td>% working population</td>
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<tr>
<td>3.02 Knowledge-intensive employment</td>
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<td>3.03 Female participation in labor force</td>
<td>ratio</td>
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<td>3.04 Mean years of schooling</td>
<td>Years</td>
<td>47</td>
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<tr>
<td>3.05 Availability of scientists and engineers</td>
<td>1-7 (best)</td>
<td>13</td>
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<tr>
<td>3.06 Digital skills among population</td>
<td>1-7 (best)</td>
<td>33</td>
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<tr>
<td>Future Labor Force</td>
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<td>23</td>
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<tr>
<td>3.07 Migration</td>
<td>migrants/100,000 pop.</td>
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<tr>
<td>3.08 Country capacity to attract and retain talent</td>
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<tr>
<td>3.09 Quality of universities</td>
<td>Count</td>
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<tr>
<td>3.10 Quality of math and science education</td>
<td>1-7 (best)</td>
<td>52</td>
</tr>
<tr>
<td>3.11 Quality of vocational training</td>
<td>1-7 (best)</td>
<td>44</td>
</tr>
<tr>
<td>3.12 School life expectancy</td>
<td>Years</td>
<td>76</td>
</tr>
<tr>
<td>3.13 Pupil-to-teacher ratio in primary education</td>
<td>Ratio</td>
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<tr>
<td>3.14 Critical thinking in teaching</td>
<td>1-7 (best)</td>
<td>36</td>
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<tr>
<td>3.15 Active labor policies</td>
<td>1-7 (best)</td>
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<tr>
<td>3.16 On-the-job training</td>
<td>1-7 (best)</td>
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<tr>
<td>3.17 Hiring and firing practices</td>
<td>1-7 (best)</td>
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## Country Profiles

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
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<td>56</td>
</tr>
<tr>
<td>Trade</td>
<td>0-10 (best)</td>
<td>46</td>
</tr>
<tr>
<td>4.01 Trade</td>
<td>% GDP</td>
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<tr>
<td>4.02 Trade tariffs</td>
<td>% duty</td>
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<tr>
<td>4.03 Prevalence of non-tariff barriers</td>
<td>1-7 (best)</td>
<td>86</td>
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<tr>
<td>4.04 Logistics performance</td>
<td>1 – 5 (best)</td>
<td>62</td>
</tr>
<tr>
<td>Investment</td>
<td>0-10 (best)</td>
<td>49</td>
</tr>
<tr>
<td>4.05 Greenfield investments</td>
<td>US$ millions</td>
<td>42</td>
</tr>
<tr>
<td>4.06 FDI inflows</td>
<td>US$ millions</td>
<td>66</td>
</tr>
<tr>
<td>4.07 Domestic credit to private sector</td>
<td>% GDP</td>
<td>38</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>0-10 (best)</td>
<td>61</td>
</tr>
<tr>
<td>4.08 Transport infrastructure</td>
<td>0-100 (best)</td>
<td>67</td>
</tr>
<tr>
<td>4.09 Electricity infrastructure</td>
<td>0-100 (best)</td>
<td>50</td>
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<tr>
<td><strong>Driver: Institutional Framework</strong></td>
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<tr>
<td>Government</td>
<td>0-10 (best)</td>
<td>45</td>
</tr>
<tr>
<td>5.01 Regulatory efficiency</td>
<td>0 – 100 (best)</td>
<td>54</td>
</tr>
<tr>
<td>5.02 Incidence of corruption</td>
<td>0-100 (best)</td>
<td>42</td>
</tr>
<tr>
<td>5.03 Future orientation of government</td>
<td>1-7 (best)</td>
<td>42</td>
</tr>
<tr>
<td>5.04 Rule of law</td>
<td>(2.5) – 2.0 (best)</td>
<td>46</td>
</tr>
<tr>
<td><strong>Driver: Sustainable Resources</strong></td>
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<tr>
<td>Sustainability</td>
<td>0-10 (best)</td>
<td>80</td>
</tr>
<tr>
<td>6.01 Alternative and nuclear energy use</td>
<td>% total energy use</td>
<td>89</td>
</tr>
<tr>
<td>6.02 CO2 intensity level</td>
<td>CO2 emissions in megatons/GDP (US$ billions)</td>
<td>84</td>
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<tr>
<td>6.03 CH4 intensity level</td>
<td>CH4 emissions in megatons/GDP (US$ billions)</td>
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<tr>
<td>6.04 N2O intensity level</td>
<td>N2O emissions in megatons/GDP (US$ billions)</td>
<td>30</td>
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<tr>
<td>6.05 Baseline water stress</td>
<td>Annual withdrawals, % of annual available blue water</td>
<td>88</td>
</tr>
<tr>
<td>6.06 Wastewater treatment</td>
<td>0 – 5 (worst)</td>
<td>53</td>
</tr>
<tr>
<td><strong>Driver: Demand Environment</strong></td>
<td>0-10 (best)</td>
<td>70</td>
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<tr>
<td>Foreign and Domestic Demand</td>
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<td>75</td>
</tr>
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<td>7.01 Market size</td>
<td>0-100 (best)</td>
<td>75</td>
</tr>
<tr>
<td>Consumer Base</td>
<td>0-10 (best)</td>
<td>46</td>
</tr>
<tr>
<td>7.02 Buyer sophistication</td>
<td>1-7 (best)</td>
<td>56</td>
</tr>
<tr>
<td>7.03 Extent of market dominance</td>
<td>1-7 (best)</td>
<td>39</td>
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</table>
Kazakhstan

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (millions)</td>
<td>17.9</td>
</tr>
<tr>
<td>GDP (US$ billions)</td>
<td>133.8</td>
</tr>
<tr>
<td>GDP per capita (US$)</td>
<td>7,452.8</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>5.0</td>
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</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010) (US$)</td>
<td>18,294.3</td>
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<tr>
<td>Manufacturing value added in economy</td>
<td>9.9</td>
</tr>
<tr>
<td>Manufacturing employment (%)</td>
<td>6.4</td>
</tr>
<tr>
<td>Manufacturing value added growth (%)</td>
<td>-3.2</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (%)</td>
<td>16.6</td>
</tr>
<tr>
<td>CO2 emission per unit of value added</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Readiness Overall Assessment

Drivers of Production 4.7

<table>
<thead>
<tr>
<th>Driver</th>
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<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>58th</td>
<td>4.1</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>43rd</td>
<td>5.4</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>63rd</td>
<td>4.9</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>68th</td>
<td>4.6</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>91st</td>
<td>4.4</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>49th</td>
<td>4.9</td>
</tr>
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</table>

Structure of Production 4.2

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>63rd</td>
<td>4.6</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>64th</td>
<td>3.5</td>
</tr>
</tbody>
</table>
# Kazakhstan

## Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
<td>63</td>
<td>4.6</td>
</tr>
<tr>
<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
<td>63</td>
<td>-0.2</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong> 0-10 (best)</td>
<td>64</td>
<td>3.5</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>77</td>
<td>9.9</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>50</td>
<td>18,294.3</td>
</tr>
</tbody>
</table>

**Driver: Technology & Innovation** 0-10 (best) 58 4.1

Technology Platform 0-10 (best) | 68 | 5.4 |
| 2.01 Mobile-cellular telephone subscriptions /100 pop. | 14 | 150.0 |
| 2.02 LTE mobile network coverage % population | 65 | 69.0 |
| 2.03 Internet users % pop. | 32 | 76.8 |
| 2.04 FDI and technology transfer 1-7 (best) | 77 | 4.0 |
| 2.05 Firm-level technology absorption 1-7 (best) | 68 | 4.3 |
| 2.06 Impact of ICTs on new services and products 1-7 (best) | 78 | 4.2 |
| 2.07 Cybersecurity commitment 0-1 (best) | 76 | 0.4 |

**Ability to Innovate** 0-10 (best) 39 2.7

2.08 State of cluster development 1-7 (best) | 95 | 3.0 |
| 2.09 Company investment in emerging technology 1-7 (best) | 70 | 3.3 |
| 2.10 Gov’t procurement of advanced technology products 1-7 (best) | 55 | 3.3 |
| 2.11 Companies embracing disruptive ideas 1-7 (best) | 58 | 3.4 |
| 2.12 Multi-stakeholder collaboration 1-7 (best) | 54 | 3.6 |
| 2.13 R&D expenditures % GDP | 4 | 3.3 |
| 2.14 Scientific and technical publications Number per Billion PPP$ GDP | 91 | 1.8 |
| 2.15 Patent applications applications/million pop. | 66 | 0.36 |
| 2.16 Venture capital deal volume US$ millions | 52 | 2,426.9 |
| 2.17 Venture capital deal volume per size of economy US$GDP | 50 | 13.5 |

**Driver: Human Capital** 0-10 (best) 43 5.4

Current Labor Force 0-10 (best) | 41 | 6.8 |
| 3.01 Manufacturing employment % working population | 89 | 6.4 |
| 3.02 Knowledge-intensive employment % working pop. | 35 | 33.3 |
| 3.03 Female participation in labor force ratio | 12 | 0.98 |
| 3.04 Mean years of schooling Years | 29 | 11.7 |
| 3.05 Availability of scientists and engineers 1-7 (best) | 58 | 3.9 |
| 3.06 Digital skills among population 1-7 (best) | 38 | 4.6 |

Future Labor Force 0-10 (best) | 50 | 4.0 |
| 3.07 Migration migrants/100,000 pop. | 46 | 0.0 |
| 3.08 Country capacity to attract and retain talent 1-7 (best) | 54 | 3.4 |
| 3.09 Quality of universities Count | 28 | 8.0 |
| 3.10 Quality of math and science education 1-7 (best) | 54 | 4.2 |
| 3.11 Quality of vocational training 1-7 (best) | 82 | 3.6 |
| 3.12 School life expectancy Years | 47 | 15.0 |
| 3.13 Pupil-to-teacher ratio in primary education Ratio | 39 | 16.2 |
| 3.14 Critical thinking in teaching 1-7 (best) | 38 | 3.6 |
| 3.15 Active labor policies 1-7 (best) | 37 | 3.9 |
| 3.16 On-the-job training 1-7 (best) | 53 | 4.2 |
| 3.17 Hiring and firing practices 1-7 (best) | 34 | 4.2 |

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong> 0-10 (best)</td>
<td>63</td>
<td>4.9</td>
</tr>
<tr>
<td>Trade 0-10 (best)</td>
<td>72</td>
<td>5.4</td>
</tr>
<tr>
<td>4.01 Trade % GDP</td>
<td>64</td>
<td>61.8</td>
</tr>
<tr>
<td>4.02 Trade tariffs % duty</td>
<td>59</td>
<td>0.05</td>
</tr>
<tr>
<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
<td>54</td>
<td>4.4</td>
</tr>
<tr>
<td>4.04 Logistics performance 1 – 5 (best)</td>
<td>73</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Investment 0-10 (best) | 43 | 2.7 |

4.05 Greenfield investments US$ millions | 17 | 10,429.7 |
| 4.06 FDI inflows US$ millions | 33 | 9,030.8 |
| 4.07 Domestic credit to private sector % GDP | 80 | 33.4 |

Infrastructure 0-10 (best) | 52 | 6.5 |
| 4.08 Transport infrastructure 0-100 (best) | 72 | 38.4 |
| 4.09 Electricity infrastructure 0-100 (best) | 31 | 91.5 |

**Driver: Institutional Framework** 0-10 (best) 68 4.6

Government 0-10 (best) | 68 | 4.6 |
| 5.01 Regulatory efficiency 0 – 100 (best) | 20 | 77.0 |
| 5.02 Incidence of corruption 0-100 (best) | 89 | 29.0 |
| 5.03 Future orientation of government 1-7 (best) | 32 | 4.0 |
| 5.04 Rule of law (2.5) - 2.0 (best) | 80 | -0.4 |

**Driver: Sustainable Resources** 0-10 (best) 91 4.4

Sustainability 0-10 (best) | 91 | 4.4 |
| 6.01 Alternative and nuclear energy use % total energy use | 92 | 0.0 |
| 6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 91 | 1.0 |
| 6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 68 | 0.2 |
| 6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 47 | 0.0 |
| 6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 83 | 4.0 |
| 6.06 Wastewater treatment 0 – 5 (worst) | 55 | 74.8 |

**Driver: Demand Environment** 0-10 (best) 49 4.9

Foreign and Domestic Demand 0-10 (best) | 43 | 5.5 |
| 7.01 Market size 0-100 (best) | 43 | 55.2 |
| Consumer Base 0-10 (best) | 59 | 4.2 |
| 7.02 Buyer sophistication 1-7 (best) | 45 | 3.6 |
| 7.03 Extent of market dominance 1-7 (best) | 74 | 3.5 |
Kenya

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
<td>68.9</td>
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<tr>
<td>GDP per capita US$</td>
<td>1,516.3</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>13.1</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.6</td>
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Readiness Overall Assessment

Drivers of Production 3.8

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>65th</td>
<td>3.9</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>88th</td>
<td>3.7</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>96th</td>
<td>2.5</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>80th</td>
<td>4.2</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>42nd</td>
<td>6.5</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>68th</td>
<td>4.2</td>
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</tbody>
</table>

Structure of Production 3.0

<table>
<thead>
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<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>Scale</td>
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<td>76th</td>
<td>2.9</td>
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</table>

Archetype

Kenya 3.0, 3.8
Kenya

Readiness for the Future of Production Assessment 2018 edition

**Index Component** | **Rank /100** | **Value**
--- | --- | ---
**Structure: Complexity | 0-10 (best) | **
1.01 Economic complexity | 0-10 (best) | **
1.02 Manufacturing value added in economy | 0-10 (best) | **
1.03 Manufacturing value added | 0-10 (best) | **
Driver: Technology & Innovation | 0-10 (best) | **
Technology Platform | 0-10 (best) | **
2.01 Mobile-cellular telephone subscriptions | 0-100 pop. | **
2.02 LTE mobile network coverage | % population | **
2.03 Internet users | % pop. | **
2.04 FDI and technology transfer | 1-7 (best) | **
2.05 Firm-level technology absorption | 1-7 (best) | **
2.06 Impact of ICTs on new services and products | 1-7 (best) | **
2.07 Cybersecurity commitment | 0-1 (best) | **
Ability to Innovate | 0-10 (best) | **
2.08 State of cluster development | 1-7 (best) | **
2.09 Company investment in emerging technology | 1-7 (best) | **
2.10 Govt procurement of advanced technology products | 1-7 (best) | **
2.11 Companies embracing disruptive ideas | 1-7 (best) | **
2.12 Multi-stakeholder collaboration | 1-7 (best) | **
2.13 R&D expenditures | % GDP | **
2.14 Scientific and technical publications | Number per Billion PPP$ GDP | **
2.15 Patent applications | applications/million pop. | **
2.16 Venture capital deal volume | US$ millions | **
2.17 Venture capital deal volume per size of economy US$/GDP | **
Driver: Human Capital | 0-10 (best) | **
Current Labor Force | 0-10 (best) | **
3.01 Manufacturing employment | % working population | **
3.02 Knowledge-intensive employment | % working pop. | **
3.03 Female participation in labor force | ratio | **
3.04 Mean years of schooling | Years | **
3.05 Availability of scientists and engineers | 1-7 (best) | **
3.06 Digital skills among population | 1-7 (best) | **
Future Labor Force | 0-10 (best) | **
3.07 Migration | migrants/100,000 pop. | **
3.08 Country capacity to attract and retain talent | 1-7 (best) | **
3.09 Quality of universities | Count | **
3.10 Quality of math and science education | 1-7 (best) | **
3.11 Quality of vocational training | 1-7 (best) | **
3.12 School life expectancy | Years | **
3.13 Pupil-to-teacher ratio in primary education | Ratio | **
3.14 Critical thinking in teaching | 1-7 (best) | **
3.15 Active labor policies | 1-7 (best) | **
3.16 On-the-job training | 1-7 (best) | **
3.17 Hiring and firing practices | 1-7 (best) | **

**Index Component** | **Rank /100** | **Value**
--- | --- | ---
**Driver: Global Trade & Investment | 0-10 (best) | **
Trade | 0-10 (best) | **
4.01 Trade | % GDP | **
4.02 Trade tariffs | % duty | **
4.03 Prevalence of non-tariff barriers | 1-7 (best) | **
4.04 Logistics performance | 1 – 5 (best) | **
Investment | 0-10 (best) | **
4.05 Greenfield investments | US$ millions | **
4.06 FDI inflows | US$ millions | **
4.07 Domestic credit to private sector | % GDP | **
Infrastructure | 0-10 (best) | **
4.08 Transport infrastructure | 0-100 (best) | **
4.09 Electricity infrastructure | 0-100 (best) | **
Driver: Institutional Framework | 0-10 (best) | **
Government | 0-10 (best) | **
5.01 Regulatory efficiency | 0 – 100 (best) | **
5.02 Incidence of corruption | 0-100 (best) | **
5.03 Future orientation of government | 1-7 (best) | **
5.04 Rule of law | (2.5) - 2.0 (best) | **
Driver: Sustainable Resources | 0-10 (best) | **
Sustainability | 0-10 (best) | **
6.01 Alternative and nuclear energy use | % total energy use | **
6.02 CO2 intensity level | CO2 emissions in megatons/GDP (US$ billions) | **
6.03 CH4 intensity level | CH4 emissions in megatons/GDP (US$ billions) | **
6.04 N2O intensity level | N2O emissions in megatons/GDP (US$ billions) | **
6.05 Baseline water stress | Annual withdrawals, % of annual available blue water | **
6.06 Wastewater treatment | 0 – 5 (worst) | **
Driver: Demand Environment | 0-10 (best) | **
Foreign and Domestic Demand | 0-10 (best) | **
7.01 Market size | 0-100 (best) | **
Consumer Base | 0-10 (best) | **
7.02 Buyer sophistication | 1-7 (best) | **
7.03 Extent of market dominance | 1-7 (best) | **
Korea, Rep.

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>51.2</td>
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<tr>
<td>GDP US$ billions</td>
<td>1,411.2</td>
</tr>
<tr>
<td>GDP per capita US$</td>
<td>27,538.8</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>3.7</td>
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</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>381,649.6</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>29.5</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>17.1</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>3.4</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>63.7</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Readiness Overall Assessment

Drivers of Production  6.5

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>17th</td>
<td>6.6</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>30th</td>
<td>5.9</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>17th</td>
<td>6.8</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
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<td>6.9</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>46th</td>
<td>6.5</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>13th</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Structure of Production  8.9

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>4th</td>
<td>9.0</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>2nd</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Archetype

Complexity 

Korea, Rep. 8.9, 6.5

Leading
## Korea, Rep.

### Readiness for the Future of Production Assessment 2018 edition

#### Index Component | Rank /100 | Value
--- | --- | ---
**Structure: Complexity** | 0-10 (best) | 4 | 9.0
**Economic complexity** | (2.5) – 2.5 (best) | 4 | 1.8
**Structure: Scale** | 0-10 (best) | 2 | 8.7
**Manufacturing value added in economy** | % GDP | 2 | 29.5
**Manufacturing value added** | US$ millions | 6 | 381,649.6
**Technology Platform** | 0-10 (best) | 17 | 6.6
**Future Labor Force** | 33 | 4.9
**Current Labor Force** | 37 | 6.9
**Technology Platform** | 13 | 8.0
**Driver: Technology & Innovation** | 0-10 (best) | 14 | 17.3
**Hiring and firing practices** | 3.15 | 3.14
**Pupil-to-teacher ratio in primary education** | 42 | 16.5
**Quality of vocational training** | 1-7 (best) | 41 | 4.3
**School life expectancy** | Years | 19 | 16.5
**Pupil-to-teacher ratio in primary education** | Ratio | 42 | 16.5
**Critical thinking in teaching** | 1-7 (best) | 80 | 3.0
**Active labor policies** | 1-7 (best) | 32 | 4.0
**On-the-job training** | 1-7 (best) | 37 | 4.5
**Hiring and firing practices** | 1-7 (best) | 61 | 3.5

### Leading Country Profiles

#### Index Component | Rank /100 | Value
--- | --- | ---
**Driver: Global Trade & Investment** | 0-10 (best) | 17 | 6.8
**Trade** | 0-10 (best) | 49 | 6.5
**Trade tariffs** | % GDP | 53 | 77.7
**Prevalence of non-tariff barriers** | 1-7 (best) | 69 | 4.2
**Logistics performance** | 1 – 5 (best) | 23 | 3.7
**Investment** | 0-10 (best) | 16 | 5.4
**Greenfield investments** | US$ millions | 21 | 9,541.8
**FDI inflows** | US$ millions | 32 | 9,480.9
**Transport infrastructure** | 0-100 (best) | 13 | 72.1
**Electricity infrastructure** | 0-100 (best) | 4 | 99.2
**Regulatory efficiency** | 0 – 100 (best) | 19 | 77.2
**Incidence of corruption** | 0 – 100 (best) | 38 | 53.0
**Future orientation of government** | 1-7 (best) | 47 | 3.8
**Rule of law** | (2.5) - 2.0 (best) | 21 | 1.1
**Sustainable Resources** | 0-10 (best) | 46 | 6.5
**Sustainability** | 0-10 (best) | 46 | 6.5
**Alternative and nuclear energy use** | % total energy use | 59 | 0.2
**CO2 intensity level** | CO2 emissions in megatons/GDP (US$ billions) | 61 | 0.4
**CH4 intensity level** | CH4 emissions in megatons/GDP (US$ billions) | 14 | 0.0
**N2O intensity level** | N2O emissions in megatons/GDP (US$ billions) | 21 | 0.0
**Baseline water stress** | Annual withdrawals, % of annual available blue water | 80 | 3.5
**Wastewater treatment** | % of annual available blue water | 18 | 93.2
**Market environment** | 0-100 (best) | 13 | 73.3
**Consumer Base** | 0-10 (best) | 23 | 5.5
**Buyer sophistication** | 1-7 (best) | 7 | 5.2
**Extent of market dominance** | 1-7 (best) | 81 | 3.3

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Kuwait

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
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<td>4.2</td>
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<tr>
<td>GDP US$ billions</td>
<td>109.9</td>
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<tr>
<td>GDP per capita US$</td>
<td>26,004.7</td>
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<tr>
<td>Unemployment rate %</td>
<td>2.1</td>
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Key production indicators

<table>
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<tr>
<th>Indicator</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010</td>
<td>80th</td>
<td>3.4</td>
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<td>Manufacturing value added in economy</td>
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<td>Manufacturing employment % working population</td>
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Drivers of Production

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<tr>
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<tr>
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Structure of Production

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Readiness Overall Assessment

Archetype

Kuwait - 3.6, 4.6
### Country Profiles

**Kuwait**

#### Readiness for the Future of Production Assessment 2018 edition

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<td>CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>7.03 Extent of market dominance</td>
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</table>
Kyrgyz Republic

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

Population millions 6.1
GDP US$ billions 6.6
GDP per capita US$ 1,072.7
Unemployment rate % 7.5

Key production indicators

Manufacturing value added 2010 millions US$ 887.1
Manufacturing value added in economy % GDP 14.4
Manufacturing employment % working population 7.4
Manufacturing value added growth Annual % -0.2
Medium hi-tech & hi-tech industries % of manu. value added 4.1
CO2 emission per unit of value added kg/USD 1.7

Readiness Overall Assessment

Drivers of Production 3.4

Driver Weighting Rank Score /10
Technology & Innovation 20% 100th 2.6
Human Capital 20% 79th 4.2
Global Trade & Investment 20% 81st 3.9
Institutional Framework 20% 93rd 3.4
Sustainable Resources 5% 98th 2.9
Demand Environment 15% 93rd 3.2

Structure of Production 3.7

Structure Weighting Rank Score /10
Complexity 60% 65th 4.5
Scale 40% 81st 2.5

Archetype

High-Potential
Leading

Kyrgyz Republic
3.7, 3.4

Nascent

Legacy
## Kyrgyz Republic

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<tr>
<td>6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
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<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
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<tr>
<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
<td>71</td>
<td>58.1</td>
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<tr>
<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
<td>93</td>
<td>3.2</td>
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<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
<td>99</td>
<td>2.3</td>
</tr>
<tr>
<td>7.01 Market size 0-100 (best)</td>
<td>99</td>
<td>22.9</td>
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<tr>
<td>Consumer Base 0-10 (best)</td>
<td>60</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
<td>44</td>
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<tr>
<td>7.03 Extent of market dominance 1-7 (best)</td>
<td>75</td>
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### Key economic indicators

<table>
<thead>
<tr>
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<tr>
<td>Population (millions)</td>
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<td>GDP (US$ billions)</td>
<td>27.7</td>
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<tr>
<td>GDP per capita (US$)</td>
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<tr>
<td>Unemployment rate (%)</td>
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### Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added (2010 millions US$)</td>
<td>3,015.4</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>10.3</td>
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<tr>
<td>Manufacturing employment (% working population)</td>
<td>13.0</td>
</tr>
<tr>
<td>Manufacturing employment growth (Annual %)</td>
<td>-0.6</td>
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<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>-0.6</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>21.5</td>
</tr>
<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
<td>0.3</td>
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### Readiness Overall Assessment

**Drivers of Production**

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>42nd</td>
<td>4.5</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>37th</td>
<td>5.6</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>39th</td>
<td>5.6</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>33rd</td>
<td>6.4</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>7th</td>
<td>8.4</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>89th</td>
<td>3.4</td>
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**Structure of Production**

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>35th</td>
<td>6.5</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>79th</td>
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</tbody>
</table>

### Archetype

- **High-Potential**: Latvia 4.9, 5.4
- **Nascent**: Latvia
- **Legacy**: Latvia

#### Latvia Key economic indicators

- **Population**: 2.0 millions
- **GDP**: 27.7 billions
- **GDP per capita**: 14,060.4 US$
- **Unemployment rate**: 9.6%

#### Latvia Key production indicators

- **Manufacturing value added**: 3,015.4 US$
- **Manufacturing value added in economy**: 10.3%
- **Manufacturing employment**: 13.0%
- **Manufacturing employment growth**: -0.6%
- **Medium hi-tech & hi-tech industries**: 21.5%
- **CO2 emission per unit of value added**: 0.3 kg/USD
**Latvia**

**Readiness for the Future of Production Assessment 2018 edition**

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tr>
<td>Structure: Scale (0-10 (best))</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>71</td>
<td>10.3</td>
</tr>
<tr>
<td>Manufacturing value added US$ millions</td>
<td>81</td>
<td>3,015.4</td>
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<td>Technology Platform (0-10 (best))</td>
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<td>Mobile-cellular telephone subscriptions /100 pop.</td>
<td>35</td>
<td>131.2</td>
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<td>LTE mobile network coverage % population</td>
<td>11</td>
<td>99.0</td>
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<td>Internet users % pop.</td>
<td>26</td>
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<td>FDI and technology transfer 1-7 (best)</td>
<td>65</td>
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<td>4.4</td>
</tr>
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<td>Cybersecurity commitment 0-1 (best)</td>
<td>24</td>
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<tr>
<td>Ability to Innovate 0-10 (best)</td>
<td>58</td>
<td>2.1</td>
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<td>GoVt procurement of advanced technology products 1-7 (best)</td>
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<td>R&amp;D expenditures % GDP</td>
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<td>Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>Patent applications applications/million pop.</td>
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<td>Venture capital deal volume US$ millions</td>
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<td>Venture capital deal volume per size of economy US$/GDP</td>
<td>49</td>
<td>18.3</td>
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<tr>
<td>Current Labor Force 0-10 (best)</td>
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<tr>
<td>Manufacturing employment % working population</td>
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<td>Knowledge-intensive employment % working pop.</td>
<td>20</td>
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<td>Female participation in labor force ratio</td>
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<td>Mean years of schooling Years</td>
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<tr>
<td>Availability of scientists and engineers 1-7 (best)</td>
<td>92</td>
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<td>Digital skills among population 1-7 (best)</td>
<td>48</td>
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<td>Future Labor Force 0-10 (best)</td>
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<td>Migration migrants/100,000 pop.</td>
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<td>Quality of math and science education 1-7 (best)</td>
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<td>Quality of vocational training 1-7 (best)</td>
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<td>Pupil-to-teacher ratio in primary education Ratio</td>
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<td>Critical thinking in teaching 1-7 (best)</td>
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<td>Active labor policies 1-7 (best)</td>
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<td>On-the-job training 1-7 (best)</td>
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<td>Hiring and firing practices 1-7 (best)</td>
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<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td>Driver: Global Trade &amp; Investment 0-10 (best)</td>
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<td>Trade 0-10 (best)</td>
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<td>Trade % GDP</td>
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<td>Logistics performance 1-5 (best)</td>
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<td>Investment 0-10 (best)</td>
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<td>Greenfield investments US$ millions</td>
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<td>Infrastructure 0-10 (best)</td>
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<td>Electricity infrastructure 0-100 (best)</td>
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<td>Driver: Institutional Framework 0-10 (best)</td>
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<td>Regulatory efficiency 0-100 (best)</td>
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<td>Incidence of corruption 0-100 (best)</td>
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<td>Rule of law (2.5) - 2.0 (best)</td>
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<td>Alternative and nuclear energy use % total energy use</td>
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<td>CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>Driver: Demand Environment 0-10 (best)</td>
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<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>Market size 0-100 (best)</td>
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<td>Consumer Base 0-10 (best)</td>
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<td>Buyer sophistication 1-7 (best)</td>
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<tr>
<td>Extent of market dominance 1-7 (best)</td>
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Lebanon

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<th>Indicator</th>
<th>Value</th>
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<tbody>
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<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
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<td>GDP per capita US$</td>
<td>11,308.9</td>
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Key production indicators

<table>
<thead>
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<tr>
<td>Manufacturing value added 2010 millions US$</td>
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<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Drivers of Production 4.4

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<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>84th</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>39th</td>
<td>5.6</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>48th</td>
<td>5.5</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>96th</td>
<td>3.3</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>71st</td>
<td>5.4</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>65th</td>
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Structure of Production 4.0

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<tr>
<td>Complexity</td>
<td>60%</td>
<td>60th</td>
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<tr>
<td>Scale</td>
<td>40%</td>
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### Lebanon

**Readiness for the Future of Production Assessment 2018 edition**

#### Index Component

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank (1/100)</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
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<tr>
<td>Economic complexity (2.5) – 2.5 (best)</td>
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<tr>
<td><strong>Structure: Scale</strong> 0-10 (best)</td>
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<td>2.6</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
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<td>Impact of ICTs on new services and products 1-7 (best)</td>
<td>97</td>
<td>3.7</td>
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<tr>
<td>Cybersecurity commitment 0-1 (best)</td>
<td>94</td>
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<tr>
<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
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<td>2.0</td>
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<td>State of cluster development 1-7 (best)</td>
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<td>3.9</td>
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<td>Multi-stakeholder collaboration 1-7 (best)</td>
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<td>R&amp;D expenditures % GDP</td>
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<td>Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>Venture capital deal volume per size of economy US$/GDP</td>
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<td>5.2</td>
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<tr>
<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
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<td>0.44</td>
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<td>8.6</td>
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<td>Availability of scientists and engineers 1-7 (best)</td>
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<td>Digital skills among population 1-7 (best)</td>
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<td>Migration migrants/100,000 pop.</td>
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<td>Critical thinking in teaching 1-7 (best)</td>
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<td>Active labor policies 1-7 (best)</td>
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<td>Hiring and firing practices 1-7 (best)</td>
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### Index Component

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<td><strong>Driver: Global Trade &amp; Investment</strong> 0-10 (best)</td>
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<td>Rule of law (2.5) - 2.0 (best)</td>
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<td>Sustainability 0-10 (best)</td>
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<td>CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>Wastewater treatment Annual withdrawals, % of annual available blue water</td>
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<td>Water withdrawal, % total water</td>
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<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>Market size 0-100 (best)</td>
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<td>Consumer Base 0-10 (best)</td>
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<td>Buyer sophistication 1-7 (best)</td>
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<td>Extent of market dominance 1-7 (best)</td>
<td>53</td>
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Lithuania

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<th>Value</th>
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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Manufacturing value added 2010 millions US$</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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<td></td>
<td></td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>15.2</td>
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<td>Manufacturing value added growth Annual %</td>
<td>3.5</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<td>CO2 emission per unit of value added kg/USD</td>
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</table>

Drivers of Production 5.4

- **Technology & Innovation**: 20% 38th 4.7
- **Human Capital**: 20% 33rd 5.9
- **Global Trade & Investment**: 20% 62nd 5.0
- **Institutional Framework**: 20% 28th 6.7
- **Sustainable Resources**: 5% 21st 7.4
- **Demand Environment**: 15% 73rd 4.0

Structure of Production 5.9

- **Complexity**: 60% 29th 6.8
- **Scale**: 40% 41st 4.5

Archetype

Lithuania 5.9, 5.4

(Lithuania is placed within the High-Potential category in the Drivers of Production quadrant and in the Complexity-Scale quadrant in the Structure of Production quadrant.)
## Lithuania

### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
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<tr>
<td><strong>Structure: Complexity</strong></td>
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<td><strong>Economic complexity</strong></td>
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<td><strong>Structure: Scale</strong></td>
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<tr>
<td><strong>Manufacturing value added in economy</strong></td>
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<tr>
<td><strong>Manufacturing value added US$ millions</strong></td>
<td>63</td>
<td>8,352.9</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<td><strong>Technology Platform</strong></td>
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<td><strong>Mobile-cellular telephone subscriptions /100 pop.</strong></td>
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<td><strong>Internet users % pop.</strong></td>
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<td><strong>FDI and technology transfer 1-7 (best)</strong></td>
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<td><strong>Firm-level technology absorption 1-7 (best)</strong></td>
<td>20</td>
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<tr>
<td><strong>Impact of ICTs on new services and products 1-7 (best)</strong></td>
<td>31</td>
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<tr>
<td><strong>Cybersecurity commitment 0-1 (best)</strong></td>
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<td><strong>Ability to Innovate 0-10 (best)</strong></td>
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<td><strong>State of cluster development 1-7 (best)</strong></td>
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<td><strong>Company investment in emerging technology 1-7 (best)</strong></td>
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<tr>
<td><strong>Gov't procurement of advanced technology products 1-7 (best)</strong></td>
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<tr>
<td><strong>Companies embracing disruptive ideas 1-7 (best)</strong></td>
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<td><strong>Multi-stakeholder collaboration 1-7 (best)</strong></td>
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<td><strong>R&amp;D expenditures % GDP</strong></td>
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<td><strong>Scientific and technical publications Number per Billion PPP$ GDP</strong></td>
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<td><strong>Patent applications applications/million pop.</strong></td>
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<td><strong>Driver: Human Capital</strong></td>
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<td><strong>Current Labor Force 0-10 (best)</strong></td>
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<td><strong>Manufacturing employment % working population</strong></td>
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<td><strong>Knowledge-intensive employment % working pop.</strong></td>
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<td><strong>Female participation in labor force ratio</strong></td>
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<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
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<td><strong>Trade 0-10 (best)</strong></td>
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<td><strong>Driver: Sustainable Resources</strong></td>
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<td><strong>Extent of market dominance 1-7 (best)</strong></td>
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Malaysia

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<th>Indicator</th>
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<td>Population millions</td>
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<td>GDP US$ billions</td>
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<td>GDP per capita US$</td>
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<td>Unemployment rate %</td>
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Key production indicators

<table>
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<tr>
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<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 6.5

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<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
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<td>23rd</td>
<td>5.9</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>21st</td>
<td>6.5</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>7th</td>
<td>7.4</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>30th</td>
<td>6.6</td>
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Structure of Production 6.8

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Malaysia

Readiness for the Future of Production Assessment 2018 edition

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<td>LTE mobile network coverage % population</td>
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<td>State of cluster development 1-7 (best)</td>
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<td>Company investment in emerging technology 1-7 (best)</td>
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<td>Gov't procurement of advanced technology products 1-7 (best)</td>
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<td>Companies embracing disruptive ideas 1-7 (best)</td>
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<td>Multi-stakeholder collaboration 1-7 (best)</td>
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<td>Regulatory efficiency 0 – 100 (best)</td>
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<td>Future orientation of government 1-7 (best)</td>
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<td>Rule of law (2.5) - 2.0 (best)</td>
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<td>Sustainability 0-10 (best)</td>
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<td>Alternative and nuclear energy use % total energy use</td>
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<td>CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
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<td>0.0</td>
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<td>Baseline water stress Annual withdrawals, % of annual available blue water</td>
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<td>2.1</td>
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<td>Waste water treatment 0 – 5 (worst)</td>
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<td>Driver: Demand Environment 0-10 (best)</td>
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<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>Market size 0-100 (best)</td>
<td>21</td>
<td>66.3</td>
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<tr>
<td>Consumer Base 0-10 (best)</td>
<td>13</td>
<td>6.0</td>
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<tr>
<td>Buyer sophistication 1-7 (best)</td>
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<td>4.4</td>
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<tr>
<td>Extent of market dominance 1-7 (best)</td>
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</table>
Mauritius

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
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<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
<td>12.0</td>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
<td>7.2</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>1,678.9</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>14.1</td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>14.2</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>2.1</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>8.9</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

**Drivers of Production** 5.4

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<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>30th</td>
<td>5.1</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>49th</td>
<td>5.2</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>33rd</td>
<td>6.0</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>32nd</td>
<td>6.5</td>
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<tr>
<td>Sustainable Resources</td>
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<td>54th</td>
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<tr>
<td>Demand Environment</td>
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<td>87th</td>
<td>3.5</td>
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**Structure of Production** 3.8

<table>
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<tr>
<th>Structure</th>
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<td>Scale</td>
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Archetype

Mauritius 3.8, 5.4
Mauritius

Index Component | Rank /100 | Value
--- | --- | ---
Structure: Complexity 0-10 (best) | 66 | 4.5
1.01 Economic complexity (2.5) – 2.5 (best) | 66 | -0.2
Structure: Scale 0-10 (best) | 77 | 2.8
1.02 Manufacturing value added in economy % GDP | 43 | 14.1
1.03 Manufacturing value added US$ millions | 93 | 1,678.9
Driver: Technology & Innovation 0-10 (best) | 30 | 5.1
Technology Platform 0-10 (best) | 37 | 6.8
2.01 Mobile-cellular telephone subscriptions /100 pop. | 22 | 144.2
2.02 LTE mobile network coverage % population | 83 | 36.7
2.03 Internet users % pop. | 69 | 53.2
2.04 FDi and technology transfer 1-7 (best) | 59 | 4.4
2.05 Firm-level technology absorption 1-7 (best) | 45 | 4.8
2.06 Impact of ICTs on new services and products 1-7 (best) | 59 | 4.5
2.07 Cybersecurity commitment 0-1 (best) | 6 | 0.8
Ability to Innovate 0-10 (best) | 32 | 3.3
2.08 State of cluster development 1-7 (best) | 31 | 4.4
2.09 Company investment in emerging technology 1-7 (best) | 53 | 3.6
2.10 Gov’t procurement of advanced technology products 1-7 (best) | 45 | 3.4
2.11 Companies embracing disruptive ideas 1-7 (best) | 43 | 3.7
2.12 Multi-stakeholder collaboration 1-7 (best) | 60 | 3.6
2.13 R&D expenditures % GDP | 85 | 0.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP | 80 | 4.6
2.15 Patent applications applications/million pop. | 63 | 0.60
2.16 Venture capital deal volume US$ millions | 55 | 1,715.6
2.17 Venture capital deal volume per size of economy US$/GDP | 5 | 140.4
Driver: Human Capital 0-10 (best) | 49 | 5.2
Current Labor Force 0-10 (best) | 50 | 6.1
3.01 Manufacturing employment % working population | 30 | 14.2
3.02 Knowledge-intensive employment % working pop. | 48 | 24.7
3.03 Female participation in labor force ratio | 61 | 0.67
3.04 Mean years of schooling Years | 63 | 9.1
3.05 Availability of scientists and engineers 1-7 (best) | 63 | 3.9
3.06 Digital skills among population 1-7 (best) | 45 | 4.5
Future Labor Force 0-10 (best) | 44 | 4.2
3.07 Migration migrants/100,000 pop. | 46 | 0.0
3.08 Country capacity to attract and retain talent 1-7 (best) | 36 | 3.9
3.09 Quality of universities Count | 75 | 0.0
3.10 Quality of math and science education 1-7 (best) | 30 | 4.6
3.11 Quality of vocational training 1-7 (best) | 42 | 4.3
3.12 School life expectancy Years | 51 | 14.9
3.13 Pupil-to-teacher ratio in primary education Ratio | 59 | 18.8
3.14 Critical thinking in teaching 1-7 (best) | 50 | 3.5
3.15 Active labor policies 1-7 (best) | 34 | 3.9
3.16 On-the-job training 1-7 (best) | 35 | 4.5
3.17 Hiring and firing practices 1-7 (best) | 26 | 4.3

Driver: Global Trade & Investment 0-10 (best) | 33 | 6.0
Trade 0-10 (best) | 12 | 8.6
4.01 Trade % GDP | 27 | 107.9
4.02 Trade tariffs % duty | 3 | 0.01
4.03 Prevalence of non-tariff barriers 1-7 (best) | 32 | 4.8
4.04 Logistics performance 1 – 5 (best) | - | -
Investment 0-10 (best) | 48 | 2.4
4.05 Greenfield investments US$ millions | 98 | 229.6
4.06 FDI inflows US$ millions | 92 | 371.7
4.07 Domestic credit to private sector % GDP | 28 | 96.4
Infrastructure 0-10 (best) | 42 | 6.8
4.08 Transport infrastructure 0-100 (best) | 61 | 44.1
4.09 Electricity infrastructure 0-100 (best) | 24 | 92.7
Driver: Institutional Framework 0-10 (best) | 32 | 6.5
Government 0-10 (best) | 32 | 6.5
5.01 Regulatory efficiency 0 – 100 (best) | 25 | 76.0
5.02 Incidence of corruption 0-100 (best) | 37 | 54.0
5.03 Future orientation of government 1-7 (best) | 35 | 3.9
5.04 Rule of law (2.5) – 2.0 (best) | 32 | 0.8
Driver: Sustainable Resources 0-10 (best) | 54 | 6.2
Sustainability 0-10 (best) | 54 | 6.2
6.01 Alternative and nuclear energy use % total energy use | 62 | 0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 48 | 0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 45 | 0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 29 | 0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water | - | -
6.06 Wastewater treatment 0 – 5 (worst) | 71 | 58.1
Driver: Demand Environment 0-10 (best) | 87 | 3.5
Foreign and Domestic Demand 0-10 (best) | 97 | 2.4
7.01 Market size 0-100 (best) | 97 | 23.7
Consumer Base 0-10 (best) | 43 | 4.6
7.02 Buyer sophistication 1-7 (best) | 33 | 3.8
7.03 Extent of market dominance 1-7 (best) | 59 | 3.7
Mexico

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % manu. value added</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Drivers of Production 5.0

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<th>Score /10</th>
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Structure of Production 6.7

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Archetype

Mexico 6.7, 5.0

High-Potential Leading

Nascent Legacy
## Readiness for the Future of Production Assessment 2018 edition

### Index Component

<table>
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<tr>
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<tbody>
<tr>
<td>25</td>
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### Mexico

### Structure: Complexity

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### Structure: Scale

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### Manufacturing value added

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### Driver: Technology & Innovation

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### Driver: Human Capital

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### Driver: Global Trade & Investment

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### Trade

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### Investment

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### Infrastructure

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### Driver: Institutional Framework

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### Sustainability

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### Driver: Sustainable Resources

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<tr>
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### Foreign and Domestic Demand

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### Consumer Base

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### 7.03 Extent of market dominance

<table>
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### Legacy

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### World Economic Forum

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### Country Profiles

### Trade

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### Investment

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<td>5.9</td>
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</tbody>
</table>
Moldova

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population, millions</td>
<td>3.6</td>
</tr>
<tr>
<td>GDP, US$ billions</td>
<td>6.8</td>
</tr>
<tr>
<td>GDP per capita, US$</td>
<td>1,900.9</td>
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<tr>
<td>Unemployment rate, %</td>
<td>4.2</td>
</tr>
</tbody>
</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added, 2010 millions US$</td>
<td>768.4</td>
</tr>
<tr>
<td>Manufacturing value added in economy, % GDP</td>
<td>10.8</td>
</tr>
<tr>
<td>Manufacturing employment, % working population</td>
<td>10.0</td>
</tr>
<tr>
<td>Manufacturing value added growth, Annual %</td>
<td>-0.5</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries, % of manu. value added</td>
<td>18.8</td>
</tr>
<tr>
<td>CO2 emission per unit of value added, kg/USD</td>
<td>1.1</td>
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</tbody>
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Readiness Overall Assessment

Drivers of Production 4.0

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>75th</td>
<td>3.5</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>59th</td>
<td>4.9</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>70th</td>
<td>4.5</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>86th</td>
<td>3.8</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>73rd</td>
<td>5.4</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>99th</td>
<td>2.7</td>
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</table>

Structure of Production 3.4

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>70th</td>
<td>4.4</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
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<td>1.8</td>
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Archetype

High-Potential

Leading

Nascent

Legacy

Moldova 3.4, 4.0

Complexity 4.4

Scale 1.8

Small / basic -- Large / complex

Structure of Production -- Most future-ready
Moldova

Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
<td>70</td>
<td>4.4</td>
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<tr>
<td>1.01 Economic complexity (2.5) – 5.0 (best)</td>
<td>70</td>
<td>-0.3</td>
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<tr>
<td><strong>Structure: Scale</strong> 0-10 (best)</td>
<td>91</td>
<td>1.8</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>67</td>
<td>10.8</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>99</td>
<td>768.4</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
<td>75</td>
<td>3.5</td>
</tr>
<tr>
<td>Technology Platform 0-10 (best)</td>
<td>66</td>
<td>5.6</td>
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<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>68</td>
<td>111.0</td>
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<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td>30</td>
<td>97.0</td>
</tr>
<tr>
<td>2.03 Internet users % pop.</td>
<td>43</td>
<td>71.0</td>
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<tr>
<td>2.04 FDI and technology transfer 1-7 (best)</td>
<td>81</td>
<td>4.0</td>
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<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>88</td>
<td>4.0</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
<td>90</td>
<td>4.0</td>
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<td>2.07 Cybersecurity commitment 0-1 (best)</td>
<td>71</td>
<td>0.4</td>
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<tr>
<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
<td>98</td>
<td>1.4</td>
</tr>
<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
<td>100</td>
<td>2.6</td>
</tr>
<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
<td>92</td>
<td>2.9</td>
</tr>
<tr>
<td>2.10 Gov't procurement of advanced technology products 1-7 (best)</td>
<td>96</td>
<td>2.5</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>71</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<td>2.13 R&amp;D expenditures % GDP</td>
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<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
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<tr>
<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
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<td>4.9</td>
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<td>Current Labor Force 0-10 (best)</td>
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<td>3.01 Manufacturing employment % working population</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td>28.1</td>
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<td>3.03 Female participation in labor force ratio</td>
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<td>3.04 Mean years of schooling Years</td>
<td>31</td>
<td>11.6</td>
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<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>97</td>
<td>3.1</td>
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<td>3.06 Digital skills among population 1-7 (best)</td>
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<td>Future Labor Force 0-10 (best)</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
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<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<tr>
<td>3.09 Quality of universities Count</td>
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<td>3.10 Quality of math and science education 1-7 (best)</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>3.12 School life expectancy Years</td>
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<td>11.6</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>53</td>
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<td>3.14 Critical thinking in teaching 1-7 (best)</td>
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<td>3.15 Active labor policies 1-7 (best)</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
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<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong> 0-10 (best)</td>
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<td>Trade 0-10 (best)</td>
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<td>4.01 Trade % GDP</td>
<td>22</td>
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<td>4.02 Trade tariffs % duty</td>
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<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
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<td>4.04 Logistics performance 1-5 (best)</td>
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<td>Investment 0-10 (best)</td>
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<td>4.05 Greenfield investments US$ millions</td>
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<td>4.06 FDI inflows US$ millions</td>
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<td>4.07 Domestic credit to private sector % GDP</td>
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<td><strong>Infrastructure</strong> 0-10 (best)</td>
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<td>4.08 Transport infrastructure 0-100 (best)</td>
<td>63</td>
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<td>4.09 Electricity infrastructure 0-100 (best)</td>
<td>86</td>
<td>57.9</td>
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<tr>
<td><strong>Driver: Institutional Framework</strong> 0-10 (best)</td>
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<td>3.8</td>
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<td>Government 0-10 (best)</td>
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<td>5.01 Regulatory efficiency 0-100 (best)</td>
<td>88</td>
<td>59.0</td>
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<td>5.02 Incidence of corruption 0-100 (best)</td>
<td>84</td>
<td>30.0</td>
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<td>5.03 Future orientation of government 1-7 (best)</td>
<td>87</td>
<td>2.9</td>
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<tr>
<td>5.04 Rule of law (2.5) - 2.0 (best)</td>
<td>84</td>
<td>-0.5</td>
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<td><strong>Driver: Sustainable Resources</strong> 0-10 (best)</td>
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<td>5.4</td>
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<tr>
<td>Sustainability 0-10 (best)</td>
<td>73</td>
<td>5.4</td>
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<tr>
<td>6.01 Alternative and nuclear energy use % total energy use</td>
<td>76</td>
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<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
<td>92</td>
<td>1.0</td>
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<tr>
<td>6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
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<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
<td>42</td>
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<td>6.06 Wastewater treatment 0-5 (worst)</td>
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<td>72.8</td>
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<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
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<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
<td>100</td>
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<td>7.01 Market size 0-100 (best)</td>
<td>100</td>
<td>21.1</td>
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<td>Consumer Base 0-10 (best)</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>2.9</td>
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<tr>
<td>7.03 Extent of market dominance 1-7 (best)</td>
<td>96</td>
<td>3.0</td>
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Mongolia

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
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<th>Indicator</th>
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</thead>
<tbody>
<tr>
<td>Population (millions)</td>
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<tr>
<td>GDP (US$ billions)</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>3,659.8</td>
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<tr>
<td>Unemployment rate (%)</td>
<td>7.9</td>
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Key production indicators

<table>
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<tr>
<td>Manufacturing value added (2010) US$</td>
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<td>Medium hi-tech &amp; hi-tech industries (% of manuf. value added)</td>
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</tr>
<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
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Readiness Overall Assessment

Drivers of Production 3.8

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
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<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>93rd</td>
<td>3.0</td>
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<td>Human Capital</td>
<td>20%</td>
<td>68th</td>
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<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>67th</td>
<td>4.6</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>73rd</td>
<td>4.5</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>100th</td>
<td>1.9</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>100th</td>
<td>2.7</td>
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</table>

Structure of Production 1.8

<table>
<thead>
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<th>Score /10</th>
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<tr>
<td>Complexity</td>
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<td>Scale</td>
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<td>0.7</td>
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Archetype

Mongolia 1.8, 3.8

Countries are classified into four archetypes:
- Nascent
- Legacy
- High-Potential
- Leading

## Country Profiles

### Mongolia

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>0-10 (best)</td>
<td></td>
</tr>
<tr>
<td>1.01 Economic complexity</td>
<td>0.25 - 2.5 (best)</td>
<td>92</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>% GDP</td>
<td>100</td>
</tr>
<tr>
<td>1.03 Manufacturing value added</td>
<td>US$ millions</td>
<td>100</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
<td>0-10 (best)</td>
<td></td>
</tr>
<tr>
<td>Technology Platform</td>
<td>0-10 (best)</td>
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</tr>
<tr>
<td>2.01 Mobile-cellular telephone subscriptions</td>
<td>/100 pop.</td>
<td>65</td>
</tr>
<tr>
<td>2.02 LTE mobile network coverage</td>
<td>% population</td>
<td>94</td>
</tr>
<tr>
<td>2.03 Internet users</td>
<td>% pop.</td>
<td>95</td>
</tr>
<tr>
<td>2.04 FDI and technology transfer</td>
<td>1-7 (best)</td>
<td>85</td>
</tr>
<tr>
<td>2.05 Firm-level technology absorption</td>
<td>1-7 (best)</td>
<td>72</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products</td>
<td>1-7 (best)</td>
<td>75</td>
</tr>
<tr>
<td>2.07 Cybersecurity commitment</td>
<td>0-1 (best)</td>
<td>91</td>
</tr>
<tr>
<td><strong>Ability to Innovate</strong></td>
<td>0-10 (best)</td>
<td></td>
</tr>
<tr>
<td>2.08 State of cluster development</td>
<td>1-7 (best)</td>
<td>99</td>
</tr>
<tr>
<td>2.09 Company investment in emerging technology</td>
<td>1-7 (best)</td>
<td>71</td>
</tr>
<tr>
<td>2.10 Gov't procurement of advanced technology products</td>
<td>1-7 (best)</td>
<td>83</td>
</tr>
<tr>
<td>2.11 Companies embracing disruptive ideas</td>
<td>1-7 (best)</td>
<td>91</td>
</tr>
<tr>
<td>2.12 Multi-stakeholder collaboration</td>
<td>1-7 (best)</td>
<td>91</td>
</tr>
<tr>
<td>2.13 R&amp;D expenditures</td>
<td>% GDP</td>
<td>87</td>
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<tr>
<td>2.14 Scientific and technical publications</td>
<td>Number per Billion PPP$ GDP</td>
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<td>2.15 Patent applications</td>
<td>applications/million pop.</td>
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<td>2.16 Venture capital deal volume</td>
<td>US$ millions</td>
<td>70</td>
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<td>2.17 Venture capital deal per size of economy</td>
<td>US$/GDP</td>
<td>24</td>
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<td><strong>Driver: Human Capital</strong></td>
<td>0-10 (best)</td>
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<td>Current Labor Force</td>
<td>0-10 (best)</td>
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<tr>
<td>3.01 Manufacturing employment</td>
<td>% working population</td>
<td>87</td>
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<tr>
<td>3.02 Knowledge-intensive employment</td>
<td>% working pop.</td>
<td>49</td>
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<tr>
<td>3.03 Female participation in labor force</td>
<td>ratio</td>
<td>23</td>
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<td>3.04 Mean years of schooling</td>
<td>Years</td>
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<td>3.05 Availability of scientists and engineers</td>
<td>1-7 (best)</td>
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<td>3.06 Digital skills among population</td>
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<td><strong>Future Labor Force</strong></td>
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<td>3.07 Migration</td>
<td>migrants/100,000 pop.</td>
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<td>3.09 Quality of universities</td>
<td>Count</td>
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<td>3.10 Quality of math and science education</td>
<td>1-7 (best)</td>
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<td>3.11 Quality of vocational training</td>
<td>1-7 (best)</td>
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<td>3.12 School life expectancy</td>
<td>Years</td>
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<td>3.14 Critical thinking in teaching</td>
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<tr>
<td>3.15 Active labor policies</td>
<td>1-7 (best)</td>
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<tr>
<td>3.16 On-the-job training</td>
<td>1-7 (best)</td>
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<tr>
<td>3.17 Hiring and firing practices</td>
<td>1-7 (best)</td>
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<table>
<thead>
<tr>
<th>Index Component</th>
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<th>Value</th>
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<tbody>
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<td>Trade</td>
<td>0-10 (best)</td>
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<tr>
<td>4.01 Trade</td>
<td>% GDP</td>
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<tr>
<td>4.02 Trade tariffs</td>
<td>% duty</td>
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<td>4.03 Prevalence of non-tariff barriers</td>
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<td>4.04 Logistics performance</td>
<td>1 – 5 (best)</td>
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<tr>
<td>Investment</td>
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<tr>
<td>4.05 Greenfield investments</td>
<td>US$ millions</td>
<td>63</td>
</tr>
<tr>
<td>4.06 FDI inflows</td>
<td>US$ millions</td>
<td>87</td>
</tr>
<tr>
<td>4.07 Domestic credit to private sector</td>
<td>% GDP</td>
<td>51</td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>0-10 (best)</td>
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<tr>
<td>4.08 Transport infrastructure</td>
<td>0-100 (best)</td>
<td>91</td>
</tr>
<tr>
<td>4.09 Electricity infrastructure</td>
<td>0-100 (best)</td>
<td>80</td>
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<tr>
<td><strong>Driver: Institutional Framework</strong></td>
<td>0-10 (best)</td>
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<tr>
<td>Government</td>
<td>0-10 (best)</td>
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<td>5.01 Regulatory efficiency</td>
<td>0 – 100 (best)</td>
<td>39</td>
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<tr>
<td>5.02 Incidence of corruption</td>
<td>0-100 (best)</td>
<td>63</td>
</tr>
<tr>
<td>5.03 Future orientation of government</td>
<td>1-7 (best)</td>
<td>95</td>
</tr>
<tr>
<td>5.04 Rule of law</td>
<td>(2.5) – 2.0 (best)</td>
<td>66</td>
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<tr>
<td><strong>Driver: Sustainable Resources</strong></td>
<td>0-10 (best)</td>
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</tr>
<tr>
<td>Sustainability</td>
<td>0-10 (best)</td>
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<tr>
<td>6.01 Alternative and nuclear energy use</td>
<td>% total energy use</td>
<td>85</td>
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<tr>
<td>6.02 CO2 intensity level</td>
<td>CO2 emissions in megatons/GDP (US$ billions)</td>
<td>98</td>
</tr>
<tr>
<td>6.03 CH4 intensity level</td>
<td>CH4 emissions in megatons/GDP (US$ billions)</td>
<td>97</td>
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<tr>
<td>6.04 N2O intensity level</td>
<td>N2O emissions in megatons/GDP (US$ billions)</td>
<td>97</td>
</tr>
<tr>
<td>6.05 Baseline water stress</td>
<td>Annual withdrawals, % of annual available blue water</td>
<td>84</td>
</tr>
<tr>
<td>6.06 Wastewater treatment</td>
<td>0 – 5 (worst)</td>
<td>75</td>
</tr>
<tr>
<td><strong>Driver: Demand Environment</strong></td>
<td>0-10 (best)</td>
<td></td>
</tr>
<tr>
<td>Foreign and Domestic Demand</td>
<td>0-10 (best)</td>
<td>100</td>
</tr>
<tr>
<td>7.01 Market size</td>
<td>0-100 (best)</td>
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<tr>
<td>Consumer Base</td>
<td>0-10 (best)</td>
<td>100</td>
</tr>
<tr>
<td>7.02 Buyer sophistication</td>
<td>1-7 (best)</td>
<td>88</td>
</tr>
<tr>
<td>7.03 Extent of market dominance</td>
<td>1-7 (best)</td>
<td>100</td>
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**Readiness for the Future of Production Assessment 2018**
Morocco

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
<td>103.6</td>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
<td>9.4</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>16,780.1</td>
</tr>
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<td>Manufacturing value added in economy % GDP</td>
<td>14.5</td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>10.9</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
<td>2.9</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>27.7</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.4</td>
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Readiness Overall Assessment

Drivers of Production 4.4

<table>
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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>56th</td>
<td>4.1</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>94th</td>
<td>3.4</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>65th</td>
<td>4.7</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>65th</td>
<td>4.8</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>82nd</td>
<td>4.8</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>53rd</td>
<td>4.7</td>
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</table>

Structure of Production 3.7

<table>
<thead>
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<th>Structure</th>
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<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>86th</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>47th</td>
<td>4.3</td>
</tr>
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</table>

Archetype

High-Potential

Leading

Nascent

Legacy
### Readiness for the Future of Production Assessment 2018 edition

#### Morocco

**Index Component** | Rank /100 | Value
--- | --- | ---
**Structure: Complexity** | 86 | 3.3
| 1.01 Economic complexity | 86 | -0.8
| 1.02 Manufacturing value added in economy | 47 | 4.3
| 1.03 Manufacturing value added | 37 | 14.5
| 1.04 Trade value added | 52 | 16,780.1

**Driver: Technology & Innovation** | 56 | 4.1
| Technology Platform | 55 | 6.1
| 2.01 Mobile-cellular telephone subscriptions /100 pop. | 51 | 120.7
| 2.02 LTE mobile network coverage % population | 66 | 68.0
| 2.03 Internet users % pop. | 63 | 58.3
| 2.04 FDI and technology transfer 1-7 (best) | 47 | 4.6
| 2.05 Firm-level technology absorption 1-7 (best) | 54 | 4.5
| 2.06 Impact of ICTs on new services and products 1-7 (best) | 50 | 4.7
| 2.07 Cybersecurity commitment 0-1 (best) | 52 | 0.5

**Ability to Innovate** | 57 | 2.2
| 2.08 State of cluster development 1-7 (best) | 52 | 3.8
| 2.09 Company investment in emerging technology 1-7 (best) | 63 | 3.5
| 2.10 Gov't procurement of advanced technology products 1-7 (best) | 56 | 3.3
| 2.11 Companies embracing disruptive ideas 1-7 (best) | 85 | 3.1
| 2.12 Multi-stakeholder collaboration 1-7 (best) | 80 | 3.3
| 2.13 R&D expenditures % GDP | 48 | 0.7
| 2.14 Scientific and technical publications Number per Billion PPP$ GDP | 65 | 7.0
| 2.15 Patent applications applications/million pop. | 80 | 0.10
| 2.16 Venture capital deal volume US$ millions | 48 | 2,715.2
| 2.17 Venture capital deal volume per size of economy US$/GDP | 35 | 26.1

**Driver: Human Capital** | 94 | 3.4
| Current Labor Force 0-10 (best) | 94 | 3.9
| 3.01 Manufacturing employment % working population | 62 | 10.9
| 3.02 Knowledge-intensive employment % working pop. | 86 | 6.8
| 3.03 Female participation in labor force ratio | 89 | 0.25
| 3.04 Mean years of schooling | 97 | 5.0
| 3.05 Availability of scientists and engineers 1-7 (best) | 54 | 4.1
| 3.06 Digital skills among population 1-7 (best) | 75 | 3.8

**Future Labor Force 0-10 (best)** | 85 | 2.9
| 3.07 Migration migrants/100,000 pop. | 91 | -13.1
| 3.08 Country capacity to attract and retain talent 1-7 (best) | 65 | 3.2
| 3.09 Quality of universities | 62 | 1.0
| 3.10 Quality of math and science education 1-7 (best) | 63 | 3.8
| 3.11 Quality of vocational training 1-7 (best) | 76 | 3.6
| 3.12 School life expectancy Years | 84 | 12.1
| 3.13 Pupil-to-teacher ratio in primary education Ratio | 79 | 25.9
| 3.14 Critical thinking in teaching 1-7 (best) | 99 | 2.3
| 3.15 Active labor policies 1-7 (best) | 92 | 2.5
| 3.16 On-the-job training 1-7 (best) | 83 | 3.7
| 3.17 Hiring and firing practices 1-7 (best) | 77 | 3.3

### Country Profiles

**Driver: Global Trade & Investment** | 65 | 4.7
| Trade 0-10 (best) | 66 | 5.8
| 4.01 Trade % GDP | 50 | 79.8
| 4.02 Trade tariffs % duty | 83 | 0.10
| 4.03 Prevalence of non-tariff barriers 1-7 (best) | 85 | 3.9
| 4.04 Logistics performance 1-5 (best) | 78 | 2.7
| Investment 0-10 (best) | 52 | 2.2
| 4.05 Greenfield investments US$ millions | 38 | 4,001.5
| 4.06 FDI inflows US$ millions | 52 | 3,014.3
| 4.07 Domestic credit to private sector % GDP | 46 | 64.0

**Infrastructure 0-10 (best)** | 62 | 6.1
| 4.08 Transport infrastructure 0-100 (best) | 49 | 49.4
| 4.09 Electricity infrastructure 0-100 (best) | 74 | 72.9

**Driver: Institutional Framework** | 65 | 4.8
| Government 0-10 (best) | 65 | 4.8
| 5.01 Regulatory efficiency 0 – 100 (best) | 80 | 61.4
| 5.02 Incidence of corruption 0-100 (best) | 66 | 37.0
| 5.03 Future orientation of government 1-7 (best) | 33 | 4.0
| 5.04 Rule of law (2.5) - 2.0 (best) | 63 | -0.1

**Driver: Sustainable Resources** | 82 | 4.8
| Sustainability 0-10 (best) | 82 | 4.8
| 6.01 Alternative and nuclear energy use % total energy use | 77 | 0.1
| 6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 74 | 0.6
| 6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 44 | 0.1
| 6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 69 | 0.1
| 6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 85 | 4.2
| 6.06 Wastewater treatment 0 – 5 (worst) | 69 | 60.8
| 6.07 Water use efficiency US$ per m3 used | 53 | 4.7
| 6.08 Energy efficiency US$ per kWh used | 52 | 51.3
| 6.09 Alternative energy use Alternative and nuclear energy use | 55 | 4.3
| 6.10 Energy mix | 69 | 3.2
| 6.11 Energy consumption energy use | 73 | 3.7

**Driver: Demand Environment** | 53 | 4.7
| Foreign and Domestic Demand 0-10 (best) | 52 | 51.3
| 7.01 Market size 0-100 (best) | 52 | 51.3
| Consumer Base 0-10 (best) | 55 | 4.3
| 7.02 Buyer sophistication 1-7 (best) | 69 | 3.2
| 7.03 Extent of market dominance 1-7 (best) | 43 | 3.9
Netherlands

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Population (millions)</td>
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<td>GDP (US$ billions)</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>45,282.6</td>
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<tr>
<td>Unemployment rate (%)</td>
<td>5.9</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010 US$)</td>
<td>94,456.1</td>
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<tr>
<td>Manufacturing value added in economy (%)</td>
<td>10.8</td>
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<tr>
<td>Manufacturing employment (%)</td>
<td>9.5</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries (%)</td>
<td>48.2</td>
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<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
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Drivers of Production 7.8

<table>
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<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
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<tr>
<td>Human Capital</td>
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<td>7.1</td>
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<tr>
<td>Global Trade &amp; Investment</td>
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<tr>
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<td>20%</td>
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<tr>
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<td>7.7</td>
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<tr>
<td>Demand Environment</td>
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<td>6.6</td>
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Structure of Production 6.3

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<tr>
<td>Scale</td>
<td>40%</td>
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Archetype

- High-Potential
- Leading
- Netherlands 6.3, 7.8
- nascent
- Legacy
## Readiness for the Future of Production Assessment 2018 edition

**Index Component** | Rank /100 | Value
--- | --- | ---
Structure: Complexity | 22 | 7.4
1.01 Economic complexity | 22 | 1.1
Structure: Scale | 38 | 4.6
1.02 Manufacturing value added in economy | 66 | 10.8
1.03 Manufacturing value added | 21 | 94,456.1
Driver: Technology & Innovation | 4 | 7.7
Technology Platform | 3 | 8.3
2.01 Mobile-cellular telephone subscriptions | 36 | 130.0
2.02 LTE mobile network coverage | 11 | 99.0
2.03 Internet users | 10 | 90.4
2.04 FDI and technology transfer | 8 | 5.5
2.05 Firm-level technology absorption | 3 | 5.9
2.06 Impact of ICTs on new services and products | 3 | 6.1
2.07 Cybersecurity commitment | 17 | 0.8
Ability to Innovate | 4 | 7.1
2.08 State of cluster development | 4 | 5.4
2.09 Company investment in emerging technology | 6 | 5.6
2.10 Gov't procurement of advanced technology products | 16 | 4.1
2.11 Companies embracing disruptive ideas | 13 | 4.5
2.12 Multi-stakeholder collaboration | 6 | 5.3
2.13 R&D expenditures | 19 | 2.0
2.14 Scientific and technical publications | 12 | 42.9
2.15 Patent applications | 10 | 141.48
2.16 Venture capital deal volume | 9 | 78,632.5
2.17 Venture capital deal volume per size of economy | 9 | 98.3
Driver: Human Capital | 13 | 7.1
Current Labor Force | 10 | 8.3
3.01 Manufacturing employment | 73 | 9.5
3.02 Knowledge-intensive employment | 7 | 46.6
3.03 Female participation in labor force | 28 | 0.90
3.04 Mean years of schooling | 24 | 12.1
3.05 Availability of scientists and engineers | 18 | 4.9
3.06 Digital skills among population | 3 | 5.9
Future Labor Force | 16 | 5.9
3.07 Migration | 41 | 3.0
3.08 Country capacity to attract and retain talent | 8 | 5.2
3.09 Quality of universities | 17 | 13.0
3.10 Quality of math and science education | 5 | 5.7
3.11 Quality of vocational training | 4 | 5.6
3.12 School life expectancy | 8 | 18.1
3.13 Pupil-to-teacher ratio in primary education | 16 | 11.6
3.14 Critical thinking in teaching | 9 | 5.1
3.15 Active labor policies | 8 | 5.0
3.16 On-the-job training | 2 | 5.8
3.17 Hiring and firing practices | 29 | 4.2

**Index Component** | Rank /100 | Value
--- | --- | ---
Driver: Global Trade & Investment | 3 | 8.4
Trade | 3 | 9.0
4.01 Trade | 11 | 150.7
4.02 Trade tariffs | 13 | 0.01
4.03 Prevalence of non-tariff barriers | 11 | 5.2
4.04 Logistics performance | 3 | 4.2
Investment | 9 | 7.2
4.05 Greenfield investments | 30 | 7,199.1
4.06 FDI inflows | 7 | 57,658.4
4.07 Domestic credit to private sector | 23 | 110.3
Infrastructure | 4 | 8.9
4.08 Transport infrastructure | 7 | 82.6
4.09 Electricity infrastructure | 11 | 96.0
Driver: Institutional Framework | 8 | 8.7
Government | 8 | 8.7
5.01 Regulatory efficiency | 14 | 78.8
5.02 Incidence of corruption | 8 | 83.0
5.03 Future orientation of government | 12 | 5.1
5.04 Rule of law | 7 | 1.9
Driver: Sustainable Resources | 15 | 7.7
Sustainability | 15 | 7.7
6.01 Alternative and nuclear energy use | 79 | 0.1
6.02 CO2 intensity level | 17 | 0.2
6.03 CH4 intensity level | 13 | 0.0
6.04 N2O intensity level | 16 | 0.0
6.05 Baseline water stress | 47 | 1.7
6.06 Wastewater treatment | 2 | 99.7
Driver: Demand Environment | 9 | 6.6
Foreign and Domestic Demand | 19 | 6.8
7.01 Market size | 19 | 67.5
Consumer Base | 7 | 6.4
7.02 Buyer sophistication | 17 | 4.4
7.03 Extent of market dominance | 5 | 5.2
New Zealand

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>4.7</td>
</tr>
<tr>
<td>GDP US$ billions</td>
<td>182.0</td>
</tr>
<tr>
<td>GDP per capita US$</td>
<td>38,345.4</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>16,978.4</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>9.9</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>9.9</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>1.0</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>17.2</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.4</td>
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</table>

Drivers of Production 6.7

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>22nd</td>
<td>6.1</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>10th</td>
<td>7.4</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>45th</td>
<td>5.5</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>2nd</td>
<td>9.1</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>14th</td>
<td>7.8</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>50th</td>
<td>4.8</td>
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</table>

Structure of Production 4.8

<table>
<thead>
<tr>
<th>Structure</th>
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<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>45th</td>
<td>5.7</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>68th</td>
<td>3.5</td>
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</tbody>
</table>

Archetype

High-Potential

New Zealand 4.8, 6.7

Readiness Overall Assessment

High Potential

New Zealand

Country Profiles

Readiness for the Future of Production Report 2018
### New Zealand

Readiness for the Future of Production Assessment 2018 edition

#### Index Component

<table>
<thead>
<tr>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
<td>45</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
<td>22</td>
</tr>
<tr>
<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
<td>10</td>
</tr>
<tr>
<td><strong>Future Labor Force</strong> 0-10 (best)</td>
<td>11</td>
</tr>
<tr>
<td><strong>Migration</strong> 0-100,000 pop.</td>
<td>17</td>
</tr>
<tr>
<td><strong>Country capacity to attract and retain talent</strong> 1-7 (best)</td>
<td>13</td>
</tr>
<tr>
<td><strong>Quality of universities</strong> Count</td>
<td>28</td>
</tr>
<tr>
<td><strong>Quality of math and science education</strong> 1-7 (best)</td>
<td>17</td>
</tr>
<tr>
<td><strong>Quality of vocational training</strong> 1-7 (best)</td>
<td>10</td>
</tr>
<tr>
<td><strong>School life expectancy</strong> Years</td>
<td>4</td>
</tr>
<tr>
<td><strong>Pupil-to-teacher ratio in primary education</strong> Ratio</td>
<td>33</td>
</tr>
<tr>
<td><strong>Critical thinking in teaching</strong> 1-7 (best)</td>
<td>5</td>
</tr>
<tr>
<td><strong>Active labor policies</strong> 1-7 (best)</td>
<td>15</td>
</tr>
<tr>
<td><strong>On-the-job training</strong> 1-7 (best)</td>
<td>13</td>
</tr>
<tr>
<td><strong>Hiring and firing practices</strong> 1-7 (best)</td>
<td>13</td>
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#### High Potential

<table>
<thead>
<tr>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong> 0-10 (best)</td>
<td>45</td>
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<tr>
<td><strong>Trade</strong> 0-10 (best)</td>
<td>63</td>
</tr>
<tr>
<td><strong>FDI inflows</strong> US$ millions</td>
<td>63</td>
</tr>
<tr>
<td><strong>Domestic credit to private sector</strong> % GDP</td>
<td>6</td>
</tr>
<tr>
<td><strong>Infrastructure</strong> 0-10 (best)</td>
<td>34</td>
</tr>
<tr>
<td><strong>Transport infrastructure</strong> 0-100 (best)</td>
<td>46</td>
</tr>
<tr>
<td><strong>Electricity infrastructure</strong> 0-100 (best)</td>
<td>28</td>
</tr>
<tr>
<td><strong>Driver: Institutional Framework</strong> 0-10 (best)</td>
<td>2</td>
</tr>
<tr>
<td><strong>Government</strong> 0-10 (best)</td>
<td>2</td>
</tr>
<tr>
<td><strong>Regulatory efficiency</strong> 0 – 100 (best)</td>
<td>2</td>
</tr>
<tr>
<td><strong>Incidence of corruption</strong> 0 – 100 (best)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Future orientation of government</strong> 1-7 (best)</td>
<td>6</td>
</tr>
<tr>
<td><strong>Rule of law (2.5) - 2.0 (best)</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>Driver: Sustainable Resources</strong> 0-10 (best)</td>
<td>14</td>
</tr>
<tr>
<td><strong>Sustainability</strong> 0-10 (best)</td>
<td>14</td>
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<tr>
<td><strong>Alternative and nuclear energy use</strong> % total energy use</td>
<td>26</td>
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<tr>
<td><strong>CO2 intensity level</strong> CO2 emissions in megatons/GDP (US$ billions)</td>
<td>15</td>
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<td><strong>CH4 intensity level</strong> CH4 emissions in megatons/GDP (US$ billions)</td>
<td>53</td>
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<tr>
<td><strong>N2O intensity level</strong> N2O emissions in megatons/GDP (US$ billions)</td>
<td>66</td>
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<tr>
<td><strong>Baseline water stress</strong> Annual withdrawals, % of annual available blue water</td>
<td>40</td>
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<tr>
<td><strong>Wastewater treatment</strong> 0 – 5 (worst)</td>
<td>25</td>
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<tr>
<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
<td>50</td>
</tr>
<tr>
<td><strong>Foreign and Domestic Demand</strong> 0-10 (best)</td>
<td>63</td>
</tr>
<tr>
<td><strong>Market size</strong> 0-100 (best)</td>
<td>63</td>
</tr>
<tr>
<td><strong>Consumer Base</strong> 0-10 (best)</td>
<td>25</td>
</tr>
<tr>
<td><strong>Buyer sophistication</strong> 1-7 (best)</td>
<td>24</td>
</tr>
<tr>
<td><strong>Extent of market dominance</strong> 1-7 (best)</td>
<td>25</td>
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</table>
Nigeria

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>183.6</td>
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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
<td>13.4</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>46,977.3</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>10.3</td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>11.0</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>1.4</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>33.4</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.2</td>
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Drivers of Production

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>77th</td>
<td>3.5</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>89th</td>
<td>3.7</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>97th</td>
<td>2.4</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>97th</td>
<td>3.2</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>20%</td>
<td>32nd</td>
<td>6.8</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>38th</td>
<td>5.3</td>
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Structure of Production

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<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Complexity</td>
<td>60%</td>
<td>100th</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>49th</td>
<td>4.2</td>
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Archetype

Nigeria 1.7, 3.7
## Nigeria

### Readiness for the Future of Production Report 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
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<tr>
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<tr>
<td><strong>Structure: Scale</strong></td>
<td>49</td>
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</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>72</td>
<td>10.3</td>
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<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>33</td>
<td>46,977.3</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<td>3.5</td>
</tr>
<tr>
<td>Technology Platform 0-10 (best)</td>
<td>70</td>
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<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>91</td>
<td>81.8</td>
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<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td>75</td>
<td>50.8</td>
</tr>
<tr>
<td>2.03 Internet users % pop.</td>
<td>89</td>
<td>25.7</td>
</tr>
<tr>
<td>2.04 FDI and technology transfer 1-7 (best)</td>
<td>67</td>
<td>4.2</td>
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<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>67</td>
<td>4.3</td>
</tr>
<tr>
<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
<td>61</td>
<td>4.5</td>
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<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
<td>47</td>
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<tr>
<td><strong>Ability to Innovate</strong></td>
<td>91</td>
<td>1.6</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
<td>78</td>
<td>3.4</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
<td>94</td>
<td>2.9</td>
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<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
<td>75</td>
<td>2.9</td>
</tr>
<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>59</td>
<td>3.4</td>
</tr>
<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
<td>85</td>
<td>3.2</td>
</tr>
<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
<td>82</td>
<td>0.2</td>
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<tr>
<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
<td>90</td>
<td>2.3</td>
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<tr>
<td>2.15 Patent applications applications/million pop.</td>
<td>98</td>
<td>0.00</td>
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<tr>
<td>2.16 Venture capital deal volume US$ millions</td>
<td>34</td>
<td>7,342.2</td>
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<tr>
<td>2.17 Venture capital deal per size of economy US$/GDP</td>
<td>54</td>
<td>15.1</td>
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<tr>
<td><strong>Driver: Human Capital</strong></td>
<td>89</td>
<td>3.7</td>
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<tr>
<td>Current Labor Force 0-10 (best)</td>
<td>86</td>
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<tr>
<td>3.01 Manufacturing employment % working population</td>
<td>60</td>
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<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td></td>
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<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>72</td>
<td>0.56</td>
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<tr>
<td>3.04 Mean years of schooling Years</td>
<td>92</td>
<td>6.0</td>
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<tr>
<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>71</td>
<td>3.8</td>
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<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
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<td>3.4</td>
</tr>
<tr>
<td>Future Labor Force 0-10 (best)</td>
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</tr>
<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>58</td>
<td>-1.6</td>
</tr>
<tr>
<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
<td>43</td>
<td>3.5</td>
</tr>
<tr>
<td>3.09 Quality of universities Count</td>
<td>75</td>
<td>0.0</td>
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<tr>
<td>3.10 Quality of math and science education 1-7 (best)</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>2.9</td>
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<tr>
<td>3.12 School life expectancy Years</td>
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<td>8.6</td>
</tr>
<tr>
<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>92</td>
<td>37.6</td>
</tr>
<tr>
<td>3.14 Critical thinking in teaching 1-7 (best)</td>
<td>93</td>
<td>2.8</td>
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<tr>
<td>3.15 Active labor policies 1-7 (best)</td>
<td>99</td>
<td>2.3</td>
</tr>
<tr>
<td>3.16 On-the-job training 1-7 (best)</td>
<td>64</td>
<td>4.0</td>
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<tr>
<td>3.17 Hiring and firing practices 1-7 (best)</td>
<td>11</td>
<td>4.8</td>
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<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
<td>97</td>
<td>2.4</td>
</tr>
<tr>
<td>Trade 0-10 (best)</td>
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<tr>
<td>4.01 Trade % GDP</td>
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<tr>
<td>4.02 Trade tariffs % duty</td>
<td>89</td>
<td>0.11</td>
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<tr>
<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
<td>31</td>
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</tr>
<tr>
<td>4.04 Logistics performance 1 – 5 (best)</td>
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<td>2.7</td>
</tr>
<tr>
<td>Investment 0-10 (best)</td>
<td>68</td>
<td>1.5</td>
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<td>4.05 Greenfield investments US$ millions</td>
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<td>Infrastructure 0-10 (best)</td>
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<td>4.08 Transport infrastructure 0-100 (best)</td>
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<td>4.09 Electricity infrastructure 0-100 (best)</td>
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<td>5.01 Regulatory efficiency 0 – 100 (best)</td>
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<td>Sustainability 0-10 (best)</td>
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<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
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<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
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<td><strong>Driver: Demand Environment</strong></td>
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<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>7.01 Market size 0-100 (best)</td>
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<tr>
<td>Consumer Base 0-10 (best)</td>
<td>63</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
<td>58</td>
<td>3.7</td>
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## Norway

Readiness for the Future of Production Assessment 2018 edition

### Key economic indicators

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<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population (millions)</td>
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<tr>
<td>GDP (US$ billions)</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>70,391.6</td>
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<tr>
<td>Unemployment rate (%)</td>
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### Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added (2010 millions US$)</td>
<td>34,854.7</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>7.4</td>
</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>8.6</td>
</tr>
<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>0.6</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>46.1</td>
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<td>CO₂ emission per unit of value added (kg/USD)</td>
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### Readiness Overall Assessment

#### Drivers of Production 7.1

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<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>13th</td>
<td>6.9</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>5th</td>
<td>7.8</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>38th</td>
<td>5.7</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>7th</td>
<td>8.7</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>1st</td>
<td>8.8</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>32nd</td>
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#### Structure of Production 5.6

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<tr>
<td>Complexity</td>
<td>60%</td>
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</tr>
<tr>
<td>Scale</td>
<td>40%</td>
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</table>

### Archetype

- **High-Potential**: Norway 5.6, 7.1
- **Leading**: Norway 5.6, 7.1
- **Nascent**:
- **Legacy**:

---

Country Profiles

High Potential

Readiness for the Future of Production Report 2018
## Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
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<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
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<td>0.9</td>
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<tr>
<td><strong>Structure: Scale</strong> 0-10 (best)</td>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>1.03 Manufacturing value added US$ millions</td>
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<td>34,854.7</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
<td>13</td>
<td>6.9</td>
</tr>
<tr>
<td>Technology Platform 0-10 (best)</td>
<td>7</td>
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<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>69</td>
<td>110.1</td>
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<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td>11</td>
<td>99.0</td>
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<tr>
<td>2.03 Internet users % pop.</td>
<td>2</td>
<td>97.3</td>
</tr>
<tr>
<td>2.04 FDI and technology transfer 1-7 (best)</td>
<td>21</td>
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<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
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<td>5.8</td>
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<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
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<td>2.07 Cybersecurity commitment 0-1 (best)</td>
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<tr>
<td>Ability to Innovate 0-10 (best)</td>
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<td>2.08 State of cluster development 1-7 (best)</td>
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<td>5.0</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
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<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
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<td>4.1</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
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<td>4.5</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<td>2.13 R&amp;D expenditures % GDP</td>
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<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal per size of economy US$/GDP</td>
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<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
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<td>Current Labor Force 0-10 (best)</td>
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<td>3.01 Manufacturing employment % working population</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td>51.7</td>
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<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>21</td>
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<tr>
<td>3.04 Mean years of schooling Years</td>
<td>9</td>
<td>12.8</td>
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<tr>
<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>14</td>
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<td>3.06 Digital skills among population 1-7 (best)</td>
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<td>Future Labor Force 0-10 (best)</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
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<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.10 Quality of math and science education 1-7 (best)</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>3.12 School life expectancy Years</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
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<td>3.14 Critical thinking in teaching 1-7 (best)</td>
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<td>3.15 Active labor policies 1-7 (best)</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<tr>
<td>3.17 Hiring and firing practices 1-7 (best)</td>
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<tr>
<th>Index Component</th>
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<th>Value</th>
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<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong> 0-10 (best)</td>
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<td>Trade 0-10 (best)</td>
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<td>4.02 Trade tariffs % duty</td>
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<td>4.03 Prevalence of non-tariff barriers 1–7 (best)</td>
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<td>4.04 Logistics performance 1 – 5 (best)</td>
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<td>7.01 Market size 0-100 (best)</td>
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<td>4.3</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Oman

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<th>Indicator</th>
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<td>GDP (US$ billions)</td>
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Key production indicators

<table>
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<th>Indicator</th>
<th>Value</th>
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<tbody>
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<td>Manufacturing value added (2010 millions US$)</td>
<td>7,256.4</td>
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<tr>
<td>Manufacturing value added in economy (% GDP)</td>
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<tr>
<td>Manufacturing employment (% working population)</td>
<td>5.6</td>
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<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>5.4</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
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<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
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Readiness Overall Assessment

Drivers of Production 5.1

<table>
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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>40th</td>
<td>4.6</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>50th</td>
<td>5.1</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>36th</td>
<td>5.8</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>40th</td>
<td>6.1</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>97th</td>
<td>3.5</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>66th</td>
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</table>

Structure of Production 4.0

<table>
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<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Complexity</td>
<td>60%</td>
<td>64th</td>
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</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>74th</td>
<td>3.1</td>
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Archetype

Oman 4.0, 5.1
### Readiness for the Future of Production Assessment 2018 Edition

#### Oman

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<tr>
<th>Index Component</th>
<th>Rank /100</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
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<td>1.01 Economic complexity</td>
<td>0-10 (best)</td>
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<td><strong>Structure: Scale</strong></td>
<td>0-10 (best)</td>
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<td>1.02 Manufacturing value added in economy</td>
<td>% GDP</td>
<td>70</td>
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<td>1.03 Manufacturing value added</td>
<td>US$ millions</td>
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<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<td>Technology Platform</td>
<td>0-10 (best)</td>
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<tr>
<td>2.01 Mobile-cellular telephone subscriptions</td>
<td>/100 pop.</td>
<td>10</td>
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<tr>
<td>2.02 LTE mobile network coverage</td>
<td>% population</td>
<td>43</td>
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<tr>
<td>2.03 Internet users</td>
<td>% pop.</td>
<td>46</td>
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<td>6.01 Alternative and nuclear energy use</td>
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<td>CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>% of total energy use</td>
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<td>0-10 (best)</td>
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<td>7.02 Buyer sophistication</td>
<td>1-7 (best)</td>
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<td>7.03 Extent of market dominance</td>
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Key economic indicators

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<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
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<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>29,341.7</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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</table>

Readiness Overall Assessment

**Drivers of Production**

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<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>88th</td>
<td>3.2</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>90th</td>
<td>3.6</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>94th</td>
<td>2.7</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>89th</td>
<td>3.7</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>99th</td>
<td>2.9</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>35th</td>
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**Structure of Production**

<table>
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<tr>
<td>Complexity</td>
<td>60%</td>
<td>83rd</td>
<td>3.5</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>44th</td>
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Archetype

[Graph showing the archetypes and Pakistan's position]

**Pakistan**

Readiness for the Future of Production Report 2018

Country Profiles
# Pakistan

**Readiness for the Future of Production Assessment 2018 edition**

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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>0-10 (best)</td>
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<tr>
<td>1.01 Economic complexity</td>
<td>0.25 – 2.5 (best)</td>
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<tr>
<td><strong>Structure: Scale</strong></td>
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<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>% GDP</td>
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<td>2.0 Technology Platform</td>
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<td>2.01 Mobile-cellular telephone subscriptions</td>
<td>/100 pop.</td>
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<tr>
<td>2.02 LTE mobile network coverage</td>
<td>% population</td>
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<tr>
<td>2.03 Internet users</td>
<td>% pop.</td>
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<td>2.04 FDI and technology transfer</td>
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<td>60 4.4</td>
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<td>6.06 Wastewater treatment</td>
<td>0 – 5 (worst)</td>
<td>90 18.6</td>
</tr>
<tr>
<td><strong>Foreign and Domestic Demand</strong></td>
<td>0-10 (best)</td>
<td></td>
</tr>
<tr>
<td>7.01 Market size</td>
<td>0-100 (best)</td>
<td>28 63.7</td>
</tr>
<tr>
<td>Consumer Base</td>
<td>0-10 (best)</td>
<td>51 4.4</td>
</tr>
<tr>
<td>7.02 Buyer sophistication</td>
<td>1-7 (best)</td>
<td>47 3.6</td>
</tr>
<tr>
<td>7.03 Extent of market dominance</td>
<td>1-7 (best)</td>
<td>60 3.7</td>
</tr>
</tbody>
</table>
Panama

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population (millions)</td>
<td>4.0</td>
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<tr>
<td>GDP (US$ billions)</td>
<td>55.1</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>13,654.1</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010 millions US$)</td>
<td>2,521.4</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>5.7</td>
</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>7.4</td>
</tr>
<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>1.6</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>6.2</td>
</tr>
<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
<td>1.1</td>
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Readiness Overall Assessment

Drivers of Production

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>64th</td>
<td>3.9</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>60th</td>
<td>4.9</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>42nd</td>
<td>5.6</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>56th</td>
<td>5.0</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>17th</td>
<td>7.6</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>62nd</td>
<td>4.3</td>
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Structure of Production

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>56th</td>
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</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>92nd</td>
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Archetype

Panama is classified as Nascent with scores 3.8 and 4.9.
## Panama

### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
<td>56</td>
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<tr>
<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
<td>56</td>
<td>0.1</td>
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<td><strong>Structure: Scale</strong> 0-10 (best)</td>
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<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>93</td>
<td>5.7</td>
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<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>86</td>
<td>2,521.4</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
<td>64</td>
<td>3.9</td>
</tr>
<tr>
<td>Technology Platform 0-10 (best)</td>
<td>61</td>
<td>5.9</td>
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<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>6</td>
<td>172.3</td>
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<td>2.02 LTE mobile network coverage % population</td>
<td>92</td>
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<td>2.03 Internet users % pop.</td>
<td>67</td>
<td>54.0</td>
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<td>2.04 FDI and technology transfer 1-7 (best)</td>
<td>7</td>
<td>5.5</td>
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<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>31</td>
<td>5.1</td>
</tr>
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<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
<td>28</td>
<td>5.2</td>
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<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
<td>61</td>
<td>0.5</td>
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<tr>
<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
<td>70</td>
<td>2.0</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
<td>41</td>
<td>4.1</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
<td>48</td>
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<tr>
<td>2.10 Gov't procurement of advanced technology products 1-7 (best)</td>
<td>38</td>
<td>3.5</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>41</td>
<td>3.7</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<td>3.7</td>
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<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
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<td>19.4</td>
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<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
<td>60</td>
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<td>Current Labor Force 0-10 (best)</td>
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<tr>
<td>3.01 Manufacturing employment % working population</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td>24.0</td>
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<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>63</td>
<td>0.67</td>
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<tr>
<td>3.04 Mean years of schooling Years</td>
<td>52</td>
<td>9.9</td>
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<tr>
<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>57</td>
<td>4.0</td>
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<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>67</td>
<td>4.0</td>
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<tr>
<td>Future Labor Force 0-10 (best)</td>
<td>47</td>
<td>4.2</td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>36</td>
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<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.09 Quality of universities Count</td>
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<td>3.10 Quality of math and science education 1-7 (best)</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
<td>46</td>
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<td>3.12 School life expectancy Years</td>
<td>74</td>
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<tr>
<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>70</td>
<td>22.0</td>
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<td>3.14 Critical thinking in teaching 1-7 (best)</td>
<td>59</td>
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<td>3.15 Active labor policies 1-7 (best)</td>
<td>49</td>
<td>3.4</td>
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<tr>
<td>3.16 On-the-job training 1-7 (best)</td>
<td>62</td>
<td>4.1</td>
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<tr>
<td>3.17 Hiring and firing practices 1-7 (best)</td>
<td>70</td>
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<table>
<thead>
<tr>
<th>Index Component</th>
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<th>Value</th>
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<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong> 0-10 (best)</td>
<td>42</td>
<td>5.6</td>
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<tr>
<td>Trade 0-10 (best)</td>
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<td>7.8</td>
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<td>4.01 Trade % GDP</td>
<td>38</td>
<td>94.3</td>
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<tr>
<td>4.02 Trade tariffs % duty</td>
<td>58</td>
<td>0.05</td>
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<tr>
<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
<td>26</td>
<td>4.9</td>
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<tr>
<td>4.04 Logistics performance 1 – 5 (best)</td>
<td>42</td>
<td>3.3</td>
</tr>
<tr>
<td>Investment 0-10 (best)</td>
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<td>2.8</td>
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<tr>
<td>4.05 Greenfield investments US$ millions</td>
<td>51</td>
<td>2,644.1</td>
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<tr>
<td>4.06 FDI inflows US$ millions</td>
<td>43</td>
<td>4,342.2</td>
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<tr>
<td>4.07 Domestic credit to private sector % GDP</td>
<td>30</td>
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<tr>
<td><strong>Infrastructure</strong> 0-10 (best)</td>
<td>60</td>
<td>6.2</td>
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<tr>
<td>4.08 Transport infrastructure 0-100 (best)</td>
<td>38</td>
<td>53.4</td>
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<tr>
<td>4.09 Electricity infrastructure 0-100 (best)</td>
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<td>69.9</td>
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<tr>
<td><strong>Driver: Institutional Framework</strong> 0-10 (best)</td>
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<td>5.0</td>
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<tr>
<td>Government 0-10 (best)</td>
<td>56</td>
<td>5.0</td>
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<td>5.01 Regulatory efficiency 0 – 100 (best)</td>
<td>68</td>
<td>65.2</td>
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<tr>
<td>5.02 Incidence of corruption 0-100 (best)</td>
<td>63</td>
<td>38.0</td>
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<tr>
<td>5.03 Future orientation of government 1-7 (best)</td>
<td>59</td>
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<tr>
<td>5.04 Rule of law (2.5) – 2.0 (best)</td>
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<tr>
<td><strong>Driver: Sustainable Resources</strong> 0-10 (best)</td>
<td>17</td>
<td>7.6</td>
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<tr>
<td>Sustainability 0-10 (best)</td>
<td>17</td>
<td>7.6</td>
</tr>
<tr>
<td>6.01 Alternative and nuclear energy use % total energy use</td>
<td>58</td>
<td>0.2</td>
</tr>
<tr>
<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
<td>31</td>
<td>0.2</td>
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<tr>
<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
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<tr>
<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
<td>17</td>
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<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
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<td>72.3</td>
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<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
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<td>4.3</td>
</tr>
<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
<td>76</td>
<td>3.8</td>
</tr>
<tr>
<td>7.01 Market size 0-100 (best)</td>
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<td>37.8</td>
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<tr>
<td>Consumer Base 0-10 (best)</td>
<td>40</td>
<td>4.7</td>
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<tr>
<td>7.02 Buyer sophistication 1-7 (best)</td>
<td>46</td>
<td>3.6</td>
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<tr>
<td>7.03 Extent of market dominance 1-7 (best)</td>
<td>37</td>
<td>4.1</td>
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</tbody>
</table>
Paraguay

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (millions)</td>
<td>6.9</td>
</tr>
<tr>
<td>GDP (US$ billions)</td>
<td>27.4</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>4,003.3</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>6.0</td>
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</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010 US$)</td>
<td>2,776.2</td>
</tr>
<tr>
<td>Manufacturing value added in economy %</td>
<td>10.6</td>
</tr>
<tr>
<td>Manufacturing employment %</td>
<td>12.2</td>
</tr>
<tr>
<td>Manufacturing value added growth %</td>
<td>1.5</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries %</td>
<td>21.9</td>
</tr>
<tr>
<td>CO2 emission per unit of value added</td>
<td>0.1</td>
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</table>

Readiness Overall Assessment

Drivers of Production  3.8

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>91st</td>
<td>3.0</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>84th</td>
<td>4.0</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>71st</td>
<td>4.5</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>88th</td>
<td>3.7</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>57th</td>
<td>6.0</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>90th</td>
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Structure of Production  3.2

<table>
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<th>Score /10</th>
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<tr>
<td>Complexity</td>
<td>60%</td>
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</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>80th</td>
<td>2.5</td>
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</tbody>
</table>

Archetype

Paraguay 3.2, 3.8

Paraguay Key economic indicators

Population 6.9 millions
GDP 27.4 US$ billions
GDP per capita 4,003.3 US$
Unemployment rate 6.0%

Paraguay Key production indicators

Manufacturing value added 2,776.2 US$
Manufacturing value added in economy 10.6%
Manufacturing employment 12.2%
Manufacturing value added growth 1.5%
Medium hi-tech & hi-tech industries 21.9%
CO2 emission per unit of value added 0.1

Country Profiles
### Paraguay

#### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>80</td>
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<tr>
<td>1.01 Economic complexity (2.5) – 2.5</td>
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<td>-0.6</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong></td>
<td>80</td>
<td>2.5</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
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<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<td>3.0</td>
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<td>2.07 Cybersecurity commitment 0-1 (best)</td>
<td>79</td>
<td>0.3</td>
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<tr>
<td><strong>Ability to Innovate</strong></td>
<td>100</td>
<td>1.2</td>
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<td>0.0</td>
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<td>1.5</td>
</tr>
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<td><strong>Driver: Human Capital</strong></td>
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<td>4.0</td>
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<td>3.04 Mean years of schooling Years</td>
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<td>3.06 Digital skills among population 1-7 (best)</td>
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<td>Future Labor Force 0-10 (best)</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
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<td><strong>Driver: Global Trade &amp; Investment</strong></td>
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<td>3.07 Domestic credit to private sector % GDP</td>
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<td>3.08 Transport infrastructure 0-100 (best)</td>
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<td>3.09 Electricity infrastructure 0-100 (best)</td>
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<td>5.02 Incidence of corruption 0-100 (best)</td>
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<td>5.04 Rule of law (2.5) - 2.0 (best)</td>
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<td>Sustainability 0-10 (best)</td>
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<td>6.01 Alternative and nuclear energy use % total energy use</td>
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<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
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<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
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<td><strong>Driver: Demand Environment</strong></td>
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<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>7.01 Market size 0-100 (best)</td>
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<td>Consumer Base 0-10 (best)</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Peru

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<th>Indicator</th>
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<tbody>
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<td>Population (millions)</td>
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<td>GDP (US$ billions)</td>
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<td>GDP per capita (US$)</td>
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<td>Unemployment rate (%)</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
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<tbody>
<tr>
<td>Manufacturing value added (2010 US$)</td>
<td>27,266.4</td>
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<tr>
<td>Manufacturing value added in economy (% GDP)</td>
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<tr>
<td>Manufacturing employment (% working population)</td>
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<tr>
<td>Manufacturing value added growth (Annual %)</td>
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<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
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<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
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Readiness Overall Assessment

Drivers of Production 4.2

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<td>Global Trade &amp; Investment</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
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<tr>
<td>Sustainable Resources</td>
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<td>Demand Environment</td>
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Structure of Production 3.7

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Archetype

Peru 3.7, 4.2
## Peru

**Readiness for the Future of Production Assessment 2018 edition**

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### Country Profiles

**Driver: Global Trade & Investment**

- Trade 0-10 (best)
- 4.0

**Driver: Institutional Framework**

- Government 0-10 (best)
- 77 4.3

**Driver: Sustainable Resources**

- Sustainability 0-10 (best)
- 50 6.3

**Driver: Demand Environment**

- Foreign and Domestic Demand 0-10 (best)
- 75 4.5
## Philippines

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### Key economic indicators

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<td>GDP per capita (US$)</td>
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### Key production indicators

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<tbody>
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<td>Manufacturing value added in economy (% GDP)</td>
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### Readiness Overall Assessment

#### Drivers of Production 4.5

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<th>Rank</th>
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<td>Human Capital</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>69th</td>
<td>4.5</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>76th</td>
<td>4.4</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>69th</td>
<td>5.5</td>
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<tr>
<td>Demand Environment</td>
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#### Structure of Production 6.1

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<td>Scale</td>
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Philippines

Readiness for the Future of Production Assessment 2018 edition

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<td>Mobile-cellular telephone subscriptions</td>
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<td>FI and technology transfer</td>
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<td>Firm-level technology absorption</td>
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<td>Impact of ICTs on new services and products</td>
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<td>Ability to Innovate</td>
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<td>Company investment in emerging technology</td>
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<td>Gov't procurement of advanced technology products</td>
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Poland

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<th>Indicator</th>
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<tr>
<td>Population (millions)</td>
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<tr>
<td>GDP (US$ billions)</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>12,315.6</td>
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<tr>
<td>Unemployment rate (%)</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added (2010 millions US$)</td>
<td>101,093.6</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>17.7</td>
</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>19.3</td>
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</table>

Manufacturing value added growth (Annual %) | 5.5 |

Medium hi-tech & hi-tech industries (% of manu. value added) | 35.4 |

CO2 emission per unit of value added (kg/USD) | 0.3 |

Readiness Overall Assessment

Drivers of Production 5.8

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>37th</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>36th</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>23rd</td>
<td>6.4</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>39th</td>
<td>6.1</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>25th</td>
<td>7.1</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>23rd</td>
<td>5.9</td>
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Structure of Production 6.8

<table>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>15th</td>
<td>5.9</td>
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Archetype

Poland 6.8, 5.8

Country Profiles
### Poland

#### Country Profiles

**Readiness for the Future of Production Assessment 2018 edition**

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<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>17.7</td>
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<td>1.03 Manufacturing value added US$ millions</td>
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<tr>
<td>Technology Platform</td>
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<td>23</td>
<td>5.9</td>
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<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
<td>20</td>
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</tr>
<tr>
<td>7.01 Market size 0-100 (best)</td>
<td>20</td>
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<tr>
<td><strong>Consumer Base</strong></td>
<td>28</td>
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<tr>
<td>7.02 Buyer sophistication 1-7 (best)</td>
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<tr>
<td>7.03 Extent of market dominance 1-7 (best)</td>
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Portugal

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>11.7</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>16.9</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>0.2</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>25.7</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.2</td>
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Readiness Overall Assessment

Drivers of Production 6.0

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>28th</td>
<td>5.5</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>29th</td>
<td>6.0</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>28th</td>
<td>6.1</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>26th</td>
<td>6.9</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>34th</td>
<td>6.7</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>40th</td>
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Structure of Production 5.4

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<th>Score /10</th>
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<td>Scale</td>
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Archetype

Portugal 5.4, 6.0

High-Potential  Leading

Nascent

Legacy
## Portugal

### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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</thead>
<tbody>
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<td>6.2</td>
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<tr>
<td>1.01 Economic complexity</td>
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<tr>
<td>Structure: Scale</td>
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<td>4.1</td>
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<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>11.7</td>
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<td>1.03 Manufacturing value added US$ millions</td>
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<td>26,850.9</td>
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<td>Technology Platform</td>
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<td>2.03 Internet users % pop.</td>
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<td>70.4</td>
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<td>2.05 Firm-level technology absorption 1-7 (best)</td>
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<td>5.2</td>
</tr>
<tr>
<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
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<td>5.7</td>
</tr>
<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
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<td>Ability to Innovate 0-10 (best)</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
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<td>4.2</td>
</tr>
<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
<td>36</td>
<td>4.1</td>
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<tr>
<td>2.10 Govt procurement of advanced technology products 1-7 (best)</td>
<td>35</td>
<td>3.5</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>31</td>
<td>3.8</td>
</tr>
<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
<td>35</td>
<td>3.9</td>
</tr>
<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
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<td>1.3</td>
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<td>2.14 Scientific and technical publications Number per Billion PPP $ GDP</td>
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<td>45.5</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>8.61</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal per size of economy US$/GDP</td>
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<td>60.2</td>
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<td>Driver: Human Capital 0-10 (best)</td>
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<tr>
<td>Current Labor Force 0-10 (best)</td>
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<td>7.3</td>
</tr>
<tr>
<td>3.01 Manufacturing employment % working population</td>
<td>15</td>
<td>16.9</td>
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<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td>35.6</td>
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<tr>
<td>3.03 Female participation in labor force ratio</td>
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<tr>
<td>3.04 Mean years of schooling Years</td>
<td>65</td>
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<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>27</td>
<td>4.7</td>
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<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>43</td>
<td>4.5</td>
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<td>Future Labor Force 0-10 (best)</td>
<td>38</td>
<td>4.7</td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>30</td>
<td>9.7</td>
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<tr>
<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.09 Quality of universities Count</td>
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<tr>
<td>3.10 Quality of math and science education 1-7 (best)</td>
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<td>4.8</td>
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<tr>
<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>4.4</td>
</tr>
<tr>
<td>3.12 School life expectancy Years</td>
<td>20</td>
<td>16.5</td>
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<tr>
<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
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<td>13.3</td>
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<tr>
<td>3.14 Critical thinking in teaching 1-7 (best)</td>
<td>31</td>
<td>3.9</td>
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<tr>
<td>3.15 Active labor policies 1-7 (best)</td>
<td>35</td>
<td>3.9</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<td>4.4</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
<td>84</td>
<td>3.1</td>
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</table>

### Index Component | Rank /100 | Value |
| Driver: Global Trade & Investment 0-10 (best) | 28 | 6.1 |
| Trade 0-10 (best) | 39 | 7.5 |
| 4.01 Trade % GDP | 51 | 79.3 |
| 4.02 Trade tariffs % duty | 26 | 0.01 |
| 4.03 Prevalence of non-tariff barriers 1-7 (best) | 6 | 5.5 |
| 4.04 Logistics performance 1-5 (best) | 29 | 3.5 |
| Investment 0-10 (best) | 34 | 3.4 |
| 4.05 Greenfield investments US$ millions | 60 | 1,770.2 |
| 4.06 FDI inflows US$ millions | 36 | 6,250.0 |
| 4.07 Domestic credit to private sector % GDP | 21 | 112.0 |
| Infrastructure 0-10 (best) | 28 | 7.5 |
| 4.08 Transport infrastructure 0-100 (best) | 19 | 65.4 |
| 4.09 Electricity infrastructure 0-100 (best) | 47 | 84.0 |
| Driver: Institutional Framework 0-10 (best) | 26 | 6.9 |
| Government 0-10 (best) | 26 | 6.9 |
| 5.01 Regulatory efficiency 0-100 (best) | 40 | 71.9 |
| 5.02 Incidence of corruption 0-100 (best) | 25 | 62.0 |
| 5.03 Future orientation of government 1-7 (best) | 54 | 3.6 |
| 5.04 Rule of law (2.5) - 2.0 (best) | 22 | 1.1 |
| Driver: Sustainable Resources 0-10 (best) | 34 | 6.7 |
| Sustainability 0-10 (best) | 34 | 6.7 |
| 6.01 Alternative and nuclear energy use % total energy use | 43 | 0.3 |
| 6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 23 | 0.2 |
| 6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 27 | 0.1 |
| 6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 20 | 0.0 |
| 6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 72 | 3.3 |
| 6.06 Wastewater treatment 0 – 5 (worst) | 36 | 85.4 |
| Driver: Demand Environment 0-10 (best) | 40 | 5.0 |
| Foreign and Domestic Demand 0-10 (best) | 51 | 5.1 |
| 7.01 Market size 0-100 (best) | 51 | 51.5 |
| Consumer Base 0-10 (best) | 36 | 4.9 |
| 7.02 Buyer sophistication 1-7 (best) | 40 | 3.7 |
| 7.03 Extent of market dominance 1-7 (best) | 36 | 4.1 |
Country Profiles

Qatar

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>16,157.9</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>9.0</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>6.9</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>3.2</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>66.9</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.9</td>
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Readiness Overall Assessment

Drivers of Production 6.0

<table>
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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>29th</td>
<td>5.2</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>26th</td>
<td>6.1</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>37th</td>
<td>5.8</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>22nd</td>
<td>7.1</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>67th</td>
<td>5.5</td>
</tr>
<tr>
<td>Demand Environment</td>
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<td>29th</td>
<td>5.8</td>
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Structure of Production 3.9

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<th>Score /10</th>
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<td>Scale</td>
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</table>

Archetype

Qatar 3.9, 6.0

High-Potential Leading

Nascent Legacy

Small / basic Large / complex
Readiness for the Future of Production Assessment 2018 edition

Qatar

Index Component | Rank /100 | Value
--- | --- | ---
Structure: Complexity | 74 | 4.3
1.01 Economic complexity | 74 | -0.3
Structure: Scale | 71 | 3.3
1.02 Manufacturing value added in economy % GDP | 82 | 9.0
1.03 Manufacturing value added US$ millions | 54 | 16,157.9
Driver: Technology & Innovation | 29 | 5.2
Technology Platform | 19 | 7.7
2.01 Mobile-cellular telephone subscriptions /100 pop. | 18 | 147.1
2.02 LTE mobile network coverage % population | 10 | 99.0
2.03 Internet users % pop. | 5 | 94.3
2.04 FDI and technology transfer 1-7 (best) | 22 | 5.1
2.05 Firm-level technology absorption 1-7 (best) | 16 | 5.4
2.06 Impact of ICTs on new services and products 1-7 (best) | 24 | 5.3
2.07 Cybersecurity commitment 0-1 (best) | 28 | 0.7
Ability to Innovate | 40 | 2.6
2.08 State of cluster development 1-7 (best) | 8 | 5.2
2.09 Company investment in emerging technology 1-7 (best) | 18 | 4.7
2.10 Gov’t procurement of advanced technology products 1-7 (best) | 3 | 5.1
2.11 Companies embracing disruptive ideas 1-7 (best) | 8 | 4.7
2.12 Multi-stakeholder collaboration 1-7 (best) | 9 | 5.0
2.13 R&D expenditures % GDP | 65 | 0.5
2.14 Scientific and technical publications Number per Billion PPP$ GDP | 69 | 6.3
2.15 Patent applications applications/million pop. | 33 | 7.59
2.16 Venture capital deal volume US$ millions | 63 | 852.7
2.17 Venture capital deal volume per size of economy US$/GDP | 81 | 4.9
Driver: Human Capital | 26 | 6.1
Current Labor Force | 77 | 5.1
3.01 Manufacturing employment % working population | 88 | 6.9
3.02 Knowledge-intensive employment % working pop. | 74 | 16.1
3.03 Female participation in labor force ratio | 96 | 0.18
3.04 Mean years of schooling Years | 53 | 9.8
3.05 Availability of scientists and engineers 1-7 (best) | 5 | 5.4
3.06 Digital skills among population 1-7 (best) | 11 | 5.5
Future Labor Force | 6 | 7.1
3.07 Migration migrants/100,000 pop. | 2 | 223.7
3.08 Country capacity to attract and retain talent 1-7 (best) | 6 | 5.3
3.09 Quality of universities Count | 62 | 1.0
3.10 Quality of math and science education 1-7 (best) | 6 | 5.6
3.11 Quality of vocational training 1-7 (best) | 13 | 5.3
3.12 School life expectancy Years | 85 | 12.0
3.13 Pupil-to-teacher ratio in primary education Ratio | 17 | 11.6
3.14 Critical thinking in teaching 1-7 (best) | 3 | 5.5
3.15 Active labor policies 1-7 (best) | 11 | 4.9
3.16 On-the-job training 1-7 (best) | 17 | 5.4
3.17 Hiring and firing practices 1-7 (best) | 8 | 5.1

Index Component | Rank /100 | Value
--- | --- | ---
Driver: Global Trade & Investment | 37 | 5.8
Trade | 32 | 7.8
4.01 Trade % GDP | 43 | 89.1
4.02 Trade tariffs % duty | 49 | 0.4
4.03 Prevalence of non-tariff barriers 1-7 (best) | 8 | 5.3
4.04 Logistics performance 1-5 (best) | 28 | 3.6
Investment | 54 | 2.1
4.05 Greenfield investments US$ millions | 67 | 1,327.8
4.06 FDI inflows US$ millions | 90 | 488.1
4.07 Domestic credit to private sector % GDP | 35 | 79.4
Infrastructure | 30 | 7.4
4.08 Transport infrastructure 0-100 (best) | 33 | 55.6
4.09 Electricity infrastructure 0-100 (best) | 21 | 93.1
Driver: Institutional Framework | 22 | 7.1
Government | 22 | 7.1
5.01 Regulatory efficiency 0 – 100 (best) | 44 | 71.4
5.02 Incidence of corruption 0-100 (best) | 27 | 61.0
5.03 Future orientation of government 1-7 (best) | 4 | 5.6
5.04 Rule of law (2.5) – 2.0 (best) | 31 | 0.9
Driver: Sustainable Resources | 67 | 5.5
Sustainability | 67 | 5.5
6.01 Alternative and nuclear energy use % total energy use | 96 | 0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 58 | 0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 17 | 0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 7 | 0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 94 | 5.0
6.06 Wastewater treatment 0 – 5 (worst) | 26 | 90.1
Driver: Demand Environment | 29 | 5.8
Foreign and Domestic Demand | 50 | 5.3
7.01 Market size 0-100 (best) | 50 | 52.5
Consumer Base | 10 | 6.3
7.02 Buyer sophistication 1-7 (best) | 9 | 4.7
7.03 Extent of market dominance 1-7 (best) | 13 | 4.8
Romania

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population</td>
<td>19.8</td>
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<tr>
<td>GDP</td>
<td>187.0</td>
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<tr>
<td>GDP per capita</td>
<td>9,465.4</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>5.9</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added</td>
<td>38,988.6</td>
</tr>
<tr>
<td>Manufacturing value added in economy</td>
<td>19.6</td>
</tr>
<tr>
<td>Manufacturing employment</td>
<td>18.2</td>
</tr>
<tr>
<td>Manufacturing value added growth</td>
<td>4.7</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries</td>
<td>37.9</td>
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<tr>
<td>CO2 emission per unit of value added</td>
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Readiness Overall Assessment

Drivers of Production 4.9

<table>
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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>67th</td>
<td>3.9</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>57th</td>
<td>4.9</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>58th</td>
<td>5.1</td>
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<td>Institutional Framework</td>
<td>20%</td>
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<td>Sustainable Resources</td>
<td>5%</td>
<td>23rd</td>
<td>7.3</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>57th</td>
<td>4.6</td>
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Structure of Production 6.6

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<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
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<tr>
<td>Complexity</td>
<td>60%</td>
<td>24th</td>
<td>7.3</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>19th</td>
<td>5.7</td>
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</table>

Archetype

Romania 6.6, 4.9
## Romania

### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>24</td>
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<tr>
<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
<td>24</td>
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<tr>
<td><strong>Structure: Scale</strong></td>
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<td>5.7</td>
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<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>12</td>
<td>19.6</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>37</td>
<td>38,988.6</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
<td>67</td>
<td>3.9</td>
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<tr>
<td>Technology Platform</td>
<td>57</td>
<td>6.0</td>
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<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>74</td>
<td>106.4</td>
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<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td>60</td>
<td>75.2</td>
</tr>
<tr>
<td>2.03 Internet users % pop.</td>
<td>61</td>
<td>59.5</td>
</tr>
<tr>
<td>2.04 FDI and technology transfer 1-7 (best)</td>
<td>71</td>
<td>4.1</td>
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<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>80</td>
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<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
<td>64</td>
<td>4.5</td>
</tr>
<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
<td>43</td>
<td>0.6</td>
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<tr>
<td><strong>Ability to Innovate</strong></td>
<td>89</td>
<td>1.7</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
<td>92</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
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<td>3.0</td>
</tr>
<tr>
<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
<td>99</td>
<td>2.3</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>67</td>
<td>3.3</td>
</tr>
<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<td>3.2</td>
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<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
<td>69</td>
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<tr>
<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
<td>39</td>
<td>16.5</td>
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<td>2.15 Patent applications applications/million pop.</td>
<td>45</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
<td>57</td>
<td>1,421.5</td>
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<td>2.17 Venture capital deal per size of economy US$/GDP</td>
<td>71</td>
<td>7.6</td>
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<tr>
<td><strong>Driver: Human Capital</strong></td>
<td>57</td>
<td>4.9</td>
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<tr>
<td>Current Labor Force 0-10 (best)</td>
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<td>6.5</td>
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<tr>
<td>3.01 Manufacturing employment % working population</td>
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<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
<td>55</td>
<td>22.7</td>
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<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>42</td>
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<td>3.04 Mean years of schooling Years</td>
<td>39</td>
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<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>72</td>
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<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>59</td>
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<tr>
<td><strong>Future Labor Force 0-10 (best)</strong></td>
<td>71</td>
<td>3.3</td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>64</td>
<td>-2.3</td>
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<tr>
<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<tr>
<td>3.09 Quality of universities Count</td>
<td>47</td>
<td>4.0</td>
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<tr>
<td>3.10 Quality of math and science education 1-7 (best)</td>
<td>21</td>
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<tr>
<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>3.12 School life expectancy Years</td>
<td>50</td>
<td>14.9</td>
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<tr>
<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>60</td>
<td>18.9</td>
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<tr>
<td>3.14 Critical thinking in teaching 1-7 (best)</td>
<td>95</td>
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<tr>
<td>3.15 Active labor policies 1-7 (best)</td>
<td>47</td>
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<tr>
<td>3.16 On-the-job training 1-7 (best)</td>
<td>81</td>
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<tr>
<td>3.17 Hiring and firing practices 1-7 (best)</td>
<td>41</td>
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<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
<td>58</td>
<td>5.1</td>
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<tr>
<td>Trade 0-10 (best)</td>
<td>42</td>
<td>7.4</td>
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<tr>
<td>4.01 Trade % GDP</td>
<td>48</td>
<td>83.7</td>
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<tr>
<td>4.02 Trade tariffs % duty</td>
<td>22</td>
<td>0.01</td>
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<tr>
<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
<td>37</td>
<td>4.6</td>
</tr>
<tr>
<td>4.04 Logistics performance 1 – 5 (best)</td>
<td>58</td>
<td>3.0</td>
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<tr>
<td><strong>Investment 0-10 (best)</strong></td>
<td>60</td>
<td>1.6</td>
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<tr>
<td>4.05 Greenfield investments US$ millions</td>
<td>31</td>
<td>6,610.7</td>
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<tr>
<td>4.06 FDI inflows US$ millions</td>
<td>47</td>
<td>3,594.6</td>
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<tr>
<td>4.07 Domestic credit to private sector % GDP</td>
<td>87</td>
<td>28.2</td>
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<tr>
<td><strong>Infrastructure 0-10 (best)</strong></td>
<td>55</td>
<td>6.4</td>
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<tr>
<td>4.08 Transport infrastructure 0-100 (best)</td>
<td>59</td>
<td>45.5</td>
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<tr>
<td>4.09 Electricity infrastructure 0-100 (best)</td>
<td>52</td>
<td>82.1</td>
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<tr>
<td><strong>Driver: Institutional Framework</strong> 0-10 (best)</td>
<td>46</td>
<td>5.5</td>
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<tr>
<td>Government 0-10 (best)</td>
<td>46</td>
<td>5.5</td>
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<tr>
<td>5.01 Regulatory efficiency 0 – 100 (best)</td>
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<td>70.7</td>
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<tr>
<td>5.02 Incidence of corruption 0-100 (best)</td>
<td>42</td>
<td>48.0</td>
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<tr>
<td>5.03 Future orientation of government 1-7 (best)</td>
<td>74</td>
<td>3.2</td>
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<tr>
<td>5.04 Rule of law (2.5) – 2.0 (best)</td>
<td>47</td>
<td>0.3</td>
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<tr>
<td><strong>Driver: Sustainable Resources</strong> 0-10 (best)</td>
<td>23</td>
<td>7.3</td>
</tr>
<tr>
<td>Sustainability 0-10 (best)</td>
<td>23</td>
<td>7.3</td>
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<tr>
<td>6.01 Alternative and nuclear energy use % total energy use</td>
<td>37</td>
<td>0.3</td>
</tr>
<tr>
<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
<td>52</td>
<td>0.4</td>
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<tr>
<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
<td>48</td>
<td>0.1</td>
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<tr>
<td>6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
<td>59</td>
<td>0.1</td>
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<tr>
<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
<td>24</td>
<td>0.8</td>
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<tr>
<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
<td>56</td>
<td>74.3</td>
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<tr>
<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
<td>57</td>
<td>4.6</td>
</tr>
<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
<td>40</td>
<td>5.7</td>
</tr>
<tr>
<td>7.01 Market size 0-100 (best)</td>
<td>40</td>
<td>56.6</td>
</tr>
<tr>
<td>Consumer Base 0-10 (best)</td>
<td>90</td>
<td>3.5</td>
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<tr>
<td>7.02 Buyer sophistication 1-7 (best)</td>
<td>97</td>
<td>2.6</td>
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<tr>
<td>7.03 Extent of market dominance 1-7 (best)</td>
<td>62</td>
<td>3.6</td>
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Russian Federation

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Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population (millions)</td>
<td>143.4</td>
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<tr>
<td>GDP (US$ billions)</td>
<td>1,280.7</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>8,928.7</td>
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<tr>
<td>Unemployment rate (%)</td>
<td>5.5</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 (US$)</td>
<td>202,188.2</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>12.7</td>
</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>14.3</td>
</tr>
<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>-1.9</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (%) of manu. value added</td>
<td>25.6</td>
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<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
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Readiness Overall Assessment

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>39th</td>
<td>4.7</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>25th</td>
<td>6.3</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>49th</td>
<td>5.4</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>87th</td>
<td>3.8</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>35th</td>
<td>6.7</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>20th</td>
<td>6.2</td>
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Archetype

Russian Federation

<table>
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<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>44th</td>
<td>5.9</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>25th</td>
<td>5.4</td>
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### Index Component

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<tr>
<th>Index Component</th>
<th>Rank /100</th>
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<tbody>
<tr>
<td>Consumer Base</td>
<td>48</td>
<td>4.4</td>
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<td>Foreign and Domestic Demand</td>
<td>6</td>
<td>8.0</td>
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#### Driver: Technology & Innovation

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<tr>
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<th>Rank /100</th>
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<tbody>
<tr>
<td>Technology Platform</td>
<td>39</td>
<td>6.8</td>
</tr>
<tr>
<td>0.01 Mobile-cellular telephone subscriptions</td>
<td>100 pop.</td>
<td>8</td>
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<tr>
<td>0.02 LTE mobile network coverage</td>
<td>% population</td>
<td>70</td>
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<tr>
<td>0.03 Internet users</td>
<td>% population</td>
<td>34</td>
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<tr>
<td>0.04 FDI and technology transfer</td>
<td>1–7 (best)</td>
<td>87</td>
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<td>82</td>
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<tr>
<td>0.07 Cybersecurity commitment</td>
<td>0–1 (best)</td>
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#### Driver: Human Capital

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<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td>Current Labor Force</td>
<td>10–1 (best)</td>
<td>18</td>
</tr>
<tr>
<td>0.01 Manufacturing employment</td>
<td>% working population</td>
<td>29</td>
</tr>
<tr>
<td>0.02 Knowledge-intensive employment</td>
<td>% working pop.</td>
<td>13</td>
</tr>
<tr>
<td>0.03 Female participation in labor force</td>
<td>ratio</td>
<td>15</td>
</tr>
<tr>
<td>0.04 Mean years of schooling</td>
<td>Years</td>
<td>26</td>
</tr>
<tr>
<td>0.05 Availability of scientists and engineers</td>
<td>1–7 (best)</td>
<td>46</td>
</tr>
<tr>
<td>0.06 Digital skills among population</td>
<td>1–7 (best)</td>
<td>37</td>
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### Driver: Global Trade & Investment

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<tr>
<td>Trade</td>
<td>0–10 (best)</td>
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<tr>
<td>0.01 Trade</td>
<td>% GDP</td>
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<tr>
<td>0.02 Trade tariffs</td>
<td>% duty</td>
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<td>89</td>
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<tr>
<td>0.04 Logistics performance</td>
<td>1–5 (best)</td>
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### Driver: Institutional Framework

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<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td>Government</td>
<td>0–10 (best)</td>
<td>87</td>
</tr>
<tr>
<td>0.01 Regulatory efficiency</td>
<td>0–100 (best)</td>
<td>82</td>
</tr>
<tr>
<td>0.02 Incidence of corruption</td>
<td>0–100 (best)</td>
<td>89</td>
</tr>
<tr>
<td>0.03 Future orientation of government</td>
<td>1–7 (best)</td>
<td>40</td>
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<tr>
<td>0.04 Rule of law</td>
<td>(2.5)–2.0 (best)</td>
<td>91</td>
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### Driver: Sustainable Resources

<table>
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<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Sustainability</td>
<td>0–10 (best)</td>
<td>35</td>
</tr>
<tr>
<td>0.01 Alternative and nuclear energy use</td>
<td>% total energy use</td>
<td>74</td>
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<tr>
<td>0.02 CO2 intensity level</td>
<td>CO2 emissions in megatons/GDP (US$ billions)</td>
<td>85</td>
</tr>
<tr>
<td>0.03 CH4 intensity level</td>
<td>CH4 emissions in megatons/GDP (US$ billions)</td>
<td>73</td>
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<tr>
<td>0.04 N2O intensity level</td>
<td>N2O emissions in megatons/GDP (US$ billions)</td>
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### Driver: Demand Environment

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<tr>
<td>Foreign and Domestic Demand</td>
<td>0–10 (best)</td>
<td>6</td>
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<tr>
<td>0.01 Market size</td>
<td>0–100 (best)</td>
<td>6</td>
</tr>
<tr>
<td>0.02 Buyer sophistication</td>
<td>1–7 (best)</td>
<td>49</td>
</tr>
<tr>
<td>0.03 Extent of market dominance</td>
<td>1–7 (best)</td>
<td>54</td>
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Saudi Arabia

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Key economic indicators

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<thead>
<tr>
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<tbody>
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<tr>
<td>GDP US$ billions</td>
<td>639.6</td>
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<tr>
<td>GDP per capita US$</td>
<td>20,150.1</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>5.6</td>
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Key production indicators

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<td>Manufacturing employment % working population</td>
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<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>35.4</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>1.7</td>
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Readiness Overall Assessment

Drivers of Production 5.4

<table>
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<tr>
<th>Driver</th>
<th>Weighting</th>
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<td>20%</td>
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<td>5.4</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>38th</td>
<td>6.2</td>
</tr>
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<td>Sustainable Resources</td>
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Structure of Production 5.2

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Archetype

Saudi Arabia 5.2, 5.4

Nascent

Country Profiles
### Saudi Arabia

#### Readiness for the Future of Production Assessment 2018 edition

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<th>Index Component</th>
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<td>Sustainability</td>
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<td>6.01 Alternative and nuclear energy use % total energy use</td>
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<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>7.03Extent of market dominance 1-7 (best)</td>
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Senegal

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<td>Population (millions)</td>
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<tr>
<td>GDP (US$ billions)</td>
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GDP per capita (US$) 959.7

Key production indicators

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<thead>
<tr>
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<td>Manufacturing value added 2010 (millions US$)</td>
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<td>Manufacturing value added in economy (% GDP)</td>
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<td>Manufacturing employment (% working population)</td>
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Manufacturing value added growth (Annual %) 3.7

Medium hi-tech & hi-tech industries (% of manu. value added) 21.6

CO2 emission per unit of value added (kg/USD) 0.7

Readiness Overall Assessment

Drivers of Production 3.7

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<th>Rank</th>
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<tr>
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<td>20%</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>92nd</td>
<td>3.5</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>88th</td>
<td>3.4</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
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<td>4.9</td>
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<tr>
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<td>5%</td>
<td>83rd</td>
<td>4.8</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>91st</td>
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Structure of Production 3.1

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Archetype

High-Potential

Leading

Senegal 3.1, 3.7

Nascent

Legacy
## Senegal

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<td>5.04 Rule of law</td>
<td>(2.5) – 2.0 (best)</td>
<td>65</td>
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<tr>
<td><strong>Driver: Sustainable Resources</strong></td>
<td>0-10 (best)</td>
<td>83</td>
</tr>
<tr>
<td>Sustainability</td>
<td>0-10 (best)</td>
<td>83</td>
</tr>
<tr>
<td>6.01 Alternative and nuclear energy use</td>
<td>% total energy use</td>
<td>20</td>
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<tr>
<td>6.02 CO2 intensity level</td>
<td>CO2 emissions in megatons/GDP (US$ billions)</td>
<td>75</td>
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<tr>
<td>6.03 CH4 intensity level</td>
<td>CH4 emissions in megatons/GDP (US$ billions)</td>
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<tr>
<td>6.04 N2O intensity level</td>
<td>N2O emissions in megatons/GDP (US$ billions)</td>
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<tr>
<td>6.05 Baseline water stress</td>
<td>Annual withdrawals, % of annual available blue water</td>
<td>11</td>
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<tr>
<td>6.06 Wastewater treatment</td>
<td>% of annual available blue water</td>
<td>86</td>
</tr>
<tr>
<td><strong>Driver: Demand Environment</strong></td>
<td>0-10 (best)</td>
<td>91</td>
</tr>
<tr>
<td>Foreign and Domestic Demand</td>
<td>0-10 (best)</td>
<td>92</td>
</tr>
<tr>
<td>7.01 Market size</td>
<td>0-100 (best)</td>
<td>92</td>
</tr>
<tr>
<td>Consumer Base</td>
<td>0-10 (best)</td>
<td>74</td>
</tr>
<tr>
<td>7.02 Buyer sophistication</td>
<td>1-7 (best)</td>
<td>95</td>
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<tr>
<td>7.03 Extent of market dominance</td>
<td>1-7 (best)</td>
<td>46</td>
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Serbia

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>7.0</td>
</tr>
<tr>
<td>GDP US$ billions</td>
<td>37.7</td>
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<tr>
<td>GDP per capita US$</td>
<td>5,376.3</td>
</tr>
<tr>
<td>Unemployment rate %</td>
<td>15.9</td>
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</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>5,719.7</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>13.9</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>16.1</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>0.4</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>23.9</td>
</tr>
<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.6</td>
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</table>

Readiness Overall Assessment

Drivers of Production 4.6

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>69th</td>
<td>3.8</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>54th</td>
<td>5.0</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>60th</td>
<td>5.1</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>60th</td>
<td>4.9</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>53rd</td>
<td>6.2</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>85th</td>
<td>3.5</td>
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Structure of Production 5.2

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>37th</td>
<td>6.3</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>63rd</td>
<td>3.5</td>
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Archetype

- **High-Potential**
- **Leading**
- **Nascent**
- **Legacy**

Serbia 5.2, 4.6

Population 7.0
GDP 37.7
GDP per capita 5,376.3
Unemployment rate 15.9
Manufacturing value added 5,719.7
Manufacturing value added in economy 13.9
Manufacturing employment 16.1
Manufacturing value added growth 0.4
Medium hi-tech & hi-tech industries 23.9
CO2 emission per unit of value added 0.6
## Serbia

### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>37</td>
<td>6.3</td>
</tr>
<tr>
<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
<td>37</td>
<td>0.6</td>
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<tr>
<td><strong>Structure: Scale</strong></td>
<td>63</td>
<td>3.5</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>46</td>
<td>13.9</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>69</td>
<td>5,719.7</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
<td>69</td>
<td>3.8</td>
</tr>
<tr>
<td>Technology Platform 0-10 (best)</td>
<td>72</td>
<td>5.1</td>
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<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>52</td>
<td>120.6</td>
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<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td>58</td>
<td>78.2</td>
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<td>2.03 Internet users % pop.</td>
<td>49</td>
<td>67.1</td>
</tr>
<tr>
<td>2.04 FD1 and technology transfer 1-7 (best)</td>
<td>83</td>
<td>3.9</td>
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<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>97</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
<td>80</td>
<td>4.2</td>
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<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
<td>84</td>
<td>0.3</td>
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<tr>
<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
<td>47</td>
<td>2.5</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
<td>80</td>
<td>3.4</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
<td>89</td>
<td>3.0</td>
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<tr>
<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
<td>79</td>
<td>2.8</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
<td>94</td>
<td>3.0</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
<td>76</td>
<td>3.3</td>
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<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
<td>45</td>
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<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
<td>7</td>
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<tr>
<td>2.15 Patent applications applications/million pop.</td>
<td>48</td>
<td>2.15</td>
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<tr>
<td>2.16 Venture capital deal volume US$ millions</td>
<td>84</td>
<td>156.3</td>
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<tr>
<td>2.17 Venture capital deal per size of economy US$GDP</td>
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<tr>
<td><strong>Driver: Human Capital</strong> 0-10 (best)</td>
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<td>5.0</td>
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<tr>
<td>Current Labor Force 0-10 (best)</td>
<td>40</td>
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<tr>
<td>3.01 Manufacturing employment % working population</td>
<td>20</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
<td>42</td>
<td>28.9</td>
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<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>37</td>
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<tr>
<td>3.04 Mean years of schooling Years</td>
<td>38</td>
<td>11.0</td>
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<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>60</td>
<td>3.9</td>
</tr>
<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>58</td>
<td>4.2</td>
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<tr>
<td>Future Labor Force 0-10 (best)</td>
<td>73</td>
<td>3.2</td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>93</td>
<td>-14.1</td>
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<tr>
<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
<td>98</td>
<td>1.9</td>
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<tr>
<td>3.09 Quality of universities Count</td>
<td>62</td>
<td>1.0</td>
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<td>3.10 Quality of math and science education 1-7 (best)</td>
<td>26</td>
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<tr>
<td>3.11 Quality of vocational training 1-7 (best)</td>
<td>67</td>
<td>3.7</td>
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<tr>
<td>3.12 School life expectancy Years</td>
<td>54</td>
<td>14.6</td>
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<tr>
<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>35</td>
<td>15.2</td>
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<tr>
<td>3.14 Critical thinking in teaching 1-7 (best)</td>
<td>68</td>
<td>3.1</td>
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<tr>
<td>3.15 Active labor policies 1-7 (best)</td>
<td>66</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
<td>80</td>
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<tr>
<td>3.17 Hiring and firing practices 1-7 (best)</td>
<td>57</td>
<td>3.6</td>
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<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong> 0-10 (best)</td>
<td>60</td>
<td>5.1</td>
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<tr>
<td>Trade 0-10 (best)</td>
<td>37</td>
<td>7.7</td>
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<tr>
<td>4.01 Trade % GDP</td>
<td>24</td>
<td>109.2</td>
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<tr>
<td>4.02 Trade tariffs % duty</td>
<td>66</td>
<td>0.05</td>
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<tr>
<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
<td>81</td>
<td>4.0</td>
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<tr>
<td>4.04 Logistics performance 1 – 5 (best)</td>
<td>69</td>
<td>2.8</td>
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<tr>
<td>Investment 0-10 (best)</td>
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<td>1.5</td>
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<tr>
<td>4.05 Greenfield investments US$ millions</td>
<td>41</td>
<td>3,649.2</td>
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<td>4.06 FDI inflows US$ millions</td>
<td>56</td>
<td>2,240.3</td>
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<tr>
<td>4.07 Domestic credit to private sector % GDP</td>
<td>71</td>
<td>43.4</td>
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<tr>
<td>Infrastructure 0-10 (best)</td>
<td>63</td>
<td>6.1</td>
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<td>4.08 Transport infrastructure 0-100 (best)</td>
<td>47</td>
<td>50.0</td>
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<td>4.09 Electricity infrastructure 0-100 (best)</td>
<td>77</td>
<td>71.7</td>
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<tr>
<td><strong>Driver: Institutional Framework</strong> 0-10 (best)</td>
<td>60</td>
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<tr>
<td>Government 0-10 (best)</td>
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<td>5.01 Regulatory efficiency 0 – 100 (best)</td>
<td>51</td>
<td>69.9</td>
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<td>5.02 Incidence of corruption 0-100 (best)</td>
<td>53</td>
<td>42.0</td>
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<tr>
<td>5.03 Future orientation of government 1-7 (best)</td>
<td>63</td>
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<td>5.04 Rule of law (2.5) – 2.0 (best)</td>
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<td>-0.1</td>
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<tr>
<td><strong>Driver: Sustainable Resources</strong> 0-10 (best)</td>
<td>53</td>
<td>6.2</td>
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<tr>
<td>Sustainability 0-10 (best)</td>
<td>53</td>
<td>6.2</td>
</tr>
<tr>
<td>6.01 Alternative and nuclear energy use % total energy use</td>
<td>63</td>
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<tr>
<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
<td>88</td>
<td>0.9</td>
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
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<tr>
<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
<td>20</td>
<td>0.6</td>
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<tr>
<td>6.06 Wastewater treatment 0 – 5 (worst)</td>
<td>67</td>
<td>64.0</td>
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<tr>
<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
<td>85</td>
<td>3.5</td>
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<tr>
<td>Foreign and Domestic Demand 0-10 (best)</td>
<td>71</td>
<td>4.0</td>
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<tr>
<td>7.01 Market size 0-100 (best)</td>
<td>71</td>
<td>40.4</td>
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<tr>
<td>Consumer Base 0-10 (best)</td>
<td>97</td>
<td>3.0</td>
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<tr>
<td>7.02 Buyer sophistication 1-7 (best)</td>
<td>99</td>
<td>2.4</td>
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<td>7.03Extent of market dominance 1-7 (best)</td>
<td>89</td>
<td>3.2</td>
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Singapore

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population (millions)</td>
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<tr>
<td>GDP (US$ billions)</td>
<td>297.0</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>52,960.7</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>2.1</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010 millions US$)</td>
<td>52,782.2</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>18.2</td>
</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>11.1</td>
</tr>
<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>-1.2</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>80.4</td>
</tr>
<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
<td>0.2</td>
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Readiness Overall Assessment

Drivers of Production 8.0

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>6th</td>
<td>7.4</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>2nd</td>
<td>8.0</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>1st</td>
<td>9.0</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>1st</td>
<td>9.1</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>56th</td>
<td>6.1</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>14th</td>
<td>6.4</td>
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</table>

Structure of Production 7.3

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
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<td>8.4</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>22nd</td>
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</table>

Archetype

Singapore 7.3, 8.0

High-Potential

Leading

Nascent

Legacy
## Readiness for the Future of Production Assessment 2018 edition

### Index Component: Structure: Complexity (0-10 (best))
- **Rank /100 Value**
  - 11 8.4

<table>
<thead>
<tr>
<th>Component</th>
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<tbody>
<tr>
<td>Economic complexity</td>
<td>11 1.5</td>
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</table>

### Index Component: Structure: Scale (0-10 (best))
- **Rank /100 Value**
  - 22 5.6

<table>
<thead>
<tr>
<th>Component</th>
<th>Rank /100 Value</th>
</tr>
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<tbody>
<tr>
<td>Manufacturing value added in economy</td>
<td>20 18.2</td>
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</table>

### Index Component: Readiness for the Future of Production Assessment (0-10 (best))
- **Rank /100 Value**
  - 6 7.4

<table>
<thead>
<tr>
<th>Component</th>
<th>Rank /100 Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Platform</td>
<td>1 8.7</td>
</tr>
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</table>

### Driver: Human Capital (0-10 (best))
- **Rank /100 Value**
  - 2 8.0

<table>
<thead>
<tr>
<th>Component</th>
<th>Rank /100 Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Labor Force</td>
<td>9 8.4</td>
</tr>
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</table>

### Driver: Technology & Innovation (0-10 (best))
- **Rank /100 Value**
  - 6 7.4

<table>
<thead>
<tr>
<th>Component</th>
<th>Rank /100 Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hiring and firing practices</td>
<td>3 5.6</td>
</tr>
</tbody>
</table>

### Driver: Global Trade & Investment (0-10 (best))
- **Rank /100 Value**
  - 1 9.0

<table>
<thead>
<tr>
<th>Component</th>
<th>Rank /100 Value</th>
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<tbody>
<tr>
<td>Trade</td>
<td>1 9.3</td>
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### Driver: Institutional Framework (0-10 (best))
- **Rank /100 Value**
  - 1 9.1

<table>
<thead>
<tr>
<th>Component</th>
<th>Rank /100 Value</th>
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</thead>
<tbody>
<tr>
<td>Government</td>
<td>1 9.1</td>
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</table>

### Driver: Sustainable Resources (0-10 (best))
- **Rank /100 Value**
  - 56 6.1

<table>
<thead>
<tr>
<th>Component</th>
<th>Rank /100 Value</th>
</tr>
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<tbody>
<tr>
<td>Sustainability</td>
<td>56 6.1</td>
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### Leading Country Profiles

<table>
<thead>
<tr>
<th>Component</th>
<th>Rank /100 Value</th>
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<tbody>
<tr>
<td>Consumer Base</td>
<td>8 6.4</td>
</tr>
<tr>
<td>Future Labor Force</td>
<td>2 7.6</td>
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<tr>
<td>Migration</td>
<td>5 72.3</td>
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<tr>
<td>Country capacity to attract and retain talent</td>
<td>4 5.7</td>
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<tr>
<td>Quality of universities</td>
<td>50 3.0</td>
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<tr>
<td>Quality of math and science education</td>
<td>1 6.5</td>
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<tr>
<td>Quality of vocational training</td>
<td>9 5.4</td>
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<tr>
<td>School life expectancy</td>
<td>36 15.4</td>
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<tr>
<td>Pupil-to-teacher ratio in primary education</td>
<td>52 17.4</td>
</tr>
<tr>
<td>Critical thinking in teaching</td>
<td>18 4.4</td>
</tr>
<tr>
<td>Active labor policies</td>
<td>2 5.6</td>
</tr>
<tr>
<td>On-the-job training</td>
<td>3 5.7</td>
</tr>
<tr>
<td>Hiring and firing practices</td>
<td>3 5.6</td>
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**Slovak Republic**

Readiness for the Future of Production Assessment 2018 edition

### Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Population (millions)</td>
<td>5.4</td>
</tr>
<tr>
<td>GDP (US$ billions)</td>
<td>89.5</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>16,498.5</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
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### Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 (US$)</td>
<td>22,309.2</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>21.5</td>
</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>24.7</td>
</tr>
<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>6.4</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>48.2</td>
</tr>
<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
<td>0.4</td>
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### Readiness Overall Assessment

#### Drivers of Production

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>51st</td>
<td>4.2</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>45th</td>
<td>5.3</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>34th</td>
<td>5.9</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>42nd</td>
<td>5.9</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>9th</td>
<td>8.3</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>61st</td>
<td>4.3</td>
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</table>

#### Structure of Production

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>16th</td>
<td>7.9</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>20th</td>
<td>5.6</td>
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</tbody>
</table>

### Archetype

- **High-Potential**
- **Leading**
- **Slovak Republic** 7.0, 5.3
- **Nascent**
- **Legacy**
## Slovak Republic

Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>16</td>
<td>7.9</td>
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<tr>
<td>1.01 Economic complexity</td>
<td>16</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong></td>
<td>20</td>
<td>5.6</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>8</td>
<td>21.5</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>49</td>
<td>22,309.2</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<td>4.2</td>
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<tr>
<td>Technology Platform</td>
<td>53</td>
<td>6.1</td>
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<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>40</td>
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<td>2.02 LTE mobile network coverage % population</td>
<td>47</td>
<td>87.0</td>
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<td>2.03 Internet users % pop.</td>
<td>25</td>
<td>80.5</td>
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<td>2.04 FDI and technology transfer 1–7 (best)</td>
<td>15</td>
<td>5.2</td>
</tr>
<tr>
<td>2.05 Firm-level technology absorption 1–7 (best)</td>
<td>43</td>
<td>4.8</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products 1–7 (best)</td>
<td>40</td>
<td>4.9</td>
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<tr>
<td>2.07 Cybersecurity commitment 0–1 (best)</td>
<td>75</td>
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<tr>
<td><strong>Ability to Innovate</strong></td>
<td>51</td>
<td>2.3</td>
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<tr>
<td>2.08 State of cluster development 1–7 (best)</td>
<td>49</td>
<td>3.8</td>
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<tr>
<td>2.09 Company investment in emerging technology 1–7 (best)</td>
<td>41</td>
<td>3.9</td>
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<tr>
<td>2.10 Gov’t procurement of advanced technology products 1–7 (best)</td>
<td>58</td>
<td>3.2</td>
</tr>
<tr>
<td>2.11 Companies embracing disruptive ideas 1–7 (best)</td>
<td>62</td>
<td>3.4</td>
</tr>
<tr>
<td>2.12 Multi-stakeholder collaboration 1–7 (best)</td>
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<td>3.6</td>
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<tr>
<td>2.13 R&amp;D expenditures % GDP</td>
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<td>2.14 Scientific and technical publications Number per Billion PPPs GDP</td>
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<td>19.6</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>7.45</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
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<td><strong>Driver: Human Capital</strong></td>
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<td>Current Labor Force</td>
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<td>3.01 Manufacturing employment % working population</td>
<td>2</td>
<td>24.7</td>
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<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
<td>38</td>
<td>31.9</td>
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<td>3.03 Female participation in labor force ratio</td>
<td>34</td>
<td>0.88</td>
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<tr>
<td>3.04 Mean years of schooling Years</td>
<td>12</td>
<td>12.7</td>
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<tr>
<td>3.05 Availability of scientists and engineers 1–7 (best)</td>
<td>89</td>
<td>3.5</td>
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<tr>
<td>3.06 Digital skills among population 1–7 (best)</td>
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<td>4.7</td>
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<tr>
<td>Future Labor Force</td>
<td>67</td>
<td>3.5</td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>42</td>
<td>2.8</td>
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<tr>
<td>3.08 Country capacity to attract and retain talent 1–7 (best)</td>
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<td>3.09 Quality of universities Count</td>
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<td>3.10 Quality of math and science education 1–7 (best)</td>
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<td>3.11 Quality of vocational training 1–7 (best)</td>
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<td>3.12 School life expectancy Years</td>
<td>48</td>
<td>15.0</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
<td>36</td>
<td>15.2</td>
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<tr>
<td>3.14 Critical thinking in teaching 1–7 (best)</td>
<td>83</td>
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<tr>
<td>3.15 Active labor policies 1–7 (best)</td>
<td>43</td>
<td>3.7</td>
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<tr>
<td>3.16 On-the-job training 1–7 (best)</td>
<td>58</td>
<td>4.1</td>
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<td>3.17 Hiring and firing practices 1–7 (best)</td>
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<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
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<td>Trade</td>
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<td>4.01 Trade % GDP</td>
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<td>183.9</td>
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<td>4.02 Trade tariffs % duty</td>
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<td>4.03 Prevalence of non-tariff barriers 1–7 (best)</td>
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<td>4.5</td>
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<tr>
<td>4.04 Logistics performance 1–5 (best)</td>
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<tr>
<td>Investment</td>
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<td>1.5</td>
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<td>4.05 Greenfield investments US$ millions</td>
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<td>4.06 FDI inflows US$ millions</td>
<td>89</td>
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<td>4.07 Domestic credit to private sector % GDP</td>
<td>53</td>
<td>57.0</td>
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<td>Infrastructure</td>
<td>24</td>
<td>7.7</td>
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<td>4.08 Transport infrastructure 0–100 (best)</td>
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<td>54.4</td>
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<td>4.09 Electricity infrastructure 0–100 (best)</td>
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<td><strong>Driver: Institutional Framework</strong></td>
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<td>5.9</td>
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<tr>
<td>Government</td>
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<td>5.9</td>
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<tr>
<td>5.01 Regulatory efficiency 0–100 (best)</td>
<td>63</td>
<td>66.8</td>
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<tr>
<td>5.02 Incidence of corruption 0–100 (best)</td>
<td>39</td>
<td>51.0</td>
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<tr>
<td>5.03 Future orientation of government 1–7 (best)</td>
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<td>5.04 Rule of law (2.5)–2.0 (best)</td>
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<td>0.7</td>
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<tr>
<td><strong>Driver: Sustainable Resources</strong></td>
<td>9</td>
<td>8.3</td>
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<tr>
<td>Sustainability</td>
<td>9</td>
<td>8.3</td>
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<tr>
<td>6.01 Alternative and nuclear energy use % total energy use</td>
<td>28</td>
<td>0.4</td>
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<tr>
<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<tr>
<td>6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions)</td>
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<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
<td>50</td>
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<td>6.06 Wastewater treatment 0–5 (worst)</td>
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<td>86.2</td>
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<td><strong>Driver: Demand Environment</strong></td>
<td>61</td>
<td>4.3</td>
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<tr>
<td>Foreign and Domestic Demand</td>
<td>57</td>
<td>4.9</td>
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<tr>
<td>7.01 Market size 0–100 (best)</td>
<td>57</td>
<td>48.6</td>
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<tr>
<td>Consumer Base</td>
<td>80</td>
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<tr>
<td>7.02 Buyer sophistication 1–7 (best)</td>
<td>83</td>
<td>2.9</td>
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<tr>
<td>7.03 Extent of market dominance 1–7 (best)</td>
<td>71</td>
<td>3.5</td>
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Slovenia

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Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population millions</td>
<td>2.1</td>
</tr>
<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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</tr>
<tr>
<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>9,251.5</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>18.4</td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>23.4</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>2.5</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>48.7</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 5.7

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>35th</td>
<td>4.8</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>27th</td>
<td>6.0</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>40th</td>
<td>5.6</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>27th</td>
<td>6.8</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>5th</td>
<td>8.6</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>67th</td>
<td>4.2</td>
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Structure of Production 6.8

<table>
<thead>
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<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Complexity</td>
<td>60%</td>
<td>12th</td>
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</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>39th</td>
<td>4.6</td>
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</table>

Archetype

Slovenia: High-Potential, Leading

Country Profiles
Slovenia

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<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>Ranked 1-10 (best)</td>
<td></td>
</tr>
<tr>
<td>1.01 Economic complexity</td>
<td>12</td>
<td>8.3</td>
</tr>
<tr>
<td><strong>Structure: Scale</strong></td>
<td>Ranked 1-10 (best)</td>
<td></td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>18</td>
<td>4.6</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>60</td>
<td>9.2515</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
<td>Ranked 0-10 (best)</td>
<td></td>
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<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>62</td>
<td>114.6</td>
</tr>
<tr>
<td>2.02 LTE mobile network coverage</td>
<td>28</td>
<td>79.74</td>
</tr>
<tr>
<td>2.03 Internet users</td>
<td>38</td>
<td>75.5</td>
</tr>
<tr>
<td>2.04 FDI and technology transfer</td>
<td>68</td>
<td>4.2</td>
</tr>
<tr>
<td>2.05 Firm-level technology absorption</td>
<td>41</td>
<td>4.9</td>
</tr>
<tr>
<td>2.06 Impact of ICTs on new services and products</td>
<td>38</td>
<td>5.0</td>
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<tr>
<td>2.07 Cybersecurity commitment</td>
<td>77</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>Ability to Innovate</strong></td>
<td>Ranked 0-10 (best)</td>
<td></td>
</tr>
<tr>
<td>2.08 State of cluster development</td>
<td>64</td>
<td>3.7</td>
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<tr>
<td>2.09 Company investment in emerging technology</td>
<td>39</td>
<td>4.0</td>
</tr>
<tr>
<td>2.10 Gov't procurement of advanced technology products</td>
<td>91</td>
<td>2.6</td>
</tr>
<tr>
<td>2.11 Companies embracing disruptive ideas</td>
<td>57</td>
<td>3.4</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration</td>
<td>41</td>
<td>3.8</td>
</tr>
<tr>
<td>2.13 R&amp;D expenditures</td>
<td>35</td>
<td>1.2</td>
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<td>2.14 Scientific and technical publications</td>
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<td>5.55</td>
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<tr>
<td>2.15 Patent applications</td>
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<td>45.72</td>
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<td>2.16 Venture capital deal volume</td>
<td>60</td>
<td>985.3</td>
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<tr>
<td>2.17 Venture capital deal per size of economy US$/GDP</td>
<td>42</td>
<td>21.7</td>
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<tr>
<td><strong>Driver: Human Capital</strong></td>
<td>Ranked 0-10 (best)</td>
<td></td>
</tr>
<tr>
<td>3.01 Manufacturing employment</td>
<td>3</td>
<td>23.4</td>
</tr>
<tr>
<td>3.02 Knowledge-intensive employment</td>
<td>19</td>
<td>41.7</td>
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<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>29</td>
<td>0.90</td>
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<td>3.04 Mean years of schooling</td>
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<td>3.05 Availability of scientists and engineers</td>
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<td>3.06 Digital skills among population</td>
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<tr>
<td><strong>Future Labor Force</strong></td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
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<tr>
<td>3.08 Country capacity to attract and retain talent</td>
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<tr>
<td>3.09 Quality of universities</td>
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<tr>
<td>3.10 Quality of math and science education</td>
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<td>3.11 Quality of vocational training</td>
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<td>3.13 Pupil-to-teacher ratio in primary education</td>
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<td>3.14 Critical thinking in teaching</td>
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<td>3.15 Active labor policies</td>
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<td>3.16 On-the-job training</td>
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<td>3.17 Hiring and firing practices</td>
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<th>Index Component</th>
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<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong></td>
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<td>4.01 Trade</td>
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<td>4.04 Logistics performance</td>
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<td><strong>Investment</strong></td>
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<td>4.05 Greenfield investments US$ millions</td>
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<td>4.06 FDI inflows US$ millions</td>
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<td>4.07 Domestic credit to private sector</td>
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<td>46.7</td>
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<td>4.08 Transport infrastructure</td>
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<td>4.09 Electricity infrastructure</td>
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<td><strong>Driver: Institutional Framework</strong></td>
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<td>5.01 Regulatory efficiency</td>
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<td>5.03 Future orientation of government</td>
<td>64</td>
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<td>5.04 Rule of law</td>
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<td>11.0</td>
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<td>6.01 Alternative and nuclear energy use</td>
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<td>6.05 Baseline water stress</td>
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<td>6.06 Wastewater treatment</td>
<td>30</td>
<td>87.8</td>
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<tr>
<td><strong>Driver: Demand Environment</strong></td>
<td>Ranked 0-10 (best)</td>
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<tr>
<td>7.01 Market size</td>
<td>77</td>
<td>36.5</td>
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<td>7.02 Buyer sophistication</td>
<td>62</td>
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<tr>
<td>7.03 Extent of market dominance</td>
<td>24</td>
<td>4.3</td>
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**South Africa**

Readiness for the Future of Production Assessment 2018 edition

### Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (millions)</td>
<td>55.9</td>
</tr>
<tr>
<td>GDP (US$ billions)</td>
<td>294.1</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>5,260.9</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>26.7</td>
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</table>

### Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010 millions US$)</td>
<td>51,204.4</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>12.3</td>
</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>11.2</td>
</tr>
<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>-1.3</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>24.4</td>
</tr>
<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
<td>1.0</td>
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</table>

### Readiness Overall Assessment

**Drivers of Production** 5.0

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>46th</td>
<td>4.5</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>67th</td>
<td>4.5</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>41st</td>
<td>5.6</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>49th</td>
<td>5.0</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>75th</td>
<td>5.3</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>33rd</td>
<td>5.5</td>
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</table>

**Structure of Production** 5.0

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
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<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>53rd</td>
<td>5.4</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>40th</td>
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</tbody>
</table>

### Archetype

- **High-Potential**
- **Leading**
- **South Africa 5.0, 5.0**
- **Nascent**
- **Legacy**

### South Africa Key economic indicators

- Population: 55.9 millions
- GDP: 294.1 billion US$
- GDP per capita: 5,260.9 US$
- Unemployment Rate: 26.7%

### South Africa Key production indicators

- Manufacturing value added: 51,204.4 billion US$
- Manufacturing value added in economy: 12.3%
- Manufacturing employment: 11.2%
- Manufacturing value added growth: -1.3%
- Medium hi-tech & hi-tech industries: 24.4%
- CO2 emission per unit of value added: 1.0 kg/USD
### South Africa

**Readiness for the Future of Production Assessment 2018 edition**

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>53</td>
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<td><strong>Economic complexity</strong></td>
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<tr>
<td><strong>Structure: Scale</strong></td>
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<td><strong>Manufacturing value added in economy % GDP</strong></td>
<td>52</td>
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<tr>
<td><strong>Manufacturing value added US$ millions</strong></td>
<td>32</td>
<td>51,204.4</td>
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<tr>
<td><strong>Technology Platform</strong></td>
<td>52</td>
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<tr>
<td><strong>Mobile-cellular telephone subscriptions /100 pop.</strong></td>
<td>23</td>
<td>142.4</td>
</tr>
<tr>
<td><strong>LTE mobile network coverage % population</strong></td>
<td>59</td>
<td>77.6</td>
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<tr>
<td><strong>Internet users % pop.</strong></td>
<td>67</td>
<td>54.0</td>
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<tr>
<td><strong>FDI and technology transfer 1-7 (best)</strong></td>
<td>53</td>
<td>4.5</td>
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<tr>
<td><strong>Firm-level technology absorption 1-7 (best)</strong></td>
<td>34</td>
<td>5.0</td>
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<tr>
<td><strong>Impact of ICTs on new services and products 1-7 (best)</strong></td>
<td>55</td>
<td>4.6</td>
</tr>
<tr>
<td><strong>Cybersecurity commitment 0-1 (best)</strong></td>
<td>58</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Ability to Innovate 0-10 (best)</strong></td>
<td>38</td>
<td>2.8</td>
</tr>
<tr>
<td><strong>State of cluster development 1-7 (best)</strong></td>
<td>27</td>
<td>4.5</td>
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<tr>
<td><strong>Company investment in emerging technology 1-7 (best)</strong></td>
<td>33</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Gov't procurement of advanced technology products 1-7 (best)</strong></td>
<td>44</td>
<td>3.4</td>
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<tr>
<td><strong>Companies embracing disruptive ideas 1-7 (best)</strong></td>
<td>27</td>
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<tr>
<td><strong>Multi-stakeholder collaboration 1-7 (best)</strong></td>
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<tr>
<td><strong>R&amp;D expenditures % GDP</strong></td>
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<tr>
<td><strong>Scientific and technical publications Number per Billion PPP$ GDP</strong></td>
<td>38</td>
<td>17.2</td>
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<tr>
<td><strong>Patent applications applications/million pop.</strong></td>
<td>46</td>
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<tr>
<td><strong>Venture capital deal volume US$ millions</strong></td>
<td>32</td>
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<td><strong>Venture capital deal volume per size of economy US$/GDP</strong></td>
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<td>27.0</td>
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<tr>
<td><strong>Driver: Human Capital</strong></td>
<td>67</td>
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<tr>
<td><strong>Current Labor Force 0-10 (best)</strong></td>
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<tr>
<td><strong>Manufacturing employment % working population</strong></td>
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<tr>
<td><strong>Knowledge-intensive employment % working pop.</strong></td>
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<tr>
<td><strong>Female participation in labor force ratio</strong></td>
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<tr>
<td><strong>Mean years of schooling Years</strong></td>
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<tr>
<td><strong>Availability of scientists and engineers 1-7 (best)</strong></td>
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<tr>
<td><strong>Digital skills among population 1-7 (best)</strong></td>
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<td><strong>Future Labor Force 0-10 (best)</strong></td>
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<td><strong>Migration migrants/100,000 pop.</strong></td>
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<td><strong>Quality of math and science education 1-7 (best)</strong></td>
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<td><strong>School life expectancy Years</strong></td>
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<td><strong>Pupil-to-teacher ratio in primary education Ratio</strong></td>
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<td><strong>Critical thinking in teaching 1-7 (best)</strong></td>
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<td><strong>Active labor policies 1-7 (best)</strong></td>
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<td><strong>On-the-job training 1-7 (best)</strong></td>
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<td><strong>Hiring and firing practices 1-7 (best)</strong></td>
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<tr>
<th>Index Component</th>
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<tr>
<td><strong>Driver: Global Trade &amp; Investment 0-10 (best)</strong></td>
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<td><strong>Trade 0-10 (best)</strong></td>
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<td><strong>Investment 0-10 (best)</strong></td>
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<td><strong>Greenfield investments US$ millions</strong></td>
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<td><strong>Transport infrastructure 0-100 (best)</strong></td>
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<td><strong>Government 0-10 (best)</strong></td>
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<td><strong>Regulatory efficiency 0 – 100 (best)</strong></td>
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<td><strong>Incidence of corruption 0-100 (best)</strong></td>
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<td><strong>Future orientation of government 1-7 (best)</strong></td>
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<td><strong>Rule of law (2.5) - 2.0 (best)</strong></td>
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<td><strong>Driver: Sustainable Resources 0-10 (best)</strong></td>
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<td><strong>Sustainability 0-10 (best)</strong></td>
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<td><strong>Alternative and nuclear energy use % total energy use</strong></td>
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<td><strong>CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</strong></td>
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<td>1.3</td>
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<tr>
<td><strong>CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</strong></td>
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<td>0.1</td>
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<td><strong>N2O intensity level N2O emissions in megatons/GDP (US$ billions)</strong></td>
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<td>0.1</td>
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<td><strong>Baseline water stress Annual withdrawals, % of annual available blue water</strong></td>
<td>63</td>
<td>3.0</td>
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<td><strong>Wastewater treatment 0 – 5 (worst)</strong></td>
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<td>79.4</td>
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<td><strong>Driver: Demand Environment 0-10 (best)</strong></td>
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<td>5.5</td>
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<tr>
<td><strong>Foreign and Domestic Demand 0-10 (best)</strong></td>
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<tr>
<td><strong>Market size 0-100 (best)</strong></td>
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<td>61.8</td>
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<tr>
<td><strong>Consumer Base 0-10 (best)</strong></td>
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<tr>
<td><strong>Buyer sophistication 1-7 (best)</strong></td>
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<td>3.9</td>
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<tr>
<td><strong>Extent of market dominance 1-7 (best)</strong></td>
<td>45</td>
<td>3.9</td>
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</table>
Spain

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
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<tr>
<th>Indicator</th>
<th>Value</th>
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<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
<td>1,232.6</td>
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<tr>
<td>GDP per capita US$</td>
<td>26,608.9</td>
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<tr>
<td>Unemployment rate %</td>
<td>19.6</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>164,249.1</td>
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<td>Manufacturing value added in economy % GDP</td>
<td>11.3</td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>12.5</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
<td>2.3</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>40.2</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
<td>0.2</td>
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Readiness Overall Assessment

Drivers of Production  6.2

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
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Structure of Production  6.0

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Archetype

Spain 6.0, 6.2

Country Profiles
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>Consumer Base 0-10 (best)</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Leading Country Profiles
Sri Lanka

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<td>GDP US$ billions</td>
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<td>GDP per capita US$</td>
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Key production indicators

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<tr>
<td>Manufacturing employment % working population</td>
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<td>Manufacturing value added growth Annual %</td>
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<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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Readiness Overall Assessment

Drivers of Production 4.3

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<td>Human Capital</td>
<td>20%</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
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<tr>
<td>Institutional Framework</td>
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Structure of Production 4.1

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Sri Lanka

Readiness for the Future of Production Assessment 2018 edition

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<td>7.01 Market size 0-100 (best)</td>
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<td>Consumer Base 0-10 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Sweden

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<th>Indicator</th>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
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Key production indicators

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<thead>
<tr>
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<td>Manufacturing value added 2010 millions US$</td>
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<td>Manufacturing value added in economy % GDP</td>
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<td>Manufacturing employment % working population</td>
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<td>Manufacturing value added growth Annual %</td>
<td>7.7</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>48.9</td>
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<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 7.4

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<th>Score /10</th>
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<tr>
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<td>20%</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>6th</td>
<td>7.5</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>19th</td>
<td>6.8</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>6th</td>
<td>8.8</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>2nd</td>
<td>8.8</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 7.5

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<th>Structure</th>
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<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Complexity</td>
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<td>Scale</td>
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Archetype

High-Potential

Leading

Nascent

Legacy

Sweden 7.5, 7.4
## Sweden

### Readiness for the Future of Production Assessment 2018 edition

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<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
<td>0-10 (best)</td>
<td></td>
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<tr>
<td>1.01 Economic complexity</td>
<td>(2.5) – 2.5 (best)</td>
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<td><strong>Structure: Scale</strong></td>
<td>0-10 (best)</td>
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<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>1.03 Manufacturing value added US$ millions</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<td>Technology Platform</td>
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<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
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<td>2.02 LTE mobile network coverage % population</td>
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<td>2.03 Internet users % pop.</td>
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<td>2.04 FD1 and technology transfer 1-7 (best)</td>
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<td>2.05 Firm-level technology absorption 1-7 (best)</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
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<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
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<tr>
<td><strong>Ability to Innovate</strong></td>
<td>0-10 (best)</td>
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<tr>
<td>2.08 State of cluster development 1-7 (best)</td>
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<tr>
<td>2.09 Company investment in emerging technology 1-7 (best)</td>
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<tr>
<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas 1-7 (best)</td>
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<td>2.12 Multi-stakeholder collaboration 1-7 (best)</td>
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<td>2.13 R&amp;D expenditures % GDP</td>
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<td>2.14 Scientific and technical publications Number per Billion PPP$ GDP</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
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<td><strong>Driver: Human Capital</strong></td>
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<td>Current Labor Force</td>
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<tr>
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<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
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<td>3.03 Female participation in labor force ratio</td>
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<td>3.04 Mean years of schooling Years</td>
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<tr>
<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
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<td>3.06 Digital skills among population 1-7 (best)</td>
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<td>Future Labor Force</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
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<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.11 Quality of vocational training 1-7 (best)</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
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<td>7.01 Market size 0-100 (best)</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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### Country Profiles
Switzerland

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<td>Unemployment rate %</td>
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Key production indicators

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<thead>
<tr>
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<th>Value</th>
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<td>Manufacturing value added 2010 millions US$</td>
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<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
<td>12.5</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 7.9

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<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>3rd</td>
<td>7.9</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>1st</td>
<td>8.5</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>10th</td>
<td>7.2</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>5th</td>
<td>8.8</td>
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<td>5%</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 8.4

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<tr>
<td>Scale</td>
<td>40%</td>
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Archetype

Switzerland 8.4, 7.9
## Switzerland

### Readiness for the Future of Production Assessment 2018 edition

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<th>Rank /100</th>
<th>Value</th>
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<tr>
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<td><strong>Structure: Scale</strong></td>
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<tr>
<td>1.02 Manufacturing value added in economy</td>
<td>% GDP</td>
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<td>1.03 Manufacturing value added</td>
<td>US$ millions</td>
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<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<tr>
<td>Technology Platform</td>
<td>0-10 (best)</td>
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<td>2.01 Mobile-cellular telephone subscriptions</td>
<td>/100 pop.</td>
<td>29</td>
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<tr>
<td>2.02 LTE mobile network coverage</td>
<td>% population</td>
<td>11</td>
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<td>2.03 Internet users</td>
<td>% pop.</td>
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<td>2.05 Firm-level technology absorption</td>
<td>1-7 (best)</td>
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<td>0-100 (best)</td>
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<td>Consumer Base</td>
<td>0-10 (best)</td>
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<td>7.02 Buyer sophistication</td>
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<td>7.03 Extent of market dominance</td>
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Tanzania

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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Key production indicators

<table>
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<td>Manufacturing value added 2010 US$</td>
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<td>Manufacturing value added in economy % GDP</td>
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<td>Manufacturing employment % working population</td>
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Drivers of Production 3.3

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<th>Score /10</th>
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<tr>
<td>Technology &amp; Innovation</td>
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<td>95th</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>100th</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>98th</td>
<td>2.2</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>75th</td>
<td>4.4</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>78th</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 2.4

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<tr>
<td>Scale</td>
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Archetype

- High-Potential
- Leading
- Nascent
- Legacy

Tanzania: 2.4, 3.3
## Tanzania

**Readiness for the Future of Production Assessment 2018 edition**

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<thead>
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<th>Index Component</th>
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<td><strong>Structure: Scale</strong></td>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<td>2.03 Internet users % pop.</td>
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Thailand

Key economic indicators

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<td>Population (millions)</td>
<td>69.0</td>
</tr>
<tr>
<td>GDP (US$ billions)</td>
<td>406.9</td>
</tr>
<tr>
<td>GDP per capita (US$)</td>
<td>5,899.4</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>0.8</td>
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</tbody>
</table>

Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010)</td>
<td>116,650.5</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>28.7</td>
</tr>
<tr>
<td>Manufacturing employment (% working population)</td>
<td>16.5</td>
</tr>
<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>3.6</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>40.7</td>
</tr>
<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Readiness Overall Assessment

Drivers of Production  

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>41st</td>
<td>4.6</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>53rd</td>
<td>5.0</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>20th</td>
<td>6.7</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>51st</td>
<td>5.0</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>49th</td>
<td>6.3</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>28th</td>
<td>5.8</td>
</tr>
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</table>

Structure of Production  

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
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<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
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<td>6.6</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>3rd</td>
<td>7.9</td>
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</table>

Archetype

Thailand 7.1, 5.4
### Readiness for the Future of Production Assessment 2018 edition

**Country Component** | Rank /100 | Value  
--- | --- | --- 
**Structure: Complexity** | |  
1.01 Economic complexity (2.5) – 2.5 (best) | 33 | 6.6  
1.02 Manufacturing value added in economy % GDP | 3 | 7.9  
1.03 Manufacturing value added US$ millions | 18 | 116,650.5  
**Technology Platform** | |  
2.01 Mobile-cellular telephone subscriptions /100 pop. | 5 | 172.6  
2.02 LTE mobile network coverage % population | 21 | 98.0  
2.03 Internet users % pop. | 75 | 47.5  
2.04 FDI and technology transfer 1-7 (best) | 37 | 4.8  
2.05 Firm-level technology absorption 1-7 (best) | 38 | 4.9  
2.06 Impact of ICTs on new services and products 1-7 (best) | 30 | 5.2  
2.07 Cybersecurity commitment 0-1 (best) | 25 | 0.7  
**Ability to Innovate** | |  
2.08 State of cluster development 1-7 (best) | 58 | 3.8  
2.09 Company investment in emerging technology 1-7 (best) | 35 | 4.1  
2.10 Gov’t procurement of advanced technology products 1-7 (best) | 43 | 3.4  
2.11 Companies embracing disruptive ideas 1-7 (best) | 25 | 3.9  
2.12 Multi-stakeholder collaboration 1-7 (best) | 37 | 3.9  
2.13 R&D expenditures % GDP | 62 | 0.5  
2.14 Scientific and technical publications Number per Billion PPP$ GDP | 67 | 6.5  
2.15 Patent applications applications/million pop. | 60 | 0.70  
2.16 Venture capital deal volume US$ millions | 42 | 4,028.3  
2.17 Venture capital deal per size of economy US$/GDP | 67 | 10.0  
**Driver: Human Capital** | |  
3.01 Manufacturing employment % working population | 18 | 16.5  
3.02 Knowledge-intensive employment % working pop. | 78 | 13.8  
3.03 Female participation in labor force ratio | 47 | 0.81  
3.04 Mean years of schooling Years | 76 | 7.9  
3.05 Availability of scientists and engineers 1-7 (best) | 51 | 4.1  
3.06 Digital skills among population 1-7 (best) | 51 | 4.4  
**Future Labor Force** | |  
3.07 Migration migrants/100,000 pop. | 45 | 1.5  
3.08 Country capacity to attract and retain talent 1-7 (best) | 35 | 3.9  
3.09 Quality of universities Count | 28 | 8.0  
3.10 Quality of math and science education 1-7 (best) | 66 | 3.8  
3.11 Quality of vocational training 1-7 (best) | 59 | 3.9  
3.12 School life expectancy Years | 30 | 16.0  
3.13 Pupil-to-teacher ratio in primary education Ratio | 44 | 16.9  
3.14 Critical thinking in teaching 1-7 (best) | 78 | 3.0  
3.15 Active labor policies 1-7 (best) | 44 | 3.7  
3.16 On-the-job training 1-7 (best) | 56 | 4.1  
3.17 Hiring and firing practices 1-7 (best) | 25 | 4.4  
**Driver: Global Trade & Investment** | |  
4.01 Trade % GDP | 18 | 123.1  
4.02 Trade tariffs % duty | 74 | 0.07  
4.03 Prevalence of non-tariff barriers 1-7 (best) | 56 | 4.4  
4.04 Logistics performance 1 – 5 (best) | 43 | 3.3  
Investment 0-10 (best) | 19 | 5.1  
4.05 Greenfield investments US$ millions | 28 | 7,582.4  
4.06 FDI inflows US$ millions | 28 | 9,820.9  
4.07 Domestic credit to private sector % GDP | 10 | 147.3  
Infrastructure 0-10 (best) | 32 | 7.4  
4.08 Transport infrastructure 0-100 (best) | 34 | 54.9  
4.09 Electricity infrastructure 0-100 (best) | 25 | 92.5  
**Driver: Institutional Framework** | |  
5.01 Regulatory efficiency 0 – 100 (best) | 59 | 68.5  
5.02 Incidence of corruption 0-100 (best) | 72 | 35.0  
5.03 Future orientation of government 1-7 (best) | 45 | 3.8  
5.04 Rule of law (2.5) – 2.0 (best) | 55 | 0.0  
**Driver: Sustainable Resources** | |  
6.01 Alternative and nuclear energy use % total energy use | 56 | 0.2  
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 78 | 0.6  
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 62 | 0.2  
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 54 | 0.1  
6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 46 | 1.7  
6.06 Wastewater treatment 0 – 5 (worst) | 62 | 71.3  
**Driver: Demand Environment** | |  
7.01 Market size 0-100 (best) | 18 | 69.0  
Consumer Base 0-10 (best) | 42 | 4.6  
7.02 Buyer sophistication 1-7 (best) | 22 | 4.1  
7.03Extent of market dominance 1-7 (best) | 76 | 3.4  

---

**Legacy**

1.03 Manufacturing value added US$ millions

2.15 Patent applications applications/million pop.

3.01 Manufacturing employment % working population

4.05 Greenfield investments US$ millions

6.01 Alternative and nuclear energy use % total energy use

7.01 Market size 0-100 (best)
### Tunisia

Readiness for the Future of Production Assessment 2018 edition

#### Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (millions)</td>
<td>11.2</td>
</tr>
<tr>
<td>GDP (US$ billions)</td>
<td>41.9</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>3,730.4</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>14.0</td>
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#### Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added (2010 millions US$)</td>
<td>7,835.6</td>
</tr>
<tr>
<td>Manufacturing value added in economy (% GDP)</td>
<td>16.3</td>
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<tr>
<td>Manufacturing employment (% working population)</td>
<td>18.8</td>
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<tr>
<td>Manufacturing value added growth (Annual %)</td>
<td>1.9</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
<td>20.0</td>
</tr>
<tr>
<td>CO2 emission per unit of value added (kg/USD)</td>
<td>0.7</td>
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#### Readiness Overall Assessment

**Drivers of Production**

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>62nd</td>
<td>4.0</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>80th</td>
<td>4.1</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>68th</td>
<td>4.6</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>52nd</td>
<td>5.0</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>64th</td>
<td>5.7</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>76th</td>
<td>3.9</td>
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</tbody>
</table>

**Structure of Production**

<table>
<thead>
<tr>
<th>Structure</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>55th</td>
<td>5.3</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>50th</td>
<td>4.1</td>
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#### Archetype

- High-Potential
- Leading
- Nascent
- Legacy

[Diagram showing the archetype with Tunisia's position indicated.]
Tunisia

Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure: Complexity</td>
<td>0-10 (best)</td>
<td>55</td>
</tr>
<tr>
<td>1.01 Economic complexity</td>
<td>(2.5) – 2.5 (best)</td>
<td>55</td>
</tr>
<tr>
<td>Structure: Scale</td>
<td>0-10 (best)</td>
<td>50</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>29</td>
<td>16.3</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>64</td>
<td>7,835.6</td>
</tr>
<tr>
<td>3.17 Hiring and firing practices</td>
<td>1-7 (best)</td>
<td>94</td>
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</table>

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver: Technology &amp; Innovation</td>
<td>0-10 (best)</td>
<td>62</td>
</tr>
<tr>
<td>Technology Platform</td>
<td>0-10 (best)</td>
<td>58</td>
</tr>
<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>45</td>
<td>125.8</td>
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<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td>62</td>
<td>73.0</td>
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<tr>
<td>2.03 Internet users % pop.</td>
<td>73</td>
<td>50.9</td>
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<td>2.04 FDI and technology transfer 1-7 (best)</td>
<td>70</td>
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<tr>
<td>2.05 Firm-level technology absorption 1-7 (best)</td>
<td>93</td>
<td>4.0</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products 1-7 (best)</td>
<td>60</td>
<td>4.5</td>
</tr>
<tr>
<td>2.07 Cybersecurity commitment 0-1 (best)</td>
<td>41</td>
<td>0.6</td>
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<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Driver: Human Capital</td>
<td>0-10 (best)</td>
<td>80</td>
</tr>
<tr>
<td>Current Labor Force</td>
<td>0-10 (best)</td>
<td>75</td>
</tr>
<tr>
<td>3.01 Manufacturing employment % working population</td>
<td>8</td>
<td>18.8</td>
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<tr>
<td>3.02 Knowledge-intensive employment % working pop.</td>
<td>61</td>
<td>21.0</td>
</tr>
<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>85</td>
<td>0.39</td>
</tr>
<tr>
<td>3.04 Mean years of schooling Years</td>
<td>86</td>
<td>6.7</td>
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<tr>
<td>3.05 Availability of scientists and engineers 1-7 (best)</td>
<td>40</td>
<td>4.4</td>
</tr>
<tr>
<td>3.06 Digital skills among population 1-7 (best)</td>
<td>53</td>
<td>4.3</td>
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<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Future Labor Force</td>
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<tr>
<td>3.07 Migration migrants/100,000 pop.</td>
<td>71</td>
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<td>3.08 Country capacity to attract and retain talent 1-7 (best)</td>
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<td>3.09 Quality of universities Count</td>
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<td>3.10 Quality of math and science education 1-7 (best)</td>
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<td>4.6</td>
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<tr>
<td>3.11 Quality of vocational training 1-7 (best)</td>
<td>78</td>
<td>3.6</td>
</tr>
<tr>
<td>3.12 School life expectancy Years</td>
<td>52</td>
<td>14.8</td>
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<tr>
<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
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<td>15.8</td>
</tr>
<tr>
<td>3.14 Critical thinking in teaching 1-7 (best)</td>
<td>88</td>
<td>2.8</td>
</tr>
<tr>
<td>3.15 Active labor policies 1-7 (best)</td>
<td>71</td>
<td>3.0</td>
</tr>
<tr>
<td>3.16 On-the-job training 1-7 (best)</td>
<td>88</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Country Profiles

Driver: Global Trade & Investment | 0-10 (best) | 68 | 4.6 |
| Trade | 0-10 (best) | 57 | 6.3 |
| 4.01 Trade % GDP | 39 | 91.2 |
| 4.02 Trade tariffs % duty | 87 | 0.11 |
| 4.03 Prevalence of non-tariff barriers 1-7 (best) | 96 | 3.8 |
| 4.04 Logistics performance 1 – 5 (best) | 89 | 2.5 |
| Investment | 0-10 (best) | 55 | 2.1 |
| 4.05 Greenfield investments US$ millions | 75 | 887.3 |
| 4.06 FDI inflows US$ millions | 73 | 1,148.6 |
| 4.07 Domestic credit to private sector % GDP | 34 | 81.2 |
| Infrastructure | 0-10 (best) | 81 | 5.4 |
| 4.08 Transport infrastructure 0-100 (best) | 80 | 34.2 |
| 4.09 Electricity infrastructure 0-100 (best) | 75 | 72.9 |

Driver: Institutional Framework | 0-10 (best) | 52 | 5.0 |
| Government | 0-10 (best) | 52 | 5.0 |
| 5.01 Regulatory efficiency 0 – 100 (best) | 47 | 70.9 |
| 5.02 Incidence of corruption 0-100 (best) | 54 | 41.0 |
| 5.03 Future orientation of government 1-7 (best) | 75 | 3.2 |
| 5.04 Rule of law (2.5 – 2.0) (best) | 54 | 0.0 |

Driver: Sustainable Resources | 0-10 (best) | 64 | 5.7 |
| Sustainability | 0-10 (best) | 64 | 5.7 |
| 6.01 Alternative and nuclear energy use % total energy use | 69 | 0.1 |
| 6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 76 | 0.6 |
| 6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 43 | 0.1 |
| 6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 61 | 0.1 |
| 6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 75 | 3.4 |
| 6.06 Wastewater treatment 0 – 5 (worst) | 43 | 82.1 |

Driver: Demand Environment | 0-10 (best) | 76 | 3.9 |
| Foreign and Domestic Demand | 0-10 (best) | 66 | 4.3 |
| 7.01 Market size 0-100 (best) | 66 | 42.7 |
| Consumer Base | 0-10 (best) | 87 | 3.6 |
| 7.02 Buyer sophistication 1-7 (best) | 84 | 2.9 |
| 7.03 Extent of market dominance 1-7 (best) | 78 | 3.4 |

Readiness for the Future of Production Report 2018

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Turkey

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>147,420.0</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>15.8</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>18.7</td>
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</table>

Drivers of Production

<table>
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<th>Driver</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>54th</td>
<td>4.2</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>72nd</td>
<td>4.5</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>57th</td>
<td>5.1</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>64th</td>
<td>4.8</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>51st</td>
<td>6.3</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>26th</td>
<td>5.8</td>
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Structure of Production

<table>
<thead>
<tr>
<th>Structure</th>
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<th>Rank</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>42nd</td>
<td>5.9</td>
</tr>
<tr>
<td>Scale</td>
<td>40%</td>
<td>18th</td>
<td>5.8</td>
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</table>

Archetype

Turkish ARCHETYPE

<table>
<thead>
<tr>
<th>Archetype</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Potential</td>
<td>5.9</td>
</tr>
<tr>
<td>Leading</td>
<td>4.9</td>
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<tr>
<td>Nascent</td>
<td></td>
</tr>
<tr>
<td>Legacy</td>
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Readiness for the Future of Production Report 2018

Country Profiles
### Readiness for the Future of Production Assessment 2018 edition

**Turkey**

<table>
<thead>
<tr>
<th>Index Component</th>
<th>Rank /100</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure: Complexity</strong> 0-10 (best)</td>
<td>42</td>
<td>5.9</td>
</tr>
<tr>
<td>1.01 Economic complexity (2.5) – 2.5 (best)</td>
<td>42</td>
<td>0.4</td>
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<tr>
<td><strong>Structure: Scale</strong> 0-10 (best)</td>
<td>18</td>
<td>5.8</td>
</tr>
<tr>
<td>1.02 Manufacturing value added in economy % GDP</td>
<td>34</td>
<td>15.8</td>
</tr>
<tr>
<td>1.03 Manufacturing value added US$ millions</td>
<td>16</td>
<td>147,420.0</td>
</tr>
<tr>
<td><strong>Driver: Technology &amp; Innovation</strong> 0-10 (best)</td>
<td>54</td>
<td>4.2</td>
</tr>
<tr>
<td>Technology Platform 0-10 (best)</td>
<td>46</td>
<td>6.3</td>
</tr>
<tr>
<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
<td>83</td>
<td>96.9</td>
</tr>
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<td>2.02 LTE mobile network coverage % population</td>
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<td><strong>Ability to Innovate</strong> 0-10 (best)</td>
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<td>2.10 Gov’t procurement of advanced technology products 1-7 (best)</td>
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<td>2.15 Patent applications applications/million pop.</td>
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<td>2.17 Venture capital deal volume per size of economy US$/GDP</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
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<td>3.13 Pupil-to-teacher ratio in primary education Ratio</td>
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<td>3.14 Critical thinking in teaching 1-7 (best)</td>
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<td>3.15 Active labor policies 1-7 (best)</td>
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<td>3.16 On-the-job training 1-7 (best)</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
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### Country Profiles

<table>
<thead>
<tr>
<th>Index Component</th>
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<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong> 0-10 (best)</td>
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<td>Trade 0-10 (best)</td>
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<td>4.01 Trade % GDP</td>
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<td>4.02 Trade tariffs % duty</td>
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<td>4.03 Prevalence of non-tariff barriers 1-7 (best)</td>
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<td>4.04 Logistics performance 1 – 5 (best)</td>
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<td>4.06 FDI inflows US$ millions</td>
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<td><strong>Driver: Institutional Framework</strong> 0-10 (best)</td>
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<td>5.01 Regulatory efficiency 0 – 100 (best)</td>
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<td>5.02 Incidence of corruption 0-100 (best)</td>
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<td>5.03 Future orientation of government 1-7 (best)</td>
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<td>5.04 Rule of law (2.5) - 2.0 (best)</td>
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<td><strong>Driver: Sustainable Resources</strong> 0-10 (best)</td>
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<td>6.3</td>
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<tr>
<td>Sustainability 0-10 (best)</td>
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<tr>
<td>6.01 Alternative and nuclear energy use % total energy use</td>
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<td>6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions)</td>
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>79.0</td>
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<td><strong>Driver: Demand Environment</strong> 0-10 (best)</td>
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<td>Foreign and Domestic Demand 0-10 (best)</td>
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<td>Consumer Base 0-10 (best)</td>
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<td>7.02 Buyer sophistication 1-7 (best)</td>
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<td>3.4</td>
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<td>7.03 Extent of market dominance 1-7 (best)</td>
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Uganda

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
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<th>Indicator</th>
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<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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Key production indicators

<table>
<thead>
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<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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</tr>
<tr>
<td>Manufacturing employment % working population</td>
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</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
<td>5.1</td>
</tr>
<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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</tbody>
</table>

Readiness Overall Assessment

**Drivers of Production** 3.3

<table>
<thead>
<tr>
<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>87th</td>
<td>3.2</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>99th</td>
<td>3.0</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>99th</td>
<td>2.0</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>71st</td>
<td>4.5</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>65th</td>
<td>5.7</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
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**Structure of Production** 2.2

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<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>96th</td>
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<tr>
<td>Scale</td>
<td>40%</td>
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Archetype

[Graph showing the positioning of Uganda on the Drivers of Production and Structure of Production axes, indicating it is in the high-potential category.]
## Uganda

### Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
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<th>Value</th>
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<tbody>
<tr>
<td><strong>Structure: Complexity</strong></td>
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<tr>
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<td>1.02 Manufacturing value added in economy % GDP</td>
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<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<tr>
<td>Technology Platform 0-10 (best)</td>
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<td>2.01 Mobile-cellular telephone subscriptions /100 pop.</td>
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<tr>
<td>2.02 LTE mobile network coverage % population</td>
<td>89</td>
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<td>2.03 Internet users % pop.</td>
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<td>3.17 Hiring and firing practices 1-7 (best)</td>
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</tr>
</tbody>
</table>

### Country Profiles

- **Nascent**

- **Driver: Global Trade & Investment** 0-10 (best) | 99 | 2.0 |
- Trade 0-10 (best) | 83 | 4.0 |
  - 4.01 Trade % GDP | 81 | 45.3 |
  - 4.02 Trade tariffs % duty | 80 | 0.10 |
  - 4.03 Prevalence of non-tariff barriers 1-7 (best) | 36 | 4.6 |
  - 4.04 Logistics performance 1-5 (best) | 52 | 3.1 |
- Investment 0-10 (best) | 100 | 0.1 |
  - 4.05 Greenfield investments US$ millions | 88 | 511.9 |
  - 4.06 FDI inflows US$ millions | 78 | 991.7 |
  - 4.07 Domestic credit to private sector % GDP | 96 | 14.5 |
- Infrastructure 0-10 (best) | 100 | 1.8 |
  - 4.08 Transport infrastructure 0-100 (best) | 97 | 25.7 |
  - 4.09 Electricity infrastructure 0-100 (best) | 100 | 10.7 |
- **Driver: Institutional Framework** 0-10 (best) | 71 | 4.5 |
- Government 0-10 (best) | 71 | 4.5 |
  - 5.01 Regulatory efficiency 0 – 100 (best) | 57 | 69.1 |
  - 5.02 Incidence of corruption 0-100 (best) | 99 | 25.0 |
  - 5.03 Future orientation of government 1-7 (best) | 41 | 3.8 |
  - 5.04 Rule of law (2.5) - 2.0 (best) | 68 | -0.2 |
- **Driver: Sustainable Resources** 0-10 (best) | 65 | 5.7 |
- Sustainability 0-10 (best) | 65 | 5.7 |
  - 6.01 Alternative and nuclear energy use % total energy use | - |
  - 6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billions) | 21 | 0.2 |
  - 6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions) | 90 | 0.5 |
  - 6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billions) | 93 | 0.5 |
  - 6.05 Baseline water stress Annual withdrawals, % of annual available blue water | 1 | 0.0 |
  - 6.06 Wastewater treatment 0 – 5 (worst) | 87 | 32.7 |
- **Driver: Demand Environment** 0-10 (best) | 95 | 3.2 |
- Foreign and Domestic Demand 0-10 (best) | 78 | 3.5 |
  - 7.01 Market size 0-100 (best) | 78 | 35.5 |
  - 7.02 Buyer sophistication 1-7 (best) | 98 | 2.5 |
  - 7.03 Extent of market dominance 1-7 (best) | 98 | 2.9 |
Ukraine

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Key economic indicators

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<th>Indicator</th>
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<td>GDP (US$ billions)</td>
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<tr>
<td>GDP per capita (US$)</td>
<td>2,194.4</td>
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<td>Unemployment rate (%)</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Weighting %</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
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<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>74th</td>
<td>3.5</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
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<td>5.8</td>
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<tr>
<td>Global Trade &amp; Investment</td>
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Manufacturing value added 2010 (millions US$) 15,620.8
Manufacturing value added in economy (% GDP) 12.3
Manufacturing employment (% working population) 12.6
Manufacturing value added growth (Annual %) 1.8
Medium hi-tech & hi-tech industries (% of manu. value added) 30.4
CO2 emission per unit of value added (kg/USD) 3.0

Drivers of Production 4.5

Structure of Production 5.2

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Archetype

Ukraine 5.2, 4.5

Complexity

Scale
### Ukraine

#### Readiness for the Future of Production Assessment 2018 edition

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United Arab Emirates

Key economic indicators

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Key production indicators

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Readiness Overall Assessment

Drivers of Production

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<td>Human Capital</td>
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Structure of Production

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Archetype

United Arab Emirates 4.5, 6.8
# United Arab Emirates

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<td><strong>Government 0-10 (best)</strong></td>
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<tr>
<td><strong>Regulatory efficiency 0 – 100 (best)</strong></td>
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<td><strong>Incidence of corruption 0-100 (best)</strong></td>
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<tr>
<td><strong>Future orientation of government 1-7 (best)</strong></td>
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<td><strong>Rule of law (2.5) - 2.0 (best)</strong></td>
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<td><strong>Driver: Sustainable Resources 0-10 (best)</strong></td>
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<td><strong>Alternative and nuclear energy use % total energy use</strong></td>
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<td><strong>CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</strong></td>
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<td><strong>N2O intensity level N2O emissions in megatons/GDP (US$ billions)</strong></td>
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<td><strong>Baseline water stress Annual withdrawals, % of annual available blue water</strong></td>
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<td><strong>Wastewater treatment % of annual available blue water</strong></td>
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<tr>
<td><strong>Water and urban Drainage 0-100 (best)</strong></td>
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<tr>
<td><strong>Market size 0-100 (best)</strong></td>
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<tr>
<td><strong>Buyer sophistication 1-7 (best)</strong></td>
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<td><strong>Extent of market dominance 1-7 (best)</strong></td>
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**Country Profiles**

**High Potential**
United Kingdom

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Population millions</td>
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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<tr>
<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>226,271.1</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>8.3</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>9.6</td>
</tr>
<tr>
<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<tr>
<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 7.8

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<th>Driver</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>2nd</td>
<td>8.0</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>8th</td>
<td>7.5</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>4th</td>
<td>8.3</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>13th</td>
<td>8.2</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>22nd</td>
<td>7.4</td>
</tr>
<tr>
<td>Demand Environment</td>
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<td>6th</td>
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Structure of Production 7.0

<table>
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<tr>
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<td>Scale</td>
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Archetype

United Kingdom 7.0, 7.8
## United Kingdom

### Readiness for the Future of Production Assessment 2018 edition

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<th>Index Component</th>
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<td>1.02 Manufacturing value added in economy</td>
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<td>2.01 Mobile-cellular telephone subscriptions per 100 pop.</td>
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<td>2.03 Internet users per pop.</td>
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<td>2.04 FDI and technology transfer</td>
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<tr>
<td>2.05 Firm-level technology absorption</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products</td>
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<td>2.07 Cybersecurity commitment</td>
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<tr>
<td><strong>Ability to Innovate</strong> (0-10 (best))</td>
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<tr>
<td>2.08 State of cluster development</td>
<td>5</td>
<td>5.4</td>
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<tr>
<td>2.09 Company investment in emerging technology</td>
<td>9</td>
<td>5.2</td>
</tr>
<tr>
<td>2.10 Gov't procurement of advanced technology products</td>
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<td>3.9</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas</td>
<td>7</td>
<td>4.7</td>
</tr>
<tr>
<td>2.12 Multi-stakeholder collaboration</td>
<td>10</td>
<td>5.0</td>
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<td>2.13 R&amp;D expenditures % GDP</td>
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<td>2.14 Scientific and technical publications</td>
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<td>2.15 Patent applications per million pop.</td>
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<td>2.16 Venture capital deal volume US$ millions</td>
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<td>Current Labor Force</td>
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<tr>
<td>3.01 Manufacturing employment % working pop.</td>
<td>72</td>
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<td>3.02 Knowledge-intensive employment % working pop.</td>
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<tr>
<td>3.03 Female participation in labor force ratio</td>
<td>16</td>
<td>0.96</td>
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<tr>
<td>3.04 Mean years of schooling Years</td>
<td>10</td>
<td>12.7</td>
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<tr>
<td>3.05 Availability of scientists and engineers</td>
<td>17</td>
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<td>3.06 Digital skills among population</td>
<td>31</td>
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<td>Future Labor Force</td>
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<td>3.07 Migration migrants/100,000 pop.</td>
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<td>3.08 Country capacity to attract and retain talent</td>
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<tr>
<td>3.09 Quality of universities</td>
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<td>3.10 Quality of math and science education</td>
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<td>3.11 Quality of vocational training</td>
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<td>3.12 School life expectancy Years</td>
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<tr>
<td>3.13 Pupil-to-teacher ratio</td>
<td>50</td>
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<td>3.14 Critical thinking in teaching</td>
<td>12</td>
<td>5.0</td>
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<tr>
<td>3.15 Active labor policies</td>
<td>27</td>
<td>4.2</td>
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<tr>
<td>3.16 On-the-job training</td>
<td>16</td>
<td>5.4</td>
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<tr>
<td>3.17 Hiring and firing practices</td>
<td>7</td>
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### Leading Country Profiles

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<tr>
<th>Index Component</th>
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<th>Value</th>
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<tbody>
<tr>
<td><strong>Driver: Global Trade &amp; Investment</strong> (0-10 (best))</td>
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<td>Trade</td>
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<td>4.02 Trade tariffs % duty</td>
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<td>0.01</td>
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<td>4.03 Prevalence of non-tariff barriers</td>
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<tr>
<td>4.04 Logistics performance 1-5 (best)</td>
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<td>Investment</td>
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<tr>
<td>4.05 Greenfield investments US$ billions</td>
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<td>4.06 FDI inflows US$ billions</td>
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<td>89,769.3</td>
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<td><strong>Infrastructure</strong></td>
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<td>4.08 Transport infrastructure 0-100 (best)</td>
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<td>Sustainability</td>
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<td>6.01 Alternative and nuclear energy use % total energy use</td>
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<td>6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billions)</td>
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<td>6.05 Baseline water stress Annual withdrawals, % of annual available blue water</td>
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<td>6.06 Wastewater treatment</td>
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<td><strong>Driver: Demand Environment</strong> (0-10 (best))</td>
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<td>7.01 Market size 0-100 (best)</td>
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<td>Consumer Base</td>
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<td>7.02 Buyer sophistication</td>
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<td>7.03 Extent of market dominance</td>
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United States

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

<table>
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<tr>
<th>Indicator</th>
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<tbody>
<tr>
<td>Population millions</td>
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<tr>
<td>GDP per capita US$</td>
<td>57,436.4</td>
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<td>Unemployment rate %</td>
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Key production indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
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<tbody>
<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>1,968,888.7</td>
</tr>
<tr>
<td>Manufacturing value added in economy % GDP</td>
<td>11.7</td>
</tr>
<tr>
<td>Manufacturing employment % working population</td>
<td>10.2</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
<td>0.8</td>
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<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
<td>41.2</td>
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<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

<table>
<thead>
<tr>
<th>Drivers of Production</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>1st</td>
<td>8.5</td>
</tr>
<tr>
<td>Human Capital</td>
<td>20%</td>
<td>3rd</td>
<td>7.9</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>5th</td>
<td>7.7</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>9th</td>
<td>8.6</td>
</tr>
<tr>
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<td>37th</td>
<td>6.7</td>
</tr>
<tr>
<td>Demand Environment</td>
<td>15%</td>
<td>1st</td>
<td>8.5</td>
</tr>
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<table>
<thead>
<tr>
<th>Structure of Production</th>
<th>Weighting</th>
<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Complexity</td>
<td>60%</td>
<td>8th</td>
<td>8.6</td>
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<tr>
<td>Scale</td>
<td>40%</td>
<td>10th</td>
<td>6.6</td>
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United States

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<tr>
<th>Index Component</th>
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<td><strong>Structure: Complexity</strong></td>
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<td><strong>Economic complexity</strong></td>
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<td><strong>Structure: Scale</strong></td>
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<td><strong>Manufacturing value added</strong></td>
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<td>1,968,888.7</td>
</tr>
<tr>
<td><strong>Ability to Innovate</strong></td>
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</tr>
<tr>
<td><strong>Driver: Human Capital</strong></td>
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<td>1.6</td>
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<tr>
<td><strong>Driver: Technology &amp; Innovation</strong></td>
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<td><strong>Technology Platform</strong></td>
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<tr>
<td><strong>Mobile-cellular telephone subscriptions /100 pop.</strong></td>
<td>42</td>
<td>127.2</td>
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<td><strong>LTE mobile network coverage % population</strong></td>
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<td><strong>Internet users % pop.</strong></td>
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<tr>
<td><strong>FDI and technology transfer 1-7 (best)</strong></td>
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<td><strong>Firm-level technology absorption 1-7 (best)</strong></td>
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<td>6.0</td>
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<td><strong>Impact of ICTs on new services and products 1-7 (best)</strong></td>
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<td><strong>Cybersecurity commitment 0-1 (best)</strong></td>
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<td><strong>Ability to Innovate 0-10 (best)</strong></td>
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<tr>
<td><strong>State of cluster development 1-7 (best)</strong></td>
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<td><strong>Company investment in emerging technology 1-7 (best)</strong></td>
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<td>6.0</td>
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<td><strong>Gov’t procurement of advanced technology products 1-7 (best)</strong></td>
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<td><strong>Companies embracing disruptive ideas 1-7 (best)</strong></td>
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<td><strong>Multi-stakeholder collaboration 1-7 (best)</strong></td>
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<td><strong>Patent applications applications/million pop.</strong></td>
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<td><strong>Venture capital deal volume US$ millions</strong></td>
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<td><strong>Venture capital deal volume per size of economy US$/GDP</strong></td>
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<td><strong>Driver: Human Capital 0-10 (best)</strong></td>
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<td><strong>Current Labor Force 0-10 (best)</strong></td>
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<td><strong>Manufacturing employment % working population</strong></td>
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<td><strong>Knowledge-intensive employment % working pop.</strong></td>
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<td><strong>Female participation in labor force ratio</strong></td>
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<td><strong>Mean years of schooling</strong></td>
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<td><strong>Availability of scientists and engineers 1-7 (best)</strong></td>
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<td><strong>Digital skills among population 1-7 (best)</strong></td>
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<td><strong>Critical thinking in teaching 1-7 (best)</strong></td>
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<td><strong>Active labor policies 1-7 (best)</strong></td>
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<td><strong>Greenfield investments US$ millions</strong></td>
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<td><strong>Government 0-10 (best)</strong></td>
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<td><strong>Rule of law (2.5) - 2.0 (best)</strong></td>
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<td><strong>Baseline water stress Annual withdrawals, % of annual available blue water</strong></td>
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<td><strong>Wastewater treatment 0 – 5 (worst)</strong></td>
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<td><strong>Foreign and Domestic Demand 0-10 (best)</strong></td>
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<td><strong>Consumer Base 0-10 (best)</strong></td>
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<td><strong>Buyer sophistication 1-7 (best)</strong></td>
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<td><strong>Extent of market dominance 1-7 (best)</strong></td>
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Country Profiles
Uruguay
Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<tr>
<td>GDP US$ billions</td>
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<tr>
<td>GDP per capita US$</td>
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<td>Unemployment rate %</td>
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Key production indicators

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<tr>
<td>Manufacturing value added 2010 millions US$</td>
<td>5,617.1</td>
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<tr>
<td>Manufacturing value added in economy % GDP</td>
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<tr>
<td>Manufacturing employment % working population</td>
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<tr>
<td>Manufacturing value added growth Annual %</td>
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<tr>
<td>Medium hi-tech &amp; hi-tech industries % of manu. value added</td>
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<td>CO2 emission per unit of value added kg/USD</td>
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Readiness Overall Assessment

Drivers of Production 4.7

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<tr>
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<tr>
<td>Human Capital</td>
<td>20%</td>
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<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>85th</td>
<td>3.6</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>34th</td>
<td>6.4</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>38th</td>
<td>6.7</td>
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<tr>
<td>Demand Environment</td>
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Structure of Production 4.5

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Archetype

Uruguay 4.5, 4.7

Country Profiles
## Readiness for the Future of Production Assessment 2018 edition

### Uruguay

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Readiness for the Future of Production Report 2018  249
Viet Nam

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators
Population millions 92.6  GDP US$ billions 201.3  GDP per capita US$ 2,173.3  Unemployment rate % 2.3

Key production indicators
Manufacturing value added 2010 millions US$ 34,512.0  Manufacturing value added in economy % GDP 21.0  Manufacturing employment % working population 14.4  Medium hi-tech & hi-tech industries % of manu. value added 40.4  CO2 emission per unit of value added kg/USD 1.7

Readiness Overall Assessment
Drivers of Production 4.9

<table>
<thead>
<tr>
<th>Driver</th>
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<th>Rank</th>
<th>Score /10</th>
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<tbody>
<tr>
<td>Technology &amp; Innovation</td>
<td>20%</td>
<td>90th</td>
<td>3.1</td>
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<tr>
<td>Human Capital</td>
<td>20%</td>
<td>70th</td>
<td>4.5</td>
</tr>
<tr>
<td>Global Trade &amp; Investment</td>
<td>20%</td>
<td>13th</td>
<td>7.0</td>
</tr>
<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>53rd</td>
<td>5.0</td>
</tr>
<tr>
<td>Sustainable Resources</td>
<td>5%</td>
<td>87th</td>
<td>4.6</td>
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<tr>
<td>Demand Environment</td>
<td>15%</td>
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Structure of Production 5.0

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Archetype

Viet Nam 5.0, 4.9

Country Profiles
## Viet Nam

### Readiness for the Future of Production Assessment 2018 edition

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<tr>
<td>4.01 Trade</td>
<td>% GDP</td>
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<tr>
<td>4.02 Trade tariffs</td>
<td>% duty</td>
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<tr>
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<td>1-7 (best)</td>
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<tr>
<td>4.04 Logistics performance</td>
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<td>Investment</td>
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<td>4.06 FDI inflows</td>
<td>US$ millions</td>
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<td>4.07 Domestic credit to private sector</td>
<td>% GDP</td>
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<td>Infrastructure</td>
<td>0-10 (best)</td>
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<td>Transport infrastructure</td>
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<td>Electricity infrastructure</td>
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<td>Government</td>
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<tr>
<td>5.01 Regulatory efficiency</td>
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<td>5.02 Incidence of corruption</td>
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<td>5.03 Future orientation of government</td>
<td>1-7 (best)</td>
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<tr>
<td>5.04 Rule of law</td>
<td>(2.5) - 2.0 (best)</td>
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<td>6.01 Alternative and nuclear energy use</td>
<td>% total energy use</td>
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<td>CO2 emissions in megaton/GDP (US$ billions)</td>
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<td>6.03 CH4 intensity level</td>
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<td>6.06 Wastewater treatment</td>
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<td>0-100 (best)</td>
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<td>Consumer Base</td>
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<td>7.02 Buyer sophistication</td>
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<td>2.12 Multi-stakeholder collaboration</td>
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<td>Years</td>
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<td>3.05 Availability of scientists and engineers</td>
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<td>3.06 Digital skills among population</td>
<td>1-7 (best)</td>
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<td>migrants/100,000 pop.</td>
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<td>3.13 Pupil-to-teacher ratio in primary education</td>
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<td>3.16 On-the-job training</td>
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<td>3.17 Hiring and firing practices</td>
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Zambia

Readiness for the Future of Production Assessment 2018 edition

Key economic indicators

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<td>GDP (US$ billions)</td>
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<td>GDP per capita (US$)</td>
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Key production indicators

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<td>Manufacturing value added (2010 millions US$)</td>
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<tr>
<td>Manufacturing value added in economy (% GDP)</td>
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<tr>
<td>Manufacturing employment (% working population)</td>
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<td>Manufacturing value added growth (Annual %)</td>
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<td>Medium hi-tech &amp; hi-tech industries (% of manu. value added)</td>
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<td>CO2 emission per unit of value added (kg/USD)</td>
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Readiness Overall Assessment

Drivers of Production 3.5

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<td>Technology &amp; Innovation</td>
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<td>Human Capital</td>
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<tr>
<td>Institutional Framework</td>
<td>20%</td>
<td>74th</td>
<td>4.5</td>
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<tr>
<td>Sustainable Resources</td>
<td>5%</td>
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Structure of Production 2.4

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<td>Scale</td>
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Archetype

Zambia 2.4, 3.5

High-Potential Leading

Nascent

Legacy
# Zambia

## Readiness for the Future of Production Assessment 2018 edition

<table>
<thead>
<tr>
<th>Index Component</th>
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<tbody>
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<td>Consumer Base</td>
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<td>1.02 Manufacturing value added in economy</td>
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<tr>
<td>1.03 Manufacturing value added</td>
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<tr>
<td>1.04 Technology Platform</td>
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<td>2.01 Mobile-cellular telephone subscriptions</td>
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<tr>
<td>2.02 LTE mobile network coverage</td>
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<td>2.04 Direct and technology transfer</td>
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<td>2.05 Firm-level technology absorption</td>
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<tr>
<td>2.06 Impact of ICTs on new services and products</td>
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<td>2.07 Cybersecurity commitment</td>
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<td>Ability to Innovate</td>
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<td>2.08 State of cluster development</td>
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<tr>
<td>2.09 Company investment in emerging technology</td>
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<tr>
<td>2.10 Gov't procurement of advanced technology products</td>
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<tr>
<td>2.11 Companies embracing disruptive ideas</td>
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<tr>
<td>2.12 Multi-stakeholder collaboration</td>
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<tr>
<td>2.13 R&amp;D expenditures</td>
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<td>2.14 Scientific and technical publications</td>
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<td>2.15 Patent applications</td>
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<td>2.16 Venture capital deal volume</td>
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<td>3.01 Manufacturing employment</td>
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<td>3.02 Knowledge-intensive employment</td>
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<tr>
<td>3.03 Female participation in labor force</td>
<td>88</td>
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<tr>
<td>3.04 Mean years of schooling</td>
<td>84</td>
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<tr>
<td>3.05 Availability of scientists and engineers</td>
<td>69</td>
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<tr>
<td>3.06 Digital skills among population</td>
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<td>Future Labor Force</td>
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<tr>
<td>3.07 Migration</td>
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<tr>
<td>3.08 Capacity to attract and retain talent</td>
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<tr>
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<td>3.10 Quality of math and science education</td>
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<td>3.11 Quality of vocational training</td>
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<td>3.12 School life expectancy</td>
<td>81</td>
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<td>3.13 Pupil-to-teacher ratio</td>
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<tr>
<td>3.14 Critical thinking in teaching</td>
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<td>3.15 Active labor policies</td>
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<td>3.16 On-the-job training</td>
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<td>3.17 Hiring and firing practices</td>
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## Country Profiles

**Driver: Global Trade & Investment** | Rank /100 | Value |
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<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Trade</td>
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<tr>
<td>0.41 FDI inflows</td>
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<td>0.42 Liberalization of foreign exchange</td>
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<tr>
<td>0.43 Trade barriers</td>
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<tr>
<td>0.44 FDI inflows</td>
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<td>0.45 Macroeconomic stability</td>
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<tr>
<td>0.50 Greenfield investments</td>
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<td>0.51 Foreign direct investment</td>
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**Driver: Infrastructure** | Rank /100 | Value |
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<tbody>
<tr>
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<td>0.54 Rule of law</td>
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<tr>
<td>0.55 Incidence of corruption</td>
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<tr>
<td>0.56 Future orientation of government</td>
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<tr>
<td>0.57 Rule of law</td>
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**Driver: Sustainable Resources** | Rank /100 | Value |
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<td>0.61 Alternative and nuclear energy use</td>
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<td>0.62 CO2 intensity level</td>
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**Driver: Demand Environment** | Rank /100 | Value |
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<tbody>
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<td>0.72 Market size</td>
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<tr>
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<td>0.75 Extent of market dominance</td>
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