WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

Insight Report

Readiness for the Future of Production Report 2018

In collaboration with A.T. Kearney

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Readiness for the Future of Production Report 2018

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Preface

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 Revolution[1] 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 Drivers of Production and Structure 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

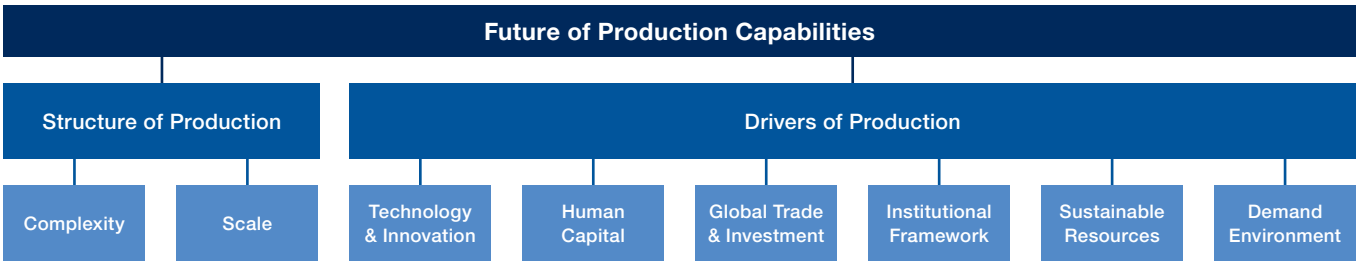
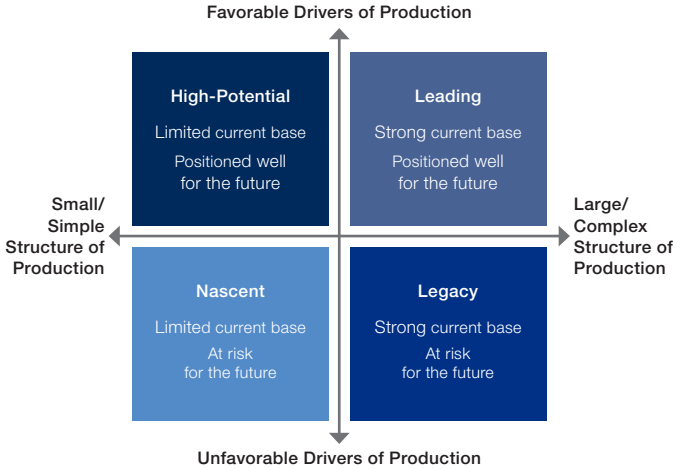
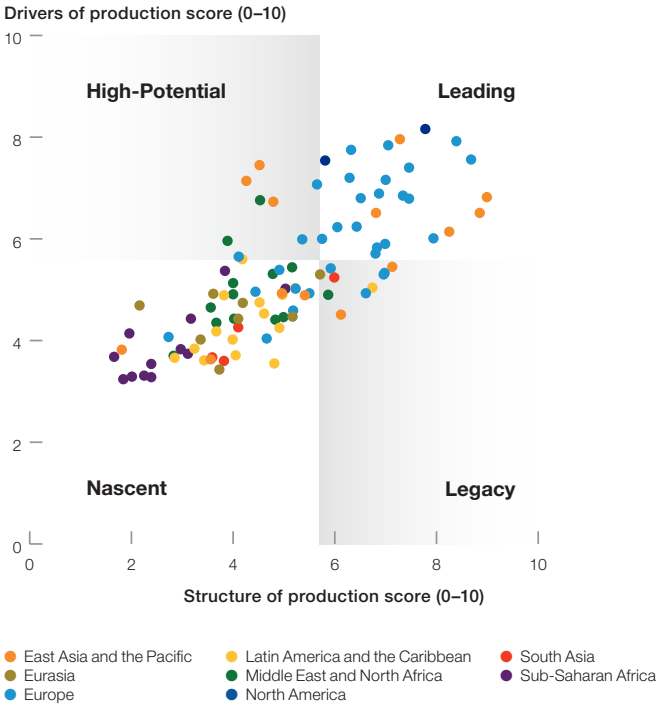


Figure 2: Country Archetypes



Note: Average performance of the top 75 countries (weighted average driver score, weighted average structure score) is at the intersection of the four quadrants to create the archetype borders.

Figure 3: Global Map of Readiness Assessment Results 2018



Note: Average performance of the top 75 countries is at the intersection of the four quadrants.

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.[2] Approximately 90% of the countries from Latin America, Middle East, 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[3] and Society 5.0[4] 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[5], 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.[6] 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.[7]

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.[8] **Table 1.1** presents a description of emerging technologies of the Fourth Industrial Revolution. In some cases, the adoption of technology in

Table 1.1: Twelve Key Emerging Technologies

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

Source: *World Economic Forum Handbook on the Fourth Industrial Revolution* and *World Economic Forum Global Risks Report 2017.*

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.[9]

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.[10] Restrictions on immigration, trade and other cross-border flows are on the rise after a quarter-century of rapid globalization.[11] 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.' Perez 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.[12] 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 late-comer 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.[13]

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.[14] 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.

widespread adoption of emerging technologies into high-stakes production environments could have adverse impacts if there are system failures, such as artificial intelligence making costly production related errors in judgement. These risks need to be anticipated, monitored and mitigated.

One of the key defining features of the Fourth Industrial Revolution is uncertainty. Innovation can be hugely disruptive, but the extent of the disruption that will occur or which sectors will be most disrupted, while currently debated and forecasted, is still unknown and can be shaped by countries today. The share of traditional manufacturing compared to advanced manufacturing will shift over time, but to what extent and how rapidly? The Fourth Industrial Revolution will fundamentally transform production systems, but at this nascent stage its full impact has yet to be realized.

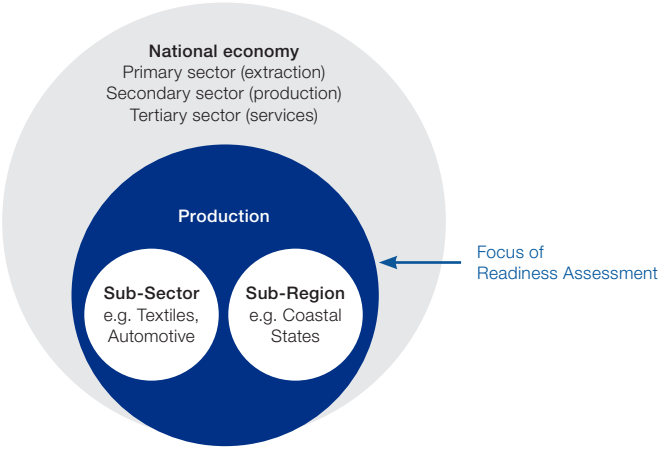
That is why, as production systems stand on the brink of another technological revolution, countries need to decide how to best respond. Countries at different stages of development can learn from global approaches as they shape their own unique journey in the future of production. However, there is 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

Figure 1.1: Scope of the Readiness Assessment



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. 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

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.

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.

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.

Figure 2.1: Readiness Diagnostic Model Framework

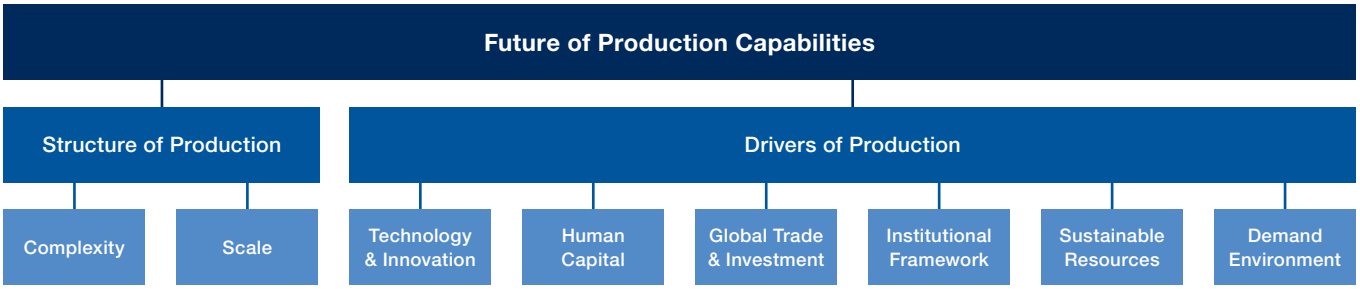
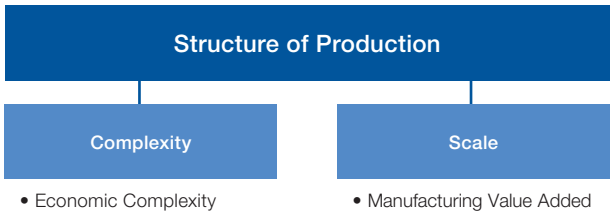


Figure 2.2: Structure of Production: Concepts Measured



- **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.

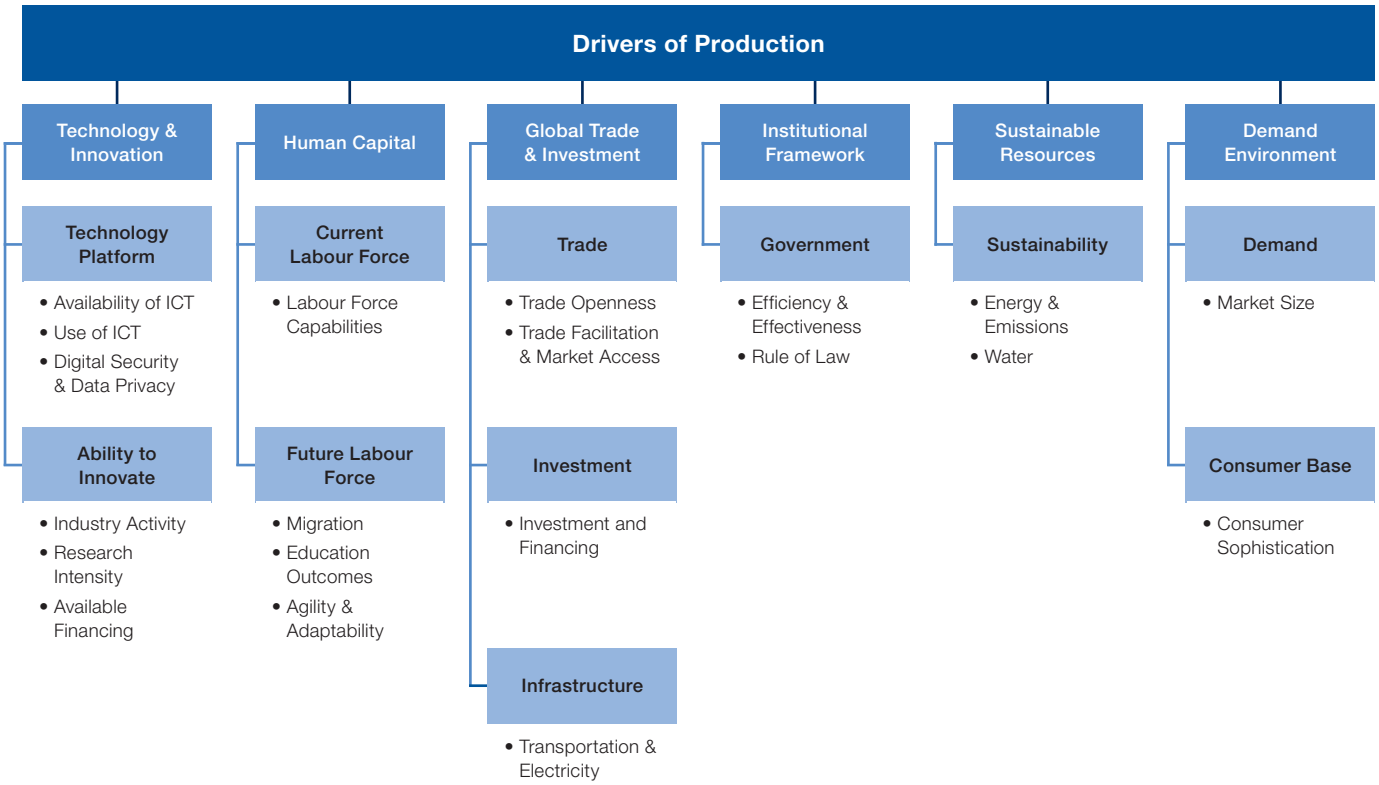
How can economies improve economic complexity?

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.

Figure 2.3: Drivers of Production: Concepts Measured



- **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.

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).

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).[16] 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.[17] 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.

Table 2.1: Readiness Assessment Weighting Scheme

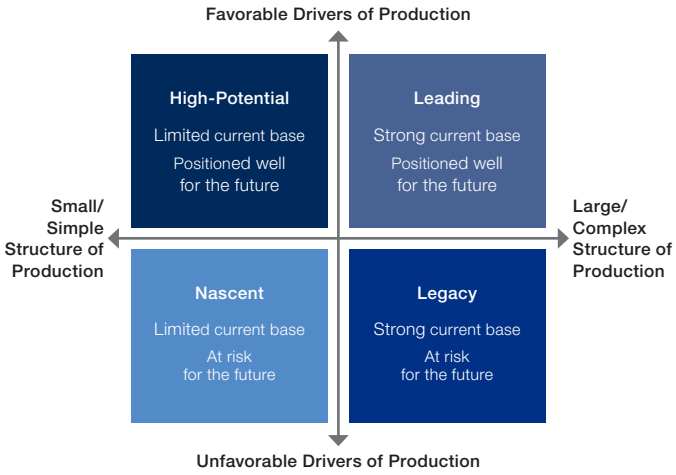
Drivers of Production	Weights
Technology & Innovation	20%
Human Capital	20%
Global Trade & Investment	20%
Institutional Framework	20%
Demand Environment	15%
Sustainable Resources	5%

Structure of Production	Weights
Complexity	60%
Scale	40%

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

Figure 2.4: Country Archetypes



Note: Average performance of the top 75 countries (weighted average driver score, weighted average structure score) is at the intersection of the four quadrants to create the archetype borders.

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.

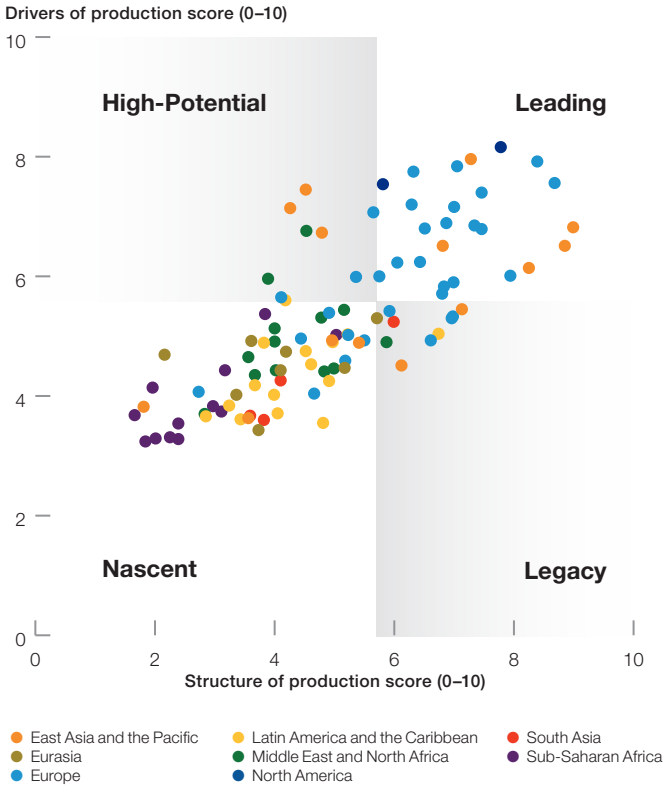
Lastly, sectoral strengths and weaknesses in manufacturing are difficult to identify in a holistic assessment. In-depth qualitative analyses have been conducted in select countries to provide a more comprehensive view and complement the quantitative assessment with qualitative insights. However, each 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.

Figure 3.1: Global Map of Readiness Assessment Results 2018



Note: Average performance of the Top 75 countries is at the intersection of the four quadrants.

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.[18] 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[19] 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

Region	Country	Structure of Production Score	Structure of Production Rank	Drivers of Production Score	Drivers of Production Rank
Leading Countries					
Europe	Austria	7.46	9	6.79	18
Europe	Belgium	6.51	24	6.80	17
North America	Canada	5.81	33	7.54	7
East Asia and the Pacific	China	8.25	5	6.14	25
Europe	Czech Republic	7.94	6	6.01	26
Europe	Denmark	6.29	27	7.20	10
Europe	Estonia	5.75	34	6.00	27
Europe	Finland	7.00	14	7.16	11
Europe	France	6.87	18	6.89	14
Europe	Germany	8.68	3	7.56	6
Europe	Ireland	7.34	10	6.85	15
Europe	Israel	6.43	25	6.24	23
Europe	Italy	6.99	15	5.90	30
East Asia and the Pacific	Japan	8.99	1	6.82	16
East Asia and the Pacific	Korea, Rep.	8.85	2	6.51	21
East Asia and the Pacific	Malaysia	6.81	20	6.51	22
Europe	Netherlands	6.32	26	7.75	5
Europe	Poland	6.83	19	5.83	31
East Asia and the Pacific	Singapore	7.28	11	7.96	2
Europe	Slovenia	6.80	21	5.71	32
Europe	Spain	6.05	29	6.23	24
Europe	Sweden	7.46	8	7.40	9
Europe	Switzerland	8.39	4	7.92	3
Europe	United Kingdom	7.05	13	7.84	4
North America	United States	7.78	7	8.16	1
Legacy Countries					
Europe	Hungary	6.96	17	5.30	42
South Asia	India	5.99	30	5.24	44
Europe	Lithuania	5.92	31	5.42	37
Latin America and the Caribbean	Mexico	6.74	22	5.04	46
East Asia and the Pacific	Philippines	6.12	28	4.51	66
Europe	Romania	6.61	23	4.93	52
Eurasia	Russian Federation	5.71	35	5.30	43
Europe	Slovak Republic	6.98	16	5.33	40
East Asia and the Pacific	Thailand	7.13	12	5.45	35
Middle East and North Africa	Turkey	5.87	32	4.90	57
High-Potential Countries/Economies					
East Asia and the Pacific	Australia	4.26	61	7.14	12
East Asia and the Pacific	Hong Kong SAR	4.52	58	7.45	8
East Asia and the Pacific	New Zealand	4.79	53	6.73	20
Europe	Norway	5.65	36	7.07	13
Europe	Portugal	5.36	39	5.99	28
Middle East and North Africa	Qatar	3.89	72	5.96	29
Middle East and North Africa	United Arab Emirates	4.53	57	6.76	19
Nascent Countries					
Europe	Albania	2.73	91	4.07	78
Middle East and North Africa	Algeria	2.83	90	3.70	87
Latin America and the Caribbean	Argentina	4.91	50	4.25	75
Eurasia	Armenia	4.10	65	4.43	70
Eurasia	Azerbaijan	2.16	95	4.69	62
Middle East and North Africa	Bahrain	4.78	54	5.31	41
South Asia	Bangladesh	3.59	80	3.67	89
Europe	Bosnia and Herzegovina	4.66	55	4.04	79
Sub-Saharan Africa	Botswana	3.17	86	4.43	69
Latin America and the Caribbean	Brazil	5.22	41	5.03	47
Europe	Bulgaria	5.23	40	5.02	48
East Asia and the Pacific	Cambodia	3.56	81	3.63	91
Sub-Saharan Africa	Cameroon	1.84	98	3.24	100
Latin America and the Caribbean	Chile	4.18	63	5.60	34
Latin America and the Caribbean	Colombia	4.61	56	4.53	65
Latin America and the Caribbean	Costa Rica	4.97	47	4.90	56
Europe	Croatia	5.50	37	4.93	51
Europe	Cyprus	4.11	64	5.65	33
Latin America and the Caribbean	Dominican Republic	3.99	71	4.02	80
Latin America and the Caribbean	Ecuador	2.85	89	3.66	90
Middle East and North Africa	Egypt	4.99	46	4.46	68
Latin America and the Caribbean	El Salvador	4.81	52	3.55	94
Sub-Saharan Africa	Ethiopia	2.01	96	3.29	98
Eurasia	Georgia	3.61	79	4.92	54
Sub-Saharan Africa	Ghana	1.96	97	4.14	77
Europe	Greece	4.44	60	4.96	50
Latin America and the Caribbean	Guatemala	4.05	67	3.71	86
Latin America and the Caribbean	Honduras	3.43	83	3.61	92
East Asia and the Pacific	Indonesia	5.41	38	4.89	59
Middle East and North Africa	Jordan	4.00	69	4.91	55
Eurasia	Kazakhstan	4.19	62	4.74	61
Sub-Saharan Africa	Kenya	2.97	88	3.83	83
Middle East and North Africa	Kuwait	3.56	82	4.65	63
Eurasia	Kyrgyz Republic	3.73	76	3.43	96
Europe	Latvia	4.91	49	5.39	38
Middle East and North Africa	Lebanon	4.02	68	4.43	71
Sub-Saharan Africa	Mauritius	3.84	73	5.37	39
Eurasia	Moldova	3.36	84	4.02	81
East Asia and the Pacific	Mongolia	1.81	99	3.82	84
Middle East and North Africa	Morocco	3.67	77	4.35	73
Sub-Saharan Africa	Nigeria	1.66	100	3.68	88
Middle East and North Africa	Oman	4.00	70	5.13	45
South Asia	Pakistan	3.82	74	3.60	93
Latin America and the Caribbean	Panama	3.82	75	4.89	58
Latin America and the Caribbean	Paraguay	3.24	85	3.84	82
Latin America and the Caribbean	Peru	3.67	78	4.18	76
Middle East and North Africa	Saudi Arabia	5.16	44	5.44	36
Sub-Saharan Africa	Senegal	3.11	87	3.74	85
Europe	Serbia	5.18	42	4.59	64
Sub-Saharan Africa	South Africa	5.03	45	5.02	49
South Asia	Sri Lanka	4.10	66	4.26	74
Sub-Saharan Africa	Tanzania	2.39	93	3.28	99
Middle East and North Africa	Tunisia	4.83	51	4.41	72
Sub-Saharan Africa	Uganda	2.25	94	3.31	97
Eurasia	Ukraine	5.17	43	4.47	67
Latin America and the Caribbean	Uruguay	4.52	59	4.75	60
East Asia and the Pacific	Viet Nam	4.96	48	4.93	53
Sub-Saharan Africa	Zambia	2.39	92	3.54	95

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.

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.

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 3.3: 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.

Figure 3.2: Map of Readiness Assessment Results 2018, Leading 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.

complexity, their Structure of Production, particularly in areas of advanced manufacturing. However, not all countries in this archetype may want to pursue manufacturing as part of their economic strategy, as services or other opportunities may be more attractive given comparable advantages.

The target movement for Nascent countries is to first invest in drivers to create the right conditions in their environment and then develop and execute a strategy to expand their Structure 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[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 26th most complex economy in the world.[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 2016[26]—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 2016[33] – and the fourth most complex economy.[34] 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 complexity[36] 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

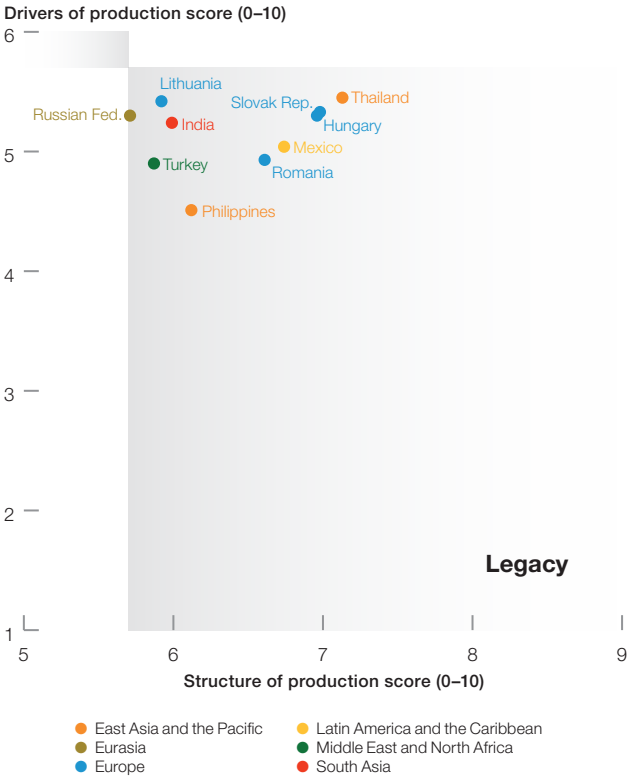
The United States' manufacturing sector is the 2nd-largest in the world, with an MVA of nearly US$ 2 trillion in 2016, representing close to 16% of global Manufacturing Value Added and 12% of US GDP.[41] The United States has the world's eighth most complex economy.[42] Over the last two decades, however, 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[43]–and ranks 45th in economic complexity.[44] 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.[45] 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.[46]

Mexico

Mexico has the 12th-largest manufacturing sector in the world[47] and ranks 24th in economic complexity.[48] 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

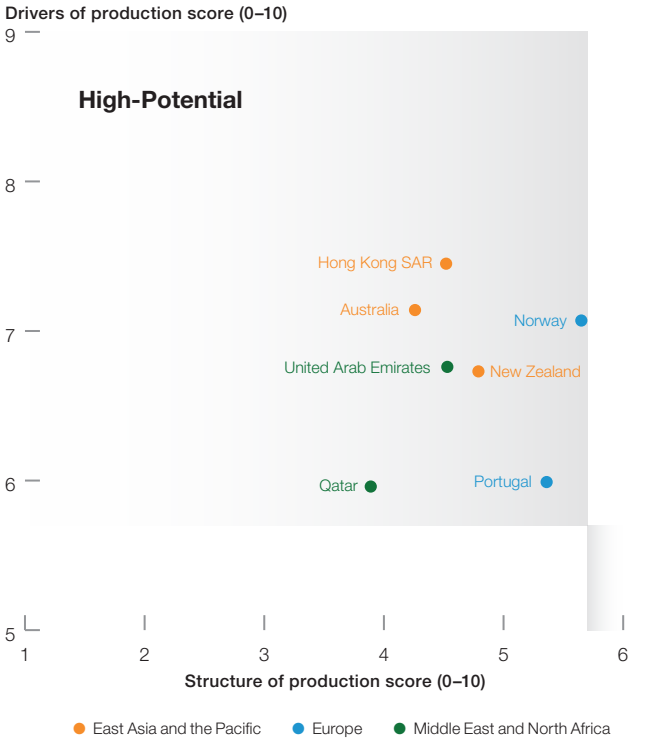
The Russian Federation's manufacturing sector is the 13th-largest in the world[49], but manufacturing's share of national GDP has declined over the last decade. This has constrained both the Scale and Complexity of the Structure of Production. The country's performance across the all drivers is mixed, 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



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.

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[50], and Australia is a significant exporter of natural resources, energy and food.[51] 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[52] 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.[53]

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.[54] 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.

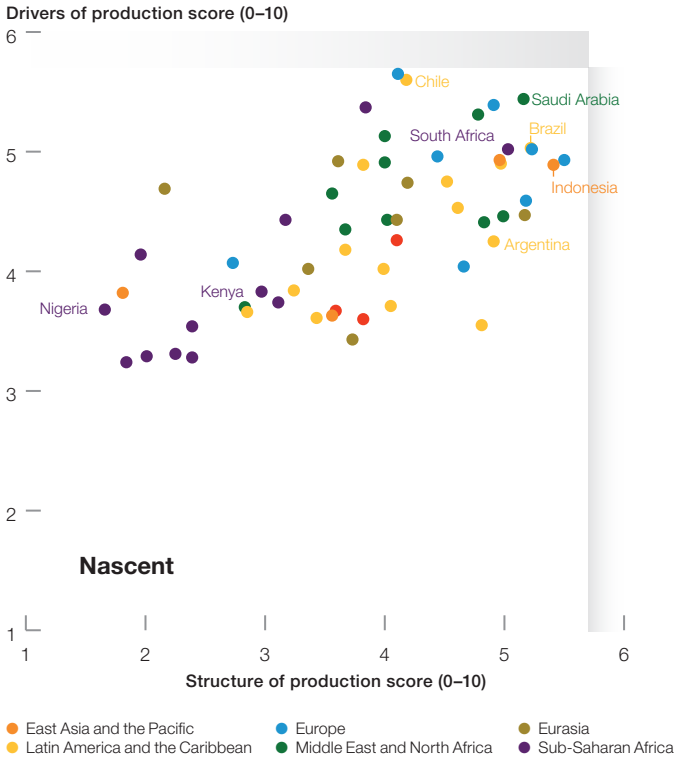
Nascent Countries

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



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.[55] 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[56], almost a third of its contribution of over 30% in the 1980s.[57] 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.[58] 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.[59] 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.[60]

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.[61] 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

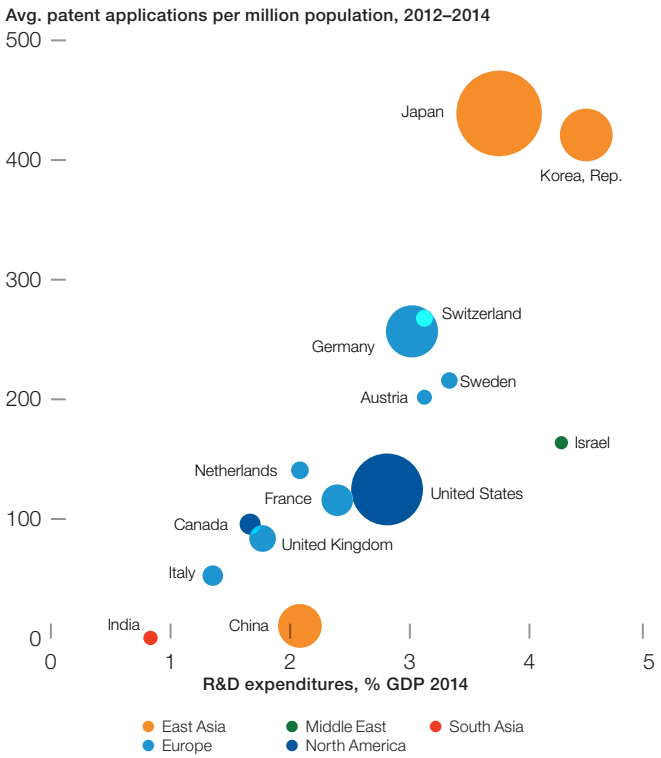
Technology & Innovation is a key enabler for the future of production, as the adoption and diffusion of emerging technologies is the crux of the Fourth Industrial Revolution. In order to do this, countries need an advanced, connected and secure technology platform. They need to continually upgrade technology 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

Figure 4.1: Leaders in Technical Innovation



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.

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.

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

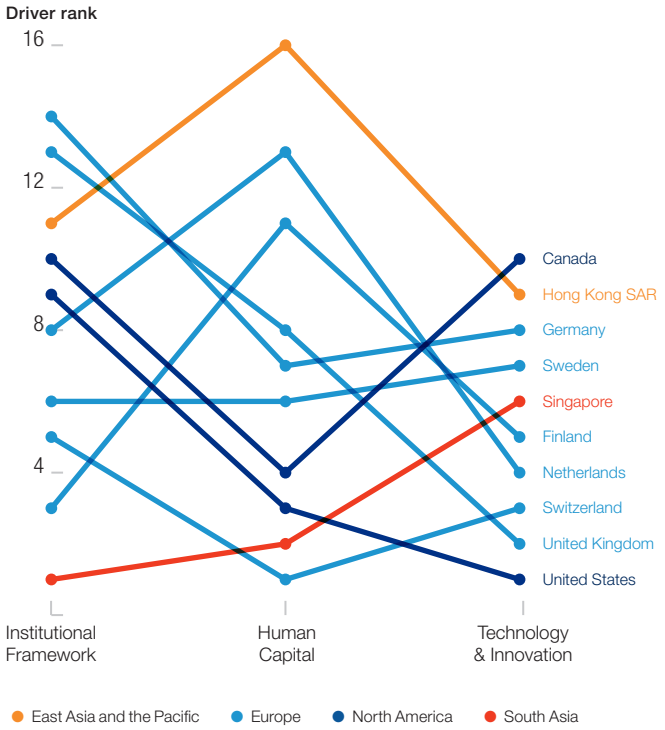
- Migration
- Education Outcomes
- Agility & Adaptability

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

Figure 4.2: Relationship between Institutional Framework, Human Capital and Technology & Innovation Drivers



Sources: World Economic Forum, A.T. Kearney.

Driver 3

Global Trade & Investment

OVERVIEW

This driver assesses:

- Participation in international trade to facilitate the exchange of products, knowledge and technology, and to establish global linkages
- Availability of financial resources to invest in production-related development
- Quality of infrastructure to enable production-related activities

CONCEPTS CAPTURED

Trade
- Trade Openness
- Trade Facilitation and Market Access

Investment
- Investment and Financing

Infrastructure
- Transportation and Electricity

gains. 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 re-train 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.

Driver 4

Institutional Framework

OVERVIEW

This driver assesses:

- Effectiveness of government institutions, rules and regulations in contributing to shepherding technological development, novel businesses and advanced manufacturing

CONCEPTS CAPTURED

Government

- Efficiency & Effectiveness
- Rule of Law

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.[63] 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.[64] 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.[65]

Driver 5

Sustainable Resources

OVERVIEW

This driver assesses:

- The impact of production on the environment, including the efficient use of natural resources and alternative energy sources

CONCEPTS CAPTURED

Sustainability

- Energy and Emissions
- Water

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 CO_2 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.

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

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.

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.

Endnotes

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Appendix A

Regional and Income Group Classifications, 2018

Table A1: Regional Classifications

The following regional classifications were used for analysis in the report.

EAST ASIA AND THE PACIFIC	EURASIA	EUROPE	LATIN AMERICA AND THE CARIBBEAN	MIDDLE EAST AND NORTH AFRICA	NORTH AMERICA	SOUTH ASIA	SUB-SAHARAN AFRICA
Australia	Armenia	Albania	Argentina	Algeria	Canada	Bangladesh	Botswana
Cambodia	Azerbaijan	Austria	Brazil	Bahrain	United States	India	Cameroon
China	Georgia	Belgium	Chile	Egypt		Pakistan	Ethiopia
Hong Kong SAR	Kazakhstan	Bosnia and Herzegovina	Colombia	Jordan		Sri Lanka	Ghana
Indonesia	Kyrgyz Republic	Bulgaria	Costa Rica	Kuwait			Kenya
Japan	Moldova	Croatia	Dominican Republic	Lebanon			Mauritius
Korea, Rep.	Russian Federation	Cyprus	Ecuador	Morocco			Nigeria
Malaysia	Ukraine	Czech Republic	El Salvador	Oman			Senegal
Mongolia		Denmark	Guatemala	Qatar			South Africa
New Zealand		Estonia	Honduras	Saudi Arabia			Tanzania
Philippines		Finland	Mexico	Tunisia			Uganda
Singapore		France	Panama	Turkey			Zambia
Thailand		Germany	Paraguay	United Arab Emirates			
Viet Nam		Greece	Peru				
		Hungary	Uruguay				
		Ireland					
		Israel					
		Italy					
		Latvia					
		Lithuania					
		Netherlands					
		Norway					
		Poland					
		Portugal					
		Romania					
		Serbia					
		Slovak Republic					
		Slovenia					
		Spain					
		Sweden					
		Switzerland					
		United Kingdom					

Table A2: Income Group Classifications

The following income group classifications were used for analysis in the report.

LOW INCOME (US$ 1,005 OR LESS)	LOWER-MIDDLE INCOME (US$ 1,006–3,955)	UPPER-MIDDLE INCOME (US$ 3,956–12,235)	HIGH INCOME (US$ 12,236 OR MORE)
Ethiopia	Armenia	Argentina	Australia
Senegal	Bangladesh	Albania	Austria
Tanzania	Cambodia	Algeria	Bahrain
Uganda	Cameroon	Azerbaijan	Belgium
	Egypt	Bosnia and Herzegovina	Canada
	El Salvador	Brazil	Chile
	Georgia	Botswana	Cyprus
	Ghana	Bulgaria	Czech Republic
	Guatemala	China	Denmark
	Honduras	Colombia	Estonia
	India	Costa Rica	Finland
	Indonesia	Croatia	France
	Jordan	Dominican Republic	Germany
	Kenya	Ecuador	Greece
	Kyrgyz Republic	Kazakhstan	Hong Kong SAR
	Moldova	Lebanon	Hungary
	Mongolia	Malaysia	Ireland
	Morocco	Mauritius	Israel
	Nigeria	Mexico	Italy
	Pakistan	Panama	Japan
	Philippines	Paraguay	Korea, Rep.
	Sri Lanka	Peru	Kuwait
	Tunisia	Romania	Latvia
	Ukraine	Russian Federation	Lithuania
	Viet Nam	Serbia	Netherlands
	Zambia	South Africa	New Zealand
		Thailand	Norway
		Turkey	Oman
			Poland
			Portugal
			Qatar
			Saudi Arabia
			Singapore
			Slovak Republic
			Slovenia
			Spain
			Sweden
			Switzerland
			United Arab Emirates
			United Kingdom
			United States
			Uruguay

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

		Structure of Production		Complexity		Scale	
Region	Country	Score	Rank	Score	Rank	Score	Rank
East Asia and the Pacific	Japan	8.99	1	10.00	1	7.47	5
East Asia and the Pacific	Korea, Rep.	8.85	2	8.96	4	8.69	2
Europe	Germany	8.68	3	9.40	3	7.59	4
Europe	Switzerland	8.39	4	9.82	2	6.25	12
East Asia and the Pacific	China	8.25	5	7.08	27	10.00	1
Europe	Czech Republic	7.94	6	8.74	5	6.76	8
North America	United States	7.78	7	8.58	8	6.59	10
Europe	Sweden	7.46	8	8.74	5	5.55	23
Europe	Austria	7.46	9	8.69	7	5.62	21
Europe	Ireland	7.34	10	8.16	13	6.11	14
East Asia and the Pacific	Singapore	7.28	11	8.40	11	5.59	22
Europe	United Kingdom	7.05	13	8.58	8	4.74	37
Europe	Finland	7.00	14	8.43	10	4.85	33
Europe	Italy	6.99	15	7.74	18	5.87	16
Europe	France	6.87	18	8.00	15	5.18	28
Europe	Poland	6.83	19	7.47	21	5.88	15
East Asia and the Pacific	Malaysia	6.81	20	6.80	30	6.82	7
Europe	Slovenia	6.80	21	8.27	12	4.60	39
Europe	Belgium	6.51	24	7.61	19	4.88	32
Europe	Israel	6.43	25	7.87	16	4.27	48
Europe	Netherlands	6.32	26	7.43	22	4.65	38
Europe	Denmark	6.29	27	7.61	19	4.31	46
Europe	Spain	6.05	29	6.70	32	5.06	30
North America	Canada	5.81	33	6.50	34	4.77	34
Europe	Estonia	5.75	34	7.36	23	3.34	70

● East Asia and the Pacific ● Europe ● North America

Structure of Production *(continued)*

Table B2: Legacy Countries

		Structure of Production		Complexity		Scale	
Region	Country	Score	Rank	Score	Rank	Score	Rank
East Asia and the Pacific	Thailand	7.13	12	6.64	33	7.86	3
Europe	Slovak Republic	6.98	16	7.87	16	5.65	20
Europe	Hungary	6.96	17	8.05	14	5.33	26
Latin America and the Caribbean	Mexico	6.74	22	7.16	25	6.11	13
Europe	Romania	6.61	23	7.25	24	5.65	19
East Asia and the Pacific	Philippines	6.12	28	5.91	43	6.44	11
South Asia	India	5.99	30	5.57	48	6.61	9
Europe	Lithuania	5.92	31	6.84	29	4.53	41
Middle East and North Africa	Turkey	5.87	32	5.93	42	5.77	18
Eurasia	Russian Federation	5.71	35	5.90	44	5.42	25

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

Table B3: High-Potential Countries/Economies

		Structure of Production		Complexity		Scale	
Region	Country/Economy	Score	Rank	Score	Rank	Score	Rank
Europe	Norway	5.65	36	7.09	26	3.48	67
Europe	Portugal	5.36	39	6.23	39	4.07	52
East Asia and the Pacific	New Zealand	4.79	53	5.67	45	3.48	68
Middle East and North Africa	United Arab Emirates	4.53	57	5.05	58	3.76	59
East Asia and the Pacific	Hong Kong SAR	4.52	58	6.80	31	1.10	97
East Asia and the Pacific	Australia	4.26	61	4.47	68	3.96	54
Middle East and North Africa	Qatar	3.89	72	4.28	74	3.30	71

East Asia and the Pacific · Europe · Middle East and North Africa

Structure of Production *(continued)*

Table B4: Nascent Countries

Region	Country	Structure of Production Score	Structure of Production Rank	Complexity Score	Complexity Rank	Scale Score	Scale Rank
Europe	Croatia	5.50	37	6.97	28	3.29	72
East Asia and the Pacific	Indonesia	5.41	38	4.31	73	7.06	6
Europe	Bulgaria	5.23	40	6.26	38	3.68	61
Latin America and the Caribbean	Brazil	5.22	41	5.33	54	5.05	31
Europe	Serbia	5.18	42	6.28	37	3.53	63
Eurasia	Ukraine	5.17	43	6.05	41	3.85	57
Middle East and North Africa	Saudi Arabia	5.16	44	5.43	50	4.76	35
Sub-Saharan Africa	South Africa	5.03	45	5.35	53	4.55	40
Middle East and North Africa	Egypt	4.99	46	4.90	61	5.13	29
Latin America and the Caribbean	Costa Rica	4.97	47	5.61	47	4.01	53
East Asia and the Pacific	Viet Nam	4.96	48	4.37	72	5.83	17
Europe	Latvia	4.91	49	6.49	35	2.55	79
Latin America and the Caribbean	Argentina	4.91	50	4.71	62	5.20	27
Middle East and North Africa	Tunisia	4.83	51	5.29	55	4.13	50
Latin America and the Caribbean	El Salvador	4.81	52	5.10	57	4.36	45
Middle East and North Africa	Bahrain	4.78	54	5.63	46	3.51	65
Europe	Bosnia and Herzegovina	4.66	55	6.13	40	2.44	84
Latin America and the Caribbean	Colombia	4.61	56	4.94	59	4.12	51
Latin America and the Caribbean	Uruguay	4.52	59	5.44	49	3.14	73
Europe	Greece	4.44	60	5.43	51	2.95	75
Eurasia	Kazakhstan	4.19	62	4.63	63	3.53	64
Latin America and the Caribbean	Chile	4.18	63	4.47	67	3.76	60
Europe	Cyprus	4.11	64	6.32	36	0.80	99
Eurasia	Armenia	4.10	65	5.41	52	2.13	87
South Asia	Sri Lanka	4.10	66	3.66	81	4.75	36
Latin America and the Caribbean	Guatemala	4.05	67	3.75	79	4.50	42
Middle East and North Africa	Lebanon	4.02	68	4.93	60	2.65	78
Middle East and North Africa	Jordan	4.00	69	4.09	76	3.86	56
Middle East and North Africa	Oman	4.00	70	4.61	64	3.07	74
Latin America and the Caribbean	Dominican Republic	3.99	71	4.03	77	3.95	55
Sub-Saharan Africa	Mauritius	3.84	73	4.51	66	2.84	77
South Asia	Pakistan	3.82	74	3.46	83	4.37	44
Latin America and the Caribbean	Panama	3.82	75	5.27	56	1.64	92
Eurasia	Kyrgyz Republic	3.73	76	4.54	65	2.53	81
Middle East and North Africa	Morocco	3.67	77	3.27	86	4.28	47
Latin America and the Caribbean	Peru	3.67	78	3.12	87	4.49	43
Eurasia	Georgia	3.61	79	4.39	71	2.44	85
South Asia	Bangladesh	3.59	80	2.33	97	5.48	24
East Asia and the Pacific	Cambodia	3.56	81	3.40	84	3.79	58
Middle East and North Africa	Kuwait	3.56	82	4.24	75	2.53	82
Latin America and the Caribbean	Honduras	3.43	83	3.32	85	3.59	62
Eurasia	Moldova	3.36	84	4.39	70	1.81	91
Latin America and the Caribbean	Paraguay	3.24	85	3.71	80	2.54	80
Latin America and the Caribbean	Botswana	3.17	86	4.44	69	1.26	96
Sub-Saharan Africa	Senegal	3.11	87	3.57	82	2.43	86
Sub-Saharan Africa	Kenya	2.97	88	3.00	89	2.91	76
Latin America and the Caribbean	Ecuador	2.85	89	2.42	95	3.50	66
Middle East and North Africa	Algeria	2.83	90	3.09	88	2.45	83
Europe	Albania	2.73	91	3.86	78	1.04	98
Sub-Saharan Africa	Zambia	2.39	92	2.75	90	1.85	90
Sub-Saharan Africa	Tanzania	2.39	93	2.66	91	1.98	89
Sub-Saharan Africa	Uganda	2.25	94	2.35	96	2.09	88
Eurasia	Azerbaijan	2.16	95	2.53	92	1.60	93
Sub-Saharan Africa	Ethiopia	2.01	96	2.46	94	1.32	95
Sub-Saharan Africa	Ghana	1.96	97	2.22	98	1.56	94
Sub-Saharan Africa	Cameroon	1.84	98	0.82	99	3.38	69
East Asia and the Pacific	Mongolia	1.81	99	2.53	92	0.74	100
Sub-Saharan Africa	Nigeria	1.66	100	-	100	4.16	49

East Asia and the Pacific · Eurasia · Europe · Latin America and the Caribbean · Middle East and North Africa · South Asia · Sub-Saharan Africa

Drivers of Production

Table B5: Leading Countries

		Drivers of Production		Technology & Innovation		Human Capital		Global Trade & Investment		Institutional Framework		Sustainable Resources		Demand Environment	
Region	Country	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
●	United States	8.16	1	8.52	1	7.91	3	7.73	5	8.55	9	6.69	37	8.54	1
●	Singapore	7.96	2	7.36	6	8.00	2	9.02	1	9.13	1	6.10	56	6.38	14
●	Switzerland	7.92	3	7.87	3	8.47	1	7.21	10	8.83	5	8.75	3	6.68	7
●	United Kingdom	7.84	4	8.05	2	7.48	8	8.29	4	8.24	13	7.42	22	7.08	6
●	Netherlands	7.75	5	7.73	4	7.12	13	8.37	3	8.69	8	7.73	15	6.56	9
●	Germany	7.56	6	7.16	8	7.49	7	7.32	8	8.22	14	7.78	13	7.55	4
●	Canada	7.54	7	7.08	10	7.90	4	7.49	6	8.47	10	7.71	16	6.42	12
●	Sweden	7.40	9	7.31	7	7.51	6	6.77	19	8.82	6	8.78	2	5.88	24
●	Denmark	7.20	10	6.90	12	7.30	12	6.79	18	8.84	4	8.38	8	5.41	34
●	Finland	7.16	11	7.45	5	7.34	11	6.06	29	8.89	3	8.46	6	5.29	37
●	France	6.89	14	6.82	14	6.48	23	6.94	14	7.31	21	8.19	10	6.50	10
●	Ireland	6.85	15	6.57	18	6.99	14	6.83	16	7.92	16	6.70	36	5.66	30
●	Japan	6.82	16	6.58	16	6.03	28	6.20	27	7.76	17	6.67	39	7.81	3
●	Belgium	6.80	17	6.41	19	6.91	15	6.66	21	7.57	18	7.12	24	6.22	18
●	Austria	6.79	18	6.20	21	6.78	18	6.54	22	8.04	15	8.74	4	5.63	31
●	Korea, Rep.	6.51	21	6.57	17	5.90	30	6.82	17	6.86	25	6.49	46	6.40	13
●	Malaysia	6.51	22	5.85	23	6.52	21	7.39	7	6.56	30	5.98	60	6.32	17
●	Israel	6.24	23	6.79	15	6.83	17	5.34	53	7.01	23	6.03	58	4.96	44
●	Spain	6.23	24	5.69	26	5.90	31	6.85	15	6.54	31	6.91	29	5.93	22
●	China	6.14	25	5.74	25	5.57	40	7.21	9	4.88	61	5.52	66	7.93	2
●	Czech Republic	6.01	26	5.07	31	6.50	22	6.22	26	6.66	29	7.57	18	4.97	43
●	Estonia	6.00	27	5.80	24	6.52	20	5.83	35	7.33	20	6.24	52	3.95	74
●	Italy	5.90	30	5.66	27	5.89	32	6.02	30	5.23	48	6.92	28	6.62	8
●	Poland	5.83	31	4.75	37	5.66	36	6.41	23	6.14	39	7.09	25	5.90	23
●	Slovenia	5.71	32	4.82	35	6.03	27	5.62	40	6.79	27	8.56	5	4.18	67

● East Asia and the Pacific ● Europe ● North America

Drivers of Production *(continued)*

Table B6: Legacy Countries

		Drivers of Production		Technology & Innovation		Human Capital		Global Trade & Investment		Institutional Framework		Sustainable Resources		Demand Environment	
Region	Country	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
East Asia and the Pacific	Thailand	5.45	35	4.56	41	5.05	53	6.74	20	5.01	51	6.28	49	5.77	28
Europe	Lithuania	5.42	37	4.73	38	5.87	33	4.96	62	6.71	28	7.43	21	3.98	73
Europe	Slovak Republic	5.33	40	4.24	51	5.32	45	5.91	34	5.90	42	8.29	9	4.27	61
Europe	Hungary	5.30	42	4.42	49	5.47	42	5.55	44	5.70	44	7.95	12	4.51	59
Eurasia	Russian Federation	5.30	43	4.65	39	6.27	25	5.45	49	3.79	87	6.70	35	6.19	20
South Asia	India	5.24	44	4.84	34	4.66	63	5.16	55	4.99	54	3.97	96	7.43	5
Latin America and the Caribbean	Mexico	5.04	46	4.51	43	4.45	73	6.25	25	4.15	84	5.88	61	5.85	25
Europe	Romania	4.93	52	3.85	67	4.93	57	5.12	58	5.47	46	7.29	23	4.57	57
Middle East and North Africa	Turkey	4.90	57	4.18	54	4.45	72	5.13	57	4.80	64	6.25	51	5.82	26
East Asia and the Pacific	Philippines	4.51	66	4.02	59	4.59	66	4.52	69	4.35	76	5.45	69	4.94	45

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

Table B7: High-Potential Countries/Economies

		Drivers of Production		Technology & Innovation		Human Capital		Global Trade & Investment		Institutional Framework		Sustainable Resources		Demand Environment	
Region	Country/Economy	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
East Asia and the Pacific	Hong Kong SAR	7.45	8	7.14	9	6.86	16	8.43	2	8.43	11	6.54	43	6.37	16
East Asia and the Pacific	Australia	7.14	12	6.91	11	7.41	9	7.12	12	8.32	12	6.47	47	5.78	27
Europe	Norway	7.07	13	6.86	13	7.75	5	5.67	38	8.72	7	8.84	1	5.55	32
Middle East and North Africa	United Arab Emirates	6.76	19	6.28	20	6.62	19	7.19	11	7.46	19	5.44	70	6.50	11
East Asia and the Pacific	New Zealand	6.73	20	6.06	22	7.38	10	5.55	45	9.10	2	7.75	14	4.85	50
Europe	Portugal	5.99	28	5.49	28	6.02	29	6.13	28	6.86	26	6.71	34	5.01	40
Middle East and North Africa	Qatar	5.96	29	5.16	29	6.11	26	5.78	37	7.07	22	5.51	67	5.76	29

East Asia and the Pacific · Europe · Middle East and North Africa

Drivers of Production *(continued)*

Table B8: Nascent Countries

		Drivers of Production		Technology & Innovation		Human Capital		Global Trade & Investment		Institutional Framework		Sustainable Resources		Demand Environment	
Region	Country	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
	Cyprus	5.65	33	5.01	33	6.44	24	6.36	24	6.28	35	5.33	74	3.80	79
	Chile	5.60	34	4.36	50	5.32	46	6.02	31	6.91	24	6.87	31	4.89	48
	Saudi Arabia	5.44	36	4.50	44	5.21	48	5.41	50	6.19	38	5.00	76	6.19	19
	Latvia	5.39	38	4.54	42	5.63	37	5.64	39	6.42	33	8.44	7	3.45	89
	Mauritius	5.37	39	5.08	30	5.15	49	5.95	33	6.48	32	6.21	54	3.48	87
	Bahrain	5.31	41	4.43	48	5.60	38	5.96	32	6.26	36	4.78	81	4.16	71
	Oman	5.13	45	4.62	40	5.11	50	5.81	36	6.07	40	3.53	97	4.19	66
	Brazil	5.03	47	4.49	45	4.42	74	5.27	54	4.51	72	7.55	19	6.10	21
	Bulgaria	5.02	48	4.76	36	5.07	52	5.40	51	4.97	55	6.89	30	4.27	60
	South Africa	5.02	49	4.49	46	4.54	67	5.61	41	5.03	49	5.26	75	5.50	33
	Greece	4.96	50	4.10	57	5.33	44	5.36	52	4.89	59	6.61	41	4.62	54
	Croatia	4.93	51	4.23	52	4.92	58	5.54	46	5.27	47	8.15	11	3.54	84
	Viet Nam	4.93	53	3.09	90	4.48	70	7.00	13	4.99	53	4.59	87	5.22	39
	Georgia	4.92	54	5.02	32	4.46	71	5.48	47	5.95	41	4.40	92	3.47	88
	Jordan	4.91	55	3.92	63	5.50	41	5.15	56	5.63	45	4.80	80	4.17	70
	Costa Rica	4.90	56	3.87	66	5.67	35	4.19	76	5.87	43	6.94	26	4.23	64
	Panama	4.89	58	3.91	64	4.90	60	5.60	42	4.95	56	7.60	17	4.26	62
	Indonesia	4.89	59	4.00	61	4.99	55	5.06	61	4.59	69	4.09	94	6.38	15
	Uruguay	4.75	60	4.46	47	4.84	61	3.57	85	6.36	34	6.68	38	3.77	80
	Kazakhstan	4.74	61	4.06	58	5.42	43	4.88	63	4.59	68	4.44	91	4.87	49
	Azerbaijan	4.69	62	4.14	55	5.23	47	4.63	66	4.55	70	4.86	79	4.89	47
	Kuwait	4.65	63	3.36	80	4.75	62	5.59	43	4.95	57	4.01	95	4.78	51
	Serbia	4.59	64	3.77	69	5.03	54	5.08	60	4.88	60	6.23	53	3.49	85
	Colombia	4.53	65	4.01	60	4.60	65	3.89	80	4.60	67	7.53	20	4.91	46
	Ukraine	4.47	67	3.51	74	5.79	34	5.11	59	3.38	94	4.59	88	4.53	58
	Egypt	4.46	68	4.21	53	3.93	85	4.23	75	4.30	78	6.43	48	5.37	36
	Botswana	4.43	69	3.39	79	4.40	75	4.37	73	6.22	37	5.49	68	3.23	94
	Armenia	4.43	70	3.53	72	5.07	51	4.41	72	4.93	58	5.85	62	3.68	81
	Lebanon	4.43	71	3.28	84	5.58	39	5.47	48	3.30	96	5.44	71	4.20	65

(Table B8 continues on next page)

Drivers of Production *(continued)*

Table B8: Nascent Countries *(continued)*

		Drivers of Production		Technology & Innovation		Human Capital		Global Trade & Investment		Institutional Framework		Sustainable Resources		Demand Environment	
Region	Country	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Middle East and North Africa	Tunisia	4.41	72	3.96	62	4.12	80	4.56	68	5.01	52	5.70	64	3.93	76
Middle East and North Africa	Morocco	4.35	73	4.13	56	3.43	94	4.69	65	4.80	65	4.77	82	4.70	53
South Asia	Sri Lanka	4.26	74	3.52	73	4.51	69	3.82	83	4.85	63	4.59	89	4.61	56
Latin America and the Caribbean	Argentina	4.25	75	3.78	68	4.94	56	3.15	92	4.16	83	5.84	63	4.99	42
Latin America and the Caribbean	Peru	4.18	76	3.34	81	4.24	77	3.96	78	4.32	77	6.27	50	4.61	55
Sub-Saharan Africa	Ghana	4.14	77	3.31	82	4.06	81	3.53	86	5.03	50	6.67	40	4.11	72
Europe	Albania	4.07	78	3.40	78	4.62	64	3.69	84	4.70	66	6.19	55	3.16	96
Europe	Bosnia and Herzegovina	4.04	79	3.71	70	4.21	78	4.77	64	4.20	82	4.63	86	2.87	98
Latin America and the Caribbean	Dominican Republic	4.02	80	3.49	76	4.29	76	3.85	82	4.22	81	6.00	59	3.65	82
Eurasia	Moldova	4.02	81	3.50	75	4.91	59	4.48	70	3.83	86	5.36	73	2.69	99
Latin America and the Caribbean	Paraguay	3.84	82	3.02	91	3.99	84	4.46	71	3.70	88	6.05	57	3.37	90
Sub-Saharan Africa	Kenya	3.83	83	3.89	65	3.72	88	2.52	96	4.22	80	6.54	42	4.18	68
East Asia and the Pacific	Mongolia	3.82	84	2.96	93	4.53	68	4.63	67	4.49	73	1.86	100	2.68	100
Sub-Saharan Africa	Senegal	3.74	85	3.20	85	3.50	92	3.45	88	4.85	62	4.75	83	3.32	91
Latin America and the Caribbean	Guatemala	3.71	86	2.89	94	4.02	82	3.53	87	3.20	98	6.94	27	4.24	63
Middle East and North Africa	Algeria	3.70	87	2.97	92	3.58	91	3.28	89	3.60	91	5.36	72	5.00	41
Sub-Saharan Africa	Nigeria	3.68	88	3.48	77	3.67	89	2.37	97	3.22	97	6.80	32	5.28	38
South Asia	Bangladesh	3.67	89	3.19	86	3.38	96	3.05	93	4.00	85	4.73	84	4.76	52
Latin America and the Caribbean	Ecuador	3.66	90	3.55	71	4.00	83	3.16	91	3.57	92	4.69	85	3.80	78
East Asia and the Pacific	Cambodia	3.63	91	3.28	83	3.75	86	3.96	79	3.09	100	4.51	90	3.93	75
Latin America and the Caribbean	Honduras	3.61	92	2.69	96	3.73	87	4.32	74	3.19	99	6.76	33	3.26	92
South Asia	Pakistan	3.60	93	3.18	88	3.65	90	2.72	94	3.67	89	2.88	99	5.37	35
Latin America and the Caribbean	El Salvador	3.55	94	2.64	98	3.45	93	4.03	77	3.63	90	6.53	44	3.14	97
Sub-Saharan Africa	Zambia	3.54	95	2.67	97	3.14	98	3.17	90	4.46	74	6.49	45	3.49	86
Eurasia	Kyrgyz Republic	3.43	96	2.56	100	4.15	79	3.86	81	3.41	93	2.89	98	3.24	93
Sub-Saharan Africa	Uganda	3.31	97	3.19	87	3.01	99	1.98	99	4.55	71	5.70	65	3.17	95
Sub-Saharan Africa	Ethiopia	3.29	98	2.57	99	3.42	95	1.97	100	4.27	79	4.38	93	4.17	69
Sub-Saharan Africa	Tanzania	3.28	99	2.82	95	2.85	100	2.18	98	4.39	75	4.93	78	3.88	77
Sub-Saharan Africa	Cameroon	3.24	100	3.11	89	3.18	97	2.58	95	3.36	95	4.97	77	3.63	83

East Asia and the Pacific · Eurasia · Europe · Latin America and the Caribbean · Middle East and North Africa · South Asia · Sub-Saharan Africa

Appendix C

Technical Notes and Sources

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

Complexity

1.01 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.

Additional details available here: http://atlas.cid.harvard.edu.

Unit of measure: (2.5)–2.5 (best)
Source: Harvard University, *The Atlas of Economic Complexity*, 2016

Scale

1.02 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
Source: United Nations Industrial Development Organization (UNIDO), 2016

1.03 Manufacturing value added

Manufacturing value added (MVA) as a logarithm with base of 10. 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: US$, logarithm base 10
Source: World Economic Forum calculation based on United Nations Industrial Development Organization (UNIDO) data, 2016

Drivers of Production

Technology & Innovation

Technology Platform

Availability of ICT

2.01 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/WiMAX mobile network. Refers to the percentage of inhabitants that live within range of LTE/LTE-Advanced, mobile WiMAX/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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

Use of ICT

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

Digital Security & Data Privacy

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.

Additional details available here: https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-GCI.01-2017-R1-PDF-E.pdf.

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

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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)
Source: World Economic Forum, Executive Opinion Survey, 2017

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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
Source: World Bank, 2015

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 basis of the institutional address(es) 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 (IP%) offices are: the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), 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

Available Financing

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

Human Capital

Current Labour Force

Labour Force Capabilities

3.01 Manufacturing employment

The share of manufacturing employment in total employment. Employment is defined as comprising all persons of working age who, during a specified brief period, were in the following categories: paid employment (whether at work or with a job but not at work) or self-employment (whether at work or with an enterprise but not at work). No distinction is made between persons employed full time and those working less than full time. The sectors of economic activity are defined according to the International Standard Industrial Classification of All Economic Activities (ISIC), Revision 3 (1990) and Revision 4 (2008). Manufacturing refers to industries belonging to the sector D defined by ISIC Revision 3, or C defined by ISIC Revision 4. Figures for updates are obtained from national data and estimates produced by the International Labour Organization (ILO).

Unit of measure: % working population
Sources: United Nations Industrial Development Organization (UNIDO), International Labour Organization (ILO), 2015

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-68: 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
Source: World Economic Forum calculation based on International Labour Organization (ILO) data, 2016

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
Source: United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics, 2015

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

Future Labour Force

Migration

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
Sources: World Economic Forum calculation based on United Nations International Children's Emergency Fund (UNICEF) data (Total net migration 2010–2015 in thousands) and United Nations Industrial Development Organization (UNIDO) data (population), 2010–2015

3.08 Country capacity to attract and retain talent

Average score of the two following Executive Opinion Survey questions: "To 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, the best and brightest leave to pursue opportunities abroad; 7 = to a great extent, the best and brightest stay and pursue opportunities in the country)"

Unit of measure: 1–7 (best)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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
Source: United Nations Educational, Scientific and Cultural Organization (UNESCO), 2015

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
Source: World Bank, 2015

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

3.17 Hiring and firing practices

Executive Opinion Survey: "In your country, to what extent do regulations allow flexible hiring and firing of workers? (1 = not at all, 7 = to a great extent)"

Unit of measure: 1–7 (best)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

Global Trade & Investment

Trade

Trade Openness

4.01 Trade

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

Unit of measure: % GDP
Source: World Bank, 2016

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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)
Source: World Economic Forum calculation based on World Bank data, International Logistics Performance Index, 2016

Investment

Investment and Financing

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
Source: World Bank, Bank for International Settlements, 2016

Infrastructure

Transportation and Electricity

4.08 Transport Infrastructure

This indicator is calculated by the World Economic Forum by aggregating eight indicators that measure roads, railroads, air transport and water transport infrastructure. For more information, write to gcp@weforum.org.

Unit of measure: 0–100 (best)
Source: World Economic Forum, 2017

4.09 Electricity Infrastructure

This indicator is calculated by the World Economic Forum by aggregating two indicators that measure the electrification rate and electric power transmission and distribution losses. For more information, write to gcp@weforum.org.

Unit of measure: 0–100 (best)
Source: World Economic Forum, 2017

Institutional Framework

Government

Efficiency & Effectiveness

5.01 Regulatory efficiency

Average of 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)
Source: World Economic Forum calculation based on The Heritage Foundation data, Index of Economic Freedom, 2017

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)
Source: Transparency International, Corruption Perception Index, 2016

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)
Source: World Economic Forum, Executive Opinion Survey, 2017

Rule of Law

5.04 Rule of Law

Score for the Rule of Law dimension in the *Worldwide Governance Indicators* report issued by the World Bank. Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence.

For more information on the concepts measured, visit http://info.worldbank.org/governance/wgi/#doc.

Unit of measure: (2.5)–2.0 (best)
Source: World Bank, Worldwide Governance Indicators, 2016

Sustainable Resources

Sustainability

Energy

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
Source: International Energy Agency, 2014

Emissions

6.02 CO_2 intensity level

Total CO_2 (carbon dioxide) emissions in a given country, as a ratio of GDP (US$ billions).

Unit of measure: CO_2 emissions in megatons/GDP (US$ billions)
Source: World Economic Forum calculation based on World Resources Institute data (Total CO_2) and World Bank data (GDP), 2014

6.03 CH_4 intensity level

Total CH_4 (methane) emissions in a given country, as a ratio of GDP (US$ billions).

Unit of measure: CH_4 emissions in megatons/GDP (US$ billions)
Source: World Economic Forum calculation based on World Resources Institute data (Total CH_4) and World Bank data (GDP), 2014

6.04 N_2O intensity level

Total N_2O (nitrous oxide) emissions in a given country, as a ratio of GDP (US$ billions).

Unit of measure: N_2O emissions in megatons/GDP (US$ billions)
Source: World Economic Forum calculation based on World Resources Institute data (Total N_2O) 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_coutnry_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

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 gcp@weforum.org.

Unit of measure: 0–100 (worst)
Source: World Economic Forum, 2017

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)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

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)"

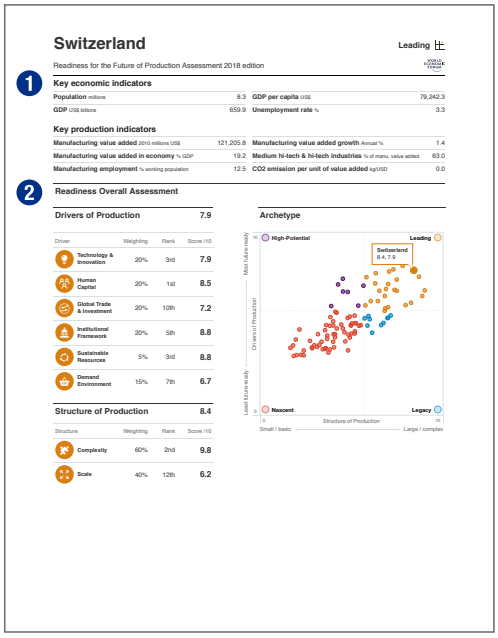
Unit of measure: 1–7 (worst)
Source: World Economic Forum, Executive Opinion Survey, 2016–17 weighted average

Table C1: Imputation Methods and Imputed Values

Indicator		Imputation Method	Country/Economy	Imputed Value
2.02	LTE mobile network coverage	Average score of countries in the same region and economic group	Egypt	70.50
			Bosnia and Herzegovina	80.60
2.07	Cybersecurity commitment	Average score of countries/economies in the same region and economic group	Hong Kong SAR	0.81
2.09	Company investment in emerging technology	Average score of countries in the same region and economic group	Bahrain	4.79
			Oman	4.79
			Turkey	3.14
2.13	R&D expenditures	Regression on PCT patent. Mean years of schooling, log GDP per capita and GDP growth of over 5 years to develop estimates	Bangladesh	0.32
			Cameroon	0.33
			Lebanon	0.59
2.14	Scientific and technical publications	Average score of countries/economies in the same region and economic group	Ghana	7.50
			Hong Kong SAR	34.00
3.01	Manufacturing employment	2015 value for "Employment Distribution — ILO modelled esitmates (%) — Manufacturing ISIC rev.4 C" from the International Labour Organization (ILO)	Cameroon	5.60
			China	10.20
			Kenya	4.00
			Lebanon	7.70
3.02	Knowledge-intensive employment	Average score of countries in the same region and economic group	Cameroon	7.28
			China	19.65
			Ghana	7.28
			India	18.80
			Jordan	20.88
			Kenya	7.28
			Kuwait	29.75
			Nigeria	7.28
			Oman	29.75
			Senegal	3.77
3.06	Digital skills among population	Average score of countries in the same region and economic group	Bahrain	5.18
			Oman	5.18
			Turkey	4.10
4.04	Logistics performance	Average score of countries in the same region and economic group	Azerbaijan	2.58
			Mauritius	3.42
			Sri Lanka	3.03
6.01	Alternative and nuclear energy use	Average score of countries in the same region and economic group	Uganda	0.75
6.02	CO_2 intensity level	Average score of countries/economies in the same region and economic group	Hong Kong SAR	0.25
6.03	CH_4 intensity level	Average score of countries/economies in the same region and economic group	Hong Kong SAR	0.05
6.04	N_2O intensity level	Average score of countries/economies in the same region and economic group	Hong Kong SAR	0.03
6.05	Baseline water stress	Average score of countries/economies in the same region and economic group	Hong Kong SAR	3.29
			Mauritius	2.20
6.06	Wastewater treatment	Average score of countries/economies in the same region and economic group	Hong Kong SAR	93.70

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.*

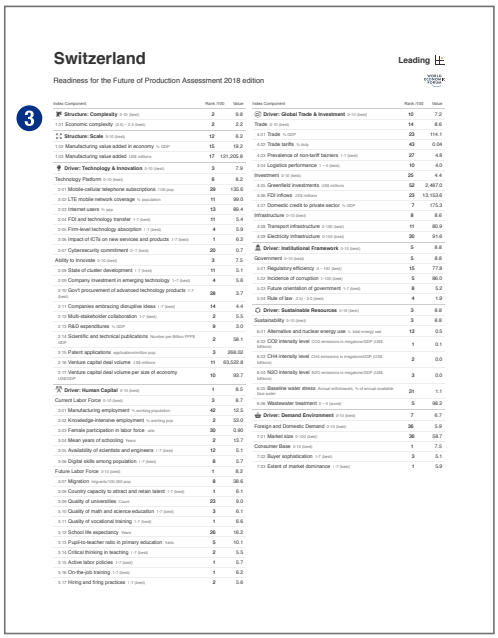


❶ Key Indicators

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.

❷ 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.



❸ 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.

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Albania

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	2.9	**GDP per capita** US$	4,203.4
GDP US$ billions	12.1	**Unemployment rate** %	15.2

Key production indicators

Manufacturing value added 2010 millions US$	823.3	**Manufacturing value added growth** Annual %	4.1
Manufacturing value added in economy % GDP	6.0	**Medium hi-tech & hi-tech industries** % of manu. value added	6.7
Manufacturing employment % working population	9.3	**CO2 emission per unit of value added** kg/USD	1.1

Readiness Overall Assessment

Drivers of Production 4.1

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	78th	**3.4**
Human Capital	20%	64th	**4.6**
Global Trade & Investment	20%	84th	**3.7**
Institutional Framework	20%	66th	**4.7**
Sustainable Resources	5%	55th	**6.2**
Demand Environment	15%	96th	**3.2**

Structure of Production 2.7

Structure	Weighting	Rank	Score /10
Complexity	60%	78th	**3.9**
Scale	40%	98th	**1.0**

Archetype

Albania

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	78	3.9
1.01 Economic complexity (2.5) – 2.5 (best)	78	-0.5
Structure: Scale 0-10 (best)	98	1.0
1.02 Manufacturing value added in economy % GDP	92	6.0
1.03 Manufacturing value added US$ millions	98	823.3
Driver: Technology & Innovation 0-10 (best)	78	3.4
Technology Platform 0-10 (best)	71	5.3
2.01 Mobile-cellular telephone subscriptions /100 pop.	76	105.1
2.02 LTE mobile network coverage % population	54	80.2
2.03 Internet users % pop.	51	66.4
2.04 FDI and technology transfer 1-7 (best)	32	4.9
2.05 Firm-level technology absorption 1-7 (best)	61	4.4
2.06 Impact of ICTs on new services and products 1-7 (best)	84	4.1
2.07 Cybersecurity commitment 0–1 (best)	82	0.3
Ability to Innovate 0-10 (best)	93	1.5
2.08 State of cluster development 1-7 (best)	90	3.1
2.09 Company investment in emerging technology 1–7 (best)	83	3.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	22	3.9
2.11 Companies embracing disruptive ideas 1-7 (best)	97	2.9
2.12 Multi-stakeholder collaboration 1-7 (best)	48	3.7
2.13 R&D expenditures % GDP	88	0.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	78	5.2
2.15 Patent applications applications/million pop.	77	0.16
2.16 Venture capital deal volume US$ millions	94	64.9
2.17 Venture capital deal volume per size of economy US$/GDP	78	5.3
Driver: Human Capital 0-10 (best)	64	4.6
Current Labor Force 0-10 (best)	57	5.8
3.01 Manufacturing employment % working population	75	9.3
3.02 Knowledge-intensive employment % working pop.	75	16.0
3.03 Female participation in labor force ratio	54	0.74
3.04 Mean years of schooling Years	50	10.0
3.05 Availability of scientists and engineers 1-7 (best)	95	3.3
3.06 Digital skills among population 1-7 (best)	47	4.4
Future Labor Force 0-10 (best)	66	3.5
3.07 Migration migrants/100,000 pop.	96	-17.3
3.08 Country capacity to attract and retain talent 1-7 (best)	87	2.4
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	49	4.3
3.11 Quality of vocational training 1-7 (best)	64	3.8
3.12 School life expectancy Years	34	15.5
3.13 Pupil-to-teacher ratio in primary education Ratio	58	18.6
3.14 Critical thinking in teaching 1-7 (best)	24	4.2
3.15 Active labor policies 1-7 (best)	86	2.7
3.16 On-the-job training 1-7 (best)	68	3.9
3.17 Hiring and firing practices 1-7 (best)	30	4.2

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	84	3.7
Trade 0-10 (best)	53	6.4
4.01 Trade % GDP	55	74.3
4.02 Trade tariffs % duty	36	0.02
4.03 Prevalence of non-tariff barriers 1-7 (best)	62	4.3
4.04 Logistics performance 1 – 5 (best)	90	2.5
Investment 0-10 (best)	91	0.6
4.05 Greenfield investments US$ millions	100	121.1
4.06 FDI inflows US$ millions	77	1,071.7
4.07 Domestic credit to private sector % GDP	76	34.7
Infrastructure 0-10 (best)	90	4.1
4.08 Transport infrastructure 0-100 (best)	87	29.9
4.09 Electricity infrastructure 0-100 (best)	90	53.0
Driver: Institutional Framework 0-10 (best)	66	4.7
Government 0-10 (best)	66	4.7
5.01 Regulatory efficiency 0 – 100 (best)	50	70.5
5.02 Incidence of corruption 0-100 (best)	61	39.0
5.03 Future orientation of government 1-7 (best)	37	3.9
5.04 Rule of law (2.5) - 2.0 (best)	74	-0.3
Driver: Sustainable Resources 0-10 (best)	55	6.2
Sustainability 0-10 (best)	55	6.2
6.01 Alternative and nuclear energy use % total energy use	32	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	57	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	65	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	73	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	50	1.9
6.06 Wastewater treatment 0 – 5 (worst)	70	60.2
Driver: Demand Environment 0-10 (best)	96	3.2
Foreign and Domestic Demand 0-10 (best)	95	2.7
7.01 Market size 0-100 (best)	95	26.8
Consumer Base 0-10 (best)	84	3.6
7.02 Buyer sophistication 1-7 (best)	67	3.3
7.03 Extent of market dominance 1-7 (best)	92	3.1

Algeria

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	40.8	**GDP per capita** US$	3,944.4
GDP US$ billions	160.8	**Unemployment rate** %	10.5

Key production indicators

Manufacturing value added 2010 millions US$	10,698.8	**Manufacturing value added growth** Annual %	2.3
Manufacturing value added in economy % GDP	5.4	**Medium hi-tech & hi-tech industries** % of manu. value added	9.1
Manufacturing employment % working population	11.3	**CO2 emission per unit of value added** kg/USD	0.7

Readiness Overall Assessment

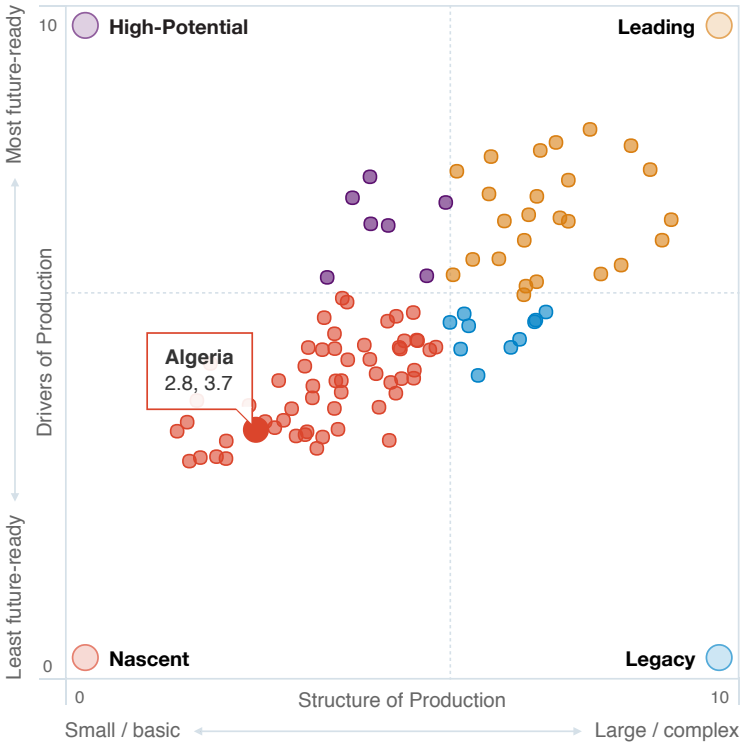
Drivers of Production 3.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	92nd	**3.0**
Human Capital	20%	91st	**3.6**
Global Trade & Investment	20%	89th	**3.3**
Institutional Framework	20%	91st	**3.6**
Sustainable Resources	5%	72nd	**5.4**
Demand Environment	15%	41st	**5.0**

Structure of Production 2.8

Structure	Weighting	Rank	Score /10
Complexity	60%	88th	**3.1**
Scale	40%	83rd	**2.4**

Archetype



Algeria

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	88	3.1
1.01 Economic complexity (2.5) – 2.5 (best)	88	-0.9
Structure: Scale 0-10 (best)	83	2.4
1.02 Manufacturing value added in economy % GDP	94	5.4
1.03 Manufacturing value added US$ millions	57	10,698.8
Driver: Technology & Innovation 0-10 (best)	92	3.0
Technology Platform 0-10 (best)	90	4.4
2.01 Mobile-cellular telephone subscriptions /100 pop.	58	117.0
2.02 LTE mobile network coverage % population	97	3.6
2.03 Internet users % pop.	78	42.9
2.04 FDI and technology transfer 1-7 (best)	91	3.7
2.05 Firm-level technology absorption 1-7 (best)	98	3.8
2.06 Impact of ICTs on new services and products 1-7 (best)	96	3.7
2.07 Cybersecurity commitment 0–1 (best)	67	0.4
Ability to Innovate 0-10 (best)	94	1.5
2.08 State of cluster development 1-7 (best)	86	3.1
2.09 Company investment in emerging technology 1–7 (best)	65	3.4
2.10 Gov't procurement of advanced technology products 1-7 (best)	70	3.0
2.11 Companies embracing disruptive ideas 1-7 (best)	98	2.9
2.12 Multi-stakeholder collaboration 1-7 (best)	99	2.9
2.13 R&D expenditures % GDP	99	0.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	76	5.4
2.15 Patent applications applications/million pop.	85	0.05
2.16 Venture capital deal volume US$ millions	54	2,342.8
2.17 Venture capital deal volume per size of economy US$/GDP	58	13.1
Driver: Human Capital 0-10 (best)	91	3.6
Current Labor Force 0-10 (best)	91	4.2
3.01 Manufacturing employment % working population	53	11.3
3.02 Knowledge-intensive employment % working pop.	82	10.0
3.03 Female participation in labor force ratio	93	0.23
3.04 Mean years of schooling Years	78	7.8
3.05 Availability of scientists and engineers 1-7 (best)	74	3.7
3.06 Digital skills among population 1-7 (best)	77	3.7
Future Labor Force 0-10 (best)	88	2.9
3.07 Migration migrants/100,000 pop.	56	-1.3
3.08 Country capacity to attract and retain talent 1-7 (best)	93	2.3
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	72	3.6
3.11 Quality of vocational training 1-7 (best)	65	3.8
3.12 School life expectancy Years	56	14.4
3.13 Pupil-to-teacher ratio in primary education Ratio	76	23.8
3.14 Critical thinking in teaching 1-7 (best)	65	3.2
3.15 Active labor policies 1-7 (best)	73	2.9
3.16 On-the-job training 1-7 (best)	94	3.4
3.17 Hiring and firing practices 1-7 (best)	73	3.3

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	89	3.3
Trade 0-10 (best)	82	4.1
4.01 Trade % GDP	69	58.1
4.02 Trade tariffs % duty	97	0.14
4.03 Prevalence of non-tariff barriers 1-7 (best)	82	4.0
4.04 Logistics performance 1 – 5 (best)	70	2.8
Investment 0-10 (best)	84	0.7
4.05 Greenfield investments US$ millions	48	3,055.8
4.06 FDI inflows US$ millions	74	1,131.5
4.07 Domestic credit to private sector % GDP	90	23.0
Infrastructure 0-10 (best)	83	5.0
4.08 Transport infrastructure 0-100 (best)	81	32.8
4.09 Electricity infrastructure 0-100 (best)	81	67.8
Driver: Institutional Framework 0-10 (best)	91	3.6
Government 0-10 (best)	91	3.6
5.01 Regulatory efficiency 0 – 100 (best)	87	59.5
5.02 Incidence of corruption 0-100 (best)	75	34.0
5.03 Future orientation of government 1-7 (best)	77	3.2
5.04 Rule of law (2.5) - 2.0 (best)	93	-0.8
Driver: Sustainable Resources 0-10 (best)	72	5.4
Sustainability 0-10 (best)	72	5.4
6.01 Alternative and nuclear energy use % total energy use	94	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	80	0.7
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	69	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	42	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	76	3.4
6.06 Wastewater treatment 0 – 5 (worst)	42	82.5
Driver: Demand Environment 0-10 (best)	41	5.0
Foreign and Domestic Demand 0-10 (best)	34	6.0
7.01 Market size 0-100 (best)	34	59.6
Consumer Base 0-10 (best)	69	4.0
7.02 Buyer sophistication 1-7 (best)	77	3.1
7.03 Extent of market dominance 1-7 (best)	55	3.7

Argentina

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	43.6	**GDP per capita** US$	12,502.8
GDP US$ billions	545.1	**Unemployment rate** %	8.5

Key production indicators

Manufacturing value added 2010 millions US$	77,416.5	**Manufacturing value added growth** Annual %	-4.1
Manufacturing value added in economy % GDP	14.6	**Medium hi-tech & hi-tech industries** % of manu. value added	26.0
Manufacturing employment % working population	13.1	**CO2 emission per unit of value added** kg/USD	0.4

Readiness Overall Assessment

Drivers of Production 4.2

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	68th	**3.8**
Human Capital	20%	56th	**4.9**
Global Trade & Investment	20%	92nd	**3.1**
Institutional Framework	20%	83rd	**4.2**
Sustainable Resources	5%	63rd	**5.8**
Demand Environment	15%	42nd	**5.0**

Structure of Production 4.9

Structure	Weighting	Rank	Score /10
Complexity	60%	62nd	**4.7**
Scale	40%	27th	**5.2**

Archetype

Argentina

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	62	4.7
1.01 Economic complexity (2.5) – 2.5 (best)	62	-0.1
Structure: Scale 0-10 (best)	27	5.2
1.02 Manufacturing value added in economy % GDP	36	14.6
1.03 Manufacturing value added US$ millions	25	77,416.5
Driver: Technology & Innovation 0-10 (best)	68	3.8
Technology Platform 0-10 (best)	64	5.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	13	150.7
2.02 LTE mobile network coverage % population	51	85.0
2.03 Internet users % pop.	45	70.2
2.04 FDI and technology transfer 1-7 (best)	96	3.5
2.05 Firm-level technology absorption 1-7 (best)	85	4.1
2.06 Impact of ICTs on new services and products 1-7 (best)	89	4.1
2.07 Cybersecurity commitment 0–1 (best)	62	0.5
Ability to Innovate 0-10 (best)	84	1.8
2.08 State of cluster development 1-7 (best)	82	3.3
2.09 Company investment in emerging technology 1–7 (best)	68	3.4
2.10 Gov't procurement of advanced technology products 1-7 (best)	78	2.8
2.11 Companies embracing disruptive ideas 1-7 (best)	55	3.5
2.12 Multi-stakeholder collaboration 1-7 (best)	70	3.5
2.13 R&D expenditures % GDP	54	0.6
2.14 Scientific and technical publications Number per Billion PPP$ GDP	58	9.6
2.15 Patent applications applications/million pop.	53	1.23
2.16 Venture capital deal volume US$ millions	53	2,421.9
2.17 Venture capital deal volume per size of economy US$/GDP	84	4.4
Driver: Human Capital 0-10 (best)	56	4.9
Current Labor Force 0-10 (best)	47	6.2
3.01 Manufacturing employment % working population	35	13.1
3.02 Knowledge-intensive employment % working pop.	53	23.9
3.03 Female participation in labor force ratio	52	0.75
3.04 Mean years of schooling Years	54	9.8
3.05 Availability of scientists and engineers 1-7 (best)	59	3.9
3.06 Digital skills among population 1-7 (best)	69	3.9
Future Labor Force 0-10 (best)	56	3.7
3.07 Migration migrants/100,000 pop.	65	-2.3
3.08 Country capacity to attract and retain talent 1-7 (best)	58	3.3
3.09 Quality of universities Count	15	16.0
3.10 Quality of math and science education 1-7 (best)	83	3.1
3.11 Quality of vocational training 1-7 (best)	30	4.6
3.12 School life expectancy Years	15	17.3
3.13 Pupil-to-teacher ratio in primary education Ratio	49	17.2
3.14 Critical thinking in teaching 1-7 (best)	67	3.2
3.15 Active labor policies 1-7 (best)	72	2.9
3.16 On-the-job training 1-7 (best)	49	4.3
3.17 Hiring and firing practices 1-7 (best)	99	2.3

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	92	3.1
Trade 0-10 (best)	97	2.3
4.01 Trade % GDP	97	26.1
4.02 Trade tariffs % duty	91	0.12
4.03 Prevalence of non-tariff barriers 1-7 (best)	98	3.7
4.04 Logistics performance 1 – 5 (best)	61	3.0
Investment 0-10 (best)	71	1.5
4.05 Greenfield investments US$ millions	34	5,893.8
4.06 FDI inflows US$ millions	30	9,522.2
4.07 Domestic credit to private sector % GDP	98	14.0
Infrastructure 0-10 (best)	74	5.7
4.08 Transport infrastructure 0-100 (best)	68	40.8
4.09 Electricity infrastructure 0-100 (best)	76	72.4
Driver: Institutional Framework 0-10 (best)	83	4.2
Government 0-10 (best)	83	4.2
5.01 Regulatory efficiency 0 – 100 (best)	100	51.4
5.02 Incidence of corruption 0-100 (best)	69	36.0
5.03 Future orientation of government 1-7 (best)	70	3.3
5.04 Rule of law (2.5) - 2.0 (best)	73	-0.3
Driver: Sustainable Resources 0-10 (best)	63	5.8
Sustainability 0-10 (best)	63	5.8
6.01 Alternative and nuclear energy use % total energy use	71	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	55	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	64	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	72	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	55	2.5
6.06 Wastewater treatment 0 – 5 (worst)	65	66.9
Driver: Demand Environment 0-10 (best)	42	5.0
Foreign and Domestic Demand 0-10 (best)	33	6.2
7.01 Market size 0-100 (best)	33	61.7
Consumer Base 0-10 (best)	75	3.8
7.02 Buyer sophistication 1-7 (best)	64	3.3
7.03 Extent of market dominance 1-7 (best)	82	3.3

Armenia

Nascent

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	3.0	**GDP per capita** US$	3,510.7
GDP US$ billions	10.5	**Unemployment rate** %	18.8

Key production indicators

Manufacturing value added 2010 millions US$	1,281.0	**Manufacturing value added growth** Annual %	3.3
Manufacturing value added in economy % GDP	10.8	**Medium hi-tech & hi-tech industries** % of manu. value added	3.7
Manufacturing employment % working population	8.0	**CO2 emission per unit of value added** kg/USD	0.4

Readiness Overall Assessment

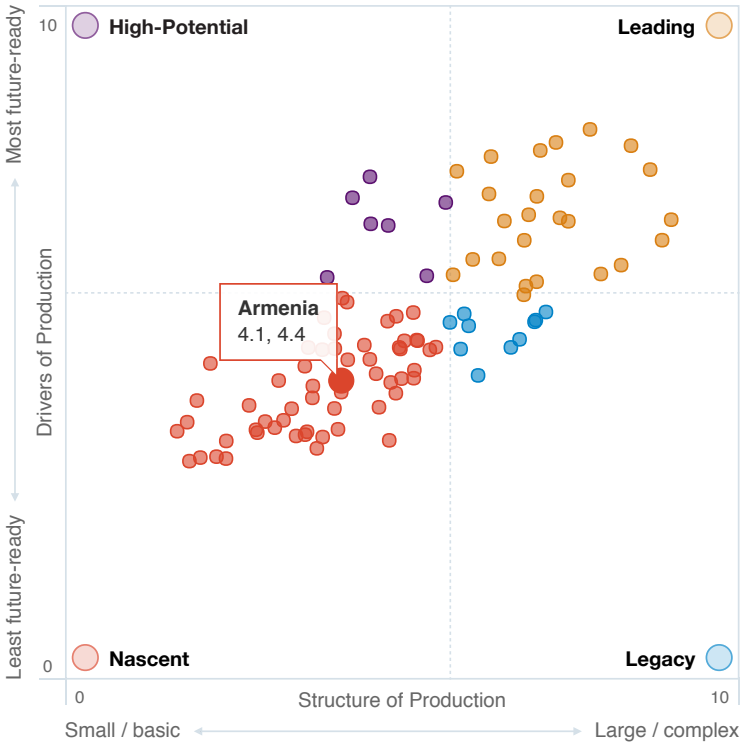
Drivers of Production 4.4

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	72nd	**3.5**
Human Capital	20%	51st	**5.1**
Global Trade & Investment	20%	72nd	**4.4**
Institutional Framework	20%	58th	**4.9**
Sustainable Resources	5%	62nd	**5.8**
Demand Environment	15%	81st	**3.7**

Structure of Production 4.1

Structure	Weighting	Rank	Score /10
Complexity	60%	52nd	**5.4**
Scale	40%	87th	**2.1**

Archetype



Armenia

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	52	5.4
1.01 Economic complexity (2.5) – 2.5 (best)	52	0.2
Structure: Scale 0-10 (best)	87	2.1
1.02 Manufacturing value added in economy % GDP	65	10.8
1.03 Manufacturing value added US$ millions	94	1,281.0
Driver: Technology & Innovation 0-10 (best)	72	3.5
Technology Platform 0-10 (best)	84	4.6
2.01 Mobile-cellular telephone subscriptions /100 pop.	61	114.8
2.02 LTE mobile network coverage % population	73	52.5
2.03 Internet users % pop.	55	62.0
2.04 FDI and technology transfer 1-7 (best)	74	4.1
2.05 Firm-level technology absorption 1-7 (best)	65	4.3
2.06 Impact of ICTs on new services and products 1-7 (best)	76	4.3
2.07 Cybersecurity commitment 0–1 (best)	93	0.2
Ability to Innovate 0-10 (best)	46	2.5
2.08 State of cluster development 1-7 (best)	76	3.4
2.09 Company investment in emerging technology 1–7 (best)	42	3.9
2.10 Gov't procurement of advanced technology products 1-7 (best)	59	3.2
2.11 Companies embracing disruptive ideas 1-7 (best)	30	3.8
2.12 Multi-stakeholder collaboration 1-7 (best)	66	3.5
2.13 R&D expenditures % GDP	77	0.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP	25	29.0
2.15 Patent applications applications/million pop.	43	3.05
2.16 Venture capital deal volume US$ millions	79	253.0
2.17 Venture capital deal volume per size of economy US$/GDP	41	23.2
Driver: Human Capital 0-10 (best)	51	5.1
Current Labor Force 0-10 (best)	43	6.6
3.01 Manufacturing employment % working population	81	8.0
3.02 Knowledge-intensive employment % working pop.	40	31.1
3.03 Female participation in labor force ratio	56	0.74
3.04 Mean years of schooling Years	30	11.7
3.05 Availability of scientists and engineers 1-7 (best)	44	4.3
3.06 Digital skills among population 1-7 (best)	49	4.4
Future Labor Force 0-10 (best)	59	3.6
3.07 Migration migrants/100,000 pop.	95	-16.6
3.08 Country capacity to attract and retain talent 1-7 (best)	73	3.0
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	29	4.7
3.11 Quality of vocational training 1-7 (best)	69	3.7
3.12 School life expectancy Years	68	13.2
3.13 Pupil-to-teacher ratio in primary education Ratio	63	19.3
3.14 Critical thinking in teaching 1-7 (best)	43	3.6
3.15 Active labor policies 1-7 (best)	64	3.0
3.16 On-the-job training 1-7 (best)	71	3.9
3.17 Hiring and firing practices 1-7 (best)	21	4.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	72	4.4
Trade 0-10 (best)	58	6.2
4.01 Trade % GDP	54	76.4
4.02 Trade tariffs % duty	46	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	45	4.6
4.04 Logistics performance 1 – 5 (best)	95	2.2
Investment 0-10 (best)	79	1.0
4.05 Greenfield investments US$ millions	91	419.8
4.06 FDI inflows US$ millions	94	359.9
4.07 Domestic credit to private sector % GDP	62	48.8
Infrastructure 0-10 (best)	68	6.0
4.08 Transport infrastructure 0-100 (best)	71	39.5
4.09 Electricity infrastructure 0-100 (best)	62	79.6
Driver: Institutional Framework 0-10 (best)	58	4.9
Government 0-10 (best)	58	4.9
5.01 Regulatory efficiency 0 – 100 (best)	29	74.6
5.02 Incidence of corruption 0-100 (best)	78	33.0
5.03 Future orientation of government 1-7 (best)	46	3.8
5.04 Rule of law (2.5) - 2.0 (best)	61	-0.1
Driver: Sustainable Resources 0-10 (best)	62	5.8
Sustainability 0-10 (best)	62	5.8
6.01 Alternative and nuclear energy use % total energy use	39	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	66	0.5
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	63	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	63	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	65	3.1
6.06 Wastewater treatment 0 – 5 (worst)	63	70.8
Driver: Demand Environment 0-10 (best)	81	3.7
Foreign and Domestic Demand 0-10 (best)	98	2.3
7.01 Market size 0-100 (best)	98	23.0
Consumer Base 0-10 (best)	30	5.1
7.02 Buyer sophistication 1-7 (best)	38	3.8
7.03 Extent of market dominance 1-7 (best)	26	4.3

Australia

High Potential

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	24.3	**GDP per capita** US$	51,850.3
GDP US$ billions	1,259.0	**Unemployment rate** %	5.7

Key production indicators

Manufacturing value added 2010 millions US$	100,108.8	**Manufacturing value added growth** Annual %	0.4
Manufacturing value added in economy % GDP	6.6	**Medium hi-tech & hi-tech industries** % of manu. value added	28.2
Manufacturing employment % working population	7.6	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

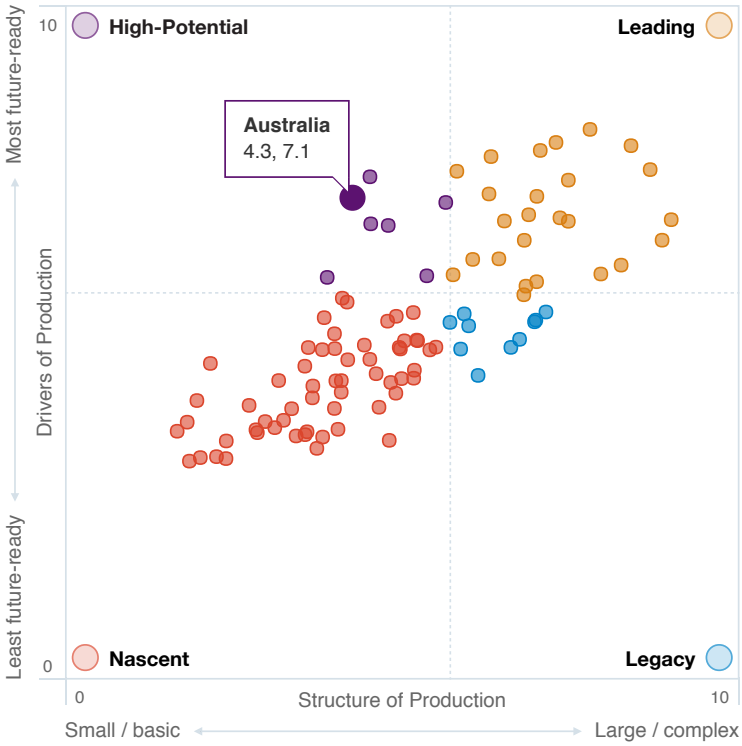
Drivers of Production 7.1

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	11th	**6.9**
Human Capital	20%	9th	**7.4**
Global Trade & Investment	20%	12th	**7.1**
Institutional Framework	20%	12th	**8.3**
Sustainable Resources	5%	47th	**6.5**
Demand Environment	15%	27th	**5.8**

Structure of Production 4.3

Structure	Weighting	Rank	Score /10
Complexity	60%	68th	**4.5**
Scale	40%	54th	**4.0**

Archetype



Australia

High Potential

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	68	4.5
1.01 Economic complexity (2.5) – 2.5 (best)	68	-0.2
Structure: Scale 0-10 (best)	54	4.0
1.02 Manufacturing value added in economy % GDP	89	6.6
1.03 Manufacturing value added US$ millions	20	100,108.8
Driver: Technology & Innovation 0-10 (best)	11	6.9
Technology Platform 0-10 (best)	14	7.9
2.01 Mobile-cellular telephone subscriptions /100 pop.	71	109.6
2.02 LTE mobile network coverage % population	21	98.0
2.03 Internet users % pop.	15	88.2
2.04 FDI and technology transfer 1-7 (best)	25	5.0
2.05 Firm-level technology absorption 1-7 (best)	22	5.3
2.06 Impact of ICTs on new services and products 1-7 (best)	29	5.2
2.07 Cybersecurity commitment 0–1 (best)	7	0.8
Ability to Innovate 0-10 (best)	12	5.9
2.08 State of cluster development 1-7 (best)	44	4.0
2.09 Company investment in emerging technology 1–7 (best)	24	4.4
2.10 Gov't procurement of advanced technology products 1-7 (best)	54	3.3
2.11 Companies embracing disruptive ideas 1-7 (best)	29	3.8
2.12 Multi-stakeholder collaboration 1-7 (best)	27	4.3
2.13 R&D expenditures % GDP	16	2.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	8	48.7
2.15 Patent applications applications/million pop.	20	46.00
2.16 Venture capital deal volume US$ millions	7	99,210.9
2.17 Venture capital deal volume per size of economy US$/GDP	12	74.2
Driver: Human Capital 0-10 (best)	9	7.4
Current Labor Force 0-10 (best)	21	7.8
3.01 Manufacturing employment % working population	84	7.5
3.02 Knowledge-intensive employment % working pop.	11	44.9
3.03 Female participation in labor force ratio	24	0.92
3.04 Mean years of schooling Years	22	12.2
3.05 Availability of scientists and engineers 1-7 (best)	16	4.9
3.06 Digital skills among population 1-7 (best)	20	5.2
Future Labor Force 0-10 (best)	7	7.0
3.07 Migration migrants/100,000 pop.	9	31.5
3.08 Country capacity to attract and retain talent 1-7 (best)	15	4.7
3.09 Quality of universities Count	7	37.0
3.10 Quality of math and science education 1-7 (best)	27	4.8
3.11 Quality of vocational training 1-7 (best)	20	4.9
3.12 School life expectancy Years	1	20.5
3.13 Pupil-to-teacher ratio in primary education Ratio		-
3.14 Critical thinking in teaching 1-7 (best)	15	4.7
3.15 Active labor policies 1-7 (best)	20	4.5
3.16 On-the-job training 1-7 (best)	19	5.3
3.17 Hiring and firing practices 1-7 (best)	78	3.2

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	12	7.1
Trade 0-10 (best)	74	4.9
4.01 Trade % GDP	84	40.0
4.02 Trade tariffs % duty	35	0.02
4.03 Prevalence of non-tariff barriers 1-7 (best)	24	4.9
4.04 Logistics performance 1 – 5 (best)	18	3.8
Investment 0-10 (best)	4	8.7
4.05 Greenfield investments US$ millions	10	17,031.0
4.06 FDI inflows US$ millions	10	45,205.5
4.07 Domestic credit to private sector % GDP	14	142.9
Infrastructure 0-10 (best)	23	7.8
4.08 Transport infrastructure 0-100 (best)	27	59.5
4.09 Electricity infrastructure 0-100 (best)	13	96.0
Driver: Institutional Framework 0-10 (best)	12	8.3
Government 0-10 (best)	12	8.3
5.01 Regulatory efficiency 0 – 100 (best)	5	86.6
5.02 Incidence of corruption 0-100 (best)	12	79.0
5.03 Future orientation of government 1-7 (best)	30	4.1
5.04 Rule of law (2.5) - 2.0 (best)	11	1.8
Driver: Sustainable Resources 0-10 (best)	47	6.5
Sustainability 0-10 (best)	47	6.5
6.01 Alternative and nuclear energy use % total energy use	81	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	37	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	40	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	53	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	78	3.5
6.06 Wastewater treatment 0 – 5 (worst)	6	97.9
Driver: Demand Environment 0-10 (best)	27	5.8
Foreign and Domestic Demand 0-10 (best)	22	6.6
7.01 Market size 0-100 (best)	22	66.0
Consumer Base 0-10 (best)	33	5.0
7.02 Buyer sophistication 1-7 (best)	27	4.0
7.03 Extent of market dominance 1-7 (best)	41	4.0

Austria

Leading

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	8.7	**GDP per capita** US$	44,498.4
GDP US$ billions	386.8	**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

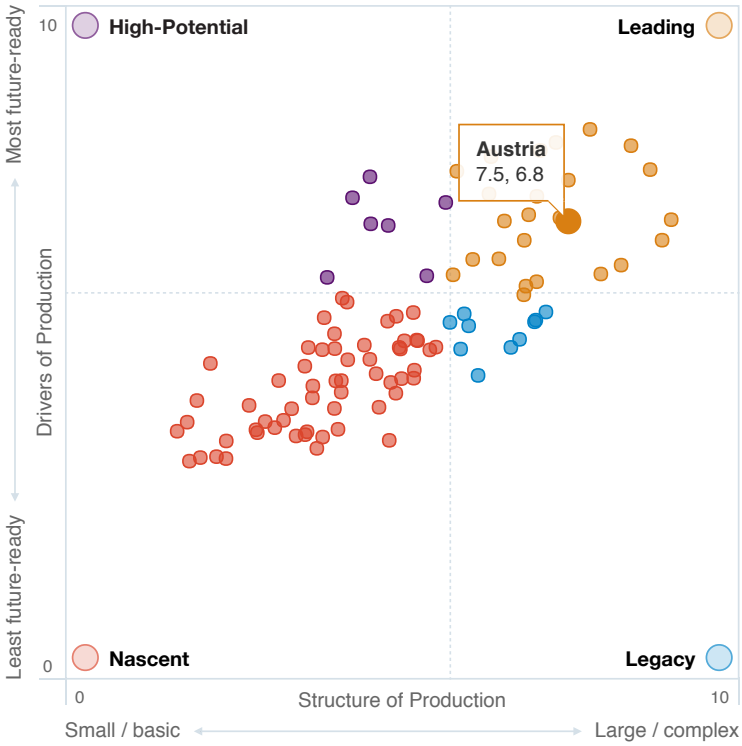
Drivers of Production 6.8

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	21st	**6.2**
Human Capital	20%	18th	**6.8**
Global Trade & Investment	20%	22nd	**6.5**
Institutional Framework	20%	15th	**8.0**
Sustainable Resources	5%	4th	**8.7**
Demand Environment	15%	31st	**5.6**

Structure of Production 7.5

Structure	Weighting	Rank	Score /10
Complexity	60%	7th	**8.7**
Scale	40%	21st	**5.6**

Archetype



Austria

Leading

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	7	8.7
1.01 Economic complexity (2.5) – 2.5 (best)	7	1.7
Structure: Scale 0-10 (best)	21	5.6
1.02 Manufacturing value added in economy % GDP	25	17.3
1.03 Manufacturing value added US$ millions	26	71,962.7
Driver: Technology & Innovation 0-10 (best)	21	6.2
Technology Platform 0-10 (best)	26	7.4
2.01 Mobile-cellular telephone subscriptions /100 pop.	7	166.1
2.02 LTE mobile network coverage % population	21	98.0
2.03 Internet users % pop.	21	84.3
2.04 FDI and technology transfer 1-7 (best)	42	4.7
2.05 Firm-level technology absorption 1-7 (best)	17	5.4
2.06 Impact of ICTs on new services and products 1-7 (best)	27	5.3
2.07 Cybersecurity commitment 0–1 (best)	33	0.6
Ability to Innovate 0-10 (best)	21	5.0
2.08 State of cluster development 1-7 (best)	16	4.9
2.09 Company investment in emerging technology 1–7 (best)	23	4.4
2.10 Gov't procurement of advanced technology products 1-7 (best)	51	3.3
2.11 Companies embracing disruptive ideas 1-7 (best)	40	3.7
2.12 Multi-stakeholder collaboration 1-7 (best)	19	4.7
2.13 R&D expenditures % GDP	7	3.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	17	36.1
2.15 Patent applications applications/million pop.	7	201.92
2.16 Venture capital deal volume US$ millions	36	7,125.5
2.17 Venture capital deal volume per size of economy US$/GDP	50	17.8
Driver: Human Capital 0-10 (best)	18	6.8
Current Labor Force 0-10 (best)	24	7.7
3.01 Manufacturing employment % working population	21	16.0
3.02 Knowledge-intensive employment % working pop.	21	40.6
3.03 Female participation in labor force ratio	22	0.93
3.04 Mean years of schooling Years	34	11.3
3.05 Availability of scientists and engineers 1-7 (best)	34	4.5
3.06 Digital skills among population 1-7 (best)	35	4.7
Future Labor Force 0-10 (best)	18	5.9
3.07 Migration migrants/100,000 pop.	16	17.4
3.08 Country capacity to attract and retain talent 1-7 (best)	32	4.1
3.09 Quality of universities Count	28	8.0
3.10 Quality of math and science education 1-7 (best)	37	4.6
3.11 Quality of vocational training 1-7 (best)	2	5.7
3.12 School life expectancy Years	29	16.0
3.13 Pupil-to-teacher ratio in primary education Ratio	7	10.6
3.14 Critical thinking in teaching 1-7 (best)	34	3.8
3.15 Active labor policies 1-7 (best)	3	5.4
3.16 On-the-job training 1-7 (best)	11	5.5
3.17 Hiring and firing practices 1-7 (best)	89	3.0

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	22	6.5
Trade 0-10 (best)	4	8.9
4.01 Trade % GDP	33	100.7
4.02 Trade tariffs % duty	15	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	20	4.9
4.04 Logistics performance 1 – 5 (best)	6	4.1
Investment 0-10 (best)	46	2.4
4.05 Greenfield investments US$ millions	62	1,678.7
4.06 FDI inflows US$ millions	49	3,356.4
4.07 Domestic credit to private sector % GDP	33	84.7
Infrastructure 0-10 (best)	13	8.3
4.08 Transport infrastructure 0-100 (best)	14	71.0
4.09 Electricity infrastructure 0-100 (best)	15	94.7
Driver: Institutional Framework 0-10 (best)	15	8.0
Government 0-10 (best)	15	8.0
5.01 Regulatory efficiency 0 – 100 (best)	27	76.0
5.02 Incidence of corruption 0-100 (best)	15	75.0
5.03 Future orientation of government 1-7 (best)	38	3.9
5.04 Rule of law (2.5) - 2.0 (best)	10	1.8
Driver: Sustainable Resources 0-10 (best)	4	8.7
Sustainability 0-10 (best)	4	8.7
6.01 Alternative and nuclear energy use % total energy use	30	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	9	0.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	8	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	10	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	13	0.3
6.06 Wastewater treatment 0 – 5 (worst)	8	97.2
Driver: Demand Environment 0-10 (best)	31	5.6
Foreign and Domestic Demand 0-10 (best)	41	5.6
7.01 Market size 0-100 (best)	41	56.5
Consumer Base 0-10 (best)	22	5.6
7.02 Buyer sophistication 1-7 (best)	39	3.8
7.03 Extent of market dominance 1-7 (best)	11	5.0

Azerbaijan

Nascent

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	9.5	**GDP per capita** US$	3,956.4
GDP US$ billions	37.6	**Unemployment rate** %	6.0

Key production indicators

Manufacturing value added 2010 millions US$	2,860.5	**Manufacturing value added growth** Annual %	-4.6
Manufacturing value added in economy % GDP	5.0	**Medium hi-tech & hi-tech industries** % of manu. value added	13.7
Manufacturing employment % working population	4.9	**CO2 emission per unit of value added** kg/USD	0.7

Readiness Overall Assessment

Drivers of Production 4.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	55th	**4.1**
Human Capital	20%	47th	**5.2**
Global Trade & Investment	20%	66th	**4.6**
Institutional Framework	20%	70th	**4.5**
Sustainable Resources	5%	79th	**4.9**
Demand Environment	15%	47th	**4.9**

Structure of Production 2.2

Structure	Weighting	Rank	Score /10
Complexity	60%	92nd	**2.5**
Scale	40%	93rd	**1.6**

Archetype

Azerbaijan

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	92	2.5
1.01 Economic complexity (2.5) – 2.5 (best)	92	-1.1
Structure: Scale 0-10 (best)	93	1.6
1.02 Manufacturing value added in economy % GDP	97	5.0
1.03 Manufacturing value added US$ millions	83	2,860.5
Driver: Technology & Innovation 0-10 (best)	55	4.1
Technology Platform 0-10 (best)	49	6.2
2.01 Mobile-cellular telephone subscriptions /100 pop.	75	106.3
2.02 LTE mobile network coverage % population	79	41.0
2.03 Internet users % pop.	31	78.2
2.04 FDI and technology transfer 1-7 (best)	27	5.0
2.05 Firm-level technology absorption 1-7 (best)	40	4.9
2.06 Impact of ICTs on new services and products 1-7 (best)	39	5.0
2.07 Cybersecurity commitment 0–1 (best)	51	0.6
Ability to Innovate 0-10 (best)	66	2.0
2.08 State of cluster development 1-7 (best)	32	4.3
2.09 Company investment in emerging technology 1–7 (best)	20	4.7
2.10 Gov't procurement of advanced technology products 1-7 (best)	11	4.3
2.11 Companies embracing disruptive ideas 1-7 (best)	21	4.2
2.12 Multi-stakeholder collaboration 1-7 (best)	24	4.4
2.13 R&D expenditures % GDP	80	0.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	85	3.2
2.15 Patent applications applications/million pop.	78	0.15
2.16 Venture capital deal volume US$ millions	96	42.9
2.17 Venture capital deal volume per size of economy US$/GDP	97	0.8
Driver: Human Capital 0-10 (best)	47	5.2
Current Labor Force 0-10 (best)	54	5.9
3.01 Manufacturing employment % working population	92	4.9
3.02 Knowledge-intensive employment % working pop.	54	23.4
3.03 Female participation in labor force ratio	59	0.70
3.04 Mean years of schooling Years	44	10.5
3.05 Availability of scientists and engineers 1-7 (best)	23	4.7
3.06 Digital skills among population 1-7 (best)	19	5.2
Future Labor Force 0-10 (best)	41	4.6
3.07 Migration migrants/100,000 pop.	46	0.0
3.08 Country capacity to attract and retain talent 1-7 (best)	20	4.6
3.09 Quality of universities Count	53	2.0
3.10 Quality of math and science education 1-7 (best)	56	4.2
3.11 Quality of vocational training 1-7 (best)	37	4.4
3.12 School life expectancy Years	78	12.7
3.13 Pupil-to-teacher ratio in primary education Ratio	30	13.5
3.14 Critical thinking in teaching 1-7 (best)	23	4.2
3.15 Active labor policies 1-7 (best)	29	4.2
3.16 On-the-job training 1-7 (best)	40	4.4
3.17 Hiring and firing practices 1-7 (best)	12	4.7

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	66	4.6
Trade 0-10 (best)	47	6.8
4.01 Trade % GDP	42	90.1
4.02 Trade tariffs % duty	77	0.08
4.03 Prevalence of non-tariff barriers 1-7 (best)	42	4.6
4.04 Logistics performance 1 – 5 (best)		-
Investment 0-10 (best)	89	0.6
4.05 Greenfield investments US$ millions	77	845.2
4.06 FDI inflows US$ millions	48	3,522.9
4.07 Domestic credit to private sector % GDP	89	26.6
Infrastructure 0-10 (best)	53	6.5
4.08 Transport infrastructure 0-100 (best)	37	53.5
4.09 Electricity infrastructure 0-100 (best)	71	75.9
Driver: Institutional Framework 0-10 (best)	70	4.5
Government 0-10 (best)	70	4.5
5.01 Regulatory efficiency 0 – 100 (best)	32	73.4
5.02 Incidence of corruption 0-100 (best)	84	30.0
5.03 Future orientation of government 1-7 (best)	17	4.7
5.04 Rule of law (2.5) - 2.0 (best)	85	-0.6
Driver: Sustainable Resources 0-10 (best)	79	4.9
Sustainability 0-10 (best)	79	4.9
6.01 Alternative and nuclear energy use % total energy use	90	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	64	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	86	0.5
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	49	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	74	3.4
6.06 Wastewater treatment 0 – 5 (worst)	64	69.2
Driver: Demand Environment 0-10 (best)	47	4.9
Foreign and Domestic Demand 0-10 (best)	60	4.5
7.01 Market size 0-100 (best)	60	44.8
Consumer Base 0-10 (best)	24	5.3
7.02 Buyer sophistication 1-7 (best)	21	4.2
7.03 Extent of market dominance 1-7 (best)	33	4.2

Bahrain

Nascent

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	1.3	**GDP per capita** US$	24,182.9
GDP US$ billions	31.9	**Unemployment rate** %	3.7

Key production indicators

Manufacturing value added 2010 millions US$	4,561.7	**Manufacturing value added growth** Annual %	2.3
Manufacturing value added in economy % GDP	14.5	**Medium hi-tech & hi-tech industries** % of manu. value added	24.4
Manufacturing employment % working population	12.0	**CO2 emission per unit of value added** kg/USD	0.5

Readiness Overall Assessment

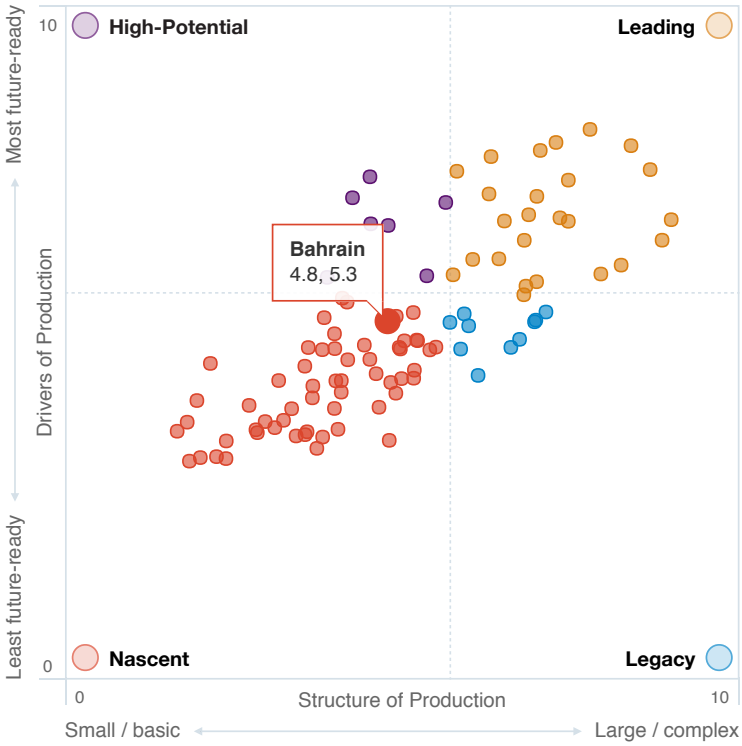
Drivers of Production 5.3

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	48th	**4.4**
Human Capital	20%	38th	**5.6**
Global Trade & Investment	20%	32nd	**6.0**
Institutional Framework	20%	36th	**6.3**
Sustainable Resources	5%	81st	**4.8**
Demand Environment	15%	71st	**4.2**

Structure of Production 4.8

Structure	Weighting	Rank	Score /10
Complexity	60%	46th	**5.6**
Scale	40%	65th	**3.5**

Archetype



Bahrain

Nascent

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	46	5.6
1.01 Economic complexity (2.5) – 2.5 (best)	46	0.3
Structure: Scale 0-10 (best)	65	3.5
1.02 Manufacturing value added in economy % GDP	39	14.5
1.03 Manufacturing value added US$ millions	74	4,561.7
Driver: Technology & Innovation 0-10 (best)	48	4.4
Technology Platform 0-10 (best)	34	6.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	2	216.9
2.02 LTE mobile network coverage % population	1	100.0
2.03 Internet users % pop.	1	98.0
2.04 FDI and technology transfer 1-7 (best)	33	4.9
2.05 Firm-level technology absorption 1-7 (best)	30	5.1
2.06 Impact of ICTs on new services and products 1-7 (best)	35	5.0
2.07 Cybersecurity commitment 0–1 (best)	64	0.5
Ability to Innovate 0-10 (best)	64	2.0
2.08 State of cluster development 1-7 (best)	23	4.6
2.09 Company investment in emerging technology 1–7 (best)		-
2.10 Gov't procurement of advanced technology products 1-7 (best)	19	4.0
2.11 Companies embracing disruptive ideas 1-7 (best)	49	3.6
2.12 Multi-stakeholder collaboration 1-7 (best)	33	4.0
2.13 R&D expenditures % GDP	95	0.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	87	2.7
2.15 Patent applications applications/million pop.	55	1.17
2.16 Venture capital deal volume US$ millions	76	313.2
2.17 Venture capital deal volume per size of economy US$/GDP	68	9.7
Driver: Human Capital 0-10 (best)	38	5.6
Current Labor Force 0-10 (best)	68	5.4
3.01 Manufacturing employment % working population	48	12.0
3.02 Knowledge-intensive employment % working pop.	63	20.9
3.03 Female participation in labor force ratio	91	0.24
3.04 Mean years of schooling Years	59	9.4
3.05 Availability of scientists and engineers 1-7 (best)	42	4.4
3.06 Digital skills among population 1-7 (best)		-
Future Labor Force 0-10 (best)	21	5.7
3.07 Migration migrants/100,000 pop.	18	16.0
3.08 Country capacity to attract and retain talent 1-7 (best)	22	4.5
3.09 Quality of universities Count	53	2.0
3.10 Quality of math and science education 1-7 (best)	28	4.8
3.11 Quality of vocational training 1-7 (best)	25	4.7
3.12 School life expectancy Years	32	16.0
3.13 Pupil-to-teacher ratio in primary education Ratio	18	11.7
3.14 Critical thinking in teaching 1-7 (best)	21	4.3
3.15 Active labor policies 1-7 (best)	24	4.4
3.16 On-the-job training 1-7 (best)	27	4.9
3.17 Hiring and firing practices 1-7 (best)	24	4.4

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	32	6.0
Trade 0-10 (best)	21	8.3
4.01 Trade % GDP	20	116.9
4.02 Trade tariffs % duty	47	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	17	5.0
4.04 Logistics performance 1 – 5 (best)	38	3.4
Investment 0-10 (best)	56	2.0
4.05 Greenfield investments US$ millions	57	1,900.5
4.06 FDI inflows US$ millions	75	1,122.3
4.07 Domestic credit to private sector % GDP	39	73.7
Infrastructure 0-10 (best)	26	7.6
4.08 Transport infrastructure 0-100 (best)	39	53.3
4.09 Electricity infrastructure 0-100 (best)	6	97.9
Driver: Institutional Framework 0-10 (best)	36	6.3
Government 0-10 (best)	36	6.3
5.01 Regulatory efficiency 0 – 100 (best)	23	76.3
5.02 Incidence of corruption 0-100 (best)	51	43.0
5.03 Future orientation of government 1-7 (best)	5	5.3
5.04 Rule of law (2.5) - 2.0 (best)	42	0.5
Driver: Sustainable Resources 0-10 (best)	81	4.8
Sustainability 0-10 (best)	81	4.8
6.01 Alternative and nuclear energy use % total energy use	96	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	89	0.9
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	52	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	1	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	94	5.0
6.06 Wastewater treatment 0 – 5 (worst)	22	91.7
Driver: Demand Environment 0-10 (best)	71	4.2
Foreign and Domestic Demand 0-10 (best)	85	3.3
7.01 Market size 0-100 (best)	85	33.1
Consumer Base 0-10 (best)	32	5.0
7.02 Buyer sophistication 1-7 (best)	35	3.8
7.03 Extent of market dominance 1-7 (best)	32	4.2

Bangladesh

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	161.5	**GDP per capita** US$	1,411.0
GDP US$ billions	227.9		

Key production indicators

Manufacturing value added 2010 millions US$	32,262.1	**Manufacturing value added growth** Annual %	9.8
Manufacturing value added in economy % GDP	19.3	**Medium hi-tech & hi-tech industries** % of manu. value added	9.5
Manufacturing employment % working population	12.4	**CO2 emission per unit of value added** kg/USD	0.4

Readiness Overall Assessment

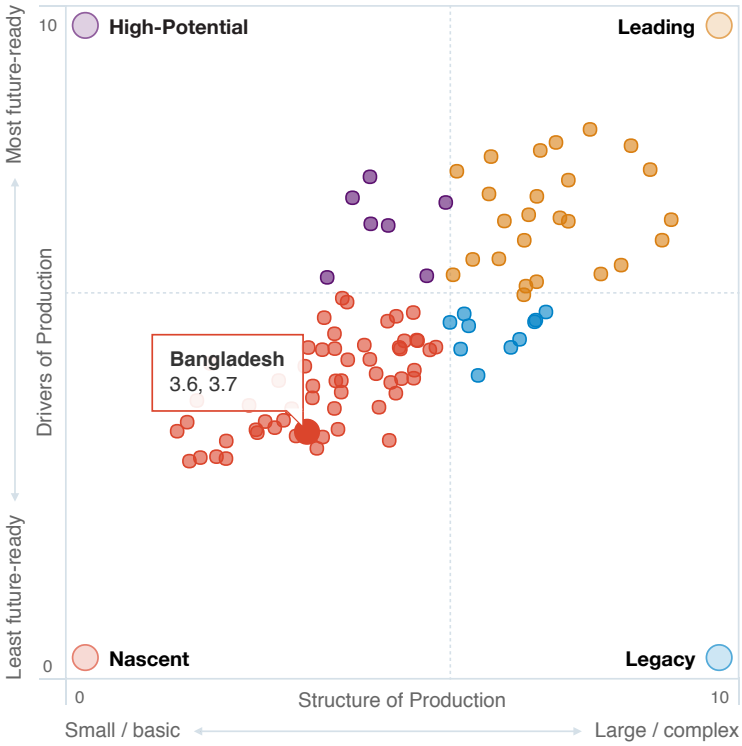
Drivers of Production 3.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	86th	**3.2**
Human Capital	20%	96th	**3.4**
Global Trade & Investment	20%	93rd	**3.0**
Institutional Framework	20%	85th	**4.0**
Sustainable Resources	5%	84th	**4.7**
Demand Environment	15%	52nd	**4.8**

Structure of Production 3.6

Structure	Weighting	Rank	Score /10
Complexity	60%	97th	**2.3**
Scale	40%	24th	**5.5**

Archetype



Bangladesh

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	97	2.3
1.01 Economic complexity (2.5) – 2.5 (best)	97	-1.2
Structure: Scale 0-10 (best)	24	5.5
1.02 Manufacturing value added in economy % GDP	14	19.3
1.03 Manufacturing value added US$ millions	43	32,262.1
Driver: Technology & Innovation 0-10 (best)	86	3.2
Technology Platform 0-10 (best)	78	4.9
2.01 Mobile-cellular telephone subscriptions /100 pop.	94	77.9
2.02 LTE mobile network coverage % population	67	65.0
2.03 Internet users % pop.	97	18.2
2.04 FDI and technology transfer 1-7 (best)	88	3.7
2.05 Firm-level technology absorption 1-7 (best)	81	4.2
2.06 Impact of ICTs on new services and products 1-7 (best)	94	3.9
2.07 Cybersecurity commitment 0–1 (best)	55	0.5
Ability to Innovate 0-10 (best)	97	1.4
2.08 State of cluster development 1-7 (best)	57	3.8
2.09 Company investment in emerging technology 1–7 (best)	67	3.4
2.10 Gov't procurement of advanced technology products 1-7 (best)	69	3.0
2.11 Companies embracing disruptive ideas 1-7 (best)	83	3.1
2.12 Multi-stakeholder collaboration 1-7 (best)	100	2.9
2.13 R&D expenditures % GDP	73	0.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP	86	2.9
2.15 Patent applications applications/million pop.	87	0.04
2.16 Venture capital deal volume US$ millions	93	72.0
2.17 Venture capital deal volume per size of economy US$/GDP	99	0.4
Driver: Human Capital 0-10 (best)	96	3.4
Current Labor Force 0-10 (best)	92	4.1
3.01 Manufacturing employment % working population	44	12.4
3.02 Knowledge-intensive employment % working pop.	65	20.0
3.03 Female participation in labor force ratio	92	0.23
3.04 Mean years of schooling Years	94	5.2
3.05 Availability of scientists and engineers 1-7 (best)	68	3.8
3.06 Digital skills among population 1-7 (best)	97	3.2
Future Labor Force 0-10 (best)	97	2.7
3.07 Migration migrants/100,000 pop.	90	-12.7
3.08 Country capacity to attract and retain talent 1-7 (best)	74	2.9
3.09 Quality of universities Count	62	1.0
3.10 Quality of math and science education 1-7 (best)	82	3.2
3.11 Quality of vocational training 1-7 (best)	95	3.2
3.12 School life expectancy Years	95	9.9
3.13 Pupil-to-teacher ratio in primary education Ratio	91	36.1
3.14 Critical thinking in teaching 1-7 (best)	86	2.8
3.15 Active labor policies 1-7 (best)	87	2.7
3.16 On-the-job training 1-7 (best)	98	3.3
3.17 Hiring and firing practices 1-7 (best)	33	4.2

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	93	3.0
Trade 0-10 (best)	93	3.1
4.01 Trade % GDP	87	38.0
4.02 Trade tariffs % duty	96	0.13
4.03 Prevalence of non-tariff barriers 1-7 (best)	30	4.8
4.04 Logistics performance 1 – 5 (best)	76	2.7
Investment 0-10 (best)	73	1.4
4.05 Greenfield investments US$ millions	49	2,918.6
4.06 FDI inflows US$ millions	64	1,802.2
4.07 Domestic credit to private sector % GDP	70	44.4
Infrastructure 0-10 (best)	87	4.7
4.08 Transport infrastructure 0-100 (best)	83	31.8
4.09 Electricity infrastructure 0-100 (best)	83	61.9
Driver: Institutional Framework 0-10 (best)	85	4.0
Government 0-10 (best)	85	4.0
5.01 Regulatory efficiency 0 – 100 (best)	71	63.6
5.02 Incidence of corruption 0-100 (best)	96	26.0
5.03 Future orientation of government 1-7 (best)	49	3.7
5.04 Rule of law (2.5) - 2.0 (best)	86	-0.6
Driver: Sustainable Resources 0-10 (best)	84	4.7
Sustainability 0-10 (best)	84	4.7
6.01 Alternative and nuclear energy use % total energy use	46	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	60	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	83	0.4
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	85	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	22	0.6
6.06 Wastewater treatment 0 – 5 (worst)	92	0.0
Driver: Demand Environment 0-10 (best)	52	4.8
Foreign and Domestic Demand 0-10 (best)	37	5.9
7.01 Market size 0-100 (best)	37	58.6
Consumer Base 0-10 (best)	81	3.7
7.02 Buyer sophistication 1-7 (best)	58	3.4
7.03 Extent of market dominance 1-7 (best)	93	3.0

Belgium

Leading

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Key economic indicators

Population millions	11.3	**GDP per capita** US$	41,283.3
GDP US$ billions	467.0	**Unemployment rate** %	7.9

Key production indicators

Manufacturing value added 2010 millions US$	68,049.0	**Manufacturing value added growth** Annual %	1.0
Manufacturing value added in economy % GDP	13.2	**Medium hi-tech & hi-tech industries** % of manu. value added	49.5
Manufacturing employment % working population	12.9	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

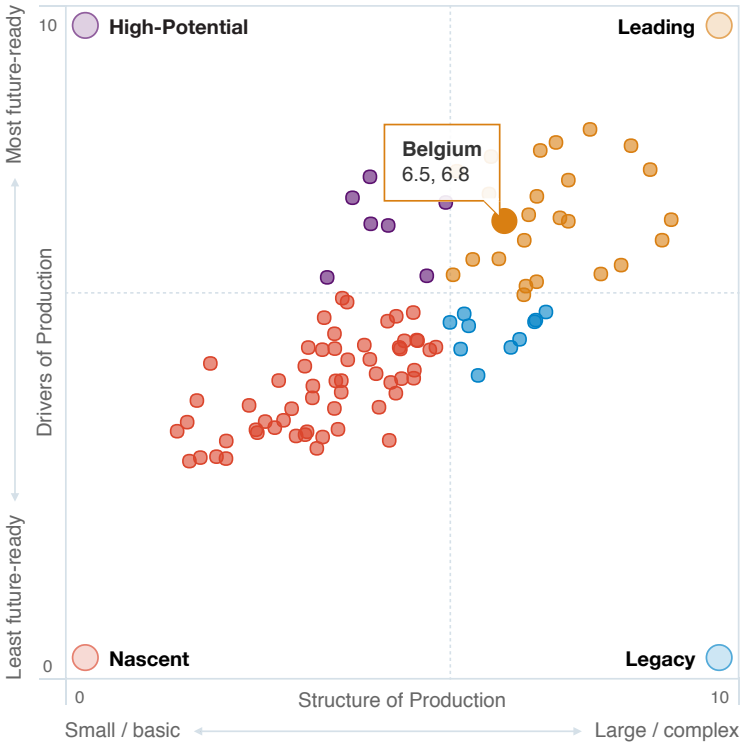
Drivers of Production 6.8

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	19th	**6.4**
Human Capital	20%	15th	**6.9**
Global Trade & Investment	20%	21st	**6.7**
Institutional Framework	20%	18th	**7.6**
Sustainable Resources	5%	24th	**7.1**
Demand Environment	15%	18th	**6.2**

Structure of Production 6.5

Structure	Weighting	Rank	Score /10
Complexity	60%	19th	**7.6**
Scale	40%	32nd	**4.9**

Archetype



Belgium

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	19	7.6
1.01 Economic complexity (2.5) – 2.5 (best)	19	1.2
Structure: Scale 0-10 (best)	32	4.9
1.02 Manufacturing value added in economy % GDP	48	13.2
1.03 Manufacturing value added US$ millions	27	68,049.0
Driver: Technology & Innovation 0-10 (best)	19	6.4
Technology Platform 0-10 (best)	23	7.5
2.01 Mobile-cellular telephone subscriptions /100 pop.	67	111.0
2.02 LTE mobile network coverage % population	1	100.0
2.03 Internet users % pop.	19	86.5
2.04 FDI and technology transfer 1-7 (best)	16	5.2
2.05 Firm-level technology absorption 1-7 (best)	23	5.3
2.06 Impact of ICTs on new services and products 1-7 (best)	16	5.6
2.07 Cybersecurity commitment 0–1 (best)	30	0.7
Ability to Innovate 0-10 (best)	17	5.3
2.08 State of cluster development 1-7 (best)	17	4.8
2.09 Company investment in emerging technology 1–7 (best)	17	4.8
2.10 Gov't procurement of advanced technology products 1-7 (best)	33	3.6
2.11 Companies embracing disruptive ideas 1-7 (best)	22	4.2
2.12 Multi-stakeholder collaboration 1-7 (best)	13	4.9
2.13 R&D expenditures % GDP	12	2.5
2.14 Scientific and technical publications Number per Billion PPP$ GDP	15	40.1
2.15 Patent applications applications/million pop.	16	92.23
2.16 Venture capital deal volume US$ millions	27	16,279.4
2.17 Venture capital deal volume per size of economy US$/GDP	28	33.6
Driver: Human Capital 0-10 (best)	15	6.9
Current Labor Force 0-10 (best)	17	8.0
3.01 Manufacturing employment % working population	39	12.9
3.02 Knowledge-intensive employment % working pop.	9	45.6
3.03 Female participation in labor force ratio	20	0.94
3.04 Mean years of schooling Years	27	11.9
3.05 Availability of scientists and engineers 1-7 (best)	39	4.5
3.06 Digital skills among population 1-7 (best)	28	4.9
Future Labor Force 0-10 (best)	20	5.8
3.07 Migration migrants/100,000 pop.	23	13.3
3.08 Country capacity to attract and retain talent 1-7 (best)	28	4.2
3.09 Quality of universities Count	28	8.0
3.10 Quality of math and science education 1-7 (best)	7	5.6
3.11 Quality of vocational training 1-7 (best)	14	5.2
3.12 School life expectancy Years	2	20.0
3.13 Pupil-to-teacher ratio in primary education Ratio	12	11.2
3.14 Critical thinking in teaching 1-7 (best)	27	4.0
3.15 Active labor policies 1-7 (best)	18	4.6
3.16 On-the-job training 1-7 (best)	8	5.5
3.17 Hiring and firing practices 1-7 (best)	81	3.2

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	21	6.7
Trade 0-10 (best)	5	8.9
4.01 Trade % GDP	8	166.5
4.02 Trade tariffs % duty	30	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	34	4.7
4.04 Logistics performance 1 – 5 (best)	5	4.1
Investment 0-10 (best)	40	2.9
4.05 Greenfield investments US$ millions	39	3,876.4
4.06 FDI inflows US$ millions	20	15,125.3
4.07 Domestic credit to private sector % GDP	45	64.4
Infrastructure 0-10 (best)	14	8.2
4.08 Transport infrastructure 0-100 (best)	15	70.2
4.09 Electricity infrastructure 0-100 (best)	16	94.5
Driver: Institutional Framework 0-10 (best)	18	7.6
Government 0-10 (best)	18	7.6
5.01 Regulatory efficiency 0 – 100 (best)	26	76.0
5.02 Incidence of corruption 0-100 (best)	13	77.0
5.03 Future orientation of government 1-7 (best)	44	3.8
5.04 Rule of law (2.5) - 2.0 (best)	18	1.4
Driver: Sustainable Resources 0-10 (best)	24	7.1
Sustainability 0-10 (best)	24	7.1
6.01 Alternative and nuclear energy use % total energy use	48	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	18	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	6	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	22	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	66	3.2
6.06 Wastewater treatment 0 – 5 (worst)	13	95.0
Driver: Demand Environment 0-10 (best)	18	6.2
Foreign and Domestic Demand 0-10 (best)	31	6.2
7.01 Market size 0-100 (best)	31	62.1
Consumer Base 0-10 (best)	11	6.2
7.02 Buyer sophistication 1-7 (best)	15	4.5
7.03 Extent of market dominance 1-7 (best)	8	5.0

Bosnia and Herzegovina

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Key economic indicators

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

Key production indicators

Manufacturing value added 2010 millions US$	2,080.9	**Manufacturing value added growth** Annual %	3.6
Manufacturing value added in economy % GDP	11.0	**Medium hi-tech & hi-tech industries** % of manu. value added	17.5
Manufacturing employment % working population	16.0	**CO2 emission per unit of value added** kg/USD	1.0

Readiness Overall Assessment

Drivers of Production 4.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	70th	**3.7**
Human Capital	20%	78th	**4.2**
Global Trade & Investment	20%	64th	**4.8**
Institutional Framework	20%	82nd	**4.2**
Sustainable Resources	5%	86th	**4.6**
Demand Environment	15%	98th	**2.9**

Structure of Production 4.7

Structure	Weighting	Rank	Score /10
Complexity	60%	40th	**6.1**
Scale	40%	84th	**2.4**

Archetype

Bosnia and Herzegovina

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	40	6.1
1.01 Economic complexity (2.5) – 2.5 (best)	40	0.5
Structure: Scale 0-10 (best)	84	2.4
1.02 Manufacturing value added in economy % GDP	64	11.0
1.03 Manufacturing value added US$ millions	90	2,080.9
Driver: Technology & Innovation 0-10 (best)	70	3.7
Technology Platform 0-10 (best)	93	4.2
2.01 Mobile-cellular telephone subscriptions /100 pop.	86	89.2
2.02 LTE mobile network coverage % population		-
2.03 Internet users % pop.	47	69.3
2.04 FDI and technology transfer 1-7 (best)	86	3.8
2.05 Firm-level technology absorption 1-7 (best)	77	4.2
2.06 Impact of ICTs on new services and products 1-7 (best)	98	3.6
2.07 Cybersecurity commitment 0–1 (best)	96	0.1
Ability to Innovate 0-10 (best)	34	3.2
2.08 State of cluster development 1-7 (best)	73	3.5
2.09 Company investment in emerging technology 1–7 (best)	88	3.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	93	2.6
2.11 Companies embracing disruptive ideas 1-7 (best)	89	3.1
2.12 Multi-stakeholder collaboration 1-7 (best)	92	3.0
2.13 R&D expenditures % GDP	81	0.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	56	10.2
2.15 Patent applications applications/million pop.	67	0.31
2.16 Venture capital deal volume US$ millions	25	18,509.7
2.17 Venture capital deal volume per size of economy US$/GDP	1	1,083.4
Driver: Human Capital 0-10 (best)	78	4.2
Current Labor Force 0-10 (best)	58	5.7
3.01 Manufacturing employment % working population	21	16.0
3.02 Knowledge-intensive employment % working pop.	52	24.0
3.03 Female participation in labor force ratio	62	0.67
3.04 Mean years of schooling Years	64	9.0
3.05 Availability of scientists and engineers 1-7 (best)	91	3.4
3.06 Digital skills among population 1-7 (best)	74	3.8
Future Labor Force 0-10 (best)	98	2.7
3.07 Migration migrants/100,000 pop.	57	-1.3
3.08 Country capacity to attract and retain talent 1-7 (best)	100	1.7
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	75	3.4
3.11 Quality of vocational training 1-7 (best)	93	3.2
3.12 School life expectancy Years	57	14.2
3.13 Pupil-to-teacher ratio in primary education Ratio	48	17.2
3.14 Critical thinking in teaching 1-7 (best)	91	2.7
3.15 Active labor policies 1-7 (best)	89	2.6
3.16 On-the-job training 1-7 (best)	97	3.3
3.17 Hiring and firing practices 1-7 (best)	74	3.3

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	64	4.8
Trade 0-10 (best)	45	7.0
4.01 Trade % GDP	41	90.8
4.02 Trade tariffs % duty	63	0.05
4.03 Prevalence of non-tariff barriers 1-7 (best)	91	3.8
4.04 Logistics performance 1 – 5 (best)	83	2.6
Investment 0-10 (best)	74	1.3
4.05 Greenfield investments US$ millions	65	1,455.3
4.06 FDI inflows US$ millions	96	346.7
4.07 Domestic credit to private sector % GDP	58	53.2
Infrastructure 0-10 (best)	67	6.0
4.08 Transport infrastructure 0-100 (best)	85	31.2
4.09 Electricity infrastructure 0-100 (best)	38	88.2
Driver: Institutional Framework 0-10 (best)	82	4.2
Government 0-10 (best)	82	4.2
5.01 Regulatory efficiency 0 – 100 (best)	72	63.6
5.02 Incidence of corruption 0-100 (best)	61	39.0
5.03 Future orientation of government 1-7 (best)	98	2.3
5.04 Rule of law (2.5) - 2.0 (best)	70	-0.3
Driver: Sustainable Resources 0-10 (best)	86	4.6
Sustainability 0-10 (best)	86	4.6
6.01 Alternative and nuclear energy use % total energy use	49	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	95	1.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	70	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	77	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	4	0.0
6.06 Wastewater treatment 0 – 5 (worst)	92	0.0
Driver: Demand Environment 0-10 (best)	98	2.9
Foreign and Domestic Demand 0-10 (best)	90	3.0
7.01 Market size 0-100 (best)	90	29.7
Consumer Base 0-10 (best)	99	2.8
7.02 Buyer sophistication 1-7 (best)	100	2.1
7.03 Extent of market dominance 1-7 (best)	84	3.2

Botswana

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	2.2	**GDP per capita** US$	6,972.1
GDP US$ billions	15.0		

Key production indicators

Manufacturing value added 2010 millions US$	1,068.8	**Manufacturing value added growth** Annual %	4.0
Manufacturing value added in economy % GDP	6.4	**Medium hi-tech & hi-tech industries** % of manu. value added	16.5
Manufacturing employment % working population	2.5	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

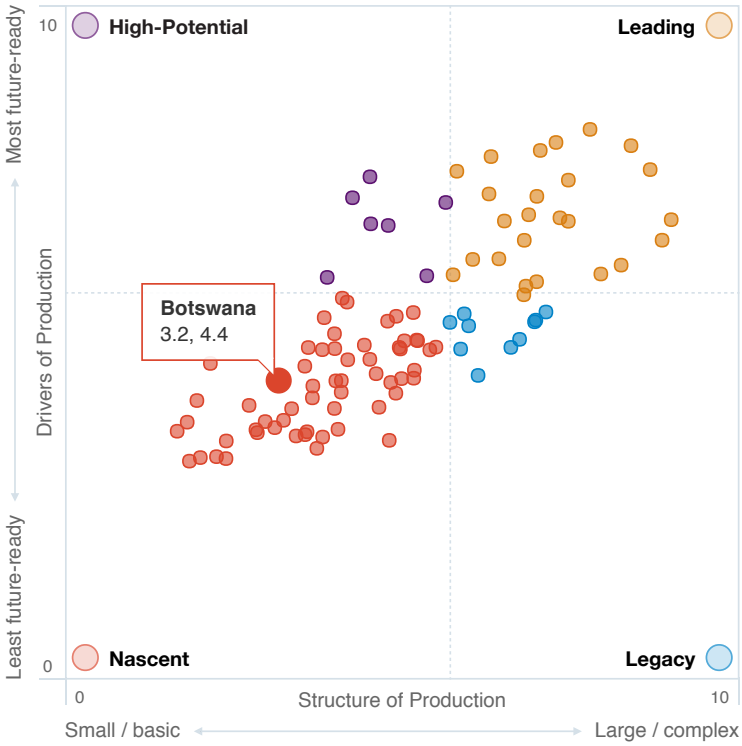
Drivers of Production 4.4

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	79th	**3.4**
Human Capital	20%	75th	**4.4**
Global Trade & Investment	20%	73rd	**4.4**
Institutional Framework	20%	37th	**6.2**
Sustainable Resources	5%	68th	**5.5**
Demand Environment	15%	94th	**3.2**

Structure of Production 3.2

Structure	Weighting	Rank	Score /10
Complexity	60%	69th	**4.4**
Scale	40%	96th	**1.3**

Archetype



Botswana

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	69	4.4
1.01 Economic complexity (2.5) – 2.5 (best)	69	-0.2
Structure: Scale 0-10 (best)	96	1.3
1.02 Manufacturing value added in economy % GDP	91	6.4
1.03 Manufacturing value added US$ millions	95	1,068.8
Driver: Technology & Innovation 0-10 (best)	79	3.4
Technology Platform 0-10 (best)	74	5.1
2.01 Mobile-cellular telephone subscriptions /100 pop.	11	158.5
2.02 LTE mobile network coverage % population	78	42.0
2.03 Internet users % pop.	79	39.4
2.04 FDI and technology transfer 1-7 (best)	75	4.0
2.05 Firm-level technology absorption 1-7 (best)	83	4.2
2.06 Impact of ICTs on new services and products 1-7 (best)	86	4.1
2.07 Cybersecurity commitment 0–1 (best)	68	0.4
Ability to Innovate 0-10 (best)	86	1.7
2.08 State of cluster development 1-7 (best)	81	3.3
2.09 Company investment in emerging technology 1–7 (best)	72	3.3
2.10 Gov't procurement of advanced technology products 1-7 (best)	23	3.8
2.11 Companies embracing disruptive ideas 1-7 (best)	60	3.4
2.12 Multi-stakeholder collaboration 1-7 (best)	68	3.5
2.13 R&D expenditures % GDP	76	0.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP	61	8.2
2.15 Patent applications applications/million pop.	99	0.00
2.16 Venture capital deal volume US$ millions	90	88.9
2.17 Venture capital deal volume per size of economy US$/GDP	75	5.8
Driver: Human Capital 0-10 (best)	75	4.4
Current Labor Force 0-10 (best)	82	4.7
3.01 Manufacturing employment % working population	100	2.5
3.02 Knowledge-intensive employment % working pop.	71	17.8
3.03 Female participation in labor force ratio	36	0.87
3.04 Mean years of schooling Years	60	9.2
3.05 Availability of scientists and engineers 1-7 (best)	85	3.5
3.06 Digital skills among population 1-7 (best)	80	3.7
Future Labor Force 0-10 (best)	48	4.1
3.07 Migration migrants/100,000 pop.	33	8.8
3.08 Country capacity to attract and retain talent 1-7 (best)	37	3.8
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	69	3.7
3.11 Quality of vocational training 1-7 (best)	58	4.0
3.12 School life expectancy Years	79	12.6
3.13 Pupil-to-teacher ratio in primary education Ratio	71	22.6
3.14 Critical thinking in teaching 1-7 (best)	53	3.3
3.15 Active labor policies 1-7 (best)	63	3.1
3.16 On-the-job training 1-7 (best)	57	4.1
3.17 Hiring and firing practices 1-7 (best)	46	3.9

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	73	4.4
Trade 0-10 (best)	34	7.7
4.01 Trade % GDP	28	105.9
4.02 Trade tariffs % duty	71	0.07
4.03 Prevalence of non-tariff barriers 1-7 (best)	59	4.4
4.04 Logistics performance 1 – 5 (best)	54	3.1
Investment 0-10 (best)	94	0.5
4.05 Greenfield investments US$ millions	94	311.8
4.06 FDI inflows US$ millions	93	361.0
4.07 Domestic credit to private sector % GDP	83	31.7
Infrastructure 0-10 (best)	84	4.9
4.08 Transport infrastructure 0-100 (best)	73	38.3
4.09 Electricity infrastructure 0-100 (best)	84	58.8
Driver: Institutional Framework 0-10 (best)	37	6.2
Government 0-10 (best)	37	6.2
5.01 Regulatory efficiency 0 – 100 (best)	42	71.8
5.02 Incidence of corruption 0-100 (best)	29	60.0
5.03 Future orientation of government 1-7 (best)	29	4.1
5.04 Rule of law (2.5) - 2.0 (best)	38	0.5
Driver: Sustainable Resources 0-10 (best)	68	5.5
Sustainability 0-10 (best)	68	5.5
6.01 Alternative and nuclear energy use % total energy use	53	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	63	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	71	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	86	0.2
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	41	1.4
6.06 Wastewater treatment 0 – 5 (worst)	84	41.0
Driver: Demand Environment 0-10 (best)	94	3.2
Foreign and Domestic Demand 0-10 (best)	94	2.7
7.01 Market size 0-100 (best)	94	27.0
Consumer Base 0-10 (best)	77	3.8
7.02 Buyer sophistication 1-7 (best)	60	3.3
7.03 Extent of market dominance 1-7 (best)	87	3.2

Brazil

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	206.1	**GDP per capita** US$	8,726.9
GDP US$ billions	1,798.6	**Unemployment rate** %	11.3

Key production indicators

Manufacturing value added 2010 millions US$	226,520.3	**Manufacturing value added growth** Annual %	-9.4
Manufacturing value added in economy % GDP	10.1	**Medium hi-tech & hi-tech industries** % of manu. value added	35.2
Manufacturing employment % working population	12.3	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

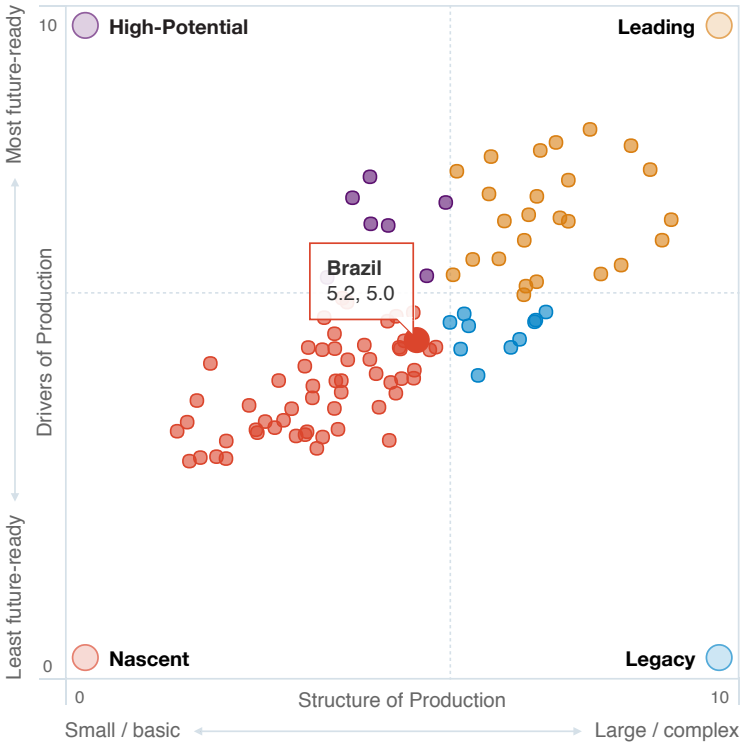
Drivers of Production 5.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	45th	**4.5**
Human Capital	20%	74th	**4.4**
Global Trade & Investment	20%	54th	**5.3**
Institutional Framework	20%	72nd	**4.5**
Sustainable Resources	5%	19th	**7.6**
Demand Environment	15%	21st	**6.1**

Structure of Production 5.2

Structure	Weighting	Rank	Score /10
Complexity	60%	54th	**5.3**
Scale	40%	31st	**5.0**

Archetype



Brazil

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Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	54	5.3
1.01 Economic complexity (2.5) – 2.5 (best)	54	0.2
Structure: Scale 0-10 (best)	31	5.0
1.02 Manufacturing value added in economy % GDP	74	10.1
1.03 Manufacturing value added US$ millions	9	226,520.3
Driver: Technology & Innovation 0-10 (best)	45	4.5
Technology Platform 0-10 (best)	51	6.2
2.01 Mobile-cellular telephone subscriptions /100 pop.	54	118.9
2.02 LTE mobile network coverage % population	72	56.5
2.03 Internet users % pop.	59	59.7
2.04 FDI and technology transfer 1-7 (best)	48	4.6
2.05 Firm-level technology absorption 1-7 (best)	52	4.6
2.06 Impact of ICTs on new services and products 1-7 (best)	54	4.6
2.07 Cybersecurity commitment 0–1 (best)	40	0.6
Ability to Innovate 0-10 (best)	37	2.8
2.08 State of cluster development 1-7 (best)	38	4.1
2.09 Company investment in emerging technology 1–7 (best)	52	3.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	89	2.7
2.11 Companies embracing disruptive ideas 1-7 (best)	38	3.7
2.12 Multi-stakeholder collaboration 1-7 (best)	61	3.6
2.13 R&D expenditures % GDP	32	1.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	47	13.5
2.15 Patent applications applications/million pop.	49	1.60
2.16 Venture capital deal volume US$ millions	17	41,425.7
2.17 Venture capital deal volume per size of economy US$/GDP	44	20.5
Driver: Human Capital 0-10 (best)	74	4.4
Current Labor Force 0-10 (best)	59	5.7
3.01 Manufacturing employment % working population	45	12.3
3.02 Knowledge-intensive employment % working pop.	58	21.6
3.03 Female participation in labor force ratio	43	0.82
3.04 Mean years of schooling Years	80	7.4
3.05 Availability of scientists and engineers 1-7 (best)	77	3.6
3.06 Digital skills among population 1-7 (best)	88	3.5
Future Labor Force 0-10 (best)	76	3.1
3.07 Migration migrants/100,000 pop.	52	-0.9
3.08 Country capacity to attract and retain talent 1-7 (best)	63	3.3
3.09 Quality of universities Count	13	22.0
3.10 Quality of math and science education 1-7 (best)	97	2.6
3.11 Quality of vocational training 1-7 (best)	86	3.5
3.12 School life expectancy Years	37	15.4
3.13 Pupil-to-teacher ratio in primary education Ratio	69	20.9
3.14 Critical thinking in teaching 1-7 (best)	92	2.7
3.15 Active labor policies 1-7 (best)	84	2.7
3.16 On-the-job training 1-7 (best)	73	3.8
3.17 Hiring and firing practices 1-7 (best)	100	1.8

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	54	5.3
Trade 0-10 (best)	99	2.1
4.01 Trade % GDP	98	24.6
4.02 Trade tariffs % duty	92	0.12
4.03 Prevalence of non-tariff barriers 1-7 (best)	99	3.4
4.04 Logistics performance 1 – 5 (best)	53	3.1
Investment 0-10 (best)	7	8.0
4.05 Greenfield investments US$ millions	8	20,682.4
4.06 FDI inflows US$ millions	5	65,114.1
4.07 Domestic credit to private sector % GDP	47	62.2
Infrastructure 0-10 (best)	75	5.6
4.08 Transport infrastructure 0-100 (best)	65	41.9
4.09 Electricity infrastructure 0-100 (best)	78	70.8
Driver: Institutional Framework 0-10 (best)	72	4.5
Government 0-10 (best)	72	4.5
5.01 Regulatory efficiency 0 – 100 (best)	85	60.2
5.02 Incidence of corruption 0-100 (best)	58	40.0
5.03 Future orientation of government 1-7 (best)	94	2.6
5.04 Rule of law (2.5) - 2.0 (best)	60	-0.1
Driver: Sustainable Resources 0-10 (best)	19	7.6
Sustainability 0-10 (best)	19	7.6
6.01 Alternative and nuclear energy use % total energy use	24	0.4
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	24	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	56	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	65	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	26	0.9
6.06 Wastewater treatment 0 – 5 (worst)	54	76.2
Driver: Demand Environment 0-10 (best)	21	6.1
Foreign and Domestic Demand 0-10 (best)	10	7.7
7.01 Market size 0-100 (best)	10	76.6
Consumer Base 0-10 (best)	45	4.5
7.02 Buyer sophistication 1-7 (best)	51	3.5
7.03 Extent of market dominance 1-7 (best)	42	4.0

Bulgaria

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	7.1	**GDP per capita** US$	7,368.5
GDP US$ billions	52.4	**Unemployment rate** %	7.7

Key production indicators

Manufacturing value added 2010 millions US$	7,293.7	**Manufacturing value added growth** Annual %	4.1
Manufacturing value added in economy % GDP	13.1	**Medium hi-tech & hi-tech industries** % of manu. value added	30.0
Manufacturing employment % working population	19.7	**CO2 emission per unit of value added** kg/USD	0.5

Readiness Overall Assessment

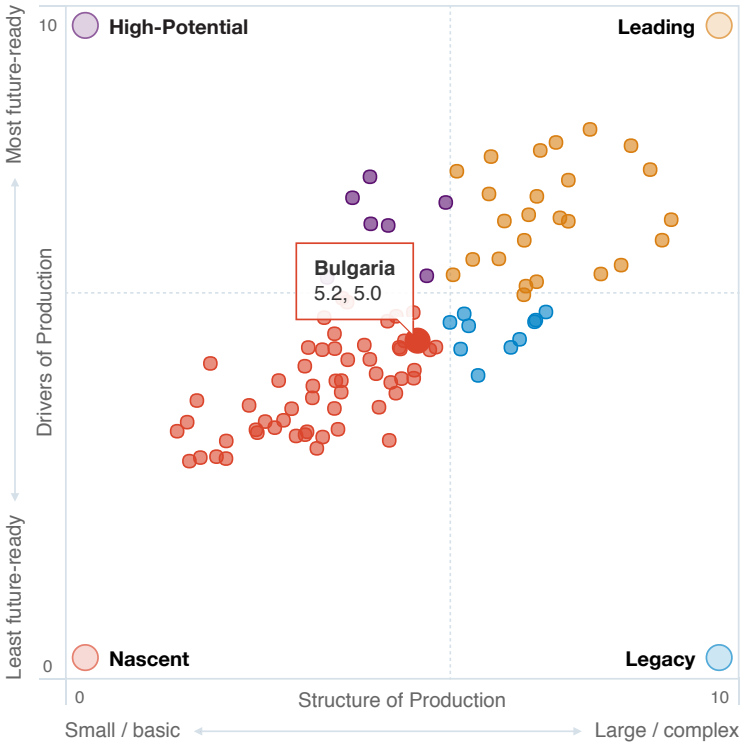
Drivers of Production 5.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	36th	**4.8**
Human Capital	20%	52nd	**5.1**
Global Trade & Investment	20%	51st	**5.4**
Institutional Framework	20%	55th	**5.0**
Sustainable Resources	5%	30th	**6.9**
Demand Environment	15%	60th	**4.3**

Structure of Production 5.2

Structure	Weighting	Rank	Score /10
Complexity	60%	38th	**6.3**
Scale	40%	61st	**3.7**

Archetype



Bulgaria

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	38	6.3
1.01 Economic complexity (2.5) – 2.5 (best)	38	0.6
Structure: Scale 0-10 (best)	61	3.7
1.02 Manufacturing value added in economy % GDP	45	13.9
1.03 Manufacturing value added US$ millions	66	7,293.7
Driver: Technology & Innovation 0-10 (best)	36	4.8
Technology Platform 0-10 (best)	44	6.4
2.01 Mobile-cellular telephone subscriptions /100 pop.	41	127.2
2.02 LTE mobile network coverage % population	50	86.8
2.03 Internet users % pop.	58	59.8
2.04 FDI and technology transfer 1-7 (best)	43	4.7
2.05 Firm-level technology absorption 1-7 (best)	57	4.5
2.06 Impact of ICTs on new services and products 1-7 (best)	51	4.7
2.07 Cybersecurity commitment 0–1 (best)	45	0.6
Ability to Innovate 0-10 (best)	35	3.1
2.08 State of cluster development 1-7 (best)	60	3.7
2.09 Company investment in emerging technology 1–7 (best)	45	3.7
2.10 Gov't procurement of advanced technology products 1-7 (best)	50	3.3
2.11 Companies embracing disruptive ideas 1-7 (best)	65	3.4
2.12 Multi-stakeholder collaboration 1-7 (best)	65	3.5
2.13 R&D expenditures % GDP	39	1.0
2.14 Scientific and technical publications Number per Billion PPP$ GDP	43	15.3
2.15 Patent applications applications/million pop.	40	3.86
2.16 Venture capital deal volume US$ millions	47	3,171.9
2.17 Venture capital deal volume per size of economy US$/GDP	18	59.7
Driver: Human Capital 0-10 (best)	52	5.1
Current Labor Force 0-10 (best)	39	6.9
3.01 Manufacturing employment % working population	5	19.7
3.02 Knowledge-intensive employment % working pop.	37	32.3
3.03 Female participation in labor force ratio	19	0.94
3.04 Mean years of schooling Years	41	10.8
3.05 Availability of scientists and engineers 1-7 (best)	80	3.6
3.06 Digital skills among population 1-7 (best)	72	3.8
Future Labor Force 0-10 (best)	72	3.3
3.07 Migration migrants/100,000 pop.	82	-7.0
3.08 Country capacity to attract and retain talent 1-7 (best)	88	2.4
3.09 Quality of universities Count	62	1.0
3.10 Quality of math and science education 1-7 (best)	64	3.8
3.11 Quality of vocational training 1-7 (best)	87	3.5
3.12 School life expectancy Years	49	14.9
3.13 Pupil-to-teacher ratio in primary education Ratio	54	17.7
3.14 Critical thinking in teaching 1-7 (best)	76	3.0
3.15 Active labor policies 1-7 (best)	52	3.4
3.16 On-the-job training 1-7 (best)	90	3.5
3.17 Hiring and firing practices 1-7 (best)	50	3.7

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	51	5.4
Trade 0-10 (best)	23	8.2
4.01 Trade % GDP	17	124.1
4.02 Trade tariffs % duty	17	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	68	4.2
4.04 Logistics performance 1 – 5 (best)	66	2.9
Investment 0-10 (best)	72	1.4
4.05 Greenfield investments US$ millions	61	1,698.8
4.06 FDI inflows US$ millions	68	1,572.2
4.07 Domestic credit to private sector % GDP	59	52.8
Infrastructure 0-10 (best)	50	6.6
4.08 Transport infrastructure 0-100 (best)	62	44.1
4.09 Electricity infrastructure 0-100 (best)	41	87.4
Driver: Institutional Framework 0-10 (best)	55	5.0
Government 0-10 (best)	55	5.0
5.01 Regulatory efficiency 0 – 100 (best)	37	72.8
5.02 Incidence of corruption 0-100 (best)	54	41.0
5.03 Future orientation of government 1-7 (best)	73	3.2
5.04 Rule of law (2.5) - 2.0 (best)	58	0.0
Driver: Sustainable Resources 0-10 (best)	30	6.9
Sustainability 0-10 (best)	30	6.9
6.01 Alternative and nuclear energy use % total energy use	31	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	86	0.8
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	58	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	74	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	36	1.3
6.06 Wastewater treatment 0 – 5 (worst)	29	88.6
Driver: Demand Environment 0-10 (best)	60	4.3
Foreign and Domestic Demand 0-10 (best)	61	4.5
7.01 Market size 0-100 (best)	61	44.7
Consumer Base 0-10 (best)	68	4.1
7.02 Buyer sophistication 1-7 (best)	79	3.1
7.03 Extent of market dominance 1-7 (best)	51	3.8

Cambodia

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	15.8	**GDP per capita** US$	1,229.6
GDP US$ billions	19.4		

Key production indicators

Manufacturing value added 2010 millions US$	2,994.5	**Manufacturing value added growth** Annual %	11.6
Manufacturing value added in economy % GDP	17.6	**Medium hi-tech & hi-tech industries** % of manu. value added	0.3
Manufacturing employment % working population	10.9	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

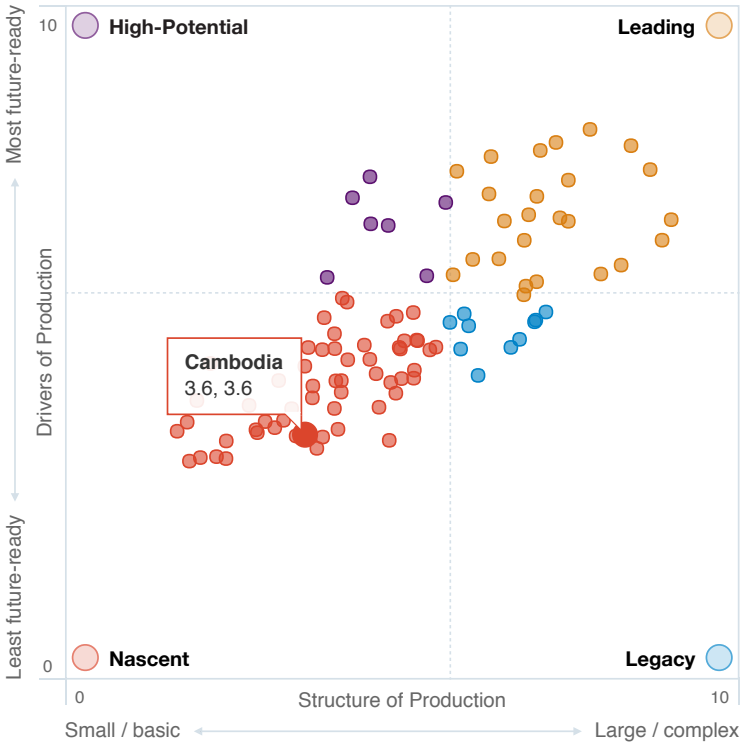
Drivers of Production 3.6

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	83rd	**3.3**
Human Capital	20%	86th	**3.7**
Global Trade & Investment	20%	79th	**4.0**
Institutional Framework	20%	100th	**3.1**
Sustainable Resources	5%	90th	**4.5**
Demand Environment	15%	75th	**3.9**

Structure of Production 3.6

Structure	Weighting	Rank	Score /10
Complexity	60%	84th	**3.4**
Scale	40%	58th	**3.8**

Archetype



Cambodia

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	84	3.4
1.01 Economic complexity (2.5) – 2.5 (best)	84	-0.7
Structure: Scale 0-10 (best)	58	3.8
1.02 Manufacturing value added in economy % GDP	24	17.6
1.03 Manufacturing value added US$ millions	82	2,994.5
Driver: Technology & Innovation 0-10 (best)	83	3.3
Technology Platform 0-10 (best)	83	4.7
2.01 Mobile-cellular telephone subscriptions /100 pop.	47	124.9
2.02 LTE mobile network coverage % population	76	50.0
2.03 Internet users % pop.	91	25.6
2.04 FDI and technology transfer 1-7 (best)	49	4.6
2.05 Firm-level technology absorption 1-7 (best)	75	4.2
2.06 Impact of ICTs on new services and products 1-7 (best)	66	4.5
2.07 Cybersecurity commitment 0–1 (best)	86	0.3
Ability to Innovate 0-10 (best)	75	1.9
2.08 State of cluster development 1-7 (best)	43	4.0
2.09 Company investment in emerging technology 1–7 (best)	47	3.7
2.10 Gov't procurement of advanced technology products 1-7 (best)	62	3.2
2.11 Companies embracing disruptive ideas 1-7 (best)	63	3.4
2.12 Multi-stakeholder collaboration 1-7 (best)	64	3.5
2.13 R&D expenditures % GDP	92	0.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	79	5.0
2.15 Patent applications applications/million pop.	88	0.02
2.16 Venture capital deal volume US$ millions	74	372.6
2.17 Venture capital deal volume per size of economy US$/GDP	45	20.4
Driver: Human Capital 0-10 (best)	86	3.7
Current Labor Force 0-10 (best)	87	4.5
3.01 Manufacturing employment % working population	62	10.9
3.02 Knowledge-intensive employment % working pop.	87	4.1
3.03 Female participation in labor force ratio	53	0.75
3.04 Mean years of schooling Years	98	4.7
3.05 Availability of scientists and engineers 1-7 (best)	96	3.2
3.06 Digital skills among population 1-7 (best)	89	3.5
Future Labor Force 0-10 (best)	80	3.0
3.07 Migration migrants/100,000 pop.	89	-11.2
3.08 Country capacity to attract and retain talent 1-7 (best)	38	3.7
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	86	3.1
3.11 Quality of vocational training 1-7 (best)	92	3.3
3.12 School life expectancy Years	92	10.9
3.13 Pupil-to-teacher ratio in primary education Ratio	95	45.5
3.14 Critical thinking in teaching 1-7 (best)	49	3.5
3.15 Active labor policies 1-7 (best)	68	3.0
3.16 On-the-job training 1-7 (best)	86	3.7
3.17 Hiring and firing practices 1-7 (best)	27	4.3

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	79	4.0
Trade 0-10 (best)	44	7.3
4.01 Trade % GDP	15	127.0
4.02 Trade tariffs % duty	79	0.09
4.03 Prevalence of non-tariff barriers 1-7 (best)	76	4.1
4.04 Logistics performance 1 – 5 (best)	67	2.9
Investment 0-10 (best)	51	2.2
4.05 Greenfield investments US$ millions	43	3,577.0
4.06 FDI inflows US$ millions	62	1,809.0
4.07 Domestic credit to private sector % GDP	42	69.7
Infrastructure 0-10 (best)	99	2.4
4.08 Transport infrastructure 0-100 (best)	95	26.8
4.09 Electricity infrastructure 0-100 (best)	99	20.8
Driver: Institutional Framework 0-10 (best)	100	3.1
Government 0-10 (best)	100	3.1
5.01 Regulatory efficiency 0 – 100 (best)	92	57.5
5.02 Incidence of corruption 0-100 (best)	100	21.0
5.03 Future orientation of government 1-7 (best)	67	3.4
5.04 Rule of law (2.5) - 2.0 (best)	99	-1.1
Driver: Sustainable Resources 0-10 (best)	90	4.5
Sustainability 0-10 (best)	90	4.5
6.01 Alternative and nuclear energy use % total energy use	9	0.7
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	59	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	98	1.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	91	0.3
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	18	0.4
6.06 Wastewater treatment 0 – 5 (worst)	92	0.0
Driver: Demand Environment 0-10 (best)	75	3.9
Foreign and Domestic Demand 0-10 (best)	80	3.5
7.01 Market size 0-100 (best)	80	34.8
Consumer Base 0-10 (best)	49	4.4
7.02 Buyer sophistication 1-7 (best)	43	3.7
7.03 Extent of market dominance 1-7 (best)	66	3.6

Cameroon

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Key economic indicators

Population millions	23.7	**GDP per capita** US$	1,238.5
GDP US$ billions	29.3		

Key production indicators

Manufacturing value added 2010 millions US$	4,427.2	**Medium hi-tech & hi-tech industries** % of manu. value added	7.6
Manufacturing value added in economy % GDP	13.9	**CO2 emission per unit of value added** kg/USD	0.1
Manufacturing value added growth Annual %	3.3		

Readiness Overall Assessment

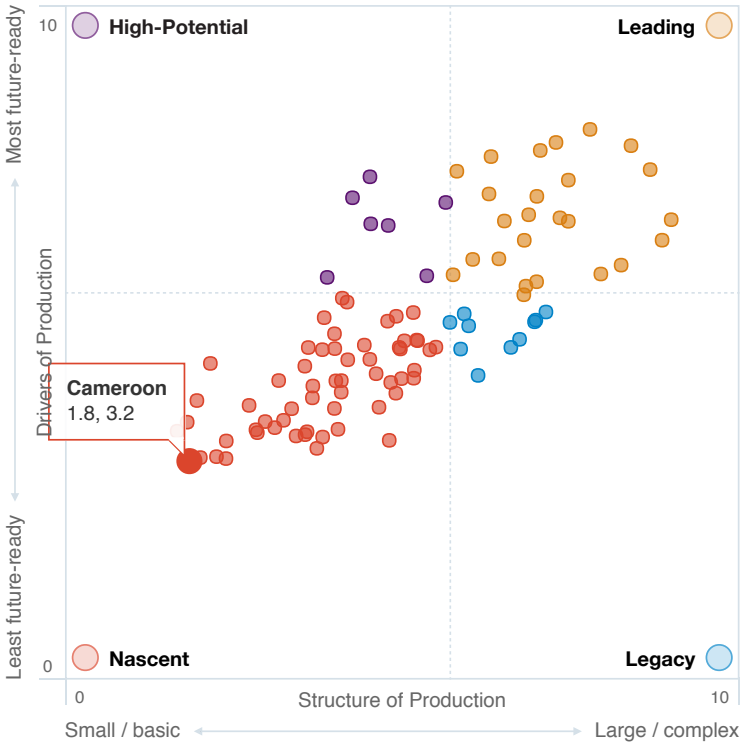
Drivers of Production 3.2

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	89th	**3.1**
Human Capital	20%	97th	**3.2**
Global Trade & Investment	20%	95th	**2.6**
Institutional Framework	20%	95th	**3.4**
Sustainable Resources	5%	77th	**5.0**
Demand Environment	15%	83rd	**3.6**

Structure of Production 1.8

Structure	Weighting	Rank	Score /10
Complexity	60%	99th	**0.8**
Scale	40%	69th	**3.4**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	99	0.8
1.01 Economic complexity (2.5) – 2.5 (best)	99	-1.9
Structure: Scale 0-10 (best)	69	3.4
1.02 Manufacturing value added in economy % GDP	47	13.9
1.03 Manufacturing value added US$ millions	75	4,427.2
Driver: Technology & Innovation 0-10 (best)	89	3.1
Technology Platform 0-10 (best)	85	4.6
2.01 Mobile-cellular telephone subscriptions /100 pop.	98	68.1
2.02 LTE mobile network coverage % population	68	64.1
2.03 Internet users % pop.	94	25.0
2.04 FDI and technology transfer 1-7 (best)	94	3.6
2.05 Firm-level technology absorption 1-7 (best)	94	4.0
2.06 Impact of ICTs on new services and products 1-7 (best)	77	4.3
2.07 Cybersecurity commitment 0–1 (best)	72	0.4
Ability to Innovate 0-10 (best)	90	1.7
2.08 State of cluster development 1-7 (best)	85	3.2
2.09 Company investment in emerging technology 1–7 (best)	75	3.3
2.10 Gov't procurement of advanced technology products 1-7 (best)	61	3.2
2.11 Companies embracing disruptive ideas 1-7 (best)	81	3.1
2.12 Multi-stakeholder collaboration 1-7 (best)	69	3.5
2.13 R&D expenditures % GDP	71	0.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP	54	10.6
2.15 Patent applications applications/million pop.	91	0.02
2.16 Venture capital deal volume US$ millions	85	146.7
2.17 Venture capital deal volume per size of economy US$/GDP	80	5.2
Driver: Human Capital 0-10 (best)	97	3.2
Current Labor Force 0-10 (best)	97	3.4
3.01 Manufacturing employment % working population	90	5.6
3.02 Knowledge-intensive employment % working pop.		No data
3.03 Female participation in labor force ratio	86	0.37
3.04 Mean years of schooling Years	91	6.1
3.05 Availability of scientists and engineers 1-7 (best)	83	3.6
3.06 Digital skills among population 1-7 (best)	76	3.8
Future Labor Force 0-10 (best)	89	2.9
3.07 Migration migrants/100,000 pop.	62	-2.1
3.08 Country capacity to attract and retain talent 1-7 (best)	82	2.6
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	50	4.3
3.11 Quality of vocational training 1-7 (best)	49	4.1
3.12 School life expectancy Years	83	12.2
3.13 Pupil-to-teacher ratio in primary education Ratio	93	41.5
3.14 Critical thinking in teaching 1-7 (best)	64	3.2
3.15 Active labor policies 1-7 (best)	85	2.7
3.16 On-the-job training 1-7 (best)	59	4.1
3.17 Hiring and firing practices 1-7 (best)	44	3.9

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	95	2.6
Trade 0-10 (best)	91	3.2
4.01 Trade % GDP	76	51.4
4.02 Trade tariffs % duty	99	0.16
4.03 Prevalence of non-tariff barriers 1-7 (best)	92	3.8
4.04 Logistics performance 1 – 5 (best)	97	2.1
Investment 0-10 (best)	99	0.1
4.05 Greenfield investments US$ millions	84	600.7
4.06 FDI inflows US$ millions	88	521.7
4.07 Domestic credit to private sector % GDP	95	15.6
Infrastructure 0-10 (best)	89	4.4
4.08 Transport infrastructure 0-100 (best)	100	22.8
4.09 Electricity infrastructure 0-100 (best)	82	65.5
Driver: Institutional Framework 0-10 (best)	95	3.4
Government 0-10 (best)	95	3.4
5.01 Regulatory efficiency 0 – 100 (best)	93	57.4
5.02 Incidence of corruption 0-100 (best)	96	26.0
5.03 Future orientation of government 1-7 (best)	50	3.7
5.04 Rule of law (2.5) - 2.0 (best)	95	-1.0
Driver: Sustainable Resources 0-10 (best)	77	5.0
Sustainability 0-10 (best)	77	5.0
6.01 Alternative and nuclear energy use % total energy use	8	0.7
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	34	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	80	0.3
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	99	2.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	8	0.1
6.06 Wastewater treatment 0 – 5 (worst)	92	0.0
Driver: Demand Environment 0-10 (best)	83	3.6
Foreign and Domestic Demand 0-10 (best)	81	3.5
7.01 Market size 0-100 (best)	81	34.5
Consumer Base 0-10 (best)	76	3.8
7.02 Buyer sophistication 1-7 (best)	96	2.7
7.03 Extent of market dominance 1-7 (best)	47	3.9

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Key economic indicators

Population millions	36.2	**GDP per capita** US$	42,210.1
GDP US$ billions	1,529.2	**Unemployment rate** %	7.0

Key production indicators

Manufacturing value added 2010 millions US$	170,959.2	**Manufacturing value added growth** Annual %	-1.7
Manufacturing value added in economy % GDP	9.5	**Medium hi-tech & hi-tech industries** % of manu. value added	30.6
Manufacturing employment % working population	9.4	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

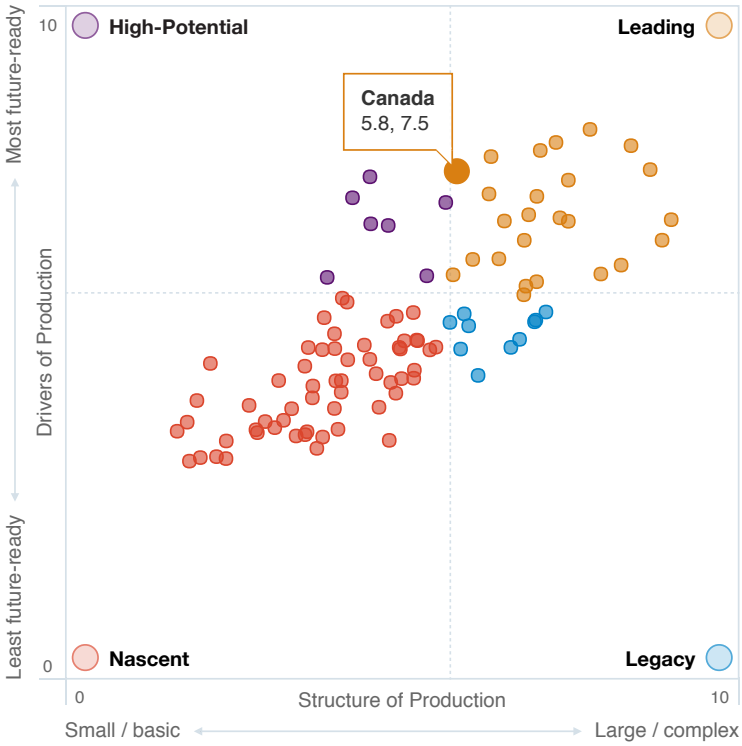
Drivers of Production 7.5

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	10th	**7.1**
Human Capital	20%	4th	**7.9**
Global Trade & Investment	20%	6th	**7.5**
Institutional Framework	20%	10th	**8.5**
Sustainable Resources	5%	16th	**7.7**
Demand Environment	15%	12th	**6.4**

Structure of Production 5.8

Structure	Weighting	Rank	Score /10
Complexity	60%	34th	**6.5**
Scale	40%	34th	**4.8**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	34	6.5
1.01 Economic complexity (2.5) – 2.5 (best)	34	0.7
Structure: Scale 0-10 (best)	34	4.8
1.02 Manufacturing value added in economy % GDP	80	9.5
1.03 Manufacturing value added US$ millions	14	170,959.2
Driver: Technology & Innovation 0-10 (best)	10	7.1
Technology Platform 0-10 (best)	15	7.9
2.01 Mobile-cellular telephone subscriptions /100 pop.	90	84.1
2.02 LTE mobile network coverage % population	28	97.4
2.03 Internet users % pop.	11	89.8
2.04 FDI and technology transfer 1-7 (best)	18	5.2
2.05 Firm-level technology absorption 1-7 (best)	24	5.3
2.06 Impact of ICTs on new services and products 1-7 (best)	17	5.6
2.07 Cybersecurity commitment 0–1 (best)	10	0.8
Ability to Innovate 0-10 (best)	8	6.3
2.08 State of cluster development 1-7 (best)	22	4.6
2.09 Company investment in emerging technology 1–7 (best)	21	4.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	52	3.3
2.11 Companies embracing disruptive ideas 1-7 (best)	24	4.0
2.12 Multi-stakeholder collaboration 1-7 (best)	21	4.5
2.13 R&D expenditures % GDP	26	1.6
2.14 Scientific and technical publications Number per Billion PPP$ GDP	16	37.2
2.15 Patent applications applications/million pop.	14	95.73
2.16 Venture capital deal volume US$ millions	5	116,857.8
2.17 Venture capital deal volume per size of economy US$/GDP	14	71.9
Driver: Human Capital 0-10 (best)	4	7.9
Current Labor Force 0-10 (best)	7	8.5
3.01 Manufacturing employment % working population	73	9.5
3.02 Knowledge-intensive employment % working pop.	16	43.7
3.03 Female participation in labor force ratio	13	0.98
3.04 Mean years of schooling Years	5	13.1
3.05 Availability of scientists and engineers 1-7 (best)	4	5.4
3.06 Digital skills among population 1-7 (best)	16	5.3
Future Labor Force 0-10 (best)	3	7.3
3.07 Migration migrants/100,000 pop.	10	30.7
3.08 Country capacity to attract and retain talent 1-7 (best)	9	5.1
3.09 Quality of universities Count	10	26.0
3.10 Quality of math and science education 1-7 (best)	14	5.3
3.11 Quality of vocational training 1-7 (best)	12	5.3
3.12 School life expectancy Years	23	16.3
3.13 Pupil-to-teacher ratio in primary education Ratio	51	17.4
3.14 Critical thinking in teaching 1-7 (best)	13	4.8
3.15 Active labor policies 1-7 (best)	16	4.7
3.16 On-the-job training 1-7 (best)	15	5.4
3.17 Hiring and firing practices 1-7 (best)	9	4.9

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	6	7.5
Trade 0-10 (best)	55	6.3
4.01 Trade % GDP	60	64.4
4.02 Trade tariffs % duty	38	0.03
4.03 Prevalence of non-tariff barriers 1-7 (best)	43	4.6
4.04 Logistics performance 1 – 5 (best)	14	3.9
Investment 0-10 (best)	5	8.5
4.05 Greenfield investments US$ millions	13	14,224.6
4.06 FDI inflows US$ millions	8	51,146.8
4.07 Domestic credit to private sector % GDP	2	218.3
Infrastructure 0-10 (best)	25	7.6
4.08 Transport infrastructure 0-100 (best)	18	65.6
4.09 Electricity infrastructure 0-100 (best)	42	86.7
Driver: Institutional Framework 0-10 (best)	10	8.5
Government 0-10 (best)	10	8.5
5.01 Regulatory efficiency 0 – 100 (best)	16	77.6
5.02 Incidence of corruption 0-100 (best)	9	82.0
5.03 Future orientation of government 1-7 (best)	18	4.7
5.04 Rule of law (2.5) - 2.0 (best)	8	1.8
Driver: Sustainable Resources 0-10 (best)	16	7.7
Sustainability 0-10 (best)	16	7.7
6.01 Alternative and nuclear energy use % total energy use	41	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	49	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	32	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	37	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	34	1.2
6.06 Wastewater treatment 0 – 5 (worst)	27	89.8
Driver: Demand Environment 0-10 (best)	12	6.4
Foreign and Domestic Demand 0-10 (best)	16	7.1
7.01 Market size 0-100 (best)	16	71.4
Consumer Base 0-10 (best)	21	5.7
7.02 Buyer sophistication 1-7 (best)	18	4.4
7.03 Extent of market dominance 1-7 (best)	22	4.4

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Key economic indicators

Population millions	18.2	**GDP per capita** US$	13,576.0
GDP US$ billions	247.0	**Unemployment rate** %	6.5

Key production indicators

Manufacturing value added 2010 millions US$	26,603.1	**Manufacturing value added growth** Annual %	0.1
Manufacturing value added in economy % GDP	9.9	**Medium hi-tech & hi-tech industries** % of manu. value added	13.7
Manufacturing employment % working population	11.0	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

Drivers of Production 5.6

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	50th	**4.4**
Human Capital	20%	46th	**5.3**
Global Trade & Investment	20%	31st	**6.0**
Institutional Framework	20%	24th	**6.9**
Sustainable Resources	5%	31st	**6.9**
Demand Environment	15%	48th	**4.9**

Structure of Production 4.2

Structure	Weighting	Rank	Score /10
Complexity	60%	67th	**4.5**
Scale	40%	60th	**3.8**

Archetype

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	67	4.5
1.01 Economic complexity (2.5) – 2.5 (best)	67	-0.2
Structure: Scale 0-10 (best)	60	3.8
1.02 Manufacturing value added in economy % GDP	76	9.9
1.03 Manufacturing value added US$ millions	48	26,603.1
Driver: Technology & Innovation 0-10 (best)	50	4.4
Technology Platform 0-10 (best)	54	6.1
2.01 Mobile-cellular telephone subscriptions /100 pop.	43	127.1
2.02 LTE mobile network coverage % population	56	79.0
2.03 Internet users % pop.	53	66.0
2.04 FDI and technology transfer 1-7 (best)	19	5.2
2.05 Firm-level technology absorption 1-7 (best)	33	5.0
2.06 Impact of ICTs on new services and products 1-7 (best)	26	5.3
2.07 Cybersecurity commitment 0–1 (best)	74	0.4
Ability to Innovate 0-10 (best)	42	2.6
2.08 State of cluster development 1-7 (best)	77	3.4
2.09 Company investment in emerging technology 1–7 (best)	64	3.4
2.10 Gov't procurement of advanced technology products 1-7 (best)	82	2.8
2.11 Companies embracing disruptive ideas 1-7 (best)	79	3.2
2.12 Multi-stakeholder collaboration 1-7 (best)	57	3.6
2.13 R&D expenditures % GDP	68	0.4
2.14 Scientific and technical publications Number per Billion PPP$ GDP	36	18.5
2.15 Patent applications applications/million pop.	44	2.93
2.16 Venture capital deal volume US$ millions	31	10,963.6
2.17 Venture capital deal volume per size of economy US$/GDP	23	43.8
Driver: Human Capital 0-10 (best)	46	5.3
Current Labor Force 0-10 (best)	45	6.4
3.01 Manufacturing employment % working population	60	11.0
3.02 Knowledge-intensive employment % working pop.	46	25.0
3.03 Female participation in labor force ratio	60	0.68
3.04 Mean years of schooling Years	49	10.0
3.05 Availability of scientists and engineers 1-7 (best)	21	4.8
3.06 Digital skills among population 1-7 (best)	57	4.2
Future Labor Force 0-10 (best)	46	4.2
3.07 Migration migrants/100,000 pop.	44	1.7
3.08 Country capacity to attract and retain talent 1-7 (best)	16	4.6
3.09 Quality of universities Count	18	11.0
3.10 Quality of math and science education 1-7 (best)	76	3.4
3.11 Quality of vocational training 1-7 (best)	24	4.7
3.12 School life expectancy Years	21	16.5
3.13 Pupil-to-teacher ratio in primary education Ratio	65	19.5
3.14 Critical thinking in teaching 1-7 (best)	79	3.0
3.15 Active labor policies 1-7 (best)	62	3.1
3.16 On-the-job training 1-7 (best)	31	4.6
3.17 Hiring and firing practices 1-7 (best)	88	3.0

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	31	6.0
Trade 0-10 (best)	67	5.7
4.01 Trade % GDP	73	56.1
4.02 Trade tariffs % duty	41	0.03
4.03 Prevalence of non-tariff barriers 1-7 (best)	7	5.3
4.04 Logistics performance 1 – 5 (best)	41	3.3
Investment 0-10 (best)	18	5.3
4.05 Greenfield investments US$ millions	24	8,822.0
4.06 FDI inflows US$ millions	17	19,105.7
4.07 Domestic credit to private sector % GDP	20	112.1
Infrastructure 0-10 (best)	37	7.0
4.08 Transport infrastructure 0-100 (best)	51	48.5
4.09 Electricity infrastructure 0-100 (best)	29	92.0
Driver: Institutional Framework 0-10 (best)	24	6.9
Government 0-10 (best)	24	6.9
5.01 Regulatory efficiency 0 – 100 (best)	36	72.9
5.02 Incidence of corruption 0-100 (best)	22	66.0
5.03 Future orientation of government 1-7 (best)	61	3.5
5.04 Rule of law (2.5) - 2.0 (best)	23	1.1
Driver: Sustainable Resources 0-10 (best)	31	6.9
Sustainability 0-10 (best)	31	6.9
6.01 Alternative and nuclear energy use % total energy use	45	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	44	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	23	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	31	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	68	3.2
6.06 Wastewater treatment 0 – 5 (worst)	15	94.3
Driver: Demand Environment 0-10 (best)	48	4.9
Foreign and Domestic Demand 0-10 (best)	44	5.5
7.01 Market size 0-100 (best)	44	55.0
Consumer Base 0-10 (best)	56	4.3
7.02 Buyer sophistication 1-7 (best)	29	3.9
7.03 Extent of market dominance 1-7 (best)	86	3.2

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Key economic indicators

Population millions	1,382.7	**GDP per capita** US$	8,113.3
GDP US$ billions	11,218.3	**Unemployment rate** %	4.0

Key production indicators

Manufacturing value added 2010 millions US$	2,999,885.2	**Medium hi-tech & hi-tech industries** % of manu. value added	41.4
Manufacturing value added in economy % GDP	32.1	**CO2 emission per unit of value added** kg/USD	1.1
Manufacturing value added growth Annual %	6.5		

Readiness Overall Assessment

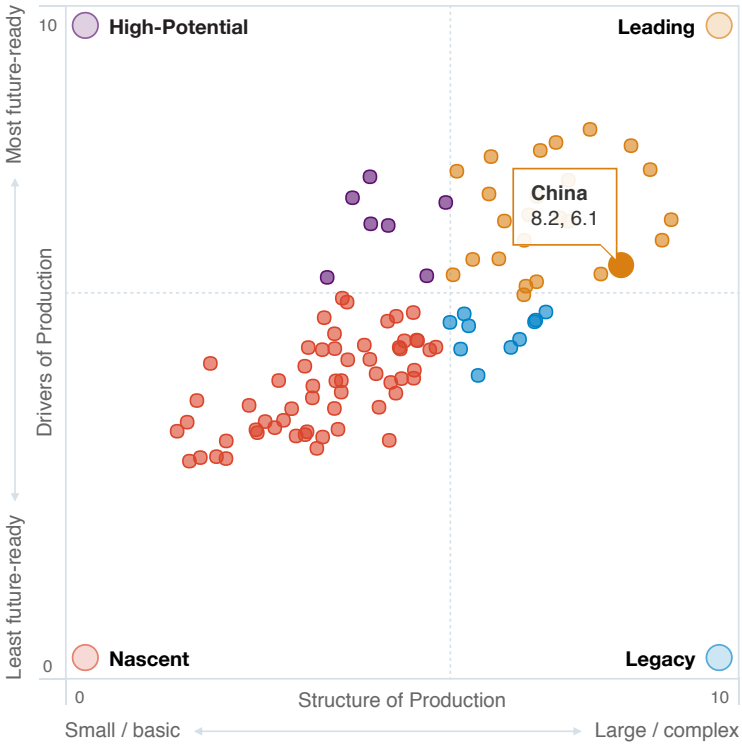
Drivers of Production 6.1

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	25th	**5.7**
Human Capital	20%	40th	**5.6**
Global Trade & Investment	20%	9th	**7.2**
Institutional Framework	20%	61st	**4.9**
Sustainable Resources	5%	66th	**5.5**
Demand Environment	15%	2nd	**7.9**

Structure of Production 8.2

Structure	Weighting	Rank	Score /10
Complexity	60%	27th	**7.1**
Scale	40%	1st	**10.0**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	27	7.1
1.01 Economic complexity (2.5) – 2.5 (best)	27	0.9
Structure: Scale 0-10 (best)	1	10.0
1.02 Manufacturing value added in economy % GDP	1	32.1
1.03 Manufacturing value added US$ millions	1	2,999,885.2
Driver: Technology & Innovation 0-10 (best)	25	5.7
Technology Platform 0-10 (best)	43	6.4
2.01 Mobile-cellular telephone subscriptions /100 pop.	82	96.9
2.02 LTE mobile network coverage % population	30	97.0
2.03 Internet users % pop.	70	53.2
2.04 FDI and technology transfer 1-7 (best)	45	4.7
2.05 Firm-level technology absorption 1-7 (best)	51	4.6
2.06 Impact of ICTs on new services and products 1-7 (best)	49	4.7
2.07 Cybersecurity commitment 0–1 (best)	35	0.6
Ability to Innovate 0-10 (best)	20	5.0
2.08 State of cluster development 1-7 (best)	25	4.6
2.09 Company investment in emerging technology 1–7 (best)	25	4.4
2.10 Gov't procurement of advanced technology products 1-7 (best)	8	4.5
2.11 Companies embracing disruptive ideas 1-7 (best)	20	4.2
2.12 Multi-stakeholder collaboration 1-7 (best)	23	4.4
2.13 R&D expenditures % GDP	18	2.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	46	14.1
2.15 Patent applications applications/million pop.	28	10.77
2.16 Venture capital deal volume US$ millions	3	212,728.4
2.17 Venture capital deal volume per size of economy US$/GDP	47	19.5
Driver: Human Capital 0-10 (best)	40	5.6
Current Labor Force 0-10 (best)	48	6.1
3.01 Manufacturing employment % working population	69	10.2
3.02 Knowledge-intensive employment % working pop.		No data
3.03 Female participation in labor force ratio	55	0.74
3.04 Mean years of schooling Years	79	7.6
3.05 Availability of scientists and engineers 1-7 (best)	28	4.7
3.06 Digital skills among population 1-7 (best)	34	4.7
Future Labor Force 0-10 (best)	31	5.0
3.07 Migration migrants/100,000 pop.	55	-1.1
3.08 Country capacity to attract and retain talent 1-7 (best)	23	4.4
3.09 Quality of universities Count	6	39.0
3.10 Quality of math and science education 1-7 (best)	43	4.5
3.11 Quality of vocational training 1-7 (best)	31	4.5
3.12 School life expectancy Years	58	14.0
3.13 Pupil-to-teacher ratio in primary education Ratio	40	16.3
3.14 Critical thinking in teaching 1-7 (best)	20	4.4
3.15 Active labor policies 1-7 (best)	21	4.5
3.16 On-the-job training 1-7 (best)	36	4.5
3.17 Hiring and firing practices 1-7 (best)	19	4.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	9	7.2
Trade 0-10 (best)	88	3.5
4.01 Trade % GDP	90	37.1
4.02 Trade tariffs % duty	90	0.12
4.03 Prevalence of non-tariff barriers 1-7 (best)	49	4.5
4.04 Logistics performance 1 – 5 (best)	27	3.6
Investment 0-10 (best)	1	10.0
4.05 Greenfield investments US$ millions	1	73,665.5
4.06 FDI inflows US$ millions	2	128,560.2
4.07 Domestic credit to private sector % GDP	9	156.7
Infrastructure 0-10 (best)	16	8.1
4.08 Transport infrastructure 0-100 (best)	17	68.0
4.09 Electricity infrastructure 0-100 (best)	17	94.4
Driver: Institutional Framework 0-10 (best)	61	4.9
Government 0-10 (best)	61	4.9
5.01 Regulatory efficiency 0 – 100 (best)	73	63.0
5.02 Incidence of corruption 0-100 (best)	58	40.0
5.03 Future orientation of government 1-7 (best)	26	4.4
5.04 Rule of law (2.5) - 2.0 (best)	67	-0.2
Driver: Sustainable Resources 0-10 (best)	66	5.5
Sustainability 0-10 (best)	66	5.5
6.01 Alternative and nuclear energy use % total energy use	68	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	91	1.0
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	41	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	45	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	60	2.9
6.06 Wastewater treatment 0 – 5 (worst)	51	78.1
Driver: Demand Environment 0-10 (best)	2	7.9
Foreign and Domestic Demand 0-10 (best)	1	10.0
7.01 Market size 0-100 (best)	1	100.0
Consumer Base 0-10 (best)	15	5.9
7.02 Buyer sophistication 1-7 (best)	14	4.5
7.03 Extent of market dominance 1-7 (best)	20	4.5

Colombia

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	48.7	**GDP per capita** US$	5,792.2
GDP US$ billions	282.4	**Unemployment rate** %	9.2

Key production indicators

Manufacturing value added 2010 millions US$	39,313.1	**Manufacturing value added growth** Annual %	0.2
Manufacturing value added in economy % GDP	10.7	**Medium hi-tech & hi-tech industries** % of manu. value added	20.9
Manufacturing employment % working population	11.8	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

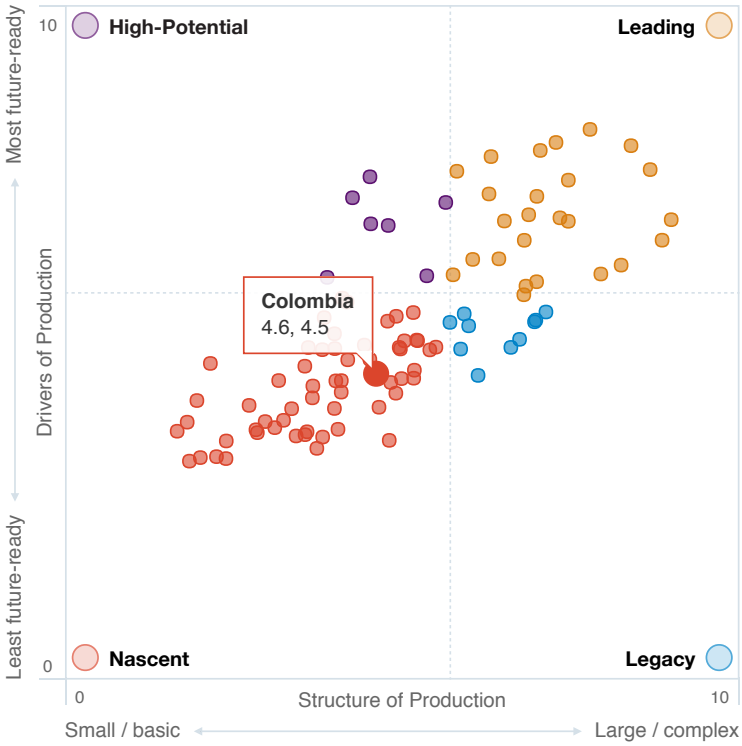
Drivers of Production 4.5

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	60th	**4.0**
Human Capital	20%	65th	**4.6**
Global Trade & Investment	20%	80th	**3.9**
Institutional Framework	20%	67th	**4.6**
Sustainable Resources	5%	20th	**7.5**
Demand Environment	15%	46th	**4.9**

Structure of Production 4.6

Structure	Weighting	Rank	Score /10
Complexity	60%	59th	**4.9**
Scale	40%	51st	**4.1**

Archetype



Colombia

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	59	4.9
1.01 Economic complexity (2.5) – 2.5 (best)	59	0.0
Structure: Scale 0-10 (best)	51	4.1
1.02 Manufacturing value added in economy % GDP	68	10.7
1.03 Manufacturing value added US$ millions	36	39,313.1
Driver: Technology & Innovation 0-10 (best)	60	4.0
Technology Platform 0-10 (best)	50	6.2
2.01 Mobile-cellular telephone subscriptions /100 pop.	56	117.1
2.02 LTE mobile network coverage % population	36	92.0
2.03 Internet users % pop.	64	58.1
2.04 FDI and technology transfer 1-7 (best)	62	4.3
2.05 Firm-level technology absorption 1-7 (best)	70	4.3
2.06 Impact of ICTs on new services and products 1-7 (best)	58	4.6
2.07 Cybersecurity commitment 0–1 (best)	47	0.6
Ability to Innovate 0-10 (best)	83	1.8
2.08 State of cluster development 1-7 (best)	65	3.7
2.09 Company investment in emerging technology 1–7 (best)	57	3.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	60	3.2
2.11 Companies embracing disruptive ideas 1-7 (best)	66	3.4
2.12 Multi-stakeholder collaboration 1-7 (best)	58	3.6
2.13 R&D expenditures % GDP	83	0.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	71	6.0
2.15 Patent applications applications/million pop.	62	0.66
2.16 Venture capital deal volume US$ millions	41	4,176.9
2.17 Venture capital deal volume per size of economy US$/GDP	57	13.2
Driver: Human Capital 0-10 (best)	65	4.6
Current Labor Force 0-10 (best)	60	5.7
3.01 Manufacturing employment % working population	50	11.8
3.02 Knowledge-intensive employment % working pop.	73	16.8
3.03 Female participation in labor force ratio	51	0.75
3.04 Mean years of schooling Years	73	8.1
3.05 Availability of scientists and engineers 1-7 (best)	64	3.9
3.06 Digital skills among population 1-7 (best)	68	4.0
Future Labor Force 0-10 (best)	65	3.5
3.07 Migration migrants/100,000 pop.	68	-2.5
3.08 Country capacity to attract and retain talent 1-7 (best)	59	3.3
3.09 Quality of universities Count	20	10.0
3.10 Quality of math and science education 1-7 (best)	77	3.4
3.11 Quality of vocational training 1-7 (best)	36	4.4
3.12 School life expectancy Years	55	14.4
3.13 Pupil-to-teacher ratio in primary education Ratio	75	23.8
3.14 Critical thinking in teaching 1-7 (best)	44	3.6
3.15 Active labor policies 1-7 (best)	67	3.0
3.16 On-the-job training 1-7 (best)	70	3.9
3.17 Hiring and firing practices 1-7 (best)	75	3.3

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	80	3.9
Trade 0-10 (best)	90	3.4
4.01 Trade % GDP	94	34.7
4.02 Trade tariffs % duty	70	0.06
4.03 Prevalence of non-tariff barriers 1-7 (best)	79	4.0
4.04 Logistics performance 1 – 5 (best)	82	2.6
Investment 0-10 (best)	45	2.5
4.05 Greenfield investments US$ millions	37	4,775.0
4.06 FDI inflows US$ millions	21	14,654.6
4.07 Domestic credit to private sector % GDP	65	47.1
Infrastructure 0-10 (best)	71	5.8
4.08 Transport infrastructure 0-100 (best)	78	34.9
4.09 Electricity infrastructure 0-100 (best)	54	81.2
Driver: Institutional Framework 0-10 (best)	67	4.6
Government 0-10 (best)	67	4.6
5.01 Regulatory efficiency 0 – 100 (best)	18	77.3
5.02 Incidence of corruption 0-100 (best)	66	37.0
5.03 Future orientation of government 1-7 (best)	81	3.1
5.04 Rule of law (2.5) - 2.0 (best)	72	-0.3
Driver: Sustainable Resources 0-10 (best)	20	7.5
Sustainability 0-10 (best)	20	7.5
6.01 Alternative and nuclear energy use % total energy use	51	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	25	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	59	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	58	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	14	0.3
6.06 Wastewater treatment 0 – 5 (worst)	61	71.8
Driver: Demand Environment 0-10 (best)	46	4.9
Foreign and Domestic Demand 0-10 (best)	35	5.9
7.01 Market size 0-100 (best)	35	59.5
Consumer Base 0-10 (best)	72	3.9
7.02 Buyer sophistication 1-7 (best)	75	3.1
7.03 Extent of market dominance 1-7 (best)	70	3.5

Costa Rica

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	4.9	**GDP per capita** US$	11,834.8
GDP US$ billions	58.1	**Unemployment rate** %	9.3

Key production indicators

Manufacturing value added 2010 millions US$	7,308.5	**Manufacturing value added growth** Annual %	4.1
Manufacturing value added in economy % GDP	15.8	**Medium hi-tech & hi-tech industries** % of manu. value added	23.1
Manufacturing employment % working population	10.9	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

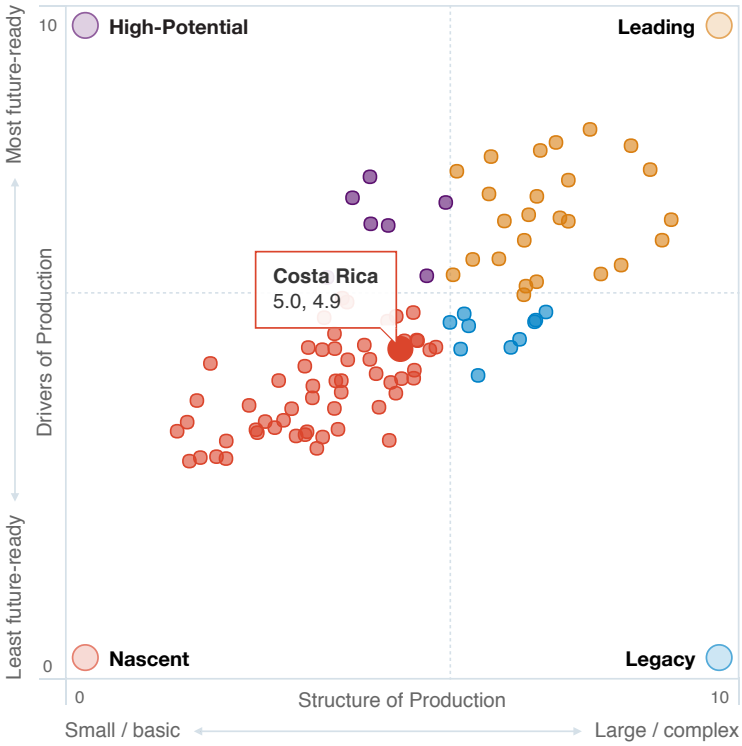
Drivers of Production 4.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	66th	**3.9**
Human Capital	20%	35th	**5.7**
Global Trade & Investment	20%	76th	**4.2**
Institutional Framework	20%	43rd	**5.9**
Sustainable Resources	5%	26th	**6.9**
Demand Environment	15%	64th	**4.2**

Structure of Production 5.0

Structure	Weighting	Rank	Score /10
Complexity	60%	47th	**5.6**
Scale	40%	53rd	**4.0**

Archetype



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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$ billiions)	12	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	38	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	4.2	**GDP per capita** US$	12,095.5
GDP US$ billions	50.4	**Unemployment rate** %	15.0

Key production indicators

Manufacturing value added 2010 millions US$	7,004.5	**Manufacturing value added growth** Annual %	1.0
Manufacturing value added in economy % GDP	11.8	**Medium hi-tech & hi-tech industries** % of manu. value added	29.9
Manufacturing employment % working population	16.7	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

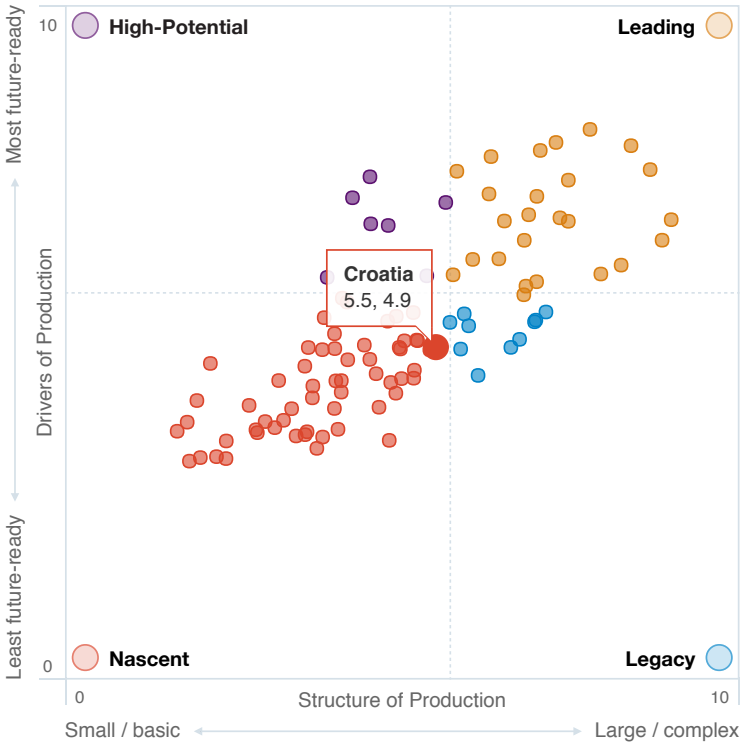
Drivers of Production 4.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	52nd	**4.2**
Human Capital	20%	58th	**4.9**
Global Trade & Investment	20%	46th	**5.5**
Institutional Framework	20%	47th	**5.3**
Sustainable Resources	5%	11th	**8.2**
Demand Environment	15%	84th	**3.5**

Structure of Production 5.5

Structure	Weighting	Rank	Score /10
Complexity	60%	28th	**7.0**
Scale	40%	72nd	**3.3**

Archetype



Croatia

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	28	7.0
1.01 Economic complexity (2.5) – 2.5 (best)	28	0.9
Structure: Scale 0-10 (best)	72	3.3
1.02 Manufacturing value added in economy % GDP	56	11.8
1.03 Manufacturing value added US$ millions	68	7,004.5
Driver: Technology & Innovation 0-10 (best)	52	4.2
Technology Platform 0-10 (best)	48	6.3
2.01 Mobile-cellular telephone subscriptions /100 pop.	78	104.1
2.02 LTE mobile network coverage % population	32	96.9
2.03 Internet users % pop.	42	72.7
2.04 FDI and technology transfer 1-7 (best)	89	3.7
2.05 Firm-level technology absorption 1-7 (best)	76	4.2
2.06 Impact of ICTs on new services and products 1-7 (best)	62	4.5
2.07 Cybersecurity commitment 0–1 (best)	42	0.6
Ability to Innovate 0-10 (best)	56	2.2
2.08 State of cluster development 1-7 (best)	97	2.9
2.09 Company investment in emerging technology 1–7 (best)	81	3.1
2.10 Gov't procurement of advanced technology products 1-7 (best)	100	2.3
2.11 Companies embracing disruptive ideas 1-7 (best)	87	3.1
2.12 Multi-stakeholder collaboration 1-7 (best)	98	3.0
2.13 R&D expenditures % GDP	44	0.8
2.14 Scientific and technical publications Number per Billion PPP$ GDP	18	35.2
2.15 Patent applications applications/million pop.	39	4.00
2.16 Venture capital deal volume US$ millions	71	488.1
2.17 Venture capital deal volume per size of economy US$/GDP	69	9.4
Driver: Human Capital 0-10 (best)	58	4.9
Current Labor Force 0-10 (best)	38	6.9
3.01 Manufacturing employment % working population	16	16.7
3.02 Knowledge-intensive employment % working pop.	30	35.6
3.03 Female participation in labor force ratio	26	0.92
3.04 Mean years of schooling Years	36	11.2
3.05 Availability of scientists and engineers 1-7 (best)	81	3.6
3.06 Digital skills among population 1-7 (best)	86	3.5
Future Labor Force 0-10 (best)	87	2.9
3.07 Migration migrants/100,000 pop.	75	-4.8
3.08 Country capacity to attract and retain talent 1-7 (best)	97	1.9
3.09 Quality of universities Count	62	1.0
3.10 Quality of math and science education 1-7 (best)	48	4.3
3.11 Quality of vocational training 1-7 (best)	85	3.5
3.12 School life expectancy Years	43	15.1
3.13 Pupil-to-teacher ratio in primary education Ratio	32	13.7
3.14 Critical thinking in teaching 1-7 (best)	97	2.5
3.15 Active labor policies 1-7 (best)	70	3.0
3.16 On-the-job training 1-7 (best)	87	3.7
3.17 Hiring and firing practices 1-7 (best)	95	2.6

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	46	5.5
Trade 0-10 (best)	16	8.5
4.01 Trade % GDP	35	99.6
4.02 Trade tariffs % duty	5	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	19	5.0
4.04 Logistics performance 1 – 5 (best)	47	3.2
Investment 0-10 (best)	65	1.5
4.05 Greenfield investments US$ millions	80	793.7
4.06 FDI inflows US$ millions	67	1,602.3
4.07 Domestic credit to private sector % GDP	49	61.3
Infrastructure 0-10 (best)	49	6.6
4.08 Transport infrastructure 0-100 (best)	35	54.6
4.09 Electricity infrastructure 0-100 (best)	68	77.0
Driver: Institutional Framework 0-10 (best)	47	5.3
Government 0-10 (best)	47	5.3
5.01 Regulatory efficiency 0 – 100 (best)	83	60.6
5.02 Incidence of corruption 0-100 (best)	40	49.0
5.03 Future orientation of government 1-7 (best)	97	2.4
5.04 Rule of law (2.5) - 2.0 (best)	43	0.4
Driver: Sustainable Resources 0-10 (best)	11	8.2
Sustainability 0-10 (best)	11	8.2
6.01 Alternative and nuclear energy use % total energy use	47	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	41	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	31	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	44	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	3	0.0
6.06 Wastewater treatment 0 – 5 (worst)	40	83.8
Driver: Demand Environment 0-10 (best)	84	3.5
Foreign and Domestic Demand 0-10 (best)	73	3.9
7.01 Market size 0-100 (best)	73	38.7
Consumer Base 0-10 (best)	94	3.2
7.02 Buyer sophistication 1-7 (best)	94	2.7
7.03 Extent of market dominance 1-7 (best)	90	3.1

Cyprus

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	0.8	**GDP per capita** US$	23,351.9
GDP US$ billions	19.8	**Unemployment rate** %	13.0

Key production indicators

Manufacturing value added 2010 millions US$	969.6	**Manufacturing value added growth** Annual %	-1.3
Manufacturing value added in economy % GDP	4.1	**Medium hi-tech & hi-tech industries** % of manu. value added	22.7
Manufacturing employment % working population	7.8	**CO2 emission per unit of value added** kg/USD	0.7

Readiness Overall Assessment

Drivers of Production 5.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	33rd	**5.0**
Human Capital	20%	24th	**6.4**
Global Trade & Investment	20%	24th	**6.4**
Institutional Framework	20%	35th	**6.3**
Sustainable Resources	5%	74th	**5.3**
Demand Environment	15%	79th	**3.8**

Structure of Production 4.1

Structure	Weighting	Rank	Score /10
Complexity	60%	36th	**6.3**
Scale	40%	99th	**0.8**

Archetype

Cyprus

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	36	6.3
1.01 Economic complexity (2.5) – 2.5 (best)	36	0.6
Structure: Scale 0-10 (best)	99	0.8
1.02 Manufacturing value added in economy % GDP	99	4.1
1.03 Manufacturing value added US$ millions	96	969.6
Driver: Technology & Innovation 0-10 (best)	33	5.0
Technology Platform 0-10 (best)	56	6.0
2.01 Mobile-cellular telephone subscriptions /100 pop.	30	134.5
2.02 LTE mobile network coverage % population	62	73.0
2.03 Internet users % pop.	37	75.9
2.04 FDI and technology transfer 1-7 (best)	64	4.3
2.05 Firm-level technology absorption 1-7 (best)	55	4.5
2.06 Impact of ICTs on new services and products 1-7 (best)	71	4.4
2.07 Cybersecurity commitment 0–1 (best)	60	0.5
Ability to Innovate 0-10 (best)	27	4.0
2.08 State of cluster development 1-7 (best)	67	3.6
2.09 Company investment in emerging technology 1–7 (best)	79	3.2
2.10 Gov't procurement of advanced technology products 1-7 (best)	65	3.1
2.11 Companies embracing disruptive ideas 1-7 (best)	64	3.4
2.12 Multi-stakeholder collaboration 1-7 (best)	71	3.5
2.13 R&D expenditures % GDP	64	0.5
2.14 Scientific and technical publications Number per Billion PPP$ GDP	14	41.0
2.15 Patent applications applications/million pop.	37	5.59
2.16 Venture capital deal volume US$ millions	51	2,628.0
2.17 Venture capital deal volume per size of economy US$/GDP	7	125.8
Driver: Human Capital 0-10 (best)	24	6.4
Current Labor Force 0-10 (best)	30	7.2
3.01 Manufacturing employment % working population	82	7.8
3.02 Knowledge-intensive employment % working pop.	32	35.2
3.03 Female participation in labor force ratio	40	0.85
3.04 Mean years of schooling Years	28	11.9
3.05 Availability of scientists and engineers 1-7 (best)	31	4.6
3.06 Digital skills among population 1-7 (best)	25	5.0
Future Labor Force 0-10 (best)	22	5.7
3.07 Migration migrants/100,000 pop.	11	30.0
3.08 Country capacity to attract and retain talent 1-7 (best)	46	3.5
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	57	4.1
3.11 Quality of vocational training 1-7 (best)	54	4.0
3.12 School life expectancy Years	53	14.6
3.13 Pupil-to-teacher ratio in primary education Ratio	19	11.9
3.14 Critical thinking in teaching 1-7 (best)	29	4.0
3.15 Active labor policies 1-7 (best)	36	3.9
3.16 On-the-job training 1-7 (best)	42	4.4
3.17 Hiring and firing practices 1-7 (best)	49	3.8

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	24	6.4
Trade 0-10 (best)	19	8.4
4.01 Trade % GDP	16	124.5
4.02 Trade tariffs % duty	7	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	25	4.9
4.04 Logistics performance 1 – 5 (best)	60	3.0
Investment 0-10 (best)	35	3.3
4.05 Greenfield investments US$ millions	99	175.0
4.06 FDI inflows US$ millions	81	749.4
4.07 Domestic credit to private sector % GDP	1	227.3
Infrastructure 0-10 (best)	33	7.3
4.08 Transport infrastructure 0-100 (best)	52	48.2
4.09 Electricity infrastructure 0-100 (best)	7	97.8
Driver: Institutional Framework 0-10 (best)	35	6.3
Government 0-10 (best)	35	6.3
5.01 Regulatory efficiency 0 – 100 (best)	38	72.6
5.02 Incidence of corruption 0-100 (best)	35	55.0
5.03 Future orientation of government 1-7 (best)	51	3.7
5.04 Rule of law (2.5) - 2.0 (best)	33	0.7
Driver: Sustainable Resources 0-10 (best)	74	5.3
Sustainability 0-10 (best)	74	5.3
6.01 Alternative and nuclear energy use % total energy use	80	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	38	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	16	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	15	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	94	5.0
6.06 Wastewater treatment 0 – 5 (worst)	57	73.8
Driver: Demand Environment 0-10 (best)	79	3.8
Foreign and Domestic Demand 0-10 (best)	96	2.6
7.01 Market size 0-100 (best)	96	25.7
Consumer Base 0-10 (best)	31	5.0
7.02 Buyer sophistication 1-7 (best)	28	4.0
7.03 Extent of market dominance 1-7 (best)	38	4.1

Czech Republic

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	10.6	**GDP per capita** US$	18,286.3
GDP US$ billions	193.0	**Unemployment rate** %	4.0

Key production indicators

Manufacturing value added 2010 millions US$	56,342.3

Readiness Overall Assessment

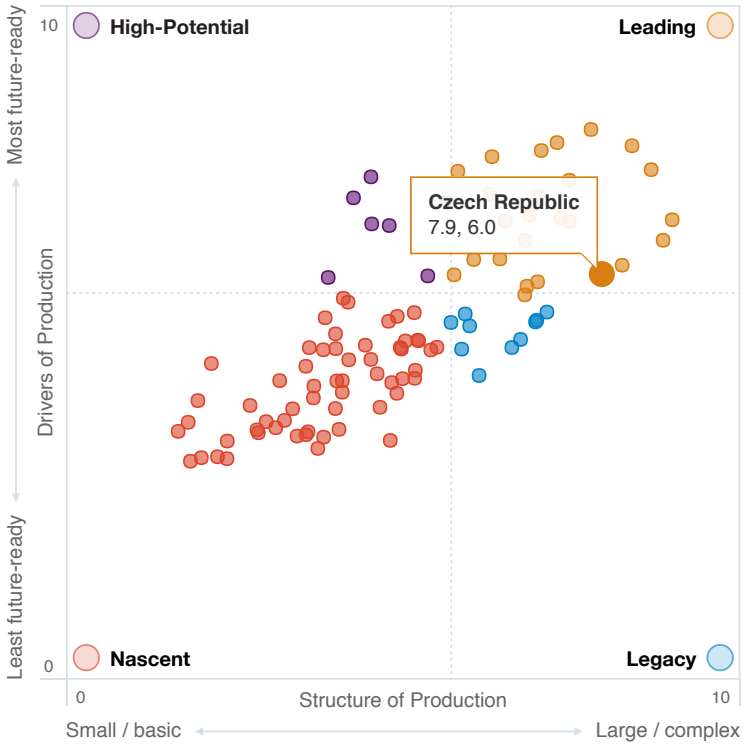
Drivers of Production 6.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	31st	**5.1**
Human Capital	20%	22nd	**6.5**
Global Trade & Investment	20%	26th	**6.2**
Institutional Framework	20%	29th	**6.7**
Sustainable Resources	5%	18th	**7.6**
Demand Environment	15%	43rd	**5.0**

Structure of Production 7.9

Structure	Weighting	Rank	Score /10
Complexity	60%	5th	**8.7**
Scale	40%	8th	**6.8**

Archetype



Czech Republic

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WORLD ECONOMIC FORUM

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	37.6
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$ billiions)	67	0.5
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	28	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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

Denmark

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	5.7	**GDP per capita** US$	53,744.0
GDP US$ billions	306.7	**Unemployment rate** %	6.2

Key production indicators

Manufacturing value added 2010 millions US$	39,348.5	**Manufacturing value added growth** Annual %	0.3
Manufacturing value added in economy % GDP	11.8	**Medium hi-tech & hi-tech industries** % of manu. value added	53.4
Manufacturing employment % working population	11.9	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

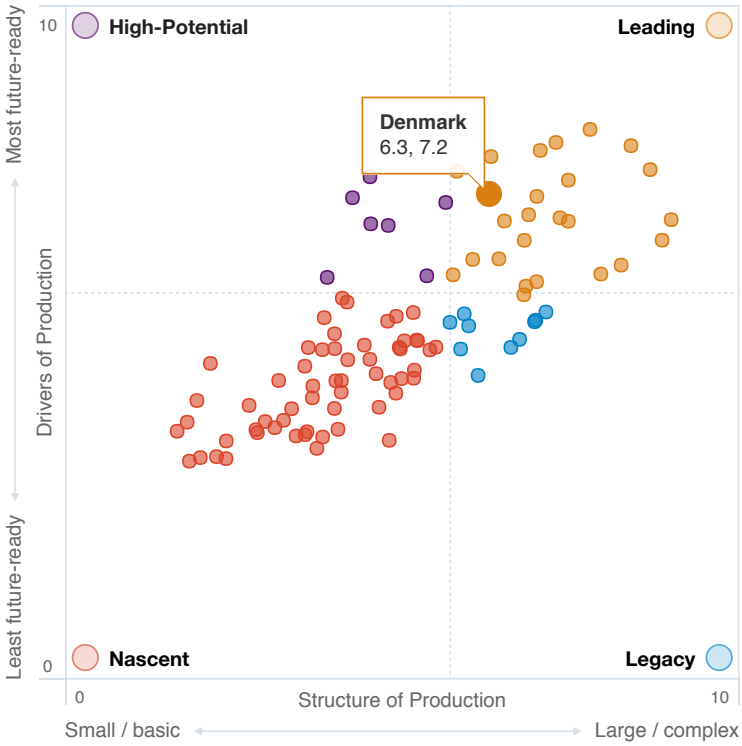
Drivers of Production 7.2

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	12th	**6.9**
Human Capital	20%	12th	**7.3**
Global Trade & Investment	20%	18th	**6.8**
Institutional Framework	20%	4th	**8.8**
Sustainable Resources	5%	8th	**8.4**
Demand Environment	15%	34th	**5.4**

Structure of Production 6.3

Structure	Weighting	Rank	Score /10
Complexity	60%	19th	**7.6**
Scale	40%	46th	**4.3**

Archetype



Denmark

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	19	7.6
1.01 Economic complexity (2.5) – 2.5 (best)	19	1.2
Structure: Scale 0-10 (best)	46	4.3
1.02 Manufacturing value added in economy % GDP	57	11.8
1.03 Manufacturing value added US$ millions	35	39,348.5
Driver: Technology & Innovation 0-10 (best)	12	6.9
Technology Platform 0-10 (best)	21	7.6
2.01 Mobile-cellular telephone subscriptions /100 pop.	48	122.9
2.02 LTE mobile network coverage % population	1	100.0
2.03 Internet users % pop.	3	97.0
2.04 FDI and technology transfer 1-7 (best)	31	4.9
2.05 Firm-level technology absorption 1-7 (best)	8	5.7
2.06 Impact of ICTs on new services and products 1-7 (best)	21	5.5
2.07 Cybersecurity commitment 0–1 (best)	37	0.6
Ability to Innovate 0-10 (best)	9	6.2
2.08 State of cluster development 1-7 (best)	21	4.7
2.09 Company investment in emerging technology 1–7 (best)	16	4.9
2.10 Gov't procurement of advanced technology products 1-7 (best)	30	3.6
2.11 Companies embracing disruptive ideas 1-7 (best)	15	4.4
2.12 Multi-stakeholder collaboration 1-7 (best)	18	4.7
2.13 R&D expenditures % GDP	6	3.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	1	66.8
2.15 Patent applications applications/million pop.	8	166.16
2.16 Venture capital deal volume US$ millions	28	15,700.8
2.17 Venture capital deal volume per size of economy US$/GDP	21	49.1
Driver: Human Capital 0-10 (best)	12	7.3
Current Labor Force 0-10 (best)	14	8.2
3.01 Manufacturing employment % working population	49	11.9
3.02 Knowledge-intensive employment % working pop.	10	45.1
3.03 Female participation in labor force ratio	17	0.96
3.04 Mean years of schooling Years	17	12.4
3.05 Availability of scientists and engineers 1-7 (best)	41	4.4
3.06 Digital skills among population 1-7 (best)	18	5.3
Future Labor Force 0-10 (best)	13	6.4
3.07 Migration migrants/100,000 pop.	25	13.2
3.08 Country capacity to attract and retain talent 1-7 (best)	27	4.4
3.09 Quality of universities Count	38	6.0
3.10 Quality of math and science education 1-7 (best)	12	5.3
3.11 Quality of vocational training 1-7 (best)	6	5.5
3.12 School life expectancy Years	6	19.3
3.13 Pupil-to-teacher ratio in primary education Ratio	8	10.7
3.14 Critical thinking in teaching 1-7 (best)	1	5.5
3.15 Active labor policies 1-7 (best)	6	5.1
3.16 On-the-job training 1-7 (best)	7	5.6
3.17 Hiring and firing practices 1-7 (best)	6	5.2

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	18	6.8
Trade 0-10 (best)	8	8.8
4.01 Trade % GDP	36	99.3
4.02 Trade tariffs % duty	27	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	22	4.9
4.04 Logistics performance 1 – 5 (best)	16	3.8
Investment 0-10 (best)	32	3.6
4.05 Greenfield investments US$ millions	71	1,229.9
4.06 FDI inflows US$ millions	59	1,906.3
4.07 Domestic credit to private sector % GDP	8	170.5
Infrastructure 0-10 (best)	18	8.1
4.08 Transport infrastructure 0-100 (best)	16	68.2
4.09 Electricity infrastructure 0-100 (best)	23	92.9
Driver: Institutional Framework 0-10 (best)	4	8.8
Government 0-10 (best)	4	8.8
5.01 Regulatory efficiency 0 – 100 (best)	4	88.4
5.02 Incidence of corruption 0-100 (best)	1	90.0
5.03 Future orientation of government 1-7 (best)	19	4.6
5.04 Rule of law (2.5) - 2.0 (best)	6	1.9
Driver: Sustainable Resources 0-10 (best)	8	8.4
Sustainability 0-10 (best)	8	8.4
6.01 Alternative and nuclear energy use % total energy use	34	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	4	0.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	12	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	18	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	27	1.0
6.06 Wastewater treatment 0 – 5 (worst)	12	95.7
Driver: Demand Environment 0-10 (best)	34	5.4
Foreign and Domestic Demand 0-10 (best)	53	5.1
7.01 Market size 0-100 (best)	53	50.9
Consumer Base 0-10 (best)	19	5.7
7.02 Buyer sophistication 1-7 (best)	34	3.8
7.03 Extent of market dominance 1-7 (best)	7	5.1

Dominican Republic

Nascent

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	10.1	**GDP per capita** US$	7,159.5
GDP US$ billions	72.2	**Unemployment rate** %	5.5

Key production indicators

Manufacturing value added 2010 millions US$	10,199.6	**Manufacturing value added growth** Annual %	0.4
Manufacturing value added in economy % GDP	2.5	**CO2 emission per unit of value added** kg/USD	0.2
Manufacturing employment % working population	7.8		

Readiness Overall Assessment

Drivers of Production 4.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	76th	**3.5**
Human Capital	20%	76th	**4.3**
Global Trade & Investment	20%	82nd	**3.9**
Institutional Framework	20%	81st	**4.2**
Sustainable Resources	5%	59th	**6.0**
Demand Environment	15%	82nd	**3.7**

Structure of Production 4.0

Structure	Weighting	Rank	Score /10
Complexity	60%	77th	**4.0**
Scale	40%	55th	**3.9**

Archetype

Dominican Republic

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	77	4.0
1.01 Economic complexity (2.5) – 2.5 (best)	77	-0.4
Structure: Scale 0-10 (best)	55	3.9
1.02 Manufacturing value added in economy % GDP	41	14.3
1.03 Manufacturing value added US$ millions	58	10,199.6
Driver: Technology & Innovation 0-10 (best)	76	3.5
Technology Platform 0-10 (best)	82	4.7
2.01 Mobile-cellular telephone subscriptions /100 pop.	93	80.8
2.02 LTE mobile network coverage % population	49	86.8
2.03 Internet users % pop.	56	61.3
2.04 FDI and technology transfer 1-7 (best)	46	4.7
2.05 Firm-level technology absorption 1-7 (best)	69	4.3
2.06 Impact of ICTs on new services and products 1-7 (best)	56	4.6
2.07 Cybersecurity commitment 0–1 (best)	95	0.2
Ability to Innovate 0-10 (best)	52	2.3
2.08 State of cluster development 1-7 (best)	55	3.8
2.09 Company investment in emerging technology 1–7 (best)	96	2.8
2.10 Gov't procurement of advanced technology products 1-7 (best)	94	2.6
2.11 Companies embracing disruptive ideas 1-7 (best)	90	3.1
2.12 Multi-stakeholder collaboration 1-7 (best)	89	3.1
2.13 R&D expenditures % GDP	8	3.0
2.14 Scientific and technical publications Number per Billion PPP$ GDP	98	0.5
2.15 Patent applications applications/million pop.	76	0.16
2.16 Venture capital deal volume US$ millions	87	109.4
2.17 Venture capital deal volume per size of economy US$/GDP	94	1.6
Driver: Human Capital 0-10 (best)	76	4.3
Current Labor Force 0-10 (best)	63	5.6
3.01 Manufacturing employment % working population	71	9.9
3.02 Knowledge-intensive employment % working pop.	70	17.9
3.03 Female participation in labor force ratio	38	0.86
3.04 Mean years of schooling Years	77	7.8
3.05 Availability of scientists and engineers 1-7 (best)	90	3.4
3.06 Digital skills among population 1-7 (best)	92	3.4
Future Labor Force 0-10 (best)	84	3.0
3.07 Migration migrants/100,000 pop.	92	-13.3
3.08 Country capacity to attract and retain talent 1-7 (best)	68	3.1
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	99	2.6
3.11 Quality of vocational training 1-7 (best)	83	3.6
3.12 School life expectancy Years	60	13.8
3.13 Pupil-to-teacher ratio in primary education Ratio	57	18.3
3.14 Critical thinking in teaching 1-7 (best)	98	2.5
3.15 Active labor policies 1-7 (best)	94	2.4
3.16 On-the-job training 1-7 (best)	78	3.8
3.17 Hiring and firing practices 1-7 (best)	86	3.1

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	82	3.9
Trade 0-10 (best)	77	4.7
4.01 Trade % GDP	75	54.1
4.02 Trade tariffs % duty	69	0.06
4.03 Prevalence of non-tariff barriers 1-7 (best)	73	4.2
4.04 Logistics performance 1 – 5 (best)	79	2.7
Investment 0-10 (best)	86	0.7
4.05 Greenfield investments US$ millions	68	1,298.4
4.06 FDI inflows US$ millions	55	2,393.9
4.07 Domestic credit to private sector % GDP	86	28.4
Infrastructure 0-10 (best)	59	6.2
4.08 Transport infrastructure 0-100 (best)	60	45.4
4.09 Electricity infrastructure 0-100 (best)	63	79.0
Driver: Institutional Framework 0-10 (best)	81	4.2
Government 0-10 (best)	81	4.2
5.01 Regulatory efficiency 0 – 100 (best)	77	61.9
5.02 Incidence of corruption 0-100 (best)	82	31.0
5.03 Future orientation of government 1-7 (best)	86	2.9
5.04 Rule of law (2.5) - 2.0 (best)	69	-0.3
Driver: Sustainable Resources 0-10 (best)	59	6.0
Sustainability 0-10 (best)	59	6.0
6.01 Alternative and nuclear energy use % total energy use	65	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	50	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	47	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	56	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	77	3.5
6.06 Wastewater treatment 0 – 5 (worst)	45	80.8
Driver: Demand Environment 0-10 (best)	82	3.7
Foreign and Domestic Demand 0-10 (best)	65	4.3
7.01 Market size 0-100 (best)	65	43.1
Consumer Base 0-10 (best)	96	3.0
7.02 Buyer sophistication 1-7 (best)	81	3.0
7.03 Extent of market dominance 1-7 (best)	99	2.6

Ecuador

Nascent

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	16.5	**GDP per capita** US$	5,929.7
GDP US$ billions	98.0	**Unemployment rate** %	5.2

Key production indicators

Manufacturing value added 2010 millions US$	9,955.4	**Manufacturing value added growth** Annual %	-2.9
Manufacturing value added in economy % GDP	11.8	**Medium hi-tech & hi-tech industries** % of manu. value added	10.3
Manufacturing employment % working population	10.6	**CO2 emission per unit of value added** kg/USD	0.5

Readiness Overall Assessment

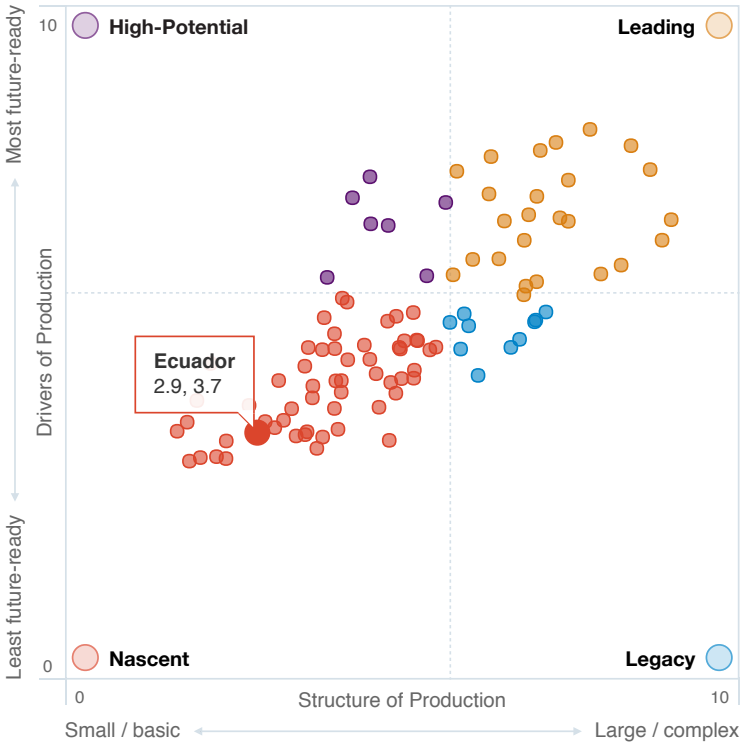
Drivers of Production 3.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	71st	**3.5**
Human Capital	20%	83rd	**4.0**
Global Trade & Investment	20%	91st	**3.2**
Institutional Framework	20%	92nd	**3.6**
Sustainable Resources	5%	85th	**4.7**
Demand Environment	15%	78th	**3.8**

Structure of Production 2.9

Structure	Weighting	Rank	Score /10
Complexity	60%	95th	**2.4**
Scale	40%	66th	**3.5**

Archetype



Ecuador

Nascent

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	95	2.4
1.01 Economic complexity (2.5) – 2.5 (best)	95	-1.2
Structure: Scale 0-10 (best)	66	3.5
1.02 Manufacturing value added in economy % GDP	55	11.8
1.03 Manufacturing value added US$ millions	59	9,955.4
Driver: Technology & Innovation 0-10 (best)	71	3.5
Technology Platform 0-10 (best)	73	5.1
2.01 Mobile-cellular telephone subscriptions /100 pop.	89	84.3
2.02 LTE mobile network coverage % population	74	51.0
2.03 Internet users % pop.	66	54.1
2.04 FDI and technology transfer 1-7 (best)	97	3.5
2.05 Firm-level technology absorption 1-7 (best)	79	4.2
2.06 Impact of ICTs on new services and products 1-7 (best)	79	4.2
2.07 Cybersecurity commitment 0–1 (best)	65	0.5
Ability to Innovate 0-10 (best)	65	2.0
2.08 State of cluster development 1-7 (best)	89	3.1
2.09 Company investment in emerging technology 1–7 (best)	87	3.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	85	2.8
2.11 Companies embracing disruptive ideas 1-7 (best)	93	3.0
2.12 Multi-stakeholder collaboration 1-7 (best)	87	3.2
2.13 R&D expenditures % GDP	22	1.9
2.14 Scientific and technical publications Number per Billion PPP$ GDP	71	6.0
2.15 Patent applications applications/million pop.	81	0.09
2.16 Venture capital deal volume US$ millions	68	539.0
2.17 Venture capital deal volume per size of economy US$/GDP	76	5.4
Driver: Human Capital 0-10 (best)	83	4.0
Current Labor Force 0-10 (best)	79	5.0
3.01 Manufacturing employment % working population	66	10.6
3.02 Knowledge-intensive employment % working pop.	76	14.7
3.03 Female participation in labor force ratio	76	0.48
3.04 Mean years of schooling Years	66	8.7
3.05 Availability of scientists and engineers 1-7 (best)	93	3.4
3.06 Digital skills among population 1-7 (best)	70	3.9
Future Labor Force 0-10 (best)	82	3.0
3.07 Migration migrants/100,000 pop.	61	-1.9
3.08 Country capacity to attract and retain talent 1-7 (best)	71	3.0
3.09 Quality of universities Count	53	2.0
3.10 Quality of math and science education 1-7 (best)	73	3.6
3.11 Quality of vocational training 1-7 (best)	57	4.0
3.12 School life expectancy Years	44	15.1
3.13 Pupil-to-teacher ratio in primary education Ratio	78	24.7
3.14 Critical thinking in teaching 1-7 (best)	52	3.4
3.15 Active labor policies 1-7 (best)	96	2.4
3.16 On-the-job training 1-7 (best)	76	3.8
3.17 Hiring and firing practices 1-7 (best)	98	2.3

Index Component	Rank /100	Value
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	774.2
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 0-10 (best)	92	3.6
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 0-10 (best)	85	4.7
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$ billiions)	62	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	46	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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 0-10 (best)	78	3.8
Foreign and Domestic Demand 0-10 (best)	64	4.4
7.01 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

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WORLD ECONOMIC FORUM

Key economic indicators

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

Key production indicators

Manufacturing value added 2010 millions US$	41,659.5	**Manufacturing value added growth** Annual %	4.3
Manufacturing value added in economy % GDP	16.4	**Medium hi-tech & hi-tech industries** % of manu. value added	14.2
Manufacturing employment % working population	11.2	**CO2 emission per unit of value added** kg/USD	0.7

Readiness Overall Assessment

Drivers of Production 4.5

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	53rd	**4.2**
Human Capital	20%	85th	**3.9**
Global Trade & Investment	20%	75th	**4.2**
Institutional Framework	20%	78th	**4.3**
Sustainable Resources	5%	48th	**6.4**
Demand Environment	15%	36th	**5.4**

Structure of Production 5.0

Structure	Weighting	Rank	Score /10
Complexity	60%	61st	**4.9**
Scale	40%	29th	**5.1**

Archetype

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	61	4.9
1.01 Economic complexity (2.5) – 2.5 (best)	61	0.0
Structure: Scale 0-10 (best)	29	5.1
1.02 Manufacturing value added in economy % GDP	28	16.4
1.03 Manufacturing value added US$ millions	34	41,659.5
Driver: Technology & Innovation 0-10 (best)	53	4.2
Technology Platform 0-10 (best)	42	6.5
2.01 Mobile-cellular telephone subscriptions /100 pop.	64	113.7
2.02 LTE mobile network coverage % population		-
2.03 Internet users % pop.	80	39.2
2.04 FDI and technology transfer 1-7 (best)	61	4.3
2.05 Firm-level technology absorption 1-7 (best)	84	4.1
2.06 Impact of ICTs on new services and products 1-7 (best)	57	4.6
2.07 Cybersecurity commitment 0–1 (best)	16	0.8
Ability to Innovate 0-10 (best)	72	1.9
2.08 State of cluster development 1-7 (best)	48	3.9
2.09 Company investment in emerging technology 1–7 (best)	74	3.3
2.10 Gov't procurement of advanced technology products 1-7 (best)	47	3.4
2.11 Companies embracing disruptive ideas 1-7 (best)	95	2.9
2.12 Multi-stakeholder collaboration 1-7 (best)	79	3.3
2.13 R&D expenditures % GDP	49	0.7
2.14 Scientific and technical publications Number per Billion PPP$ GDP	57	9.7
2.15 Patent applications applications/million pop.	74	0.17
2.16 Venture capital deal volume US$ millions	46	3,248.0
2.17 Venture capital deal volume per size of economy US$/GDP	66	10.0
Driver: Human Capital 0-10 (best)	85	3.9
Current Labor Force 0-10 (best)	78	5.1
3.01 Manufacturing employment % working population	54	11.2
3.02 Knowledge-intensive employment % working pop.	34	33.9
3.03 Female participation in labor force ratio	95	0.20
3.04 Mean years of schooling Years	82	7.1
3.05 Availability of scientists and engineers 1-7 (best)	50	4.1
3.06 Digital skills among population 1-7 (best)	64	4.0
Future Labor Force 0-10 (best)	95	2.8
3.07 Migration migrants/100,000 pop.	66	-2.4
3.08 Country capacity to attract and retain talent 1-7 (best)	81	2.7
3.09 Quality of universities Count	45	5.0
3.10 Quality of math and science education 1-7 (best)	93	2.8
3.11 Quality of vocational training 1-7 (best)	100	2.8
3.12 School life expectancy Years	71	13.1
3.13 Pupil-to-teacher ratio in primary education Ratio	72	23.1
3.14 Critical thinking in teaching 1-7 (best)	94	2.6
3.15 Active labor policies 1-7 (best)	83	2.7
3.16 On-the-job training 1-7 (best)	100	3.1
3.17 Hiring and firing practices 1-7 (best)	52	3.7

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	75	4.2
Trade 0-10 (best)	96	2.4
4.01 Trade % GDP	95	30.0
4.02 Trade tariffs % duty	98	0.15
4.03 Prevalence of non-tariff barriers 1-7 (best)	70	4.2
4.04 Logistics performance 1 – 5 (best)	45	3.2
Investment 0-10 (best)	30	3.8
4.05 Greenfield investments US$ millions	9	17,738.7
4.06 FDI inflows US$ millions	37	5,978.2
4.07 Domestic credit to private sector % GDP	79	34.1
Infrastructure 0-10 (best)	54	6.4
4.08 Transport infrastructure 0-100 (best)	53	48.0
4.09 Electricity infrastructure 0-100 (best)	56	81.0
Driver: Institutional Framework 0-10 (best)	78	4.3
Government 0-10 (best)	78	4.3
5.01 Regulatory efficiency 0 – 100 (best)	74	62.5
5.02 Incidence of corruption 0-100 (best)	75	34.0
5.03 Future orientation of government 1-7 (best)	56	3.5
5.04 Rule of law (2.5) - 2.0 (best)	79	-0.4
Driver: Sustainable Resources 0-10 (best)	48	6.4
Sustainability 0-10 (best)	48	6.4
6.01 Alternative and nuclear energy use % total energy use	84	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	79	0.7
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	61	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	57	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	39	1.3
6.06 Wastewater treatment 0 – 5 (worst)	50	78.5
Driver: Demand Environment 0-10 (best)	36	5.4
Foreign and Domestic Demand 0-10 (best)	23	6.6
7.01 Market size 0-100 (best)	23	65.6
Consumer Base 0-10 (best)	61	4.2
7.02 Buyer sophistication 1-7 (best)	76	3.1
7.03 Extent of market dominance 1-7 (best)	44	3.9

El Salvador

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Key economic indicators

Population millions	6.1	**GDP per capita** US$	4,343.4
GDP US$ billions	26.7	**Unemployment rate** %	7.0

Key production indicators

Manufacturing value added 2010 millions US$	4,706.5	**Manufacturing value added growth** Annual %	3.0
Manufacturing value added in economy % GDP	19.4	**Medium hi-tech & hi-tech industries** % of manu. value added	19.1
Manufacturing employment % working population	14.6	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

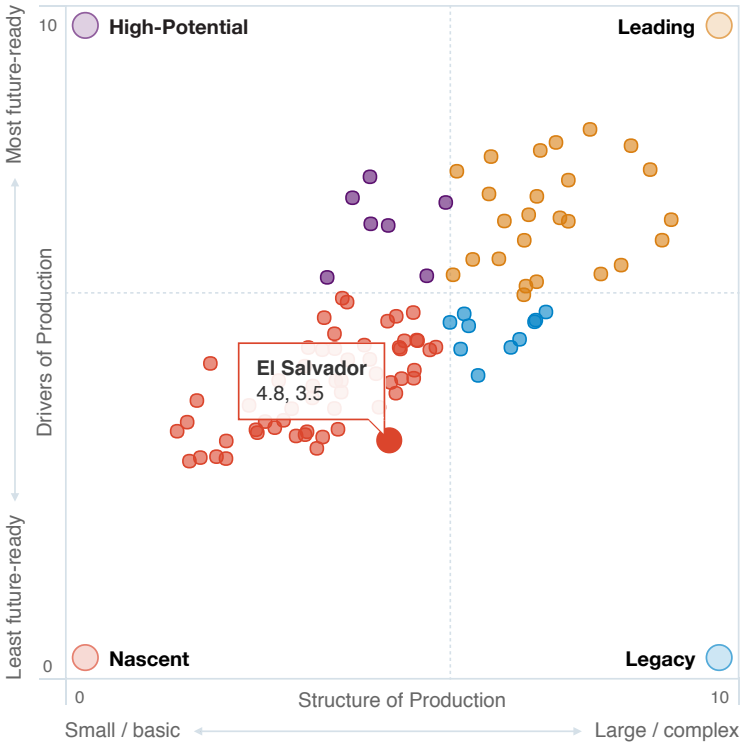
Drivers of Production 3.5

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	98th	**2.6**
Human Capital	20%	93rd	**3.4**
Global Trade & Investment	20%	77th	**4.0**
Institutional Framework	20%	90th	**3.6**
Sustainable Resources	5%	44th	**6.5**
Demand Environment	15%	97th	**3.1**

Structure of Production 4.8

Structure	Weighting	Rank	Score /10
Complexity	60%	57th	**5.1**
Scale	40%	45th	**4.4**

Archetype



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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	57	5.1
1.01 Economic complexity (2.5) – 2.5 (best)	57	0.1
Structure: Scale 0-10 (best)	45	4.4
1.02 Manufacturing value added in economy % GDP	13	19.4
1.03 Manufacturing value added US$ millions	73	4,706.5
Driver: Technology & Innovation 0-10 (best)	98	2.6
Technology Platform 0-10 (best)	96	3.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	25	140.7
2.02 LTE mobile network coverage % population	89	15.0
2.03 Internet users % pop.	87	29.0
2.04 FDI and technology transfer 1-7 (best)	93	3.6
2.05 Firm-level technology absorption 1-7 (best)	96	3.9
2.06 Impact of ICTs on new services and products 1-7 (best)	91	4.0
2.07 Cybersecurity commitment 0–1 (best)	92	0.2
Ability to Innovate 0-10 (best)	96	1.4
2.08 State of cluster development 1-7 (best)	94	3.0
2.09 Company investment in emerging technology 1–7 (best)	90	3.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	98	2.4
2.11 Companies embracing disruptive ideas 1-7 (best)	96	2.9
2.12 Multi-stakeholder collaboration 1-7 (best)	96	3.0
2.13 R&D expenditures % GDP	97	0.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	96	1.1
2.15 Patent applications applications/million pop.	84	0.05
2.16 Venture capital deal volume US$ millions	67	548.5
2.17 Venture capital deal volume per size of economy US$/GDP	43	21.1
Driver: Human Capital 0-10 (best)	93	3.4
Current Labor Force 0-10 (best)	88	4.4
3.01 Manufacturing employment % working population	27	14.6
3.02 Knowledge-intensive employment % working pop.	79	12.1
3.03 Female participation in labor force ratio	69	0.58
3.04 Mean years of schooling Years	87	6.5
3.05 Availability of scientists and engineers 1-7 (best)	100	2.6
3.06 Digital skills among population 1-7 (best)	95	3.3
Future Labor Force 0-10 (best)	100	2.5
3.07 Migration migrants/100,000 pop.	100	-36.7
3.08 Country capacity to attract and retain talent 1-7 (best)	92	2.4
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	96	2.6
3.11 Quality of vocational training 1-7 (best)	79	3.6
3.12 School life expectancy Years	73	12.9
3.13 Pupil-to-teacher ratio in primary education Ratio	84	29.7
3.14 Critical thinking in teaching 1-7 (best)	96	2.5
3.15 Active labor policies 1-7 (best)	100	2.2
3.16 On-the-job training 1-7 (best)	95	3.4
3.17 Hiring and firing practices 1-7 (best)	83	3.1

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	77	4.0
Trade 0-10 (best)	71	5.5
4.01 Trade % GDP	61	64.2
4.02 Trade tariffs % duty	56	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	93	3.8
4.04 Logistics performance 1 – 5 (best)	72	2.8
Investment 0-10 (best)	80	1.0
4.05 Greenfield investments US$ millions	89	505.2
4.06 FDI inflows US$ millions	95	354.9
4.07 Domestic credit to private sector % GDP	68	45.6
Infrastructure 0-10 (best)	73	5.7
4.08 Transport infrastructure 0-100 (best)	76	35.4
4.09 Electricity infrastructure 0-100 (best)	66	77.9
Driver: Institutional Framework 0-10 (best)	90	3.6
Government 0-10 (best)	90	3.6
5.01 Regulatory efficiency 0 – 100 (best)	70	63.7
5.02 Incidence of corruption 0-100 (best)	69	36.0
5.03 Future orientation of government 1-7 (best)	99	2.3
5.04 Rule of law (2.5) - 2.0 (best)	89	-0.7
Driver: Sustainable Resources 0-10 (best)	44	6.5
Sustainability 0-10 (best)	44	6.5
6.01 Alternative and nuclear energy use % total energy use	15	0.5
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	36	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	54	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	60	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	43	1.5
6.06 Wastewater treatment 0 – 5 (worst)	83	42.2
Driver: Demand Environment 0-10 (best)	97	3.1
Foreign and Domestic Demand 0-10 (best)	87	3.2
7.01 Market size 0-100 (best)	87	31.6
Consumer Base 0-10 (best)	95	3.1
7.02 Buyer sophistication 1-7 (best)	93	2.8
7.03 Extent of market dominance 1-7 (best)	97	2.9

Estonia

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	1.3	**GDP per capita** US$	17,632.7
GDP US$ billions	23.1	**Unemployment rate** %	6.8

Key production indicators

Manufacturing value added 2010 millions US$	3,435.8	**Manufacturing value added growth** Annual %	2.5
Manufacturing value added in economy % GDP	14.5	**Medium hi-tech & hi-tech industries** % of manu. value added	28.8
Manufacturing employment % working population	18.8	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

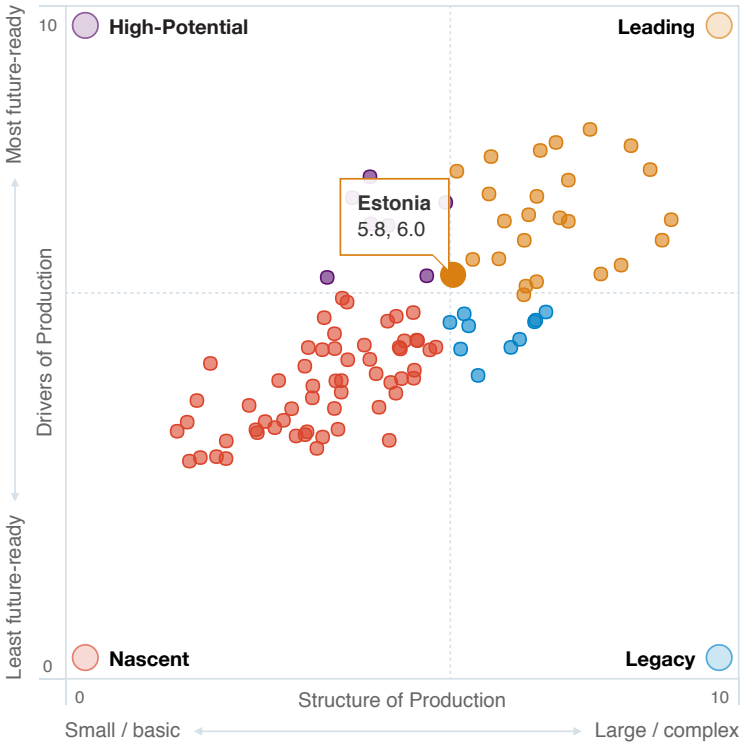
Drivers of Production 6.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	24th	**5.8**
Human Capital	20%	20th	**6.5**
Global Trade & Investment	20%	35th	**5.8**
Institutional Framework	20%	20th	**7.3**
Sustainable Resources	5%	52nd	**6.2**
Demand Environment	15%	74th	**3.9**

Structure of Production 5.8

Structure	Weighting	Rank	Score /10
Complexity	60%	23rd	**7.4**
Scale	40%	70th	**3.3**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	23	7.4
1.01 Economic complexity (2.5) – 2.5 (best)	23	1.1
Structure: Scale 0-10 (best)	70	3.3
1.02 Manufacturing value added in economy % GDP	38	14.5
1.03 Manufacturing value added US$ millions	77	3,435.8
Driver: Technology & Innovation 0-10 (best)	24	5.8
Technology Platform 0-10 (best)	8	8.2
2.01 Mobile-cellular telephone subscriptions /100 pop.	17	148.7
2.02 LTE mobile network coverage % population	11	99.0
2.03 Internet users % pop.	18	87.2
2.04 FDI and technology transfer 1-7 (best)	40	4.7
2.05 Firm-level technology absorption 1-7 (best)	18	5.3
2.06 Impact of ICTs on new services and products 1-7 (best)	20	5.6
2.07 Cybersecurity commitment 0–1 (best)	5	0.8
Ability to Innovate 0-10 (best)	31	3.4
2.08 State of cluster development 1-7 (best)	62	3.7
2.09 Company investment in emerging technology 1–7 (best)	26	4.4
2.10 Gov't procurement of advanced technology products 1-7 (best)	41	3.5
2.11 Companies embracing disruptive ideas 1-7 (best)	23	4.0
2.12 Multi-stakeholder collaboration 1-7 (best)	31	4.1
2.13 R&D expenditures % GDP	34	1.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	9	47.6
2.15 Patent applications applications/million pop.	26	21.08
2.16 Venture capital deal volume US$ millions	77	292.8
2.17 Venture capital deal volume per size of economy US$/GDP	61	12.2
Driver: Human Capital 0-10 (best)	20	6.5
Current Labor Force 0-10 (best)	12	8.3
3.01 Manufacturing employment % working population	8	18.8
3.02 Knowledge-intensive employment % working pop.	15	44.0
3.03 Female participation in labor force ratio	7	1.00
3.04 Mean years of schooling Years	14	12.5
3.05 Availability of scientists and engineers 1-7 (best)	43	4.3
3.06 Digital skills among population 1-7 (best)	12	5.4
Future Labor Force 0-10 (best)	35	4.8
3.07 Migration migrants/100,000 pop.	46	0.0
3.08 Country capacity to attract and retain talent 1-7 (best)	51	3.4
3.09 Quality of universities Count	53	2.0
3.10 Quality of math and science education 1-7 (best)	8	5.5
3.11 Quality of vocational training 1-7 (best)	26	4.6
3.12 School life expectancy Years	22	16.4
3.13 Pupil-to-teacher ratio in primary education Ratio	14	11.5
3.14 Critical thinking in teaching 1-7 (best)	17	4.5
3.15 Active labor policies 1-7 (best)	13	4.8
3.16 On-the-job training 1-7 (best)	25	4.9
3.17 Hiring and firing practices 1-7 (best)	14	4.6

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	35	5.8
Trade 0-10 (best)	10	8.7
4.01 Trade % GDP	9	155.2
4.02 Trade tariffs % duty	20	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	9	5.2
4.04 Logistics performance 1 – 5 (best)	35	3.4
Investment 0-10 (best)	58	1.7
4.05 Greenfield investments US$ millions	86	547.8
4.06 FDI inflows US$ millions	82	739.2
4.07 Domestic credit to private sector % GDP	40	71.9
Infrastructure 0-10 (best)	36	7.0
4.08 Transport infrastructure 0-100 (best)	48	49.5
4.09 Electricity infrastructure 0-100 (best)	32	91.4
Driver: Institutional Framework 0-10 (best)	20	7.3
Government 0-10 (best)	20	7.3
5.01 Regulatory efficiency 0 – 100 (best)	33	73.2
5.02 Incidence of corruption 0-100 (best)	20	70.0
5.03 Future orientation of government 1-7 (best)	28	4.2
5.04 Rule of law (2.5) - 2.0 (best)	20	1.2
Driver: Sustainable Resources 0-10 (best)	52	6.2
Sustainability 0-10 (best)	52	6.2
6.01 Alternative and nuclear energy use % total energy use	64	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	81	0.7
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	39	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	71	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	57	2.8
6.06 Wastewater treatment 0 – 5 (worst)	24	90.9
Driver: Demand Environment 0-10 (best)	74	3.9
Foreign and Domestic Demand 0-10 (best)	88	3.0
7.01 Market size 0-100 (best)	88	30.3
Consumer Base 0-10 (best)	37	4.9
7.02 Buyer sophistication 1-7 (best)	42	3.7
7.03 Extent of market dominance 1-7 (best)	35	4.1

Ethiopia

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Key economic indicators

Population millions	91.2	**GDP per capita** US$	795.2
GDP US$ billions	72.5		

Key production indicators

Manufacturing value added 2010 millions US$	2,084.8	**Manufacturing value added growth** Annual %	7.6
Manufacturing value added in economy % GDP	4.5	**Medium hi-tech & hi-tech industries** % of manu. value added	16.1
Manufacturing employment % working population	14.0	**CO2 emission per unit of value added** kg/USD	1.8

Readiness Overall Assessment

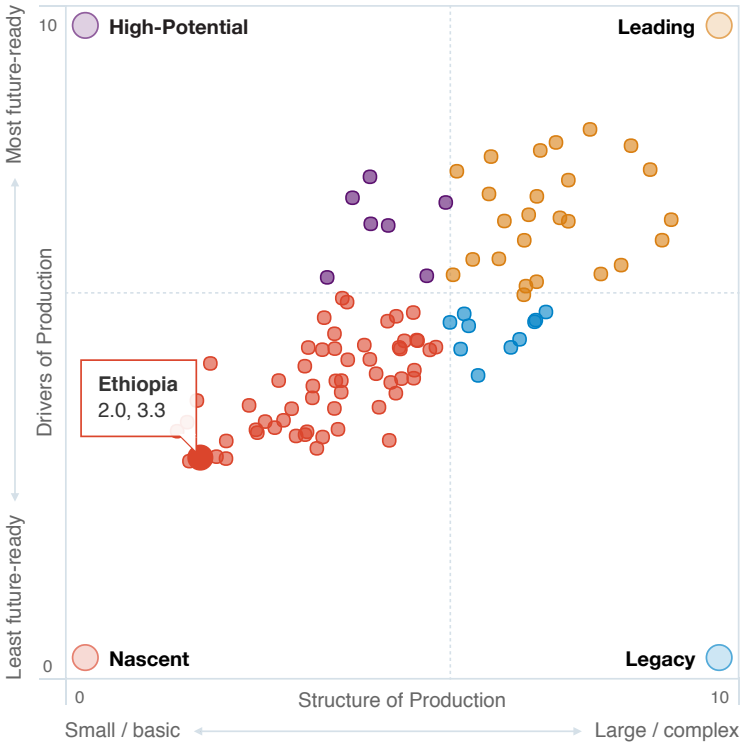
Drivers of Production 3.3

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	99th	**2.6**
Human Capital	20%	95th	**3.4**
Global Trade & Investment	20%	100th	**2.0**
Institutional Framework	20%	79th	**4.3**
Sustainable Resources	5%	93rd	**4.4**
Demand Environment	15%	69th	**4.2**

Structure of Production 2.0

Structure	Weighting	Rank	Score /10
Complexity	60%	94th	**2.5**
Scale	40%	95th	**1.3**

Archetype



Ethiopia

Nascent

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	94	2.5
1.01 Economic complexity (2.5) – 2.5 (best)	94	-1.1
Structure: Scale 0-10 (best)	95	1.3
1.02 Manufacturing value added in economy % GDP	98	4.5
1.03 Manufacturing value added US$ millions	89	2,084.8
Driver: Technology & Innovation 0-10 (best)	99	2.6
Technology Platform 0-10 (best)	100	3.0
2.01 Mobile-cellular telephone subscriptions /100 pop.	100	50.5
2.02 LTE mobile network coverage % population	93	10.0
2.03 Internet users % pop.	99	15.4
2.04 FDI and technology transfer 1-7 (best)	92	3.6
2.05 Firm-level technology absorption 1-7 (best)	100	3.3
2.06 Impact of ICTs on new services and products 1-7 (best)	99	3.4
2.07 Cybersecurity commitment 0–1 (best)	89	0.3
Ability to Innovate 0-10 (best)	59	2.1
2.08 State of cluster development 1-7 (best)	69	3.6
2.09 Company investment in emerging technology 1–7 (best)	80	3.1
2.10 Gov't procurement of advanced technology products 1-7 (best)	34	3.6
2.11 Companies embracing disruptive ideas 1-7 (best)	46	3.6
2.12 Multi-stakeholder collaboration 1-7 (best)	63	3.6
2.13 R&D expenditures % GDP	28	1.5
2.14 Scientific and technical publications Number per Billion PPP$ GDP	64	7.1
2.15 Patent applications applications/million pop.	93	0.01
2.16 Venture capital deal volume US$ millions	83	233.9
2.17 Venture capital deal volume per size of economy US$/GDP	86	3.6
Driver: Human Capital 0-10 (best)	95	3.4
Current Labor Force 0-10 (best)	93	4.0
3.01 Manufacturing employment % working population	32	14.0
3.02 Knowledge-intensive employment % working pop.	89	3.8
3.03 Female participation in labor force ratio	71	0.57
3.04 Mean years of schooling Years	100	2.6
3.05 Availability of scientists and engineers 1-7 (best)	79	3.6
3.06 Digital skills among population 1-7 (best)	87	3.5
Future Labor Force 0-10 (best)	90	2.9
3.07 Migration migrants/100,000 pop.	50	-0.6
3.08 Country capacity to attract and retain talent 1-7 (best)	48	3.4
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	78	3.4
3.11 Quality of vocational training 1-7 (best)	68	3.7
3.12 School life expectancy Years	98	8.4
3.13 Pupil-to-teacher ratio in primary education Ratio	99	55.1
3.14 Critical thinking in teaching 1-7 (best)	46	3.5
3.15 Active labor policies 1-7 (best)	51	3.4
3.16 On-the-job training 1-7 (best)	82	3.7
3.17 Hiring and firing practices 1-7 (best)	53	3.7

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	100	2.0
Trade 0-10 (best)	95	2.6
4.01 Trade % GDP	92	35.8
4.02 Trade tariffs % duty	95	0.13
4.03 Prevalence of non-tariff barriers 1-7 (best)	95	3.8
4.04 Logistics performance 1 – 5 (best)	92	2.4
Investment 0-10 (best)	90	0.6
4.05 Greenfield investments US$ millions	46	3,324.6
4.06 FDI inflows US$ millions	61	1,811.2
4.07 Domestic credit to private sector % GDP	100	10.9
Infrastructure 0-10 (best)	98	2.7
4.08 Transport infrastructure 0-100 (best)	93	27.7
4.09 Electricity infrastructure 0-100 (best)	97	27.2
Driver: Institutional Framework 0-10 (best)	79	4.3
Government 0-10 (best)	79	4.3
5.01 Regulatory efficiency 0 – 100 (best)	91	57.6
5.02 Incidence of corruption 0-100 (best)	75	34.0
5.03 Future orientation of government 1-7 (best)	52	3.7
5.04 Rule of law (2.5) - 2.0 (best)	77	-0.4
Driver: Sustainable Resources 0-10 (best)	93	4.4
Sustainability 0-10 (best)	93	4.4
6.01 Alternative and nuclear energy use % total energy use	1	0.9
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	26	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	99	1.3
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	96	0.9
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	21	0.6
6.06 Wastewater treatment 0 – 5 (worst)	92	0.0
Driver: Demand Environment 0-10 (best)	69	4.2
Foreign and Domestic Demand 0-10 (best)	62	4.4
7.01 Market size 0-100 (best)	62	44.2
Consumer Base 0-10 (best)	71	3.9
7.02 Buyer sophistication 1-7 (best)	74	3.2
7.03 Extent of market dominance 1-7 (best)	69	3.5

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Key economic indicators

Population millions	5.5	**GDP per capita** US$	43,169.2
GDP US$ billions	236.9	**Unemployment rate** %	8.8

Key production indicators

Manufacturing value added 2010 millions US$	37,661.6	**Manufacturing value added growth** Annual %	1.3
Manufacturing value added in economy % GDP	15.1	**Medium hi-tech & hi-tech industries** % of manu. value added	44.5
Manufacturing employment % working population	13.5	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

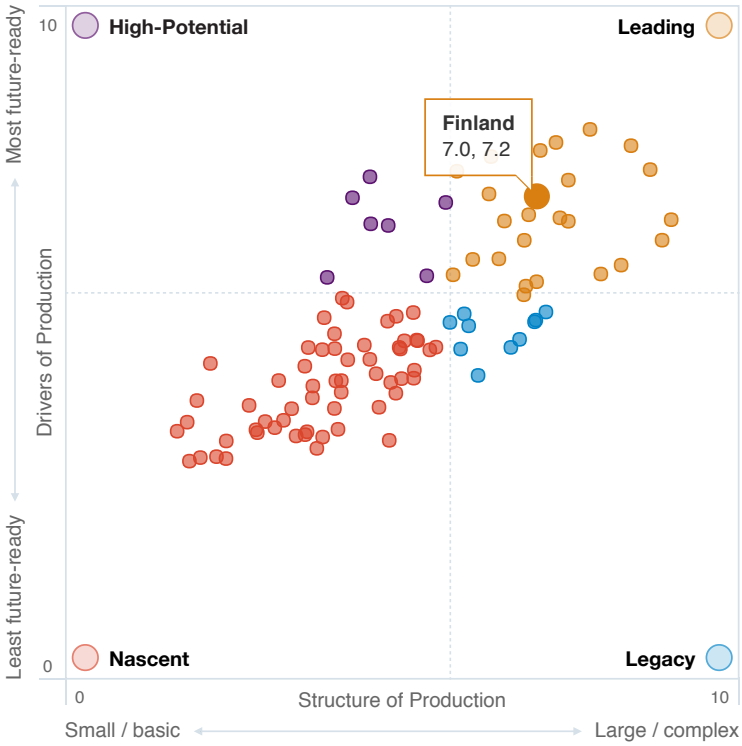
Drivers of Production 7.2

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	5th	**7.4**
Human Capital	20%	11th	**7.3**
Global Trade & Investment	20%	29th	**6.1**
Institutional Framework	20%	3rd	**8.9**
Sustainable Resources	5%	6th	**8.5**
Demand Environment	15%	37th	**5.3**

Structure of Production 7.0

Structure	Weighting	Rank	Score /10
Complexity	60%	10th	**8.4**
Scale	40%	33rd	**4.9**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	10	8.4
1.01 Economic complexity (2.5) – 2.5 (best)	10	1.6
Structure: Scale 0-10 (best)	33	4.9
1.02 Manufacturing value added in economy % GDP	35	15.1
1.03 Manufacturing value added US$ millions	38	37,661.6
Driver: Technology & Innovation 0-10 (best)	5	7.4
Technology Platform 0-10 (best)	10	8.1
2.01 Mobile-cellular telephone subscriptions /100 pop.	31	134.5
2.02 LTE mobile network coverage % population	7	99.9
2.03 Internet users % pop.	16	87.7
2.04 FDI and technology transfer 1-7 (best)	39	4.8
2.05 Firm-level technology absorption 1-7 (best)	5	5.9
2.06 Impact of ICTs on new services and products 1-7 (best)	2	6.1
2.07 Cybersecurity commitment 0–1 (best)	18	0.7
Ability to Innovate 0-10 (best)	5	6.8
2.08 State of cluster development 1-7 (best)	15	5.0
2.09 Company investment in emerging technology 1–7 (best)	8	5.5
2.10 Gov't procurement of advanced technology products 1-7 (best)	17	4.0
2.11 Companies embracing disruptive ideas 1-7 (best)	17	4.3
2.12 Multi-stakeholder collaboration 1-7 (best)	3	5.4
2.13 R&D expenditures % GDP	5	3.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	4	55.0
2.15 Patent applications applications/million pop.	5	242.78
2.16 Venture capital deal volume US$ millions	26	18,310.3
2.17 Venture capital deal volume per size of economy US$/GDP	13	74.1
Driver: Human Capital 0-10 (best)	11	7.3
Current Labor Force 0-10 (best)	1	8.8
3.01 Manufacturing employment % working population	33	13.5
3.02 Knowledge-intensive employment % working pop.	8	46.0
3.03 Female participation in labor force ratio	5	1.04
3.04 Mean years of schooling Years	36	11.2
3.05 Availability of scientists and engineers 1-7 (best)	1	6.0
3.06 Digital skills among population 1-7 (best)	4	5.9
Future Labor Force 0-10 (best)	17	5.9
3.07 Migration migrants/100,000 pop.	32	9.1
3.08 Country capacity to attract and retain talent 1-7 (best)	25	4.4
3.09 Quality of universities Count	20	10.0
3.10 Quality of math and science education 1-7 (best)	2	6.2
3.11 Quality of vocational training 1-7 (best)	5	5.5
3.12 School life expectancy Years	5	19.3
3.13 Pupil-to-teacher ratio in primary education Ratio	29	13.3
3.14 Critical thinking in teaching 1-7 (best)	6	5.3
3.15 Active labor policies 1-7 (best)	12	4.8
3.16 On-the-job training 1-7 (best)	5	5.7
3.17 Hiring and firing practices 1-7 (best)	59	3.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	29	6.1
Trade 0-10 (best)	43	7.3
4.01 Trade % GDP	57	71.9
4.02 Trade tariffs % duty	9	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	3	5.7
4.04 Logistics performance 1 – 5 (best)	13	3.9
Investment 0-10 (best)	38	3.0
4.05 Greenfield investments US$ millions	50	2,676.7
4.06 FDI inflows US$ millions	38	5,923.8
4.07 Domestic credit to private sector % GDP	29	94.8
Infrastructure 0-10 (best)	21	7.8
4.08 Transport infrastructure 0-100 (best)	28	59.4
4.09 Electricity infrastructure 0-100 (best)	8	97.6
Driver: Institutional Framework 0-10 (best)	3	8.9
Government 0-10 (best)	3	8.9
5.01 Regulatory efficiency 0 – 100 (best)	24	76.2
5.02 Incidence of corruption 0-100 (best)	3	89.0
5.03 Future orientation of government 1-7 (best)	11	5.1
5.04 Rule of law (2.5) - 2.0 (best)	3	2.0
Driver: Sustainable Resources 0-10 (best)	6	8.5
Sustainability 0-10 (best)	6	8.5
6.01 Alternative and nuclear energy use % total energy use	14	0.5
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	16	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	9	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	38	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	28	1.0
6.06 Wastewater treatment 0 – 5 (worst)	17	93.5
Driver: Demand Environment 0-10 (best)	37	5.3
Foreign and Domestic Demand 0-10 (best)	58	4.8
7.01 Market size 0-100 (best)	58	48.2
Consumer Base 0-10 (best)	18	5.8
7.02 Buyer sophistication 1-7 (best)	10	4.7
7.03 Extent of market dominance 1-7 (best)	30	4.3

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Key economic indicators

Population millions	64.6	**GDP per capita** US$	38,127.7
GDP US$ billions	2,463.2	**Unemployment rate** %	10.0

Key production indicators

Manufacturing value added 2010 millions US$	283,278.8	**Manufacturing value added growth** Annual %	1.1
Manufacturing value added in economy % GDP	10.1	**Medium hi-tech & hi-tech industries** % of manu. value added	49.4
Manufacturing employment % working population	12.2	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

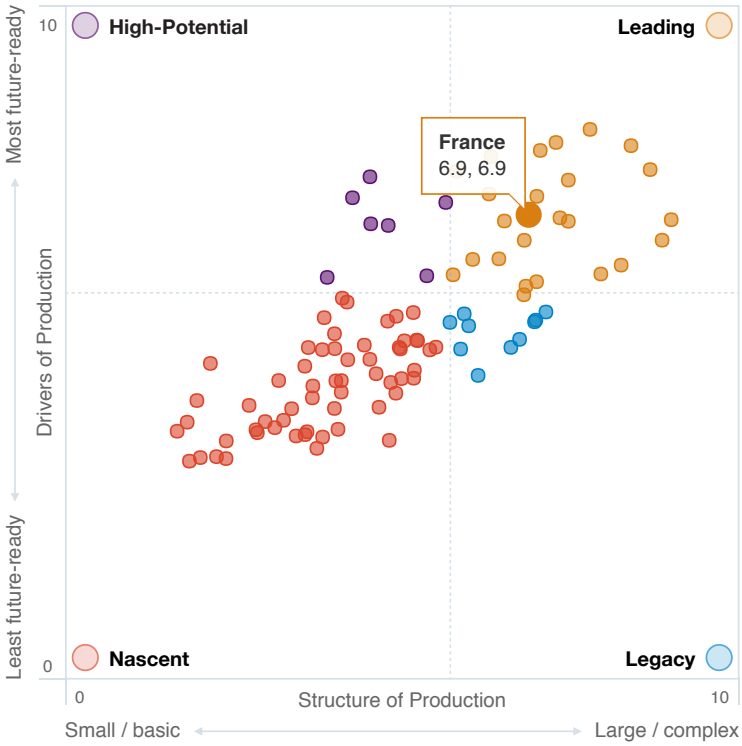
Drivers of Production 6.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	14th	**6.8**
Human Capital	20%	23rd	**6.5**
Global Trade & Investment	20%	14th	**6.9**
Institutional Framework	20%	21st	**7.3**
Sustainable Resources	5%	10th	**8.2**
Demand Environment	15%	10th	**6.5**

Structure of Production 6.9

Structure	Weighting	Rank	Score /10
Complexity	60%	15th	**8.0**
Scale	40%	28th	**5.2**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	15	8.0
1.01 Economic complexity (2.5) – 2.5 (best)	15	1.4
Structure: Scale 0-10 (best)	28	5.2
1.02 Manufacturing value added in economy % GDP	75	10.1
1.03 Manufacturing value added US$ millions	8	283,278.8
Driver: Technology & Innovation 0-10 (best)	14	6.8
Technology Platform 0-10 (best)	16	7.9
2.01 Mobile-cellular telephone subscriptions /100 pop.	80	103.5
2.02 LTE mobile network coverage % population	39	90.0
2.03 Internet users % pop.	20	85.6
2.04 FDI and technology transfer 1-7 (best)	26	5.0
2.05 Firm-level technology absorption 1-7 (best)	27	5.1
2.06 Impact of ICTs on new services and products 1-7 (best)	12	5.7
2.07 Cybersecurity commitment 0–1 (best)	8	0.8
Ability to Innovate 0-10 (best)	14	5.8
2.08 State of cluster development 1-7 (best)	19	4.7
2.09 Company investment in emerging technology 1–7 (best)	22	4.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	32	3.6
2.11 Companies embracing disruptive ideas 1-7 (best)	37	3.7
2.12 Multi-stakeholder collaboration 1-7 (best)	29	4.2
2.13 R&D expenditures % GDP	13	2.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP	29	25.3
2.15 Patent applications applications/million pop.	12	115.84
2.16 Venture capital deal volume US$ millions	6	108,406.6
2.17 Venture capital deal volume per size of economy US$/GDP	25	42.0
Driver: Human Capital 0-10 (best)	23	6.5
Current Labor Force 0-10 (best)	19	7.9
3.01 Manufacturing employment % working population	46	12.2
3.02 Knowledge-intensive employment % working pop.	12	44.6
3.03 Female participation in labor force ratio	8	0.99
3.04 Mean years of schooling Years	33	11.3
3.05 Availability of scientists and engineers 1-7 (best)	29	4.6
3.06 Digital skills among population 1-7 (best)	52	4.3
Future Labor Force 0-10 (best)	30	5.1
3.07 Migration migrants/100,000 pop.	29	9.8
3.08 Country capacity to attract and retain talent 1-7 (best)	56	3.4
3.09 Quality of universities Count	4	44.0
3.10 Quality of math and science education 1-7 (best)	19	5.1
3.11 Quality of vocational training 1-7 (best)	21	4.9
3.12 School life expectancy Years	24	16.3
3.13 Pupil-to-teacher ratio in primary education Ratio	56	18.2
3.14 Critical thinking in teaching 1-7 (best)	39	3.6
3.15 Active labor policies 1-7 (best)	33	4.0
3.16 On-the-job training 1-7 (best)	22	5.1
3.17 Hiring and firing practices 1-7 (best)	97	2.4

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	14	6.9
Trade 0-10 (best)	59	6.2
4.01 Trade % GDP	67	60.6
4.02 Trade tariffs % duty	18	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	67	4.2
4.04 Logistics performance 1 – 5 (best)	15	3.9
Investment 0-10 (best)	13	5.8
4.05 Greenfield investments US$ millions	15	10,922.6
4.06 FDI inflows US$ millions	14	29,259.4
4.07 Domestic credit to private sector % GDP	27	97.6
Infrastructure 0-10 (best)	5	8.8
4.08 Transport infrastructure 0-100 (best)	5	84.2
4.09 Electricity infrastructure 0-100 (best)	26	92.4
Driver: Institutional Framework 0-10 (best)	21	7.3
Government 0-10 (best)	21	7.3
5.01 Regulatory efficiency 0 – 100 (best)	60	67.9
5.02 Incidence of corruption 0-100 (best)	21	69.0
5.03 Future orientation of government 1-7 (best)	48	3.8
5.04 Rule of law (2.5) - 2.0 (best)	17	1.4
Driver: Sustainable Resources 0-10 (best)	10	8.2
Sustainability 0-10 (best)	10	8.2
6.01 Alternative and nuclear energy use % total energy use	11	0.5
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	5	0.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	15	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	24	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	48	1.8
6.06 Wastewater treatment 0 – 5 (worst)	20	92.4
Driver: Demand Environment 0-10 (best)	10	6.5
Foreign and Domestic Demand 0-10 (best)	8	7.7
7.01 Market size 0-100 (best)	8	77.1
Consumer Base 0-10 (best)	26	5.3
7.02 Buyer sophistication 1-7 (best)	26	4.0
7.03 Extent of market dominance 1-7 (best)	23	4.4

Georgia

Nascent

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Key economic indicators

Population millions	3.7	**GDP per capita** US$	3,842.4
GDP US$ billions	14.2	**Unemployment rate** %	11.8

Key production indicators

Manufacturing value added 2010 millions US$	1,761.8	**Manufacturing value added growth** Annual %	2.8
Manufacturing value added in economy % GDP	11.5	**Medium hi-tech & hi-tech industries** % of manu. value added	15.7
Manufacturing employment % working population	4.9	**CO2 emission per unit of value added** kg/USD	0.8

Readiness Overall Assessment

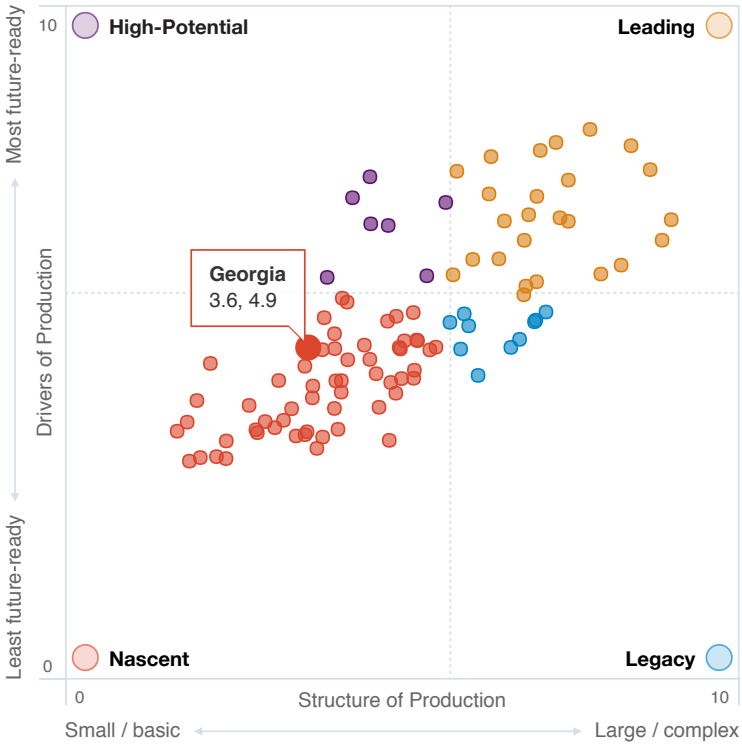
Drivers of Production 4.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	32nd	**5.0**
Human Capital	20%	71st	**4.5**
Global Trade & Investment	20%	47th	**5.5**
Institutional Framework	20%	41st	**5.9**
Sustainable Resources	5%	92nd	**4.4**
Demand Environment	15%	88th	**3.5**

Structure of Production 3.6

Structure	Weighting	Rank	Score /10
Complexity	60%	71st	**4.4**
Scale	40%	85th	**2.4**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	71	4.4
1.01 Economic complexity (2.5) – 2.5 (best)	71	-0.3
Structure: Scale 0-10 (best)	85	2.4
1.02 Manufacturing value added in economy % GDP	61	11.5
1.03 Manufacturing value added US$ millions	92	1,761.8
Driver: Technology & Innovation 0-10 (best)	32	5.0
Technology Platform 0-10 (best)	38	6.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	38	129.1
2.02 LTE mobile network coverage % population	37	92.0
2.03 Internet users % pop.	74	50.0
2.04 FDI and technology transfer 1-7 (best)	78	4.0
2.05 Firm-level technology absorption 1-7 (best)	90	4.0
2.06 Impact of ICTs on new services and products 1-7 (best)	87	4.1
2.07 Cybersecurity commitment 0–1 (best)	8	0.8
Ability to Innovate 0-10 (best)	33	3.2
2.08 State of cluster development 1-7 (best)	96	2.9
2.09 Company investment in emerging technology 1–7 (best)	84	3.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	57	3.2
2.11 Companies embracing disruptive ideas 1-7 (best)	56	3.4
2.12 Multi-stakeholder collaboration 1-7 (best)	81	3.3
2.13 R&D expenditures % GDP	23	1.7
2.14 Scientific and technical publications Number per Billion PPP$ GDP	40	16.0
2.15 Patent applications applications/million pop.	65	0.50
2.16 Venture capital deal volume US$ millions	61	978.9
2.17 Venture capital deal volume per size of economy US$/GDP	15	65.5
Driver: Human Capital 0-10 (best)	71	4.5
Current Labor Force 0-10 (best)	65	5.5
3.01 Manufacturing employment % working population	92	4.9
3.02 Knowledge-intensive employment % working pop.	57	22.3
3.03 Female participation in labor force ratio	41	0.84
3.04 Mean years of schooling Years	13	12.6
3.05 Availability of scientists and engineers 1-7 (best)	98	3.0
3.06 Digital skills among population 1-7 (best)	81	3.6
Future Labor Force 0-10 (best)	69	3.4
3.07 Migration migrants/100,000 pop.	99	-33.6
3.08 Country capacity to attract and retain talent 1-7 (best)	76	2.9
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	79	3.3
3.11 Quality of vocational training 1-7 (best)	98	3.1
3.12 School life expectancy Years	35	15.4
3.13 Pupil-to-teacher ratio in primary education Ratio	3	9.0
3.14 Critical thinking in teaching 1-7 (best)	77	3.0
3.15 Active labor policies 1-7 (best)	82	2.8
3.16 On-the-job training 1-7 (best)	99	3.3
3.17 Hiring and firing practices 1-7 (best)	23	4.4

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	47	5.5
Trade 0-10 (best)	22	8.2
4.01 Trade % GDP	30	102.6
4.02 Trade tariffs % duty	4	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	21	4.9
4.04 Logistics performance 1 – 5 (best)	93	2.4
Investment 0-10 (best)	66	1.5
4.05 Greenfield investments US$ millions	82	774.9
4.06 FDI inflows US$ millions	70	1,324.3
4.07 Domestic credit to private sector % GDP	48	61.9
Infrastructure 0-10 (best)	45	6.7
4.08 Transport infrastructure 0-100 (best)	70	40.5
4.09 Electricity infrastructure 0-100 (best)	18	93.7
Driver: Institutional Framework 0-10 (best)	41	5.9
Government 0-10 (best)	41	5.9
5.01 Regulatory efficiency 0 – 100 (best)	11	80.4
5.02 Incidence of corruption 0-100 (best)	33	57.0
5.03 Future orientation of government 1-7 (best)	60	3.5
5.04 Rule of law (2.5) - 2.0 (best)	45	0.4
Driver: Sustainable Resources 0-10 (best)	92	4.4
Sustainability 0-10 (best)	92	4.4
6.01 Alternative and nuclear energy use % total energy use	42	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	69	0.5
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	79	0.3
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	80	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	45	1.5
6.06 Wastewater treatment 0 – 5 (worst)	92	0.0
Driver: Demand Environment 0-10 (best)	88	3.5
Foreign and Domestic Demand 0-10 (best)	91	2.9
7.01 Market size 0-100 (best)	91	28.5
Consumer Base 0-10 (best)	66	4.1
7.02 Buyer sophistication 1-7 (best)	72	3.2
7.03 Extent of market dominance 1-7 (best)	57	3.7

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Key economic indicators

Population millions	82.7	**GDP per capita** US$	41,902.3
GDP US$ billions	3,466.6	**Unemployment rate** %	4.2

Key production indicators

Manufacturing value added 2010 millions US$	774,149.7	**Manufacturing value added growth** Annual %	1.7
Manufacturing value added in economy % GDP	20.6	**Medium hi-tech & hi-tech industries** % of manu. value added	61.4
Manufacturing employment % working population	19.3	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

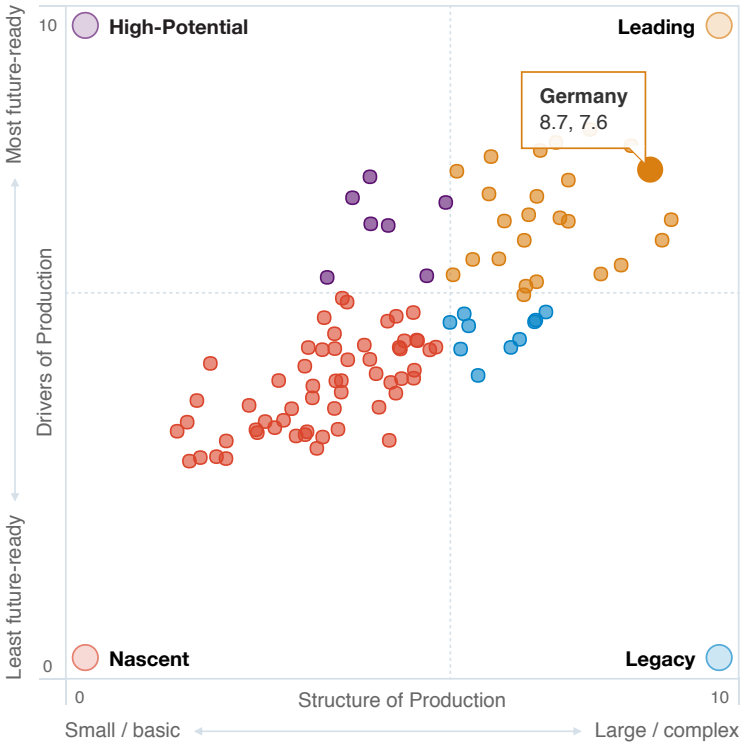
Drivers of Production 7.6

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	8th	**7.2**
Human Capital	20%	7th	**7.5**
Global Trade & Investment	20%	8th	**7.3**
Institutional Framework	20%	14th	**8.2**
Sustainable Resources	5%	13th	**7.8**
Demand Environment	15%	4th	**7.5**

Structure of Production 8.7

Structure	Weighting	Rank	Score /10
Complexity	60%	3rd	**9.4**
Scale	40%	4th	**7.6**

Archetype



Germany

Leading

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	3	9.4
1.01 Economic complexity (2.5) – 2.5 (best)	3	2.0
Structure: Scale 0-10 (best)	4	7.6
1.02 Manufacturing value added in economy % GDP	10	20.6
1.03 Manufacturing value added US$ millions	4	774,149.7
Driver: Technology & Innovation 0-10 (best)	8	7.2
Technology Platform 0-10 (best)	18	7.7
2.01 Mobile-cellular telephone subscriptions /100 pop.	63	114.5
2.02 LTE mobile network coverage % population	34	95.7
2.03 Internet users % pop.	12	89.6
2.04 FDI and technology transfer 1-7 (best)	10	5.4
2.05 Firm-level technology absorption 1-7 (best)	10	5.7
2.06 Impact of ICTs on new services and products 1-7 (best)	11	5.7
2.07 Cybersecurity commitment 0–1 (best)	27	0.7
Ability to Innovate 0-10 (best)	6	6.6
2.08 State of cluster development 1-7 (best)	3	5.4
2.09 Company investment in emerging technology 1–7 (best)	7	5.5
2.10 Gov't procurement of advanced technology products 1-7 (best)	6	4.9
2.11 Companies embracing disruptive ideas 1-7 (best)	6	4.8
2.12 Multi-stakeholder collaboration 1-7 (best)	4	5.4
2.13 R&D expenditures % GDP	20	1.9
2.14 Scientific and technical publications Number per Billion PPP$ GDP	28	25.7
2.15 Patent applications applications/million pop.	4	257.50
2.16 Venture capital deal volume US$ millions	4	148,885.3
2.17 Venture capital deal volume per size of economy US$/GDP	26	41.7
Driver: Human Capital 0-10 (best)	7	7.5
Current Labor Force 0-10 (best)	6	8.5
3.01 Manufacturing employment % working population	6	19.3
3.02 Knowledge-intensive employment % working pop.	14	44.2
3.03 Female participation in labor force ratio	25	0.92
3.04 Mean years of schooling Years	1	14.1
3.05 Availability of scientists and engineers 1-7 (best)	11	5.2
3.06 Digital skills among population 1-7 (best)	17	5.3
Future Labor Force 0-10 (best)	12	6.5
3.07 Migration migrants/100,000 pop.	37	6.7
3.08 Country capacity to attract and retain talent 1-7 (best)	10	5.1
3.09 Quality of universities Count	3	47.0
3.10 Quality of math and science education 1-7 (best)	15	5.3
3.11 Quality of vocational training 1-7 (best)	3	5.6
3.12 School life expectancy Years	14	17.3
3.13 Pupil-to-teacher ratio in primary education Ratio	23	12.2
3.14 Critical thinking in teaching 1-7 (best)	11	5.1
3.15 Active labor policies 1-7 (best)	4	5.2
3.16 On-the-job training 1-7 (best)	10	5.5
3.17 Hiring and firing practices 1-7 (best)	15	4.6

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	8	7.3
Trade 0-10 (best)	26	8.0
4.01 Trade % GDP	45	84.4
4.02 Trade tariffs % duty	11	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	15	5.1
4.04 Logistics performance 1 – 5 (best)	2	4.2
Investment 0-10 (best)	22	4.7
4.05 Greenfield investments US$ millions	14	12,411.5
4.06 FDI inflows US$ millions	18	16,395.8
4.07 Domestic credit to private sector % GDP	36	77.2
Infrastructure 0-10 (best)	2	9.2
4.08 Transport infrastructure 0-100 (best)	4	85.9
4.09 Electricity infrastructure 0-100 (best)	5	98.0
Driver: Institutional Framework 0-10 (best)	14	8.2
Government 0-10 (best)	14	8.2
5.01 Regulatory efficiency 0 – 100 (best)	43	71.8
5.02 Incidence of corruption 0-100 (best)	10	81.0
5.03 Future orientation of government 1-7 (best)	9	5.2
5.04 Rule of law (2.5) - 2.0 (best)	15	1.6
Driver: Sustainable Resources 0-10 (best)	13	7.8
Sustainability 0-10 (best)	13	7.8
6.01 Alternative and nuclear energy use % total energy use	54	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	22	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	7	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	17	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	51	1.9
6.06 Wastewater treatment 0 – 5 (worst)	4	98.6
Driver: Demand Environment 0-10 (best)	4	7.5
Foreign and Domestic Demand 0-10 (best)	5	8.2
7.01 Market size 0-100 (best)	5	82.1
Consumer Base 0-10 (best)	4	6.9
7.02 Buyer sophistication 1-7 (best)	7	4.8
7.03 Extent of market dominance 1-7 (best)	4	5.5

Ghana

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	27.6	**GDP per capita** US$	1,569.0
GDP US$ billions	43.3		

Key production indicators

Manufacturing value added 2010 millions US$	2,524.7	**Manufacturing value added growth** Annual %	1.7
Manufacturing value added in economy % GDP	5.3	**Medium hi-tech & hi-tech industries** % of manu. value added	0.8
Manufacturing employment % working population	10.7	**CO2 emission per unit of value added** kg/USD	0.7

Readiness Overall Assessment

Drivers of Production 4.1

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	82nd	**3.3**
Human Capital	20%	81st	**4.1**
Global Trade & Investment	20%	86th	**3.5**
Institutional Framework	20%	50th	**5.0**
Sustainable Resources	5%	40th	**6.7**
Demand Environment	15%	72nd	**4.1**

Structure of Production 2.0

Structure	Weighting	Rank	Score /10
Complexity	60%	98th	**2.2**
Scale	40%	94th	**1.6**

Archetype

Ghana

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	98	2.2
1.01 Economic complexity (2.5) – 2.5 (best)	98	-1.2
Structure: Scale 0-10 (best)	94	1.6
1.02 Manufacturing value added in economy % GDP	96	5.3
1.03 Manufacturing value added US$ millions	85	2,524.7
Driver: Technology & Innovation 0-10 (best)	82	3.3
Technology Platform 0-10 (best)	81	4.7
2.01 Mobile-cellular telephone subscriptions /100 pop.	28	139.1
2.02 LTE mobile network coverage % population	85	34.9
2.03 Internet users % pop.	81	34.7
2.04 FDI and technology transfer 1-7 (best)	63	4.3
2.05 Firm-level technology absorption 1-7 (best)	82	4.2
2.06 Impact of ICTs on new services and products 1-7 (best)	69	4.4
2.07 Cybersecurity commitment 0–1 (best)	79	0.3
Ability to Innovate 0-10 (best)	76	1.9
2.08 State of cluster development 1-7 (best)	37	4.2
2.09 Company investment in emerging technology 1–7 (best)	37	4.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	27	3.7
2.11 Companies embracing disruptive ideas 1-7 (best)	34	3.8
2.12 Multi-stakeholder collaboration 1-7 (best)	53	3.6
2.13 R&D expenditures % GDP	72	0.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP		-
2.15 Patent applications applications/million pop.	90	0.02
2.16 Venture capital deal volume US$ millions	88	106.9
2.17 Venture capital deal volume per size of economy US$/GDP	87	2.7
Driver: Human Capital 0-10 (best)	81	4.1
Current Labor Force 0-10 (best)	84	4.5
3.01 Manufacturing employment % working population	65	10.7
3.02 Knowledge-intensive employment % working pop.		No data
3.03 Female participation in labor force ratio	81	0.42
3.04 Mean years of schooling Years	84	6.9
3.05 Availability of scientists and engineers 1-7 (best)	73	3.8
3.06 Digital skills among population 1-7 (best)	63	4.0
Future Labor Force 0-10 (best)	58	3.6
3.07 Migration migrants/100,000 pop.	72	-3.6
3.08 Country capacity to attract and retain talent 1-7 (best)	34	3.9
3.09 Quality of universities Count	62	1.0
3.10 Quality of math and science education 1-7 (best)	71	3.7
3.11 Quality of vocational training 1-7 (best)	62	3.8
3.12 School life expectancy Years	87	11.9
3.13 Pupil-to-teacher ratio in primary education Ratio	86	31.3
3.14 Critical thinking in teaching 1-7 (best)	61	3.2
3.15 Active labor policies 1-7 (best)	60	3.2
3.16 On-the-job training 1-7 (best)	46	4.3
3.17 Hiring and firing practices 1-7 (best)	18	4.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	86	3.5
Trade 0-10 (best)	51	6.4
4.01 Trade % GDP	44	88.6
4.02 Trade tariffs % duty	86	0.11
4.03 Prevalence of non-tariff barriers 1-7 (best)	61	4.3
4.04 Logistics performance 1 – 5 (best)	77	2.7
Investment 0-10 (best)	88	0.6
4.05 Greenfield investments US$ millions	55	2,164.3
4.06 FDI inflows US$ millions	50	3,310.9
4.07 Domestic credit to private sector % GDP	92	19.6
Infrastructure 0-10 (best)	93	3.6
4.08 Transport infrastructure 0-100 (best)	86	30.8
4.09 Electricity infrastructure 0-100 (best)	94	41.5
Driver: Institutional Framework 0-10 (best)	50	5.0
Government 0-10 (best)	50	5.0
5.01 Regulatory efficiency 0 – 100 (best)	84	60.5
5.02 Incidence of corruption 0-100 (best)	51	43.0
5.03 Future orientation of government 1-7 (best)	36	3.9
5.04 Rule of law (2.5) - 2.0 (best)	56	0.0
Driver: Sustainable Resources 0-10 (best)	40	6.7
Sustainability 0-10 (best)	40	6.7
6.01 Alternative and nuclear energy use % total energy use	18	0.5
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	56	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	75	0.3
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	82	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	9	0.1
6.06 Wastewater treatment 0 – 5 (worst)	82	43.3
Driver: Demand Environment 0-10 (best)	72	4.1
Foreign and Domestic Demand 0-10 (best)	69	4.1
7.01 Market size 0-100 (best)	69	41.1
Consumer Base 0-10 (best)	65	4.1
7.02 Buyer sophistication 1-7 (best)	82	3.0
7.03 Extent of market dominance 1-7 (best)	40	4.0

Greece

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	10.9	**GDP per capita** US$	17,900.7
GDP US$ billions	194.2	**Unemployment rate** %	23.6

Key production indicators

Manufacturing value added 2010 millions US$	16,749.2	**Manufacturing value added growth** Annual %	-1.6
Manufacturing value added in economy % GDP	6.8	**Medium hi-tech & hi-tech industries** % of manu. value added	20.9
Manufacturing employment % working population	9.3	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

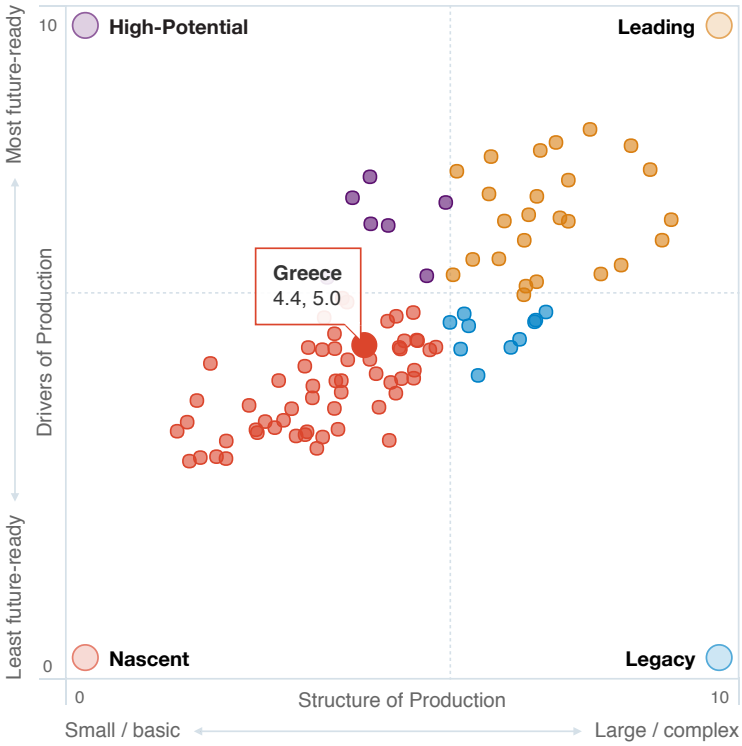
Drivers of Production 5.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	57th	**4.1**
Human Capital	20%	44th	**5.3**
Global Trade & Investment	20%	52nd	**5.4**
Institutional Framework	20%	59th	**4.9**
Sustainable Resources	5%	41st	**6.6**
Demand Environment	15%	54th	**4.6**

Structure of Production 4.4

Structure	Weighting	Rank	Score /10
Complexity	60%	51st	**5.4**
Scale	40%	75th	**3.0**

Archetype



Greece

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Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	51	5.4
1.01 Economic complexity (2.5) – 2.5 (best)	51	0.2
Structure: Scale 0-10 (best)	75	3.0
1.02 Manufacturing value added in economy % GDP	88	6.8
1.03 Manufacturing value added US$ millions	53	16,749.2
Driver: Technology & Innovation 0-10 (best)	57	4.1
Technology Platform 0-10 (best)	63	5.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	66	112.8
2.02 LTE mobile network coverage % population	35	93.0
2.03 Internet users % pop.	48	69.1
2.04 FDI and technology transfer 1-7 (best)	90	3.7
2.05 Firm-level technology absorption 1-7 (best)	64	4.3
2.06 Impact of ICTs on new services and products 1-7 (best)	81	4.2
2.07 Cybersecurity commitment 0–1 (best)	63	0.5
Ability to Innovate 0-10 (best)	50	2.4
2.08 State of cluster development 1-7 (best)	93	3.0
2.09 Company investment in emerging technology 1–7 (best)	93	2.9
2.10 Gov't procurement of advanced technology products 1-7 (best)	97	2.5
2.11 Companies embracing disruptive ideas 1-7 (best)	80	3.2
2.12 Multi-stakeholder collaboration 1-7 (best)	90	3.1
2.13 R&D expenditures % GDP	42	0.8
2.14 Scientific and technical publications Number per Billion PPP$ GDP	21	33.4
2.15 Patent applications applications/million pop.	32	7.77
2.16 Venture capital deal volume US$ millions	45	3,390.6
2.17 Venture capital deal volume per size of economy US$/GDP	51	16.3
Driver: Human Capital 0-10 (best)	44	5.3
Current Labor Force 0-10 (best)	35	7.0
3.01 Manufacturing employment % working population	75	9.3
3.02 Knowledge-intensive employment % working pop.	41	29.9
3.03 Female participation in labor force ratio	46	0.81
3.04 Mean years of schooling Years	43	10.7
3.05 Availability of scientists and engineers 1-7 (best)	10	5.2
3.06 Digital skills among population 1-7 (best)	56	4.3
Future Labor Force 0-10 (best)	55	3.7
3.07 Migration migrants/100,000 pop.	39	4.6
3.08 Country capacity to attract and retain talent 1-7 (best)	95	2.2
3.09 Quality of universities Count	38	6.0
3.10 Quality of math and science education 1-7 (best)	46	4.4
3.11 Quality of vocational training 1-7 (best)	84	3.5
3.12 School life expectancy Years	11	17.8
3.13 Pupil-to-teacher ratio in primary education Ratio	4	9.4
3.14 Critical thinking in teaching 1-7 (best)	85	2.8
3.15 Active labor policies 1-7 (best)	79	2.8
3.16 On-the-job training 1-7 (best)	75	3.8
3.17 Hiring and firing practices 1-7 (best)	65	3.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	52	5.4
Trade 0-10 (best)	60	6.1
4.01 Trade % GDP	65	61.0
4.02 Trade tariffs % duty	24	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	23	4.9
4.04 Logistics performance 1 – 5 (best)	44	3.2
Investment 0-10 (best)	39	3.0
4.05 Greenfield investments US$ millions	66	1,394.0
4.06 FDI inflows US$ millions	60	1,812.9
4.07 Domestic credit to private sector % GDP	24	108.8
Infrastructure 0-10 (best)	40	7.0
4.08 Transport infrastructure 0-100 (best)	43	51.7
4.09 Electricity infrastructure 0-100 (best)	39	88.1
Driver: Institutional Framework 0-10 (best)	59	4.9
Government 0-10 (best)	59	4.9
5.01 Regulatory efficiency 0 – 100 (best)	61	67.8
5.02 Incidence of corruption 0-100 (best)	50	44.0
5.03 Future orientation of government 1-7 (best)	100	2.0
5.04 Rule of law (2.5) - 2.0 (best)	49	0.2
Driver: Sustainable Resources 0-10 (best)	41	6.6
Sustainability 0-10 (best)	41	6.6
6.01 Alternative and nuclear energy use % total energy use	70	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	42	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	20	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	32	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	70	3.3
6.06 Wastewater treatment 0 – 5 (worst)	21	92.0
Driver: Demand Environment 0-10 (best)	54	4.6
Foreign and Domestic Demand 0-10 (best)	55	5.0
7.01 Market size 0-100 (best)	55	50.2
Consumer Base 0-10 (best)	58	4.2
7.02 Buyer sophistication 1-7 (best)	70	3.2
7.03 Extent of market dominance 1-7 (best)	48	3.9

Guatemala

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	16.7	**GDP per capita** US$	4,088.9
GDP US$ billions	68.2		

Key production indicators

Manufacturing value added 2010 millions US$	9,229.6	**Manufacturing value added growth** Annual %	2.5
Manufacturing value added in economy % GDP	17.9	**Medium hi-tech & hi-tech industries** % of manu. value added	22.4
Manufacturing employment % working population	12.7	**CO2 emission per unit of value added** kg/USD	0.6

Readiness Overall Assessment

Drivers of Production 3.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	94th	**2.9**
Human Capital	20%	82nd	**4.0**
Global Trade & Investment	20%	87th	**3.5**
Institutional Framework	20%	98th	**3.2**
Sustainable Resources	5%	27th	**6.9**
Demand Environment	15%	63rd	**4.2**

Structure of Production 4.0

Structure	Weighting	Rank	Score /10
Complexity	60%	79th	**3.7**
Scale	40%	42nd	**4.5**

Archetype

Guatemala

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Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	79	3.7
1.01 Economic complexity (2.5) – 2.5 (best)	79	-0.6
Structure: Scale 0-10 (best)	42	4.5
1.02 Manufacturing value added in economy % GDP	22	17.9
1.03 Manufacturing value added US$ millions	61	9,229.6
Driver: Technology & Innovation 0-10 (best)	94	2.9
Technology Platform 0-10 (best)	91	4.3
2.01 Mobile-cellular telephone subscriptions /100 pop.	60	115.3
2.02 LTE mobile network coverage % population	80	40.4
2.03 Internet users % pop.	82	34.5
2.04 FDI and technology transfer 1-7 (best)	57	4.4
2.05 Firm-level technology absorption 1-7 (best)	37	4.9
2.06 Impact of ICTs on new services and products 1-7 (best)	42	4.9
2.07 Cybersecurity commitment 0–1 (best)	97	0.1
Ability to Innovate 0-10 (best)	95	1.4
2.08 State of cluster development 1-7 (best)	63	3.7
2.09 Company investment in emerging technology 1–7 (best)	55	3.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	95	2.6
2.11 Companies embracing disruptive ideas 1-7 (best)	44	3.7
2.12 Multi-stakeholder collaboration 1-7 (best)	45	3.7
2.13 R&D expenditures % GDP	100	0.0
2.14 Scientific and technical publications Number per Billion PPP$ GDP	94	1.3
2.15 Patent applications applications/million pop.	96	0.01
2.16 Venture capital deal volume US$ millions	86	121.2
2.17 Venture capital deal volume per size of economy US$/GDP	92	1.9
Driver: Human Capital 0-10 (best)	82	4.0
Current Labor Force 0-10 (best)	83	4.6
3.01 Manufacturing employment % working population	40	12.7
3.02 Knowledge-intensive employment % working pop.	84	9.6
3.03 Female participation in labor force ratio	77	0.46
3.04 Mean years of schooling Years	83	7.1
3.05 Availability of scientists and engineers 1-7 (best)	62	3.9
3.06 Digital skills among population 1-7 (best)	84	3.6
Future Labor Force 0-10 (best)	68	3.4
3.07 Migration migrants/100,000 pop.	74	-4.6
3.08 Country capacity to attract and retain talent 1-7 (best)	42	3.5
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	98	2.6
3.11 Quality of vocational training 1-7 (best)	38	4.4
3.12 School life expectancy Years	93	10.9
3.13 Pupil-to-teacher ratio in primary education Ratio	68	20.4
3.14 Critical thinking in teaching 1-7 (best)	75	3.0
3.15 Active labor policies 1-7 (best)	91	2.6
3.16 On-the-job training 1-7 (best)	32	4.6
3.17 Hiring and firing practices 1-7 (best)	37	4.1

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	87	3.5
Trade 0-10 (best)	79	4.6
4.01 Trade % GDP	79	46.8
4.02 Trade tariffs % duty	44	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	41	4.6
4.04 Logistics performance 1 – 5 (best)	88	2.5
Investment 0-10 (best)	87	0.6
4.05 Greenfield investments US$ millions	90	495.9
4.06 FDI inflows US$ millions	71	1,263.6
4.07 Domestic credit to private sector % GDP	78	34.3
Infrastructure 0-10 (best)	79	5.4
4.08 Transport infrastructure 0-100 (best)	94	27.3
4.09 Electricity infrastructure 0-100 (best)	60	80.1
Driver: Institutional Framework 0-10 (best)	98	3.2
Government 0-10 (best)	98	3.2
5.01 Regulatory efficiency 0 – 100 (best)	75	62.1
5.02 Incidence of corruption 0-100 (best)	92	28.0
5.03 Future orientation of government 1-7 (best)	88	2.8
5.04 Rule of law (2.5) - 2.0 (best)	96	-1.0
Driver: Sustainable Resources 0-10 (best)	27	6.9
Sustainability 0-10 (best)	27	6.9
6.01 Alternative and nuclear energy use % total energy use	10	0.6
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	46	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	55	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	67	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	30	1.0
6.06 Wastewater treatment 0 – 5 (worst)	80	46.5
Driver: Demand Environment 0-10 (best)	63	4.2
Foreign and Domestic Demand 0-10 (best)	70	4.1
7.01 Market size 0-100 (best)	70	40.8
Consumer Base 0-10 (best)	47	4.4
7.02 Buyer sophistication 1-7 (best)	53	3.5
7.03 Extent of market dominance 1-7 (best)	50	3.8

Honduras

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	8.2	**GDP per capita** US$	2,608.6
GDP US$ billions	21.4	**Unemployment rate** %	6.3

Key production indicators

Manufacturing value added 2010 millions US$	3,161.1	**Manufacturing value added growth** Annual %	4.0
Manufacturing value added in economy % GDP	16.2	**Medium hi-tech & hi-tech industries** % of manu. value added	7.2
Manufacturing employment % working population	14.8	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

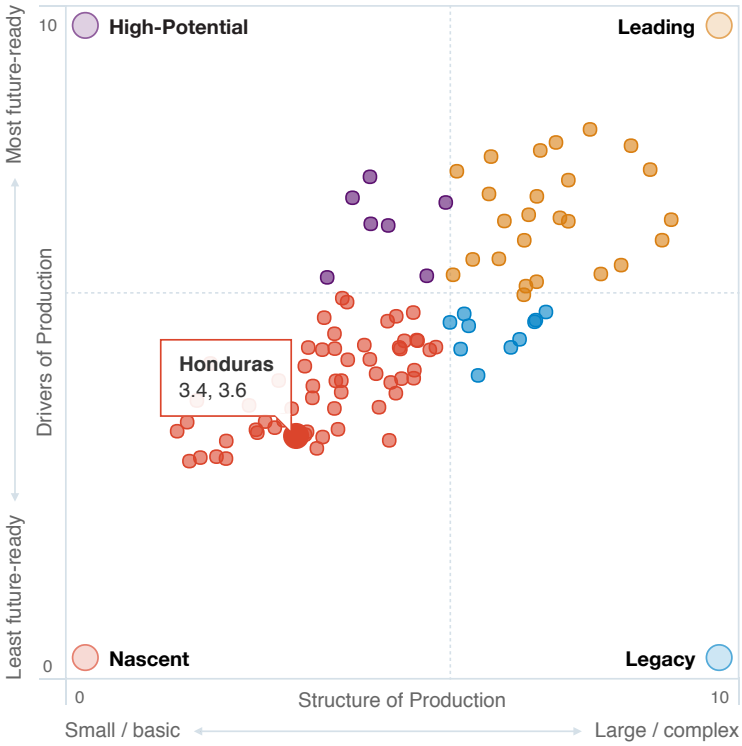
Drivers of Production 3.6

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	96th	**2.7**
Human Capital	20%	87th	**3.7**
Global Trade & Investment	20%	74th	**4.3**
Institutional Framework	20%	99th	**3.2**
Sustainable Resources	5%	33rd	**6.8**
Demand Environment	15%	92nd	**3.3**

Structure of Production 3.4

Structure	Weighting	Rank	Score /10
Complexity	60%	85th	**3.3**
Scale	40%	62nd	**3.6**

Archetype



Honduras

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	85	3.3
1.01 Economic complexity (2.5) – 2.5 (best)	85	-0.8
Structure: Scale 0-10 (best)	62	3.6
1.02 Manufacturing value added in economy % GDP	31	16.2
1.03 Manufacturing value added US$ millions	80	3,161.1
Driver: Technology & Innovation 0-10 (best)	96	2.7
Technology Platform 0-10 (best)	97	3.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	85	91.2
2.02 LTE mobile network coverage % population	71	57.7
2.03 Internet users % pop.	85	30.0
2.04 FDI and technology transfer 1-7 (best)	58	4.4
2.05 Firm-level technology absorption 1-7 (best)	56	4.5
2.06 Impact of ICTs on new services and products 1-7 (best)	63	4.5
2.07 Cybersecurity commitment 0–1 (best)	99	0.0
Ability to Innovate 0-10 (best)	92	1.6
2.08 State of cluster development 1-7 (best)	66	3.6
2.09 Company investment in emerging technology 1–7 (best)	77	3.2
2.10 Gov't procurement of advanced technology products 1-7 (best)	84	2.8
2.11 Companies embracing disruptive ideas 1-7 (best)	77	3.2
2.12 Multi-stakeholder collaboration 1-7 (best)	77	3.3
2.13 R&D expenditures % GDP	46	0.8
2.14 Scientific and technical publications Number per Billion PPP$ GDP	95	1.2
2.15 Patent applications applications/million pop.	92	0.01
2.16 Venture capital deal volume US$ millions	99	4.8
2.17 Venture capital deal volume per size of economy US$/GDP	100	0.2
Driver: Human Capital 0-10 (best)	87	3.7
Current Labor Force 0-10 (best)	85	4.5
3.01 Manufacturing employment % working population	26	14.8
3.02 Knowledge-intensive employment % working pop.	80	12.0
3.03 Female participation in labor force ratio	78	0.46
3.04 Mean years of schooling Years	90	6.3
3.05 Availability of scientists and engineers 1-7 (best)	82	3.6
3.06 Digital skills among population 1-7 (best)	82	3.6
Future Labor Force 0-10 (best)	86	2.9
3.07 Migration migrants/100,000 pop.	79	-6.2
3.08 Country capacity to attract and retain talent 1-7 (best)	67	3.1
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	88	3.1
3.11 Quality of vocational training 1-7 (best)	71	3.7
3.12 School life expectancy Years	89	11.5
3.13 Pupil-to-teacher ratio in primary education Ratio	83	29.1
3.14 Critical thinking in teaching 1-7 (best)	81	3.0
3.15 Active labor policies 1-7 (best)	93	2.5
3.16 On-the-job training 1-7 (best)	66	4.0
3.17 Hiring and firing practices 1-7 (best)	54	3.7

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	74	4.3
Trade 0-10 (best)	35	7.7
4.01 Trade % GDP	31	100.7
4.02 Trade tariffs % duty	52	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	78	4.1
4.04 Logistics performance 1 – 5 (best)	87	2.5
Investment 0-10 (best)	75	1.3
4.05 Greenfield investments US$ millions	85	556.7
4.06 FDI inflows US$ millions	76	1,093.6
4.07 Domestic credit to private sector % GDP	54	56.3
Infrastructure 0-10 (best)	91	4.0
4.08 Transport infrastructure 0-100 (best)	77	34.9
4.09 Electricity infrastructure 0-100 (best)	92	44.7
Driver: Institutional Framework 0-10 (best)	99	3.2
Government 0-10 (best)	99	3.2
5.01 Regulatory efficiency 0 – 100 (best)	98	55.1
5.02 Incidence of corruption 0-100 (best)	84	30.0
5.03 Future orientation of government 1-7 (best)	66	3.4
5.04 Rule of law (2.5) - 2.0 (best)	100	-1.1
Driver: Sustainable Resources 0-10 (best)	33	6.8
Sustainability 0-10 (best)	33	6.8
6.01 Alternative and nuclear energy use % total energy use	19	0.5
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	68	0.5
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	84	0.4
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	84	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	6	0.1
6.06 Wastewater treatment 0 – 5 (worst)	66	65.2
Driver: Demand Environment 0-10 (best)	92	3.3
Foreign and Domestic Demand 0-10 (best)	89	3.0
7.01 Market size 0-100 (best)	89	29.9
Consumer Base 0-10 (best)	89	3.5
7.02 Buyer sophistication 1-7 (best)	86	2.9
7.03 Extent of market dominance 1-7 (best)	80	3.3

Hong Kong SAR

High Potential

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	7.4	**GDP per capita** US$	43,528.0
GDP US$ billions	320.7	**Unemployment rate** %	2.7

Key production indicators

Manufacturing value added 2010 millions US$	3,434.2	**Manufacturing value added growth** Annual %	-6.6
Manufacturing value added in economy % GDP	1.3	**Medium hi-tech & hi-tech industries** % of manu. value added	36.1
Manufacturing employment % working population	3.0	**CO2 emission per unit of value added** kg/USD	2.1

Readiness Overall Assessment

Drivers of Production 7.5

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	9th	**7.1**
Human Capital	20%	16th	**6.9**
Global Trade & Investment	20%	2nd	**8.4**
Institutional Framework	20%	11th	**8.4**
Sustainable Resources	5%	43rd	**6.5**
Demand Environment	15%	16th	**6.4**

Structure of Production 4.5

Structure	Weighting	Rank	Score /10
Complexity	60%	31st	**6.8**
Scale	40%	97th	**1.1**

Archetype

Hong Kong SAR

High Potential

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	31	6.8
1.01 Economic complexity (2.5) – 2.5 (best)	31	0.8
Structure: Scale 0-10 (best)	97	1.1
1.02 Manufacturing value added in economy % GDP	100	1.3
1.03 Manufacturing value added US$ millions	78	3,434.2
Driver: Technology & Innovation 0-10 (best)	9	7.1
Technology Platform 0-10 (best)	11	8.1
2.01 Mobile-cellular telephone subscriptions /100 pop.	1	234.0
2.02 LTE mobile network coverage % population	11	99.0
2.03 Internet users % pop.	17	87.3
2.04 FDI and technology transfer 1-7 (best)	9	5.4
2.05 Firm-level technology absorption 1-7 (best)	25	5.2
2.06 Impact of ICTs on new services and products 1-7 (best)	23	5.4
2.07 Cybersecurity commitment 0–1 (best)		-
Ability to Innovate 0-10 (best)	10	6.2
2.08 State of cluster development 1-7 (best)	6	5.3
2.09 Company investment in emerging technology 1–7 (best)	15	4.9
2.10 Gov't procurement of advanced technology products 1-7 (best)	13	4.2
2.11 Companies embracing disruptive ideas 1-7 (best)	10	4.6
2.12 Multi-stakeholder collaboration 1-7 (best)	15	4.8
2.13 R&D expenditures % GDP	11	2.6
2.14 Scientific and technical publications Number per Billion PPP$ GDP		-
2.15 Patent applications applications/million pop.	23	43.83
2.16 Venture capital deal volume US$ millions	16	43,097.9
2.17 Venture capital deal volume per size of economy US$/GDP	6	140.3
Driver: Human Capital 0-10 (best)	16	6.9
Current Labor Force 0-10 (best)	34	7.0
3.01 Manufacturing employment % working population	98	3.0
3.02 Knowledge-intensive employment % working pop.	23	38.6
3.03 Female participation in labor force ratio	10	0.98
3.04 Mean years of schooling Years	25	12.0
3.05 Availability of scientists and engineers 1-7 (best)	22	4.8
3.06 Digital skills among population 1-7 (best)	10	5.6
Future Labor Force 0-10 (best)	10	6.7
3.07 Migration migrants/100,000 pop.	13	20.5
3.08 Country capacity to attract and retain talent 1-7 (best)	7	5.2
3.09 Quality of universities Count	35	7.0
3.10 Quality of math and science education 1-7 (best)	9	5.5
3.11 Quality of vocational training 1-7 (best)	15	5.1
3.12 School life expectancy Years	33	15.7
3.13 Pupil-to-teacher ratio in primary education Ratio	31	13.7
3.14 Critical thinking in teaching 1-7 (best)	33	3.8
3.15 Active labor policies 1-7 (best)	10	4.9
3.16 On-the-job training 1-7 (best)	14	5.4
3.17 Hiring and firing practices 1-7 (best)	1	5.8

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	2	8.4
Trade 0-10 (best)	2	9.3
4.01 Trade % GDP	1	372.6
4.02 Trade tariffs % duty	1	0.00
4.03 Prevalence of non-tariff barriers 1-7 (best)	2	5.8
4.04 Logistics performance 1 – 5 (best)	7	4.1
Investment 0-10 (best)	8	7.7
4.05 Greenfield investments US$ millions	33	6,055.2
4.06 FDI inflows US$ millions	3	108,126.0
4.07 Domestic credit to private sector % GDP	3	203.8
Infrastructure 0-10 (best)	12	8.4
4.08 Transport infrastructure 0-100 (best)	1	88.8
4.09 Electricity infrastructure 0-100 (best)	65	78.4
Driver: Institutional Framework 0-10 (best)	11	8.4
Government 0-10 (best)	11	8.4
5.01 Regulatory efficiency 0 – 100 (best)	3	89.0
5.02 Incidence of corruption 0-100 (best)	13	77.0
5.03 Future orientation of government 1-7 (best)	16	4.8
5.04 Rule of law (2.5) - 2.0 (best)	12	1.7
Driver: Sustainable Resources 0-10 (best)	43	6.5
Sustainability 0-10 (best)	43	6.5
6.01 Alternative and nuclear energy use % total energy use	91	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)		-
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)		-
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)		-
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)	16	6.4
Foreign and Domestic Demand 0-10 (best)	24	6.5
7.01 Market size 0-100 (best)	24	64.5
Consumer Base 0-10 (best)	9	6.3
7.02 Buyer sophistication 1-7 (best)	4	5.0
7.03 Extent of market dominance 1-7 (best)	19	4.6

Hungary

Legacy

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	9.8	**GDP per capita** US$	12,778.3
GDP US$ billions	125.7	**Unemployment rate** %	5.1

Key production indicators

Manufacturing value added 2010 millions US$	27,484.7	**Manufacturing value added growth** Annual %	4.5
Manufacturing value added in economy % GDP	18.9	**Medium hi-tech & hi-tech industries** % of manu. value added	58.8
Manufacturing employment % working population	21.4	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

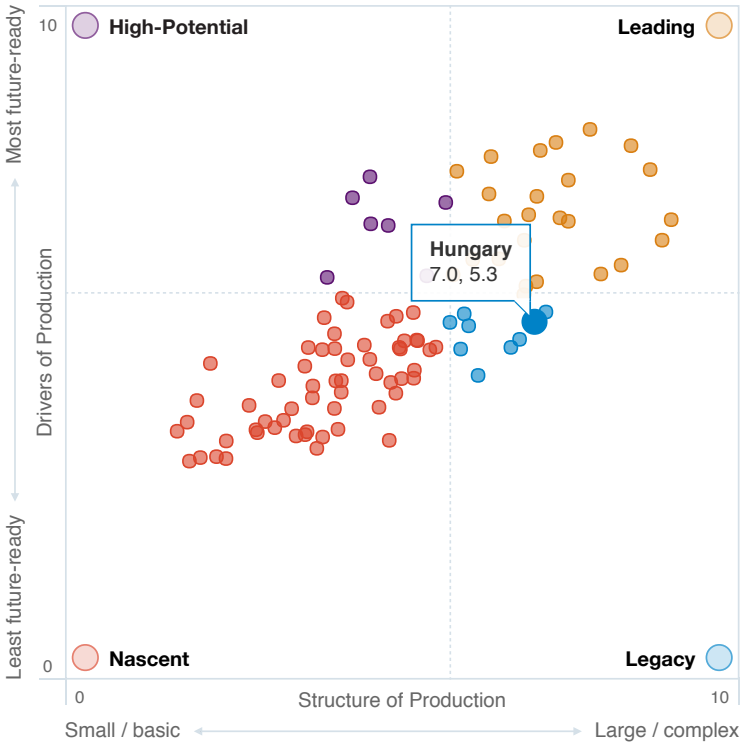
Drivers of Production 5.3

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	49th	**4.4**
Human Capital	20%	42nd	**5.5**
Global Trade & Investment	20%	44th	**5.6**
Institutional Framework	20%	44th	**5.7**
Sustainable Resources	5%	12th	**8.0**
Demand Environment	15%	59th	**4.5**

Structure of Production 7.0

Structure	Weighting	Rank	Score /10
Complexity	60%	14th	**8.0**
Scale	40%	26th	**5.3**

Archetype



Hungary

Legacy

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	14	8.0
1.01 Economic complexity (2.5) – 2.5 (best)	14	1.4
Structure: Scale 0-10 (best)	26	5.3
1.02 Manufacturing value added in economy % GDP	16	18.9
1.03 Manufacturing value added US$ millions	45	27,484.7
Driver: Technology & Innovation 0-10 (best)	49	4.4
Technology Platform 0-10 (best)	45	6.4
2.01 Mobile-cellular telephone subscriptions /100 pop.	53	119.1
2.02 LTE mobile network coverage % population	21	98.0
2.03 Internet users % pop.	28	79.3
2.04 FDI and technology transfer 1-7 (best)	44	4.7
2.05 Firm-level technology absorption 1-7 (best)	91	4.0
2.06 Impact of ICTs on new services and products 1-7 (best)	45	4.8
2.07 Cybersecurity commitment 0–1 (best)	54	0.5
Ability to Innovate 0-10 (best)	48	2.4
2.08 State of cluster development 1-7 (best)	72	3.5
2.09 Company investment in emerging technology 1–7 (best)	85	3.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	81	2.8
2.11 Companies embracing disruptive ideas 1-7 (best)	99	2.9
2.12 Multi-stakeholder collaboration 1-7 (best)	82	3.2
2.13 R&D expenditures % GDP	29	1.4
2.14 Scientific and technical publications Number per Billion PPP$ GDP	29	25.3
2.15 Patent applications applications/million pop.	27	15.76
2.16 Venture capital deal volume US$ millions	62	943.5
2.17 Venture capital deal volume per size of economy US$/GDP	72	7.3
Driver: Human Capital 0-10 (best)	42	5.5
Current Labor Force 0-10 (best)	36	6.9
3.01 Manufacturing employment % working population	4	21.4
3.02 Knowledge-intensive employment % working pop.	33	34.9
3.03 Female participation in labor force ratio	32	0.89
3.04 Mean years of schooling Years	21	12.3
3.05 Availability of scientists and engineers 1-7 (best)	78	3.6
3.06 Digital skills among population 1-7 (best)	93	3.3
Future Labor Force 0-10 (best)	49	4.0
3.07 Migration migrants/100,000 pop.	35	7.6
3.08 Country capacity to attract and retain talent 1-7 (best)	86	2.5
3.09 Quality of universities Count	38	6.0
3.10 Quality of math and science education 1-7 (best)	61	3.9
3.11 Quality of vocational training 1-7 (best)	96	3.2
3.12 School life expectancy Years	39	15.4
3.13 Pupil-to-teacher ratio in primary education Ratio	10	11.0
3.14 Critical thinking in teaching 1-7 (best)	62	3.2
3.15 Active labor policies 1-7 (best)	59	3.2
3.16 On-the-job training 1-7 (best)	84	3.7
3.17 Hiring and firing practices 1-7 (best)	22	4.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	44	5.6
Trade 0-10 (best)	20	8.4
4.01 Trade % GDP	7	174.7
4.02 Trade tariffs % duty	19	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	75	4.1
4.04 Logistics performance 1 – 5 (best)	33	3.4
Investment 0-10 (best)	76	1.2
4.05 Greenfield investments US$ millions	47	3,085.0
4.06 FDI inflows US$ millions	44	4,251.9
4.07 Domestic credit to private sector % GDP	77	34.4
Infrastructure 0-10 (best)	41	7.0
4.08 Transport infrastructure 0-100 (best)	25	61.0
4.09 Electricity infrastructure 0-100 (best)	64	78.7
Driver: Institutional Framework 0-10 (best)	44	5.7
Government 0-10 (best)	44	5.7
5.01 Regulatory efficiency 0 – 100 (best)	31	73.4
5.02 Incidence of corruption 0-100 (best)	42	48.0
5.03 Future orientation of government 1-7 (best)	85	3.0
5.04 Rule of law (2.5) - 2.0 (best)	39	0.5
Driver: Sustainable Resources 0-10 (best)	12	8.0
Sustainability 0-10 (best)	12	8.0
6.01 Alternative and nuclear energy use % total energy use	38	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	43	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	29	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	46	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	19	0.5
6.06 Wastewater treatment 0 – 5 (worst)	38	84.6
Driver: Demand Environment 0-10 (best)	59	4.5
Foreign and Domestic Demand 0-10 (best)	46	5.4
7.01 Market size 0-100 (best)	46	53.7
Consumer Base 0-10 (best)	83	3.7
7.02 Buyer sophistication 1-7 (best)	73	3.2
7.03 Extent of market dominance 1-7 (best)	85	3.2

India

Legacy

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	1,309.3	**GDP per capita** US$	1,723.3
GDP US$ billions	2,256.4		

Key production indicators

Manufacturing value added 2010 millions US$	423,721.9	**Manufacturing value added growth** Annual %	8.4
Manufacturing value added in economy % GDP	17.0	**Medium hi-tech & hi-tech industries** % of manu. value added	37.9
Manufacturing employment % working population	11.4	**CO2 emission per unit of value added** kg/USD	1.5

Readiness Overall Assessment

Drivers of Production 5.2

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	34th	**4.8**
Human Capital	20%	63rd	**4.7**
Global Trade & Investment	20%	55th	**5.2**
Institutional Framework	20%	54th	**5.0**
Sustainable Resources	5%	96th	**4.0**
Demand Environment	15%	5th	**7.4**

Structure of Production 6.0

Structure	Weighting	Rank	Score /10
Complexity	60%	48th	**5.6**
Scale	40%	9th	**6.6**

Archetype

India

Legacy

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WORLD ECONOMIC FORUM

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: Scale 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$ billiions)	94	1.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	76	0.3
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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
7.03 Extent of market dominance 1-7 (best)	21	4.4

Indonesia

Nascent

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	258.7	**GDP per capita** US$	3,604.3
GDP US$ billions	932.4	**Unemployment rate** %	5.6

Key production indicators

Manufacturing value added 2010 millions US$	225,673.8	**Manufacturing value added growth** Annual %	5.6
Manufacturing value added in economy % GDP	21.8	**Medium hi-tech & hi-tech industries** % of manu. value added	35.1
Manufacturing employment % working population	13.5	**CO2 emission per unit of value added** kg/USD	0.4

Readiness Overall Assessment

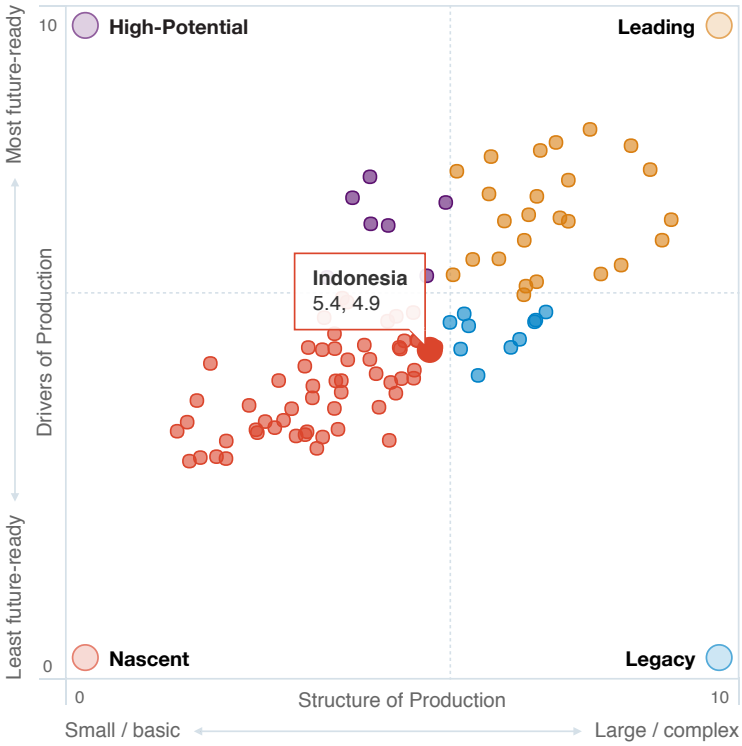
Drivers of Production 4.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	61st	**4.0**
Human Capital	20%	55th	**5.0**
Global Trade & Investment	20%	61st	**5.1**
Institutional Framework	20%	69th	**4.6**
Sustainable Resources	5%	94th	**4.1**
Demand Environment	15%	15th	**6.4**

Structure of Production 5.4

Structure	Weighting	Rank	Score /10
Complexity	60%	73rd	**4.3**
Scale	40%	6th	**7.1**

Archetype



Indonesia

Nascent

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	73	4.3
1.01 Economic complexity (2.5) – 2.5 (best)	73	-0.3
Structure: Scale 0-10 (best)	6	7.1
1.02 Manufacturing value added in economy % GDP	7	21.8
1.03 Manufacturing value added US$ millions	11	225,673.8
Driver: Technology & Innovation 0-10 (best)	61	4.0
Technology Platform 0-10 (best)	69	5.4
2.01 Mobile-cellular telephone subscriptions /100 pop.	15	149.1
2.02 LTE mobile network coverage % population	82	37.9
2.03 Internet users % pop.	93	25.4
2.04 FDI and technology transfer 1-7 (best)	41	4.7
2.05 Firm-level technology absorption 1-7 (best)	35	5.0
2.06 Impact of ICTs on new services and products 1-7 (best)	43	4.9
2.07 Cybersecurity commitment 0–1 (best)	69	0.4
Ability to Innovate 0-10 (best)	44	2.6
2.08 State of cluster development 1-7 (best)	24	4.6
2.09 Company investment in emerging technology 1–7 (best)	30	4.3
2.10 Gov't procurement of advanced technology products 1-7 (best)	10	4.4
2.11 Companies embracing disruptive ideas 1-7 (best)	18	4.3
2.12 Multi-stakeholder collaboration 1-7 (best)	22	4.5
2.13 R&D expenditures % GDP	96	0.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	97	0.7
2.15 Patent applications applications/million pop.	83	0.08
2.16 Venture capital deal volume US$ millions	22	23,809.4
2.17 Venture capital deal volume per size of economy US$/GDP	34	26.6
Driver: Human Capital 0-10 (best)	55	5.0
Current Labor Force 0-10 (best)	71	5.4
3.01 Manufacturing employment % working population	33	13.5
3.02 Knowledge-intensive employment % working pop.	83	9.8
3.03 Female participation in labor force ratio	73	0.54
3.04 Mean years of schooling Years	75	7.9
3.05 Availability of scientists and engineers 1-7 (best)	33	4.5
3.06 Digital skills among population 1-7 (best)	30	4.8
Future Labor Force 0-10 (best)	40	4.6
3.07 Migration migrants/100,000 pop.	69	-2.7
3.08 Country capacity to attract and retain talent 1-7 (best)	24	4.4
3.09 Quality of universities Count	23	9.0
3.10 Quality of math and science education 1-7 (best)	35	4.6
3.11 Quality of vocational training 1-7 (best)	33	4.4
3.12 School life expectancy Years	75	12.8
3.13 Pupil-to-teacher ratio in primary education Ratio	43	16.6
3.14 Critical thinking in teaching 1-7 (best)	25	4.1
3.15 Active labor policies 1-7 (best)	30	4.2
3.16 On-the-job training 1-7 (best)	29	4.7
3.17 Hiring and firing practices 1-7 (best)	20	4.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	61	5.1
Trade 0-10 (best)	84	4.0
4.01 Trade % GDP	89	37.4
4.02 Trade tariffs % duty	60	0.05
4.03 Prevalence of non-tariff barriers 1-7 (best)	65	4.3
4.04 Logistics performance 1 – 5 (best)	55	3.0
Investment 0-10 (best)	20	4.9
4.05 Greenfield investments US$ millions	6	22,814.0
4.06 FDI inflows US$ millions	19	15,597.3
4.07 Domestic credit to private sector % GDP	73	39.4
Infrastructure 0-10 (best)	56	6.3
4.08 Transport infrastructure 0-100 (best)	50	49.1
4.09 Electricity infrastructure 0-100 (best)	67	77.5
Driver: Institutional Framework 0-10 (best)	69	4.6
Government 0-10 (best)	69	4.6
5.01 Regulatory efficiency 0 – 100 (best)	94	57.3
5.02 Incidence of corruption 0-100 (best)	66	37.0
5.03 Future orientation of government 1-7 (best)	23	4.5
5.04 Rule of law (2.5) - 2.0 (best)	75	-0.4
Driver: Sustainable Resources 0-10 (best)	94	4.1
Sustainability 0-10 (best)	94	4.1
6.01 Alternative and nuclear energy use % total energy use	29	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	71	0.5
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	74	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	76	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	69	3.3
6.06 Wastewater treatment 0 – 5 (worst)	91	12.7
Driver: Demand Environment 0-10 (best)	15	6.4
Foreign and Domestic Demand 0-10 (best)	9	7.7
7.01 Market size 0-100 (best)	9	76.9
Consumer Base 0-10 (best)	29	5.1
7.02 Buyer sophistication 1-7 (best)	31	3.9
7.03 Extent of market dominance 1-7 (best)	31	4.2

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Key economic indicators

Population millions	4.7	**GDP per capita** US$	62,562.3
GDP US$ billions	293.6	**Unemployment rate** %	7.9

Key production indicators

Manufacturing value added 2010 millions US$	63,103.5	**Manufacturing value added growth** Annual %	5.5
Manufacturing value added in economy % GDP	19.8	**Medium hi-tech & hi-tech industries** % of manu. value added	61.0
Manufacturing employment % working population	11.2	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

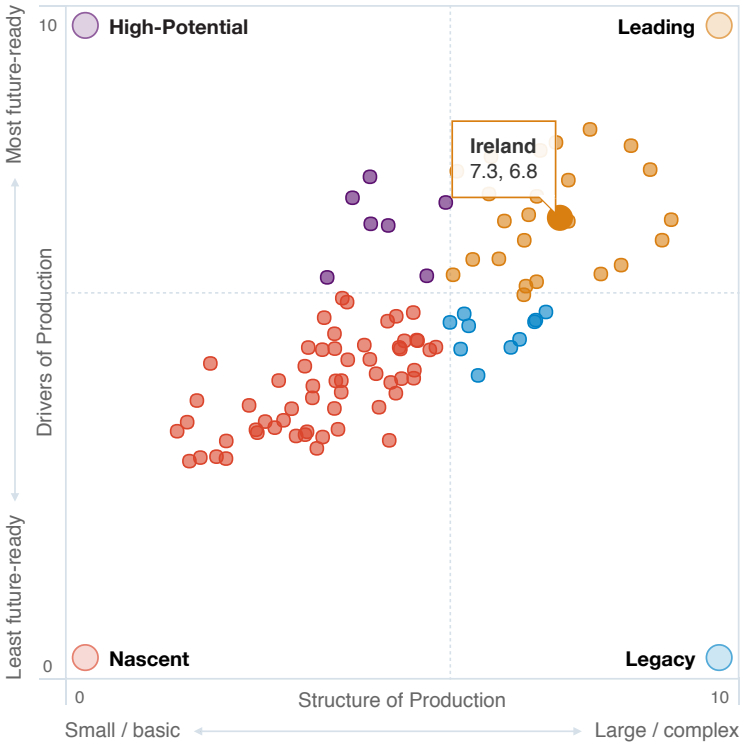
Drivers of Production 6.8

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	18th	**6.6**
Human Capital	20%	14th	**7.0**
Global Trade & Investment	20%	16th	**6.8**
Institutional Framework	20%	16th	**7.9**
Sustainable Resources	5%	36th	**6.7**
Demand Environment	15%	30th	**5.7**

Structure of Production 7.3

Structure	Weighting	Rank	Score /10
Complexity	60%	13th	**8.2**
Scale	40%	14th	**6.1**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	13	8.2
1.01 Economic complexity (2.5) – 2.5 (best)	13	1.4
Structure: Scale 0-10 (best)	14	6.1
1.02 Manufacturing value added in economy % GDP	11	20.6
1.03 Manufacturing value added US$ millions	29	63,103.5
Driver: Technology & Innovation 0-10 (best)	18	6.6
Technology Platform 0-10 (best)	24	7.5
2.01 Mobile-cellular telephone subscriptions /100 pop.	79	103.6
2.02 LTE mobile network coverage % population	39	90.0
2.03 Internet users % pop.	22	82.2
2.04 FDI and technology transfer 1-7 (best)	1	6.1
2.05 Firm-level technology absorption 1-7 (best)	19	5.3
2.06 Impact of ICTs on new services and products 1-7 (best)	18	5.6
2.07 Cybersecurity commitment 0–1 (best)	29	0.7
Ability to Innovate 0-10 (best)	15	5.6
2.08 State of cluster development 1-7 (best)	18	4.8
2.09 Company investment in emerging technology 1–7 (best)	19	4.7
2.10 Gov't procurement of advanced technology products 1-7 (best)	46	3.4
2.11 Companies embracing disruptive ideas 1-7 (best)	19	4.3
2.12 Multi-stakeholder collaboration 1-7 (best)	16	4.8
2.13 R&D expenditures % GDP	27	1.5
2.14 Scientific and technical publications Number per Billion PPP$ GDP	33	23.3
2.15 Patent applications applications/million pop.	18	63.60
2.16 Venture capital deal volume US$ millions	15	46,995.6
2.17 Venture capital deal volume per size of economy US$/GDP	3	169.0
Driver: Human Capital 0-10 (best)	14	7.0
Current Labor Force 0-10 (best)	15	8.1
3.01 Manufacturing employment % working population	54	11.2
3.02 Knowledge-intensive employment % working pop.	22	40.6
3.03 Female participation in labor force ratio	11	0.98
3.04 Mean years of schooling Years	20	12.3
3.05 Availability of scientists and engineers 1-7 (best)	20	4.8
3.06 Digital skills among population 1-7 (best)	22	5.1
Future Labor Force 0-10 (best)	19	5.8
3.07 Migration migrants/100,000 pop.	27	10.8
3.08 Country capacity to attract and retain talent 1-7 (best)	14	4.9
3.09 Quality of universities Count	28	8.0
3.10 Quality of math and science education 1-7 (best)	18	5.2
3.11 Quality of vocational training 1-7 (best)	23	4.8
3.12 School life expectancy Years	3	19.7
3.13 Pupil-to-teacher ratio in primary education Ratio	38	16.1
3.14 Critical thinking in teaching 1-7 (best)	26	4.1
3.15 Active labor policies 1-7 (best)	17	4.7
3.16 On-the-job training 1-7 (best)	18	5.3
3.17 Hiring and firing practices 1-7 (best)	36	4.1

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	16	6.8
Trade 0-10 (best)	6	8.8
4.01 Trade % GDP	3	216.7
4.02 Trade tariffs % duty	25	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	16	5.1
4.04 Logistics performance 1 – 5 (best)	17	3.8
Investment 0-10 (best)	23	4.6
4.05 Greenfield investments US$ millions	35	5,721.3
4.06 FDI inflows US$ millions	9	48,827.9
4.07 Domestic credit to private sector % GDP	63	47.4
Infrastructure 0-10 (best)	35	7.1
4.08 Transport infrastructure 0-100 (best)	42	52.2
4.09 Electricity infrastructure 0-100 (best)	37	89.0
Driver: Institutional Framework 0-10 (best)	16	7.9
Government 0-10 (best)	16	7.9
5.01 Regulatory efficiency 0 – 100 (best)	10	80.5
5.02 Incidence of corruption 0-100 (best)	17	73.0
5.03 Future orientation of government 1-7 (best)	25	4.4
5.04 Rule of law (2.5) - 2.0 (best)	16	1.5
Driver: Sustainable Resources 0-10 (best)	36	6.7
Sustainability 0-10 (best)	36	6.7
6.01 Alternative and nuclear energy use % total energy use	78	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	7	0.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	30	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	40	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	59	2.9
6.06 Wastewater treatment 0 – 5 (worst)	37	85.0
Driver: Demand Environment 0-10 (best)	30	5.7
Foreign and Domestic Demand 0-10 (best)	42	5.6
7.01 Market size 0-100 (best)	42	56.1
Consumer Base 0-10 (best)	20	5.7
7.02 Buyer sophistication 1-7 (best)	20	4.2
7.03 Extent of market dominance 1-7 (best)	16	4.7

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Key economic indicators

Population millions	8.5	**GDP per capita** US$	37,262.4
GDP US$ billions	318.4	**Unemployment rate** %	4.8

Key production indicators

Manufacturing value added 2010 millions US$	33,962.4	**Manufacturing value added growth** Annual %	1.1
Manufacturing value added in economy % GDP	12.1	**Medium hi-tech & hi-tech industries** % of manu. value added	42.8
Manufacturing employment % working population	11.5	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

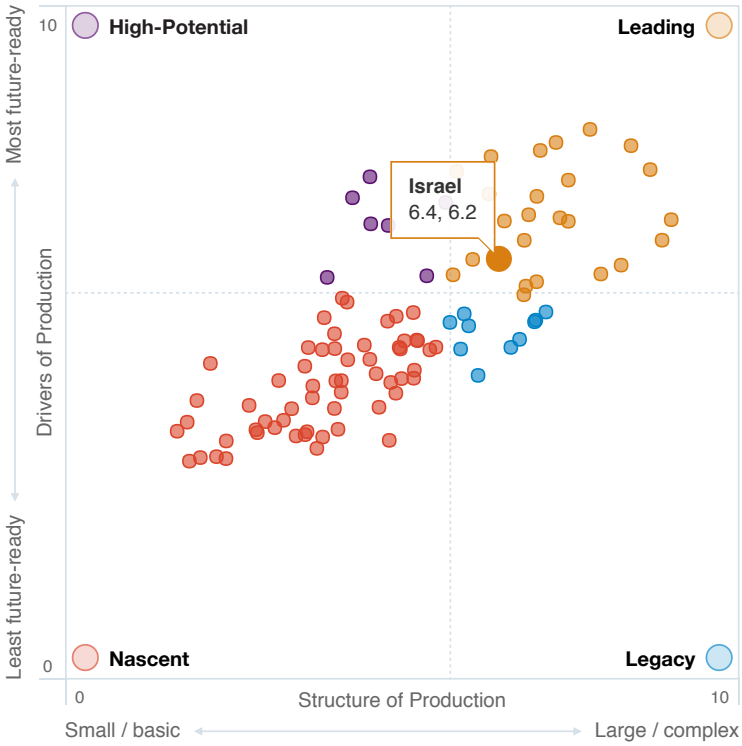
Drivers of Production 6.2

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	15th	**6.8**
Human Capital	20%	17th	**6.8**
Global Trade & Investment	20%	53rd	**5.3**
Institutional Framework	20%	23rd	**7.0**
Sustainable Resources	5%	58th	**6.0**
Demand Environment	15%	44th	**5.0**

Structure of Production 6.4

Structure	Weighting	Rank	Score /10
Complexity	60%	16th	**7.9**
Scale	40%	48th	**4.3**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	16	7.9
1.01 Economic complexity (2.5) – 2.5 (best)	16	1.3
Structure: Scale 0-10 (best)	48	4.3
1.02 Manufacturing value added in economy % GDP	53	12.1
1.03 Manufacturing value added US$ millions	41	33,962.4
Driver: Technology & Innovation 0-10 (best)	15	6.8
Technology Platform 0-10 (best)	20	7.7
2.01 Mobile-cellular telephone subscriptions /100 pop.	33	131.7
2.02 LTE mobile network coverage % population	64	70.0
2.03 Internet users % pop.	27	79.8
2.04 FDI and technology transfer 1-7 (best)	5	5.5
2.05 Firm-level technology absorption 1-7 (best)	7	5.8
2.06 Impact of ICTs on new services and products 1-7 (best)	5	5.9
2.07 Cybersecurity commitment 0–1 (best)	23	0.7
Ability to Innovate 0-10 (best)	13	5.9
2.08 State of cluster development 1-7 (best)	30	4.4
2.09 Company investment in emerging technology 1–7 (best)	2	5.9
2.10 Gov't procurement of advanced technology products 1-7 (best)	9	4.4
2.11 Companies embracing disruptive ideas 1-7 (best)	2	5.2
2.12 Multi-stakeholder collaboration 1-7 (best)	5	5.3
2.13 R&D expenditures % GDP	14	2.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	10	45.8
2.15 Patent applications applications/million pop.	9	164.44
2.16 Venture capital deal volume US$ millions	29	14,182.0
2.17 Venture capital deal volume per size of economy US$/GDP	22	45.9
Driver: Human Capital 0-10 (best)	17	6.8
Current Labor Force 0-10 (best)	2	8.7
3.01 Manufacturing employment % working population	51	11.5
3.02 Knowledge-intensive employment % working pop.	5	48.3
3.03 Female participation in labor force ratio	18	0.95
3.04 Mean years of schooling Years	6	13.0
3.05 Availability of scientists and engineers 1-7 (best)	6	5.3
3.06 Digital skills among population 1-7 (best)	7	5.7
Future Labor Force 0-10 (best)	32	4.9
3.07 Migration migrants/100,000 pop.	85	-9.1
3.08 Country capacity to attract and retain talent 1-7 (best)	26	4.4
3.09 Quality of universities Count	35	7.0
3.10 Quality of math and science education 1-7 (best)	23	4.8
3.11 Quality of vocational training 1-7 (best)	32	4.5
3.12 School life expectancy Years	31	16.0
3.13 Pupil-to-teacher ratio in primary education Ratio	22	12.1
3.14 Critical thinking in teaching 1-7 (best)	19	4.4
3.15 Active labor policies 1-7 (best)	28	4.2
3.16 On-the-job training 1-7 (best)	23	5.1
3.17 Hiring and firing practices 1-7 (best)	17	4.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	53	5.3
Trade 0-10 (best)	64	5.8
4.01 Trade % GDP	71	57.3
4.02 Trade tariffs % duty	40	0.03
4.03 Prevalence of non-tariff barriers 1-7 (best)	40	4.6
4.04 Logistics performance 1 – 5 (best)	25	3.7
Investment 0-10 (best)	53	2.2
4.05 Greenfield investments US$ millions	69	1,233.9
4.06 FDI inflows US$ millions	26	10,309.1
4.07 Domestic credit to private sector % GDP	44	65.6
Infrastructure 0-10 (best)	19	8.0
4.08 Transport infrastructure 0-100 (best)	26	60.8
4.09 Electricity infrastructure 0-100 (best)	1	100.0
Driver: Institutional Framework 0-10 (best)	23	7.0
Government 0-10 (best)	23	7.0
5.01 Regulatory efficiency 0 – 100 (best)	35	73.0
5.02 Incidence of corruption 0-100 (best)	24	64.0
5.03 Future orientation of government 1-7 (best)	24	4.4
5.04 Rule of law (2.5) - 2.0 (best)	27	1.0
Driver: Sustainable Resources 0-10 (best)	58	6.0
Sustainability 0-10 (best)	58	6.0
6.01 Alternative and nuclear energy use % total energy use	83	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	27	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	18	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	6	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	90	4.8
6.06 Wastewater treatment 0 – 5 (worst)	9	96.8
Driver: Demand Environment 0-10 (best)	44	5.0
Foreign and Domestic Demand 0-10 (best)	54	5.1
7.01 Market size 0-100 (best)	54	50.5
Consumer Base 0-10 (best)	35	4.9
7.02 Buyer sophistication 1-7 (best)	23	4.1
7.03 Extent of market dominance 1-7 (best)	56	3.7

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Key economic indicators

Population millions	60.7	**GDP per capita** US$	30,507.2
GDP US$ billions	1,850.7	**Unemployment rate** %	11.7

Key production indicators

Manufacturing value added 2010 millions US$	290,305.3	**Manufacturing value added growth** Annual %	0.3
Manufacturing value added in economy % GDP	14.0	**Medium hi-tech & hi-tech industries** % of manu. value added	42.7
Manufacturing employment % working population	18.3	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

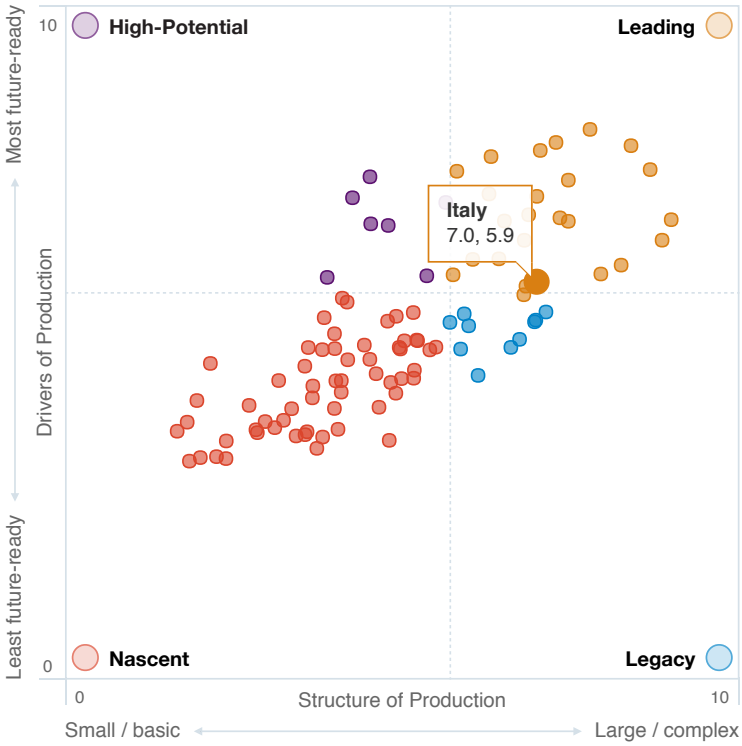
Drivers of Production 5.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	27th	**5.7**
Human Capital	20%	32nd	**5.9**
Global Trade & Investment	20%	30th	**6.0**
Institutional Framework	20%	48th	**5.2**
Sustainable Resources	5%	28th	**6.9**
Demand Environment	15%	8th	**6.6**

Structure of Production 7.0

Structure	Weighting	Rank	Score /10
Complexity	60%	18th	**7.7**
Scale	40%	16th	**5.9**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	18	7.7
1.01 Economic complexity (2.5) – 2.5 (best)	18	1.2
Structure: Scale 0-10 (best)	16	5.9
1.02 Manufacturing value added in economy % GDP	44	14.0
1.03 Manufacturing value added US$ millions	7	290,305.3
Driver: Technology & Innovation 0-10 (best)	27	5.7
Technology Platform 0-10 (best)	40	6.7
2.01 Mobile-cellular telephone subscriptions /100 pop.	27	140.4
2.02 LTE mobile network coverage % population	33	96.0
2.03 Internet users % pop.	57	61.3
2.04 FDI and technology transfer 1-7 (best)	79	4.0
2.05 Firm-level technology absorption 1-7 (best)	53	4.5
2.06 Impact of ICTs on new services and products 1-7 (best)	46	4.8
2.07 Cybersecurity commitment 0–1 (best)	34	0.6
Ability to Innovate 0-10 (best)	23	4.7
2.08 State of cluster development 1-7 (best)	7	5.3
2.09 Company investment in emerging technology 1–7 (best)	58	3.5
2.10 Gov't procurement of advanced technology products 1-7 (best)	71	3.0
2.11 Companies embracing disruptive ideas 1-7 (best)	74	3.2
2.12 Multi-stakeholder collaboration 1-7 (best)	51	3.7
2.13 R&D expenditures % GDP	2	4.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP	26	27.6
2.15 Patent applications applications/million pop.	19	53.13
2.16 Venture capital deal volume US$ millions	14	54,305.1
2.17 Venture capital deal volume per size of economy US$/GDP	31	28.0
Driver: Human Capital 0-10 (best)	32	5.9
Current Labor Force 0-10 (best)	31	7.0
3.01 Manufacturing employment % working population	11	18.3
3.02 Knowledge-intensive employment % working pop.	29	35.7
3.03 Female participation in labor force ratio	44	0.81
3.04 Mean years of schooling Years	46	10.2
3.05 Availability of scientists and engineers 1-7 (best)	35	4.5
3.06 Digital skills among population 1-7 (best)	55	4.3
Future Labor Force 0-10 (best)	37	4.7
3.07 Migration migrants/100,000 pop.	21	14.8
3.08 Country capacity to attract and retain talent 1-7 (best)	80	2.7
3.09 Quality of universities Count	8	31.0
3.10 Quality of math and science education 1-7 (best)	33	4.6
3.11 Quality of vocational training 1-7 (best)	34	4.4
3.12 School life expectancy Years	25	16.2
3.13 Pupil-to-teacher ratio in primary education Ratio	20	12.0
3.14 Critical thinking in teaching 1-7 (best)	47	3.5
3.15 Active labor policies 1-7 (best)	74	2.9
3.16 On-the-job training 1-7 (best)	45	4.4
3.17 Hiring and firing practices 1-7 (best)	92	2.8

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	30	6.0
Trade 0-10 (best)	61	6.0
4.01 Trade % GDP	72	56.5
4.02 Trade tariffs % duty	23	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	28	4.8
4.04 Logistics performance 1 – 5 (best)	20	3.8
Investment 0-10 (best)	29	3.9
4.05 Greenfield investments US$ millions	36	4,776.7
4.06 FDI inflows US$ millions	16	19,364.4
4.07 Domestic credit to private sector % GDP	32	85.7
Infrastructure 0-10 (best)	15	8.2
4.08 Transport infrastructure 0-100 (best)	12	72.3
4.09 Electricity infrastructure 0-100 (best)	35	90.9
Driver: Institutional Framework 0-10 (best)	48	5.2
Government 0-10 (best)	48	5.2
5.01 Regulatory efficiency 0 – 100 (best)	52	69.8
5.02 Incidence of corruption 0-100 (best)	45	47.0
5.03 Future orientation of government 1-7 (best)	93	2.6
5.04 Rule of law (2.5) - 2.0 (best)	48	0.3
Driver: Sustainable Resources 0-10 (best)	28	6.9
Sustainability 0-10 (best)	28	6.9
6.01 Alternative and nuclear energy use % total energy use	57	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	11	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	11	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	11	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	73	3.4
6.06 Wastewater treatment 0 – 5 (worst)	19	92.8
Driver: Demand Environment 0-10 (best)	8	6.6
Foreign and Domestic Demand 0-10 (best)	12	7.4
7.01 Market size 0-100 (best)	12	74.2
Consumer Base 0-10 (best)	16	5.8
7.02 Buyer sophistication 1-7 (best)	32	3.8
7.03 Extent of market dominance 1-7 (best)	6	5.1

Japan

Leading

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	126.9	**GDP per capita** US$	38,917.3
GDP US$ billions	4,938.6	**Unemployment rate** %	3.1

Key production indicators

Manufacturing value added 2010 millions US$	1,075,547.5	**Manufacturing value added growth** Annual %	0.0
Manufacturing value added in economy % GDP	18.8	**Medium hi-tech & hi-tech industries** % of manu. value added	55.3
Manufacturing employment % working population	16.2	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

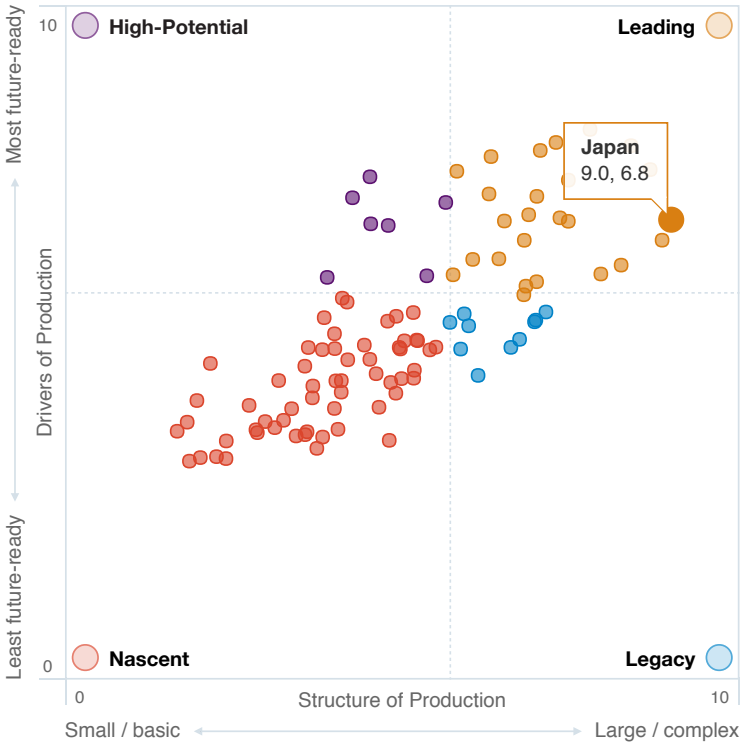
Drivers of Production 6.8

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	16th	**6.6**
Human Capital	20%	28th	**6.0**
Global Trade & Investment	20%	27th	**6.2**
Institutional Framework	20%	17th	**7.8**
Sustainable Resources	5%	39th	**6.7**
Demand Environment	15%	3rd	**7.8**

Structure of Production 9.0

Structure	Weighting	Rank	Score /10
Complexity	60%	1st	**10.0**
Scale	40%	5th	**7.5**

Archetype



Japan

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	1	10.0
1.01 Economic complexity (2.5) – 2.5 (best)	1	2.3
Structure: Scale 0-10 (best)	5	7.5
1.02 Manufacturing value added in economy % GDP	17	18.8
1.03 Manufacturing value added US$ millions	3	1,075,547.5
Driver: Technology & Innovation 0-10 (best)	16	6.6
Technology Platform 0-10 (best)	12	8.1
2.01 Mobile-cellular telephone subscriptions /100 pop.	37	129.8
2.02 LTE mobile network coverage % population	11	99.0
2.03 Internet users % pop.	7	92.0
2.04 FDI and technology transfer 1-7 (best)	23	5.1
2.05 Firm-level technology absorption 1-7 (best)	13	5.5
2.06 Impact of ICTs on new services and products 1-7 (best)	25	5.3
2.07 Cybersecurity commitment 0–1 (best)	12	0.8
Ability to Innovate 0-10 (best)	19	5.1
2.08 State of cluster development 1-7 (best)	10	5.1
2.09 Company investment in emerging technology 1–7 (best)	13	5.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	20	4.0
2.11 Companies embracing disruptive ideas 1-7 (best)	42	3.7
2.12 Multi-stakeholder collaboration 1-7 (best)	20	4.6
2.13 R&D expenditures % GDP	3	3.6
2.14 Scientific and technical publications Number per Billion PPP$ GDP	44	15.1
2.15 Patent applications applications/million pop.	1	439.04
2.16 Venture capital deal volume US$ millions	13	55,758.8
2.17 Venture capital deal volume per size of economy US$/GDP	63	11.8
Driver: Human Capital 0-10 (best)	28	6.0
Current Labor Force 0-10 (best)	29	7.2
3.01 Manufacturing employment % working population	16	16.7
3.02 Knowledge-intensive employment % working pop.	47	24.8
3.03 Female participation in labor force ratio	49	0.78
3.04 Mean years of schooling Years	14	12.5
3.05 Availability of scientists and engineers 1-7 (best)	8	5.3
3.06 Digital skills among population 1-7 (best)	44	4.5
Future Labor Force 0-10 (best)	34	4.9
3.07 Migration migrants/100,000 pop.	43	2.8
3.08 Country capacity to attract and retain talent 1-7 (best)	40	3.6
3.09 Quality of universities Count	5	43.0
3.10 Quality of math and science education 1-7 (best)	20	5.1
3.11 Quality of vocational training 1-7 (best)	18	5.0
3.12 School life expectancy Years	40	15.4
3.13 Pupil-to-teacher ratio in primary education Ratio	41	16.4
3.14 Critical thinking in teaching 1-7 (best)	84	2.9
3.15 Active labor policies 1-7 (best)	25	4.3
3.16 On-the-job training 1-7 (best)	20	5.3
3.17 Hiring and firing practices 1-7 (best)	80	3.2

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	27	6.2
Trade 0-10 (best)	78	4.6
4.01 Trade % GDP	93	35.6
4.02 Trade tariffs % duty	33	0.02
4.03 Prevalence of non-tariff barriers 1-7 (best)	50	4.5
4.04 Logistics performance 1 – 5 (best)	11	4.0
Investment 0-10 (best)	21	4.8
4.05 Greenfield investments US$ millions	26	8,317.8
4.06 FDI inflows US$ millions	51	3,052.7
4.07 Domestic credit to private sector % GDP	5	185.0
Infrastructure 0-10 (best)	3	9.1
4.08 Transport infrastructure 0-100 (best)	3	86.1
4.09 Electricity infrastructure 0-100 (best)	9	96.9
Driver: Institutional Framework 0-10 (best)	17	7.8
Government 0-10 (best)	17	7.8
5.01 Regulatory efficiency 0 – 100 (best)	9	80.9
5.02 Incidence of corruption 0-100 (best)	18	72.0
5.03 Future orientation of government 1-7 (best)	20	4.6
5.04 Rule of law (2.5) - 2.0 (best)	19	1.4
Driver: Sustainable Resources 0-10 (best)	39	6.7
Sustainability 0-10 (best)	39	6.7
6.01 Alternative and nuclear energy use % total energy use	82	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	35	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	1	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	4	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	64	3.1
6.06 Wastewater treatment 0 – 5 (worst)	32	87.0
Driver: Demand Environment 0-10 (best)	3	7.8
Foreign and Domestic Demand 0-10 (best)	4	8.3
7.01 Market size 0-100 (best)	4	83.2
Consumer Base 0-10 (best)	2	7.3
7.02 Buyer sophistication 1-7 (best)	6	4.9
7.03 Extent of market dominance 1-7 (best)	2	5.9

Jordan

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	7.0	**GDP per capita** US$	5,554.0
GDP US$ billions	38.7	**Unemployment rate** %	15.3

Key production indicators

Manufacturing value added 2010 millions US$	5,038.8	**Manufacturing value added growth** Annual %	2.0
Manufacturing value added in economy % GDP	16.2	**Medium hi-tech & hi-tech industries** % of manu. value added	27.4
Manufacturing employment % working population	14.2	**CO2 emission per unit of value added** kg/USD	0.5

Readiness Overall Assessment

Drivers of Production 4.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	63rd	**3.9**
Human Capital	20%	41st	**5.5**
Global Trade & Investment	20%	56th	**5.1**
Institutional Framework	20%	45th	**5.6**
Sustainable Resources	5%	80th	**4.8**
Demand Environment	15%	70th	**4.2**

Structure of Production 4.0

Structure	Weighting	Rank	Score /10
Complexity	60%	76th	**4.1**
Scale	40%	56th	**3.9**

Archetype

Jordan

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	76	4.1
1.01 Economic complexity (2.5) – 2.5 (best)	76	-0.4
Structure: Scale 0-10 (best)	56	3.9
1.02 Manufacturing value added in economy % GDP	30	16.2
1.03 Manufacturing value added US$ millions	72	5,038.8
Driver: Technology & Innovation 0-10 (best)	63	3.9
Technology Platform 0-10 (best)	65	5.6
2.01 Mobile-cellular telephone subscriptions /100 pop.	4	196.3
2.02 LTE mobile network coverage % population	47	87.0
2.03 Internet users % pop.	54	62.3
2.04 FDI and technology transfer 1-7 (best)	51	4.5
2.05 Firm-level technology absorption 1-7 (best)	39	4.9
2.06 Impact of ICTs on new services and products 1-7 (best)	44	4.9
2.07 Cybersecurity commitment 0–1 (best)	87	0.3
Ability to Innovate 0-10 (best)	53	2.2
2.08 State of cluster development 1-7 (best)	28	4.4
2.09 Company investment in emerging technology 1–7 (best)	40	4.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	40	3.5
2.11 Companies embracing disruptive ideas 1-7 (best)	54	3.5
2.12 Multi-stakeholder collaboration 1-7 (best)	42	3.8
2.13 R&D expenditures % GDP	67	0.4
2.14 Scientific and technical publications Number per Billion PPP$ GDP	40	16.0
2.15 Patent applications applications/million pop.	61	0.69
2.16 Venture capital deal volume US$ millions	73	442.7
2.17 Venture capital deal volume per size of economy US$/GDP	62	11.9
Driver: Human Capital 0-10 (best)	41	5.5
Current Labor Force 0-10 (best)	64	5.5
3.01 Manufacturing employment % working population	30	14.2
3.02 Knowledge-intensive employment % working pop.		No data
3.03 Female participation in labor force ratio	94	0.21
3.04 Mean years of schooling Years	47	10.1
3.05 Availability of scientists and engineers 1-7 (best)	13	5.1
3.06 Digital skills among population 1-7 (best)	33	4.7
Future Labor Force 0-10 (best)	23	5.5
3.07 Migration migrants/100,000 pop.	7	52.7
3.08 Country capacity to attract and retain talent 1-7 (best)	60	3.3
3.09 Quality of universities Count	53	2.0
3.10 Quality of math and science education 1-7 (best)	52	4.3
3.11 Quality of vocational training 1-7 (best)	44	4.3
3.12 School life expectancy Years	76	12.8
3.13 Pupil-to-teacher ratio in primary education Ratio	47	16.9
3.14 Critical thinking in teaching 1-7 (best)	36	3.7
3.15 Active labor policies 1-7 (best)	54	3.4
3.16 On-the-job training 1-7 (best)	48	4.3
3.17 Hiring and firing practices 1-7 (best)	35	4.1

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	56	5.1
Trade 0-10 (best)	46	6.9
4.01 Trade % GDP	40	91.1
4.02 Trade tariffs % duty	75	0.08
4.03 Prevalence of non-tariff barriers 1-7 (best)	86	3.9
4.04 Logistics performance 1 – 5 (best)	62	3.0
Investment 0-10 (best)	49	2.4
4.05 Greenfield investments US$ millions	42	3,592.6
4.06 FDI inflows US$ millions	66	1,628.1
4.07 Domestic credit to private sector % GDP	38	75.1
Infrastructure 0-10 (best)	61	6.2
4.08 Transport infrastructure 0-100 (best)	67	40.8
4.09 Electricity infrastructure 0-100 (best)	50	82.4
Driver: Institutional Framework 0-10 (best)	45	5.6
Government 0-10 (best)	45	5.6
5.01 Regulatory efficiency 0 – 100 (best)	54	69.6
5.02 Incidence of corruption 0-100 (best)	42	48.0
5.03 Future orientation of government 1-7 (best)	42	3.8
5.04 Rule of law (2.5) - 2.0 (best)	46	0.3
Driver: Sustainable Resources 0-10 (best)	80	4.8
Sustainability 0-10 (best)	80	4.8
6.01 Alternative and nuclear energy use % total energy use	89	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	84	0.7
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	49	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	30	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	88	4.6
6.06 Wastewater treatment 0 – 5 (worst)	53	76.7
Driver: Demand Environment 0-10 (best)	70	4.2
Foreign and Domestic Demand 0-10 (best)	75	3.8
7.01 Market size 0-100 (best)	75	38.3
Consumer Base 0-10 (best)	46	4.5
7.02 Buyer sophistication 1-7 (best)	56	3.4
7.03 Extent of market dominance 1-7 (best)	39	4.0

Kazakhstan

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	17.9	**GDP per capita** US$	7,452.8
GDP US$ billions	133.8	**Unemployment rate** %	5.0

Key production indicators

Manufacturing value added 2010 millions US$	18,294.3	**Manufacturing value added growth** Annual %	-3.2
Manufacturing value added in economy % GDP	9.9	**Medium hi-tech & hi-tech industries** % of manu. value added	16.6
Manufacturing employment % working population	6.4	**CO2 emission per unit of value added** kg/USD	1.9

Readiness Overall Assessment

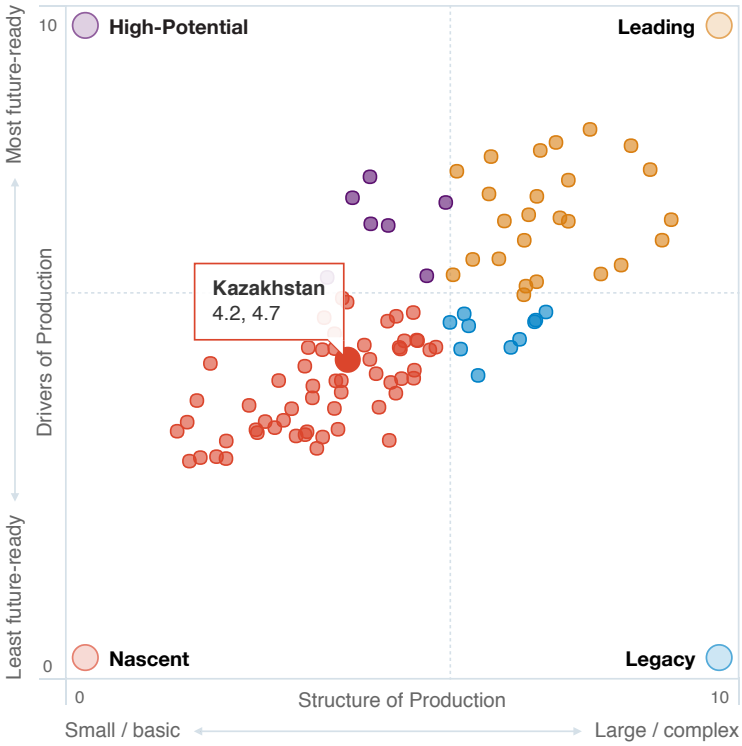
Drivers of Production 4.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	58th	**4.1**
Human Capital	20%	43rd	**5.4**
Global Trade & Investment	20%	63rd	**4.9**
Institutional Framework	20%	68th	**4.6**
Sustainable Resources	5%	91st	**4.4**
Demand Environment	15%	49th	**4.9**

Structure of Production 4.2

Structure	Weighting	Rank	Score /10
Complexity	60%	63rd	**4.6**
Scale	40%	64th	**3.5**

Archetype



Kazakhstan

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	63	4.6
1.01 Economic complexity (2.5) – 2.5 (best)	63	-0.2
Structure: Scale 0-10 (best)	64	3.5
1.02 Manufacturing value added in economy % GDP	77	9.9
1.03 Manufacturing value added US$ millions	50	18,294.3
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	56	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

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	63	4.9
Trade 0-10 (best)	72	5.4
4.01 Trade % GDP	64	61.8
4.02 Trade tariffs % duty	59	0.05
4.03 Prevalence of non-tariff barriers 1-7 (best)	54	4.4
4.04 Logistics performance 1 – 5 (best)	73	2.8
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$ billiions)	93	1.0
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	68	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	45.5	**GDP per capita** US$	1,516.3
GDP US$ billions	68.9		

Key production indicators

Manufacturing value added 2010 millions US$	5,698.3	**Medium hi-tech & hi-tech industries** % of manu. value added	13.1
Manufacturing value added in economy % GDP	10.3	**CO2 emission per unit of value added** kg/USD	0.6
Manufacturing value added growth Annual %	4.3		

Readiness Overall Assessment

Drivers of Production 3.8

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	65th	**3.9**
Human Capital	20%	88th	**3.7**
Global Trade & Investment	20%	96th	**2.5**
Institutional Framework	20%	80th	**4.2**
Sustainable Resources	5%	42nd	**6.5**
Demand Environment	15%	68th	**4.2**

Structure of Production 3.0

Structure	Weighting	Rank	Score /10
Complexity	60%	89th	**3.0**
Scale	40%	76th	**2.9**

Archetype

Kenya

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	89	3.0
1.01 Economic complexity (2.5) – 2.5 (best)	89	-0.9
Structure: Scale 0-10 (best)	76	2.9
1.02 Manufacturing value added in economy % GDP	73	10.3
1.03 Manufacturing value added US$ millions	70	5,698.3
Driver: Technology & Innovation 0-10 (best)	65	3.9
Technology Platform 0-10 (best)	67	5.6
2.01 Mobile-cellular telephone subscriptions /100 pop.	92	81.3
2.02 LTE mobile network coverage % population	88	21.5
2.03 Internet users % pop.	88	26.0
2.04 FDI and technology transfer 1-7 (best)	38	4.8
2.05 Firm-level technology absorption 1-7 (best)	32	5.1
2.06 Impact of ICTs on new services and products 1-7 (best)	34	5.1
2.07 Cybersecurity commitment 0–1 (best)	46	0.6
Ability to Innovate 0-10 (best)	54	2.2
2.08 State of cluster development 1-7 (best)	34	4.2
2.09 Company investment in emerging technology 1–7 (best)	29	4.3
2.10 Gov't procurement of advanced technology products 1-7 (best)	18	4.0
2.11 Companies embracing disruptive ideas 1-7 (best)	33	3.8
2.12 Multi-stakeholder collaboration 1-7 (best)	28	4.2
2.13 R&D expenditures % GDP	86	0.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	53	11.6
2.15 Patent applications applications/million pop.	79	0.12
2.16 Venture capital deal volume US$ millions	64	822.5
2.17 Venture capital deal volume per size of economy US$/GDP	60	12.6
Driver: Human Capital 0-10 (best)	88	3.7
Current Labor Force 0-10 (best)	96	3.7
3.01 Manufacturing employment % working population	97	4.0
3.02 Knowledge-intensive employment % working pop.		No data
3.03 Female participation in labor force ratio	83	0.40
3.04 Mean years of schooling Years	88	6.3
3.05 Availability of scientists and engineers 1-7 (best)	38	4.5
3.06 Digital skills among population 1-7 (best)	41	4.6
Future Labor Force 0-10 (best)	53	3.7
3.07 Migration migrants/100,000 pop.	54	-1.1
3.08 Country capacity to attract and retain talent 1-7 (best)	33	4.0
3.09 Quality of universities Count	62	1.0
3.10 Quality of math and science education 1-7 (best)	51	4.3
3.11 Quality of vocational training 1-7 (best)	52	4.1
3.12 School life expectancy Years	91	11.1
3.13 Pupil-to-teacher ratio in primary education Ratio	85	30.7
3.14 Critical thinking in teaching 1-7 (best)	41	3.6
3.15 Active labor policies 1-7 (best)	61	3.2
3.16 On-the-job training 1-7 (best)	30	4.6
3.17 Hiring and firing practices 1-7 (best)	28	4.3

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	96	2.5
Trade 0-10 (best)	87	3.6
4.01 Trade % GDP	88	37.9
4.02 Trade tariffs % duty	81	0.10
4.03 Prevalence of non-tariff barriers 1-7 (best)	72	4.2
4.04 Logistics performance 1 – 5 (best)	37	3.4
Investment 0-10 (best)	83	0.8
4.05 Greenfield investments US$ millions	58	1,882.2
4.06 FDI inflows US$ millions	83	730.9
4.07 Domestic credit to private sector % GDP	82	32.9
Infrastructure 0-10 (best)	96	3.2
4.08 Transport infrastructure 0-100 (best)	75	36.9
4.09 Electricity infrastructure 0-100 (best)	98	27.1
Driver: Institutional Framework 0-10 (best)	80	4.2
Government 0-10 (best)	80	4.2
5.01 Regulatory efficiency 0 – 100 (best)	76	62.1
5.02 Incidence of corruption 0-100 (best)	96	26.0
5.03 Future orientation of government 1-7 (best)	27	4.3
5.04 Rule of law (2.5) - 2.0 (best)	83	-0.5
Driver: Sustainable Resources 0-10 (best)	42	6.5
Sustainability 0-10 (best)	42	6.5
6.01 Alternative and nuclear energy use % total energy use	4	0.8
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	33	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	85	0.5
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	90	0.3
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	23	0.7
6.06 Wastewater treatment 0 – 5 (worst)	76	52.8
Driver: Demand Environment 0-10 (best)	68	4.2
Foreign and Domestic Demand 0-10 (best)	67	4.2
7.01 Market size 0-100 (best)	67	42.1
Consumer Base 0-10 (best)	62	4.1
7.02 Buyer sophistication 1-7 (best)	71	3.2
7.03 Extent of market dominance 1-7 (best)	52	3.8

Korea, Rep.

Leading

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	51.2	**GDP per capita** US$	27,538.8
GDP US$ billions	1,411.2	**Unemployment rate** %	3.7

Key production indicators

Manufacturing value added 2010 millions US$	381,649.6	**Manufacturing value added growth** Annual %	3.4
Manufacturing value added in economy % GDP	29.5	**Medium hi-tech & hi-tech industries** % of manu. value added	63.7
Manufacturing employment % working population	17.1	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

Drivers of Production 6.5

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	17th	**6.6**
Human Capital	20%	30th	**5.9**
Global Trade & Investment	20%	17th	**6.8**
Institutional Framework	20%	25th	**6.9**
Sustainable Resources	5%	46th	**6.5**
Demand Environment	15%	13th	**6.4**

Structure of Production 8.9

Structure	Weighting	Rank	Score /10
Complexity	60%	4th	**9.0**
Scale	40%	2nd	**8.7**

Archetype

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	4	9.0
1.01 Economic complexity (2.5) – 2.5 (best)	4	1.8
Structure: Scale 0-10 (best)	2	8.7
1.02 Manufacturing value added in economy % GDP	2	29.5
1.03 Manufacturing value added US$ millions	6	381,649.6
Driver: Technology & Innovation 0-10 (best)	17	6.6
Technology Platform 0-10 (best)	13	8.0
2.01 Mobile-cellular telephone subscriptions /100 pop.	49	122.7
2.02 LTE mobile network coverage % population	11	99.0
2.03 Internet users % pop.	6	92.7
2.04 FDI and technology transfer 1-7 (best)	50	4.5
2.05 Firm-level technology absorption 1-7 (best)	21	5.3
2.06 Impact of ICTs on new services and products 1-7 (best)	14	5.6
2.07 Cybersecurity commitment 0–1 (best)	15	0.8
Ability to Innovate 0-10 (best)	18	5.2
2.08 State of cluster development 1-7 (best)	26	4.6
2.09 Company investment in emerging technology 1–7 (best)	31	4.3
2.10 Gov't procurement of advanced technology products 1-7 (best)	25	3.8
2.11 Companies embracing disruptive ideas 1-7 (best)	32	3.8
2.12 Multi-stakeholder collaboration 1-7 (best)	26	4.3
2.13 R&D expenditures % GDP	1	4.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP	24	29.2
2.15 Patent applications applications/million pop.	2	421.49
2.16 Venture capital deal volume US$ millions	19	33,189.6
2.17 Venture capital deal volume per size of economy US$/GDP	40	23.7
Driver: Human Capital 0-10 (best)	30	5.9
Current Labor Force 0-10 (best)	37	6.9
3.01 Manufacturing employment % working population	14	17.3
3.02 Knowledge-intensive employment % working pop.	60	21.4
3.03 Female participation in labor force ratio	50	0.76
3.04 Mean years of schooling Years	23	12.2
3.05 Availability of scientists and engineers 1-7 (best)	36	4.5
3.06 Digital skills among population 1-7 (best)	23	5.0
Future Labor Force 0-10 (best)	33	4.9
3.07 Migration migrants/100,000 pop.	38	5.9
3.08 Country capacity to attract and retain talent 1-7 (best)	31	4.2
3.09 Quality of universities Count	9	30.0
3.10 Quality of math and science education 1-7 (best)	31	4.6
3.11 Quality of vocational training 1-7 (best)	41	4.3
3.12 School life expectancy Years	19	16.5
3.13 Pupil-to-teacher ratio in primary education Ratio	42	16.5
3.14 Critical thinking in teaching 1-7 (best)	80	3.0
3.15 Active labor policies 1-7 (best)	32	4.0
3.16 On-the-job training 1-7 (best)	37	4.5
3.17 Hiring and firing practices 1-7 (best)	61	3.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	17	6.8
Trade 0-10 (best)	49	6.5
4.01 Trade % GDP	53	77.7
4.02 Trade tariffs % duty	73	0.07
4.03 Prevalence of non-tariff barriers 1-7 (best)	69	4.2
4.04 Logistics performance 1 – 5 (best)	23	3.7
Investment 0-10 (best)	16	5.4
4.05 Greenfield investments US$ millions	21	9,541.8
4.06 FDI inflows US$ millions	32	9,480.9
4.07 Domestic credit to private sector % GDP	13	143.3
Infrastructure 0-10 (best)	9	8.6
4.08 Transport infrastructure 0-100 (best)	13	72.1
4.09 Electricity infrastructure 0-100 (best)	4	99.2
Driver: Institutional Framework 0-10 (best)	25	6.9
Government 0-10 (best)	25	6.9
5.01 Regulatory efficiency 0 – 100 (best)	19	77.2
5.02 Incidence of corruption 0-100 (best)	38	53.0
5.03 Future orientation of government 1-7 (best)	47	3.8
5.04 Rule of law (2.5) - 2.0 (best)	21	1.1
Driver: Sustainable Resources 0-10 (best)	46	6.5
Sustainability 0-10 (best)	46	6.5
6.01 Alternative and nuclear energy use % total energy use	59	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	61	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	14	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	21	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	80	3.5
6.06 Wastewater treatment 0 – 5 (worst)	18	93.2
Driver: Demand Environment 0-10 (best)	13	6.4
Foreign and Domestic Demand 0-10 (best)	13	7.3
7.01 Market size 0-100 (best)	13	73.3
Consumer Base 0-10 (best)	23	5.5
7.02 Buyer sophistication 1-7 (best)	2	5.2
7.03 Extent of market dominance 1-7 (best)	81	3.3

Kuwait

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	4.2	**GDP per capita** US$	26,004.7
GDP US$ billions	109.9	**Unemployment rate** %	2.1

Key production indicators

Manufacturing value added 2010 millions US$	9,007.8	**Manufacturing value added growth** Annual %	1.8
Manufacturing value added in economy % GDP	6.5	**Medium hi-tech & hi-tech industries** % of manu. value added	27.0
Manufacturing employment % working population	4.4	**CO2 emission per unit of value added** kg/USD	1.6

Readiness Overall Assessment

Drivers of Production 4.6

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	80th	**3.4**
Human Capital	20%	62nd	**4.7**
Global Trade & Investment	20%	43rd	**5.6**
Institutional Framework	20%	57th	**4.9**
Sustainable Resources	5%	95th	**4.0**
Demand Environment	15%	51st	**4.8**

Structure of Production 3.6

Structure	Weighting	Rank	Score /10
Complexity	60%	75th	**4.2**
Scale	40%	82nd	**2.5**

Archetype

Kuwait

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	75	4.2
1.01 Economic complexity (2.5) – 2.5 (best)	75	-0.3
Structure: Scale 0-10 (best)	82	2.5
1.02 Manufacturing value added in economy % GDP	90	6.5
1.03 Manufacturing value added US$ millions	62	9,007.8
Driver: Technology & Innovation 0-10 (best)	80	3.4
Technology Platform 0-10 (best)	80	4.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	20	146.6
2.02 LTE mobile network coverage % population	21	98.0
2.03 Internet users % pop.	30	78.4
2.04 FDI and technology transfer 1-7 (best)	98	3.5
2.05 Firm-level technology absorption 1-7 (best)	60	4.4
2.06 Impact of ICTs on new services and products 1-7 (best)	88	4.1
2.07 Cybersecurity commitment 0–1 (best)	98	0.1
Ability to Innovate 0-10 (best)	71	2.0
2.08 State of cluster development 1-7 (best)	42	4.1
2.09 Company investment in emerging technology 1–7 (best)	66	3.4
2.10 Gov't procurement of advanced technology products 1-7 (best)	63	3.1
2.11 Companies embracing disruptive ideas 1-7 (best)	84	3.1
2.12 Multi-stakeholder collaboration 1-7 (best)	84	3.2
2.13 R&D expenditures % GDP	74	0.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP	89	2.6
2.15 Patent applications applications/million pop.	51	1.39
2.16 Venture capital deal volume US$ millions	44	3,512.8
2.17 Venture capital deal volume per size of economy US$/GDP	37	25.4
Driver: Human Capital 0-10 (best)	62	4.7
Current Labor Force 0-10 (best)	89	4.4
3.01 Manufacturing employment % working population	94	4.4
3.02 Knowledge-intensive employment % working pop.		No data
3.03 Female participation in labor force ratio	80	0.44
3.04 Mean years of schooling Years	81	7.1
3.05 Availability of scientists and engineers 1-7 (best)	84	3.5
3.06 Digital skills among population 1-7 (best)	61	4.1
Future Labor Force 0-10 (best)	28	5.1
3.07 Migration migrants/100,000 pop.	4	77.1
3.08 Country capacity to attract and retain talent 1-7 (best)	69	3.1
3.09 Quality of universities Count	62	1.0
3.10 Quality of math and science education 1-7 (best)	81	3.2
3.11 Quality of vocational training 1-7 (best)	75	3.6
3.12 School life expectancy Years	69	13.2
3.13 Pupil-to-teacher ratio in primary education Ratio	1	8.8
3.14 Critical thinking in teaching 1-7 (best)	71	3.1
3.15 Active labor policies 1-7 (best)	53	3.4
3.16 On-the-job training 1-7 (best)	89	3.6
3.17 Hiring and firing practices 1-7 (best)	47	3.8

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	43	5.6
Trade 0-10 (best)	28	8.0
4.01 Trade % GDP	34	99.6
4.02 Trade tariffs % duty	48	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	71	4.2
4.04 Logistics performance 1 – 5 (best)	49	3.2
Investment 0-10 (best)	44	2.7
4.05 Greenfield investments US$ millions	74	896.5
4.06 FDI inflows US$ millions	72	1,165.6
4.07 Domestic credit to private sector % GDP	26	103.6
Infrastructure 0-10 (best)	65	6.0
4.08 Transport infrastructure 0-100 (best)	69	40.7
4.09 Electricity infrastructure 0-100 (best)	58	80.3
Driver: Institutional Framework 0-10 (best)	57	4.9
Government 0-10 (best)	57	4.9
5.01 Regulatory efficiency 0 – 100 (best)	67	65.4
5.02 Incidence of corruption 0-100 (best)	54	41.0
5.03 Future orientation of government 1-7 (best)	71	3.3
5.04 Rule of law (2.5) - 2.0 (best)	52	0.0
Driver: Sustainable Resources 0-10 (best)	95	4.0
Sustainability 0-10 (best)	95	4.0
6.01 Alternative and nuclear energy use % total energy use	96	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	72	0.5
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	94	0.7
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	2	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	92	5.0
6.06 Wastewater treatment 0 – 5 (worst)	44	81.6
Driver: Demand Environment 0-10 (best)	51	4.8
Foreign and Domestic Demand 0-10 (best)	49	5.3
7.01 Market size 0-100 (best)	49	52.6
Consumer Base 0-10 (best)	53	4.3
7.02 Buyer sophistication 1-7 (best)	37	3.8
7.03 Extent of market dominance 1-7 (best)	77	3.4

Kyrgyz Republic

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

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

Key production indicators

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

Readiness Overall Assessment

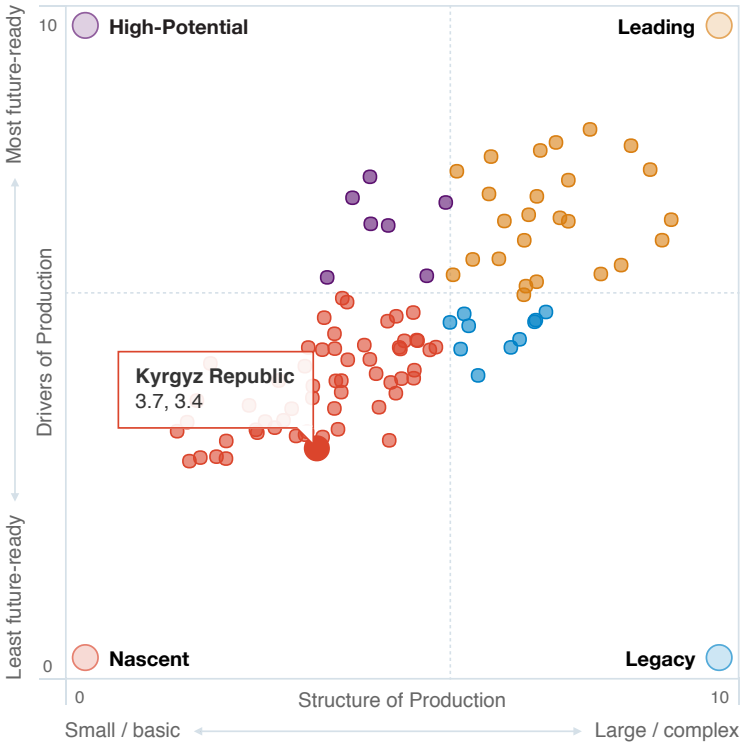
Drivers of Production 3.4

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



Kyrgyz Republic

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	65	4.5
1.01 Economic complexity (2.5) – 2.5 (best)	65	-0.2
Structure: Scale 0-10 (best)	81	2.5
1.02 Manufacturing value added in economy % GDP	40	14.4
1.03 Manufacturing value added US$ millions	97	887.1
Driver: Technology & Innovation 0-10 (best)	100	2.6
Technology Platform 0-10 (best)	94	3.9
2.01 Mobile-cellular telephone subscriptions /100 pop.	34	131.4
2.02 LTE mobile network coverage % population	81	40.0
2.03 Internet users % pop.	83	34.5
2.04 FDI and technology transfer 1-7 (best)	100	3.1
2.05 Firm-level technology absorption 1-7 (best)	99	3.4
2.06 Impact of ICTs on new services and products 1-7 (best)	100	3.3
2.07 Cybersecurity commitment 0–1 (best)	88	0.3
Ability to Innovate 0-10 (best)	99	1.2
2.08 State of cluster development 1-7 (best)	98	2.8
2.09 Company investment in emerging technology 1–7 (best)	97	2.4
2.10 Gov't procurement of advanced technology products 1-7 (best)	77	2.9
2.11 Companies embracing disruptive ideas 1-7 (best)	70	3.3
2.12 Multi-stakeholder collaboration 1-7 (best)	95	3.0
2.13 R&D expenditures % GDP	91	0.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	74	5.6
2.15 Patent applications applications/million pop.	82	0.09
2.16 Venture capital deal volume US$ millions	98	17.3
2.17 Venture capital deal volume per size of economy US$/GDP	89	2.5
Driver: Human Capital 0-10 (best)	79	4.2
Current Labor Force 0-10 (best)	67	5.5
3.01 Manufacturing employment % working population	85	7.4
3.02 Knowledge-intensive employment % working pop.	69	18.3
3.03 Female participation in labor force ratio	58	0.73
3.04 Mean years of schooling Years	41	10.8
3.05 Availability of scientists and engineers 1-7 (best)	94	3.3
3.06 Digital skills among population 1-7 (best)	65	4.0
Future Labor Force 0-10 (best)	93	2.8
3.07 Migration migrants/100,000 pop.	98	-29.4
3.08 Country capacity to attract and retain talent 1-7 (best)	91	2.4
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	84	3.1
3.11 Quality of vocational training 1-7 (best)	88	3.4
3.12 School life expectancy Years	70	13.1
3.13 Pupil-to-teacher ratio in primary education Ratio	80	26.2
3.14 Critical thinking in teaching 1-7 (best)	73	3.0
3.15 Active labor policies 1-7 (best)	77	2.8
3.16 On-the-job training 1-7 (best)	93	3.4
3.17 Hiring and firing practices 1-7 (best)	56	3.6

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	81	3.9
Trade 0-10 (best)	41	7.4
4.01 Trade % GDP	26	108.4
4.02 Trade tariffs % duty	61	0.05
4.03 Prevalence of non-tariff barriers 1-7 (best)	83	4.0
4.04 Logistics performance 1 – 5 (best)	96	2.2
Investment 0-10 (best)	98	0.2
4.05 Greenfield investments US$ millions	96	286.7
4.06 FDI inflows US$ millions	91	407.6
4.07 Domestic credit to private sector % GDP	91	21.2
Infrastructure 0-10 (best)	92	3.9
4.08 Transport infrastructure 0-100 (best)	98	25.7
4.09 Electricity infrastructure 0-100 (best)	91	52.9
Driver: Institutional Framework 0-10 (best)	93	3.4
Government 0-10 (best)	93	3.4
5.01 Regulatory efficiency 0 – 100 (best)	30	74.0
5.02 Incidence of corruption 0-100 (best)	92	28.0
5.03 Future orientation of government 1-7 (best)	82	3.1
5.04 Rule of law (2.5) - 2.0 (best)	98	-1.1
Driver: Sustainable Resources 0-10 (best)	98	2.9
Sustainability 0-10 (best)	98	2.9
6.01 Alternative and nuclear energy use % total energy use	35	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	96	1.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	91	0.5
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	89	0.3
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	89	4.8
6.06 Wastewater treatment 0 – 5 (worst)	71	58.1
Driver: Demand Environment 0-10 (best)	93	3.2
Foreign and Domestic Demand 0-10 (best)	99	2.3
7.01 Market size 0-100 (best)	99	22.9
Consumer Base 0-10 (best)	60	4.2
7.02 Buyer sophistication 1-7 (best)	44	3.6
7.03 Extent of market dominance 1-7 (best)	75	3.4

Latvia

Nascent

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WORLD ECONOMIC FORUM

Key economic indicators

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

Key production indicators

Manufacturing value added 2010 millions US$	3,015.4	**Manufacturing value added growth** Annual %	-0.6
Manufacturing value added in economy % GDP	10.3	**Medium hi-tech & hi-tech industries** % of manu. value added	21.5
Manufacturing employment % working population	13.0	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

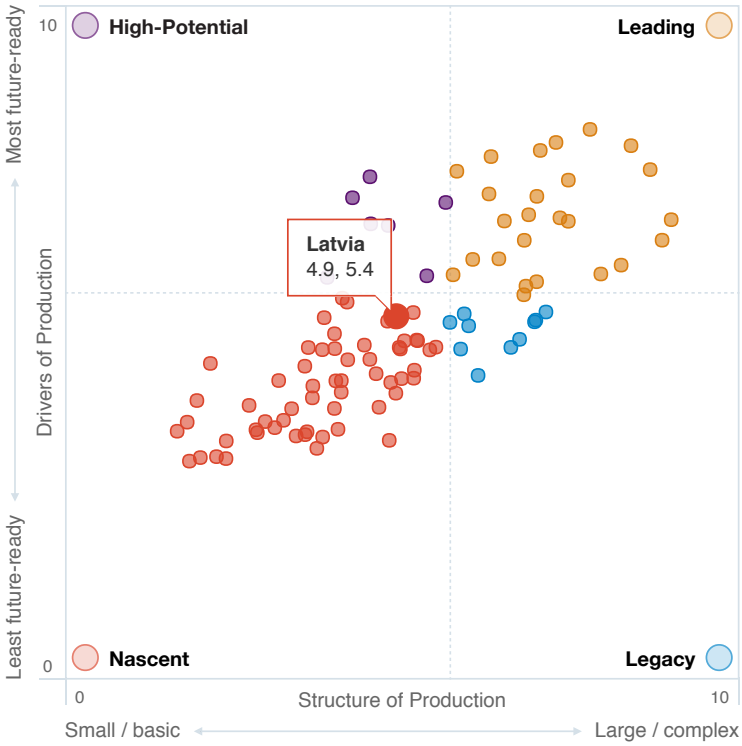
Drivers of Production 5.4

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	42nd	**4.5**
Human Capital	20%	37th	**5.6**
Global Trade & Investment	20%	39th	**5.6**
Institutional Framework	20%	33rd	**6.4**
Sustainable Resources	5%	7th	**8.4**
Demand Environment	15%	89th	**3.4**

Structure of Production 4.9

Structure	Weighting	Rank	Score /10
Complexity	60%	35th	**6.5**
Scale	40%	79th	**2.5**

Archetype



Latvia

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	35	6.5
1.01 Economic complexity (2.5) – 2.5 (best)	35	0.7
Structure: Scale 0-10 (best)	79	2.5
1.02 Manufacturing value added in economy % GDP	71	10.3
1.03 Manufacturing value added US$ millions	81	3,015.4
Driver: Technology & Innovation 0-10 (best)	42	4.5
Technology Platform 0-10 (best)	30	7.0
2.01 Mobile-cellular telephone subscriptions /100 pop.	35	131.2
2.02 LTE mobile network coverage % population	11	99.0
2.03 Internet users % pop.	26	79.9
2.04 FDI and technology transfer 1-7 (best)	65	4.2
2.05 Firm-level technology absorption 1-7 (best)	58	4.4
2.06 Impact of ICTs on new services and products 1-7 (best)	68	4.4
2.07 Cybersecurity commitment 0–1 (best)	24	0.7
Ability to Innovate 0-10 (best)	58	2.1
2.08 State of cluster development 1-7 (best)	79	3.4
2.09 Company investment in emerging technology 1–7 (best)	69	3.4
2.10 Gov't procurement of advanced technology products 1-7 (best)	90	2.7
2.11 Companies embracing disruptive ideas 1-7 (best)	53	3.5
2.12 Multi-stakeholder collaboration 1-7 (best)	83	3.2
2.13 R&D expenditures % GDP	53	0.6
2.14 Scientific and technical publications Number per Billion PPP$ GDP	45	14.9
2.15 Patent applications applications/million pop.	35	6.71
2.16 Venture capital deal volume US$ millions	69	524.8
2.17 Venture capital deal volume per size of economy US$/GDP	49	18.3
Driver: Human Capital 0-10 (best)	37	5.6
Current Labor Force 0-10 (best)	22	7.7
3.01 Manufacturing employment % working population	37	13.0
3.02 Knowledge-intensive employment % working pop.	20	41.2
3.03 Female participation in labor force ratio	2	1.08
3.04 Mean years of schooling Years	4	13.2
3.05 Availability of scientists and engineers 1-7 (best)	92	3.4
3.06 Digital skills among population 1-7 (best)	48	4.4
Future Labor Force 0-10 (best)	64	3.5
3.07 Migration migrants/100,000 pop.	76	-5.1
3.08 Country capacity to attract and retain talent 1-7 (best)	89	2.4
3.09 Quality of universities Count	53	2.0
3.10 Quality of math and science education 1-7 (best)	55	4.2
3.11 Quality of vocational training 1-7 (best)	74	3.6
3.12 School life expectancy Years	64	13.4
3.13 Pupil-to-teacher ratio in primary education Ratio	11	11.1
3.14 Critical thinking in teaching 1-7 (best)	57	3.3
3.15 Active labor policies 1-7 (best)	40	3.8
3.16 On-the-job training 1-7 (best)	51	4.2
3.17 Hiring and firing practices 1-7 (best)	64	3.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	39	5.6
Trade 0-10 (best)	11	8.6
4.01 Trade % GDP	21	115.4
4.02 Trade tariffs % duty	12	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	18	5.0
4.04 Logistics performance 1 – 5 (best)	40	3.3
Investment 0-10 (best)	61	1.6
4.05 Greenfield investments US$ millions	87	537.4
4.06 FDI inflows US$ millions	85	675.4
4.07 Domestic credit to private sector % GDP	43	67.6
Infrastructure 0-10 (best)	46	6.7
4.08 Transport infrastructure 0-100 (best)	54	47.5
4.09 Electricity infrastructure 0-100 (best)	43	86.3
Driver: Institutional Framework 0-10 (best)	33	6.4
Government 0-10 (best)	33	6.4
5.01 Regulatory efficiency 0 – 100 (best)	13	79.4
5.02 Incidence of corruption 0-100 (best)	33	57.0
5.03 Future orientation of government 1-7 (best)	92	2.6
5.04 Rule of law (2.5) - 2.0 (best)	29	1.0
Driver: Sustainable Resources 0-10 (best)	7	8.4
Sustainability 0-10 (best)	7	8.4
6.01 Alternative and nuclear energy use % total energy use	23	0.4
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	30	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	36	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	68	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	15	0.4
6.06 Wastewater treatment 0 – 5 (worst)	10	96.4
Driver: Demand Environment 0-10 (best)	89	3.4
Foreign and Domestic Demand 0-10 (best)	86	3.2
7.01 Market size 0-100 (best)	86	32.0
Consumer Base 0-10 (best)	79	3.7
7.02 Buyer sophistication 1-7 (best)	90	2.8
7.03 Extent of market dominance 1-7 (best)	65	3.6

Lebanon

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Key economic indicators

Population millions	4.6	**GDP per capita** US$	11,308.9
GDP US$ billions	52.0		

Key production indicators

Manufacturing value added 2010 millions US$	4,190.5	**Medium hi-tech & hi-tech industries** % of manu. value added	19.9
Manufacturing value added in economy % GDP	9.8	**CO2 emission per unit of value added** kg/USD	0.3
Manufacturing value added growth Annual %	1.8		

Readiness Overall Assessment

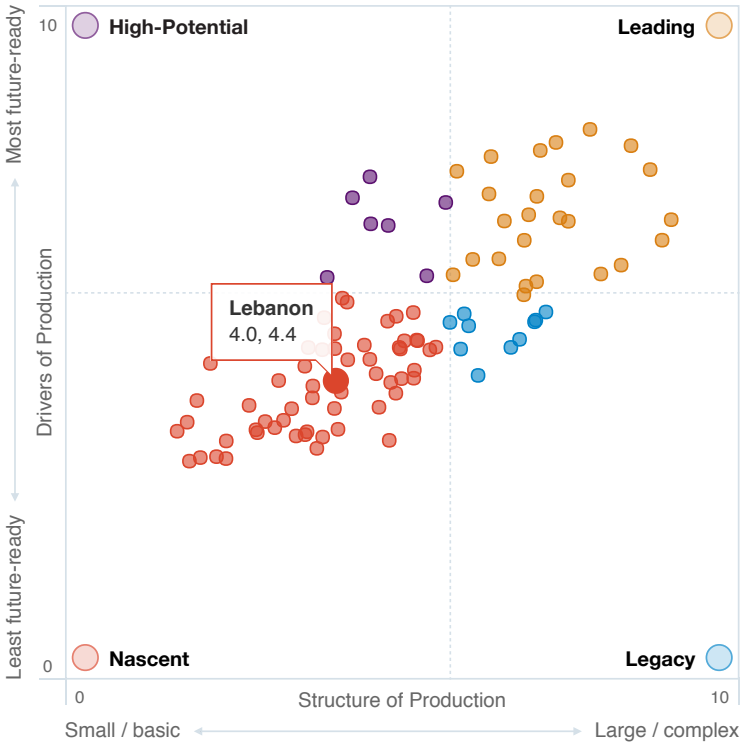
Drivers of Production 4.4

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	84th	**3.3**
Human Capital	20%	39th	**5.6**
Global Trade & Investment	20%	48th	**5.5**
Institutional Framework	20%	96th	**3.3**
Sustainable Resources	5%	71st	**5.4**
Demand Environment	15%	65th	**4.2**

Structure of Production 4.0

Structure	Weighting	Rank	Score /10
Complexity	60%	60th	**4.9**
Scale	40%	78th	**2.6**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	60	4.9
1.01 Economic complexity (2.5) – 2.5 (best)	60	0.0
Structure: Scale 0-10 (best)	78	2.6
1.02 Manufacturing value added in economy % GDP	79	9.8
1.03 Manufacturing value added US$ millions	76	4,190.5
Driver: Technology & Innovation 0-10 (best)	84	3.3
Technology Platform 0-10 (best)	86	4.5
2.01 Mobile-cellular telephone subscriptions /100 pop.	84	96.4
2.02 LTE mobile network coverage % population	42	89.2
2.03 Internet users % pop.	36	76.1
2.04 FDI and technology transfer 1-7 (best)	99	3.4
2.05 Firm-level technology absorption 1-7 (best)	73	4.3
2.06 Impact of ICTs on new services and products 1-7 (best)	97	3.7
2.07 Cybersecurity commitment 0–1 (best)	94	0.2
Ability to Innovate 0-10 (best)	69	2.0
2.08 State of cluster development 1-7 (best)	53	3.8
2.09 Company investment in emerging technology 1–7 (best)	51	3.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	86	2.8
2.11 Companies embracing disruptive ideas 1-7 (best)	28	3.9
2.12 Multi-stakeholder collaboration 1-7 (best)	56	3.6
2.13 R&D expenditures % GDP	55	0.6
2.14 Scientific and technical publications Number per Billion PPP$ GDP	42	15.7
2.15 Patent applications applications/million pop.	57	1.13
2.16 Venture capital deal volume US$ millions	81	244.1
2.17 Venture capital deal volume per size of economy US$/GDP	79	5.2
Driver: Human Capital 0-10 (best)	39	5.6
Current Labor Force 0-10 (best)	55	5.9
3.01 Manufacturing employment % working population	83	7.7
3.02 Knowledge-intensive employment % working pop.	39	31.8
3.03 Female participation in labor force ratio	79	0.44
3.04 Mean years of schooling Years	70	8.6
3.05 Availability of scientists and engineers 1-7 (best)	15	5.0
3.06 Digital skills among population 1-7 (best)	21	5.1
Future Labor Force 0-10 (best)	26	5.3
3.07 Migration migrants/100,000 pop.	3	85.5
3.08 Country capacity to attract and retain talent 1-7 (best)	79	2.8
3.09 Quality of universities Count	50	3.0
3.10 Quality of math and science education 1-7 (best)	4	5.8
3.11 Quality of vocational training 1-7 (best)	70	3.7
3.12 School life expectancy Years	90	11.1
3.13 Pupil-to-teacher ratio in primary education Ratio	24	12.3
3.14 Critical thinking in teaching 1-7 (best)	22	4.3
3.15 Active labor policies 1-7 (best)	97	2.4
3.16 On-the-job training 1-7 (best)	47	4.3
3.17 Hiring and firing practices 1-7 (best)	40	4.0

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	48	5.5
Trade 0-10 (best)	36	7.7
4.01 Trade % GDP	19	121.0
4.02 Trade tariffs % duty	62	0.05
4.03 Prevalence of non-tariff barriers 1-7 (best)	77	4.1
4.04 Logistics performance 1 – 5 (best)	74	2.7
Investment 0-10 (best)	42	2.8
4.05 Greenfield investments US$ millions	93	340.5
4.06 FDI inflows US$ millions	54	2,734.1
4.07 Domestic credit to private sector % GDP	25	107.2
Infrastructure 0-10 (best)	70	5.9
4.08 Transport infrastructure 0-100 (best)	79	34.6
4.09 Electricity infrastructure 0-100 (best)	49	83.0
Driver: Institutional Framework 0-10 (best)	96	3.3
Government 0-10 (best)	96	3.3
5.01 Regulatory efficiency 0 – 100 (best)	86	59.8
5.02 Incidence of corruption 0-100 (best)	92	28.0
5.03 Future orientation of government 1-7 (best)	96	2.5
5.04 Rule of law (2.5) - 2.0 (best)	94	-0.9
Driver: Sustainable Resources 0-10 (best)	71	5.4
Sustainability 0-10 (best)	71	5.4
6.01 Alternative and nuclear energy use % total energy use	88	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	73	0.5
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	25	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	19	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	87	4.5
6.06 Wastewater treatment 0 – 5 (worst)	33	86.6
Driver: Demand Environment 0-10 (best)	65	4.2
Foreign and Domestic Demand 0-10 (best)	74	3.8
7.01 Market size 0-100 (best)	74	38.4
Consumer Base 0-10 (best)	44	4.6
7.02 Buyer sophistication 1-7 (best)	41	3.7
7.03 Extent of market dominance 1-7 (best)	53	3.8

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Key economic indicators

Population millions	2.9	**GDP per capita** US$	14,890.1
GDP US$ billions	42.7	**Unemployment rate** %	7.9

Key production indicators

Manufacturing value added 2010 millions US$	8,352.9	**Manufacturing value added growth** Annual %	3.5
Manufacturing value added in economy % GDP	18.4	**Medium hi-tech & hi-tech industries** % of manu. value added	23.1
Manufacturing employment % working population	15.2	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

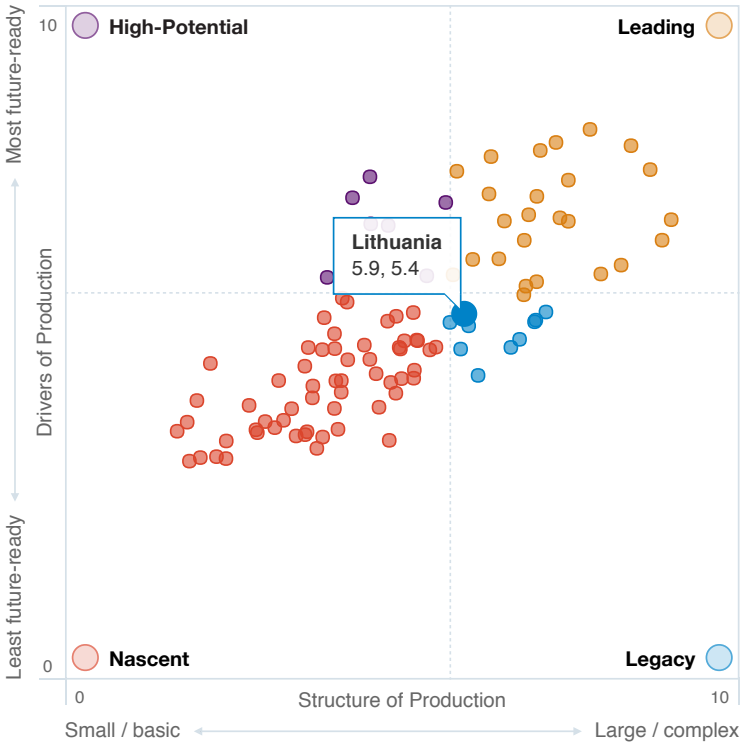
Drivers of Production 5.4

Driver	Weighting	Rank	Score /10
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

Structure	Weighting	Rank	Score /10
Complexity	60%	29th	**6.8**
Scale	40%	41st	**4.5**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	29	6.8
1.01 Economic complexity (2.5) – 2.5 (best)	29	0.8
Structure: Scale 0-10 (best)	41	4.5
1.02 Manufacturing value added in economy % GDP	19	18.4
1.03 Manufacturing value added US$ millions	63	8,352.9
Driver: Technology & Innovation 0-10 (best)	38	4.7
Technology Platform 0-10 (best)	36	6.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	26	140.7
2.02 LTE mobile network coverage % population	21	98.0
2.03 Internet users % pop.	39	74.4
2.04 FDI and technology transfer 1-7 (best)	30	4.9
2.05 Firm-level technology absorption 1-7 (best)	20	5.3
2.06 Impact of ICTs on new services and products 1-7 (best)	31	5.1
2.07 Cybersecurity commitment 0–1 (best)	57	0.5
Ability to Innovate 0-10 (best)	41	2.6
2.08 State of cluster development 1-7 (best)	75	3.4
2.09 Company investment in emerging technology 1–7 (best)	32	4.3
2.10 Gov't procurement of advanced technology products 1-7 (best)	76	2.9
2.11 Companies embracing disruptive ideas 1-7 (best)	26	3.9
2.12 Multi-stakeholder collaboration 1-7 (best)	32	4.0
2.13 R&D expenditures % GDP	37	1.0
2.14 Scientific and technical publications Number per Billion PPP$ GDP	32	24.8
2.15 Patent applications applications/million pop.	30	10.20
2.16 Venture capital deal volume US$ millions	72	459.8
2.17 Venture capital deal volume per size of economy US$/GDP	65	10.4
Driver: Human Capital 0-10 (best)	33	5.9
Current Labor Force 0-10 (best)	16	8.0
3.01 Manufacturing employment % working population	24	15.2
3.02 Knowledge-intensive employment % working pop.	18	41.8
3.03 Female participation in labor force ratio	3	1.08
3.04 Mean years of schooling Years	8	12.8
3.05 Availability of scientists and engineers 1-7 (best)	52	4.1
3.06 Digital skills among population 1-7 (best)	27	4.9
Future Labor Force 0-10 (best)	54	3.7
3.07 Migration migrants/100,000 pop.	88	-9.6
3.08 Country capacity to attract and retain talent 1-7 (best)	83	2.6
3.09 Quality of universities Count	47	4.0
3.10 Quality of math and science education 1-7 (best)	39	4.6
3.11 Quality of vocational training 1-7 (best)	53	4.1
3.12 School life expectancy Years	62	13.4
3.13 Pupil-to-teacher ratio in primary education Ratio	26	12.9
3.14 Critical thinking in teaching 1-7 (best)	48	3.5
3.15 Active labor policies 1-7 (best)	39	3.9
3.16 On-the-job training 1-7 (best)	28	4.7
3.17 Hiring and firing practices 1-7 (best)	79	3.2

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	62	5.0
Trade 0-10 (best)	13	8.6
4.01 Trade % GDP	13	147.8
4.02 Trade tariffs % duty	16	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	60	4.4
4.04 Logistics performance 1 – 5 (best)	26	3.6
Investment 0-10 (best)	82	0.9
4.05 Greenfield investments US$ millions	79	816.0
4.06 FDI inflows US$ millions	99	333.6
4.07 Domestic credit to private sector % GDP	72	43.0
Infrastructure 0-10 (best)	80	5.4
4.08 Transport infrastructure 0-100 (best)	45	50.5
4.09 Electricity infrastructure 0-100 (best)	87	56.9
Driver: Institutional Framework 0-10 (best)	28	6.7
Government 0-10 (best)	28	6.7
5.01 Regulatory efficiency 0 – 100 (best)	17	77.6
5.02 Incidence of corruption 0-100 (best)	30	59.0
5.03 Future orientation of government 1-7 (best)	65	3.4
5.04 Rule of law (2.5) - 2.0 (best)	26	1.0
Driver: Sustainable Resources 0-10 (best)	21	7.4
Sustainability 0-10 (best)	21	7.4
6.01 Alternative and nuclear energy use % total energy use	52	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	28	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	37	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	70	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	33	1.2
6.06 Wastewater treatment 0 – 5 (worst)	41	82.9
Driver: Demand Environment 0-10 (best)	73	4.0
Foreign and Domestic Demand 0-10 (best)	72	3.9
7.01 Market size 0-100 (best)	72	39.3
Consumer Base 0-10 (best)	70	4.0
7.02 Buyer sophistication 1-7 (best)	68	3.2
7.03 Extent of market dominance 1-7 (best)	63	3.6

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Key economic indicators

Population millions	31.7	**GDP per capita** US$	9,360.5
GDP US$ billions	296.4	**Unemployment rate** %	3.5

Key production indicators

Manufacturing value added 2010 millions US$	79,820.6	**Manufacturing value added growth** Annual %	3.9
Manufacturing value added in economy % GDP	23.9	**Medium hi-tech & hi-tech industries** % of manu. value added	42.6
Manufacturing employment % working population	16.5	**CO2 emission per unit of value added** kg/USD	0.4

Readiness Overall Assessment

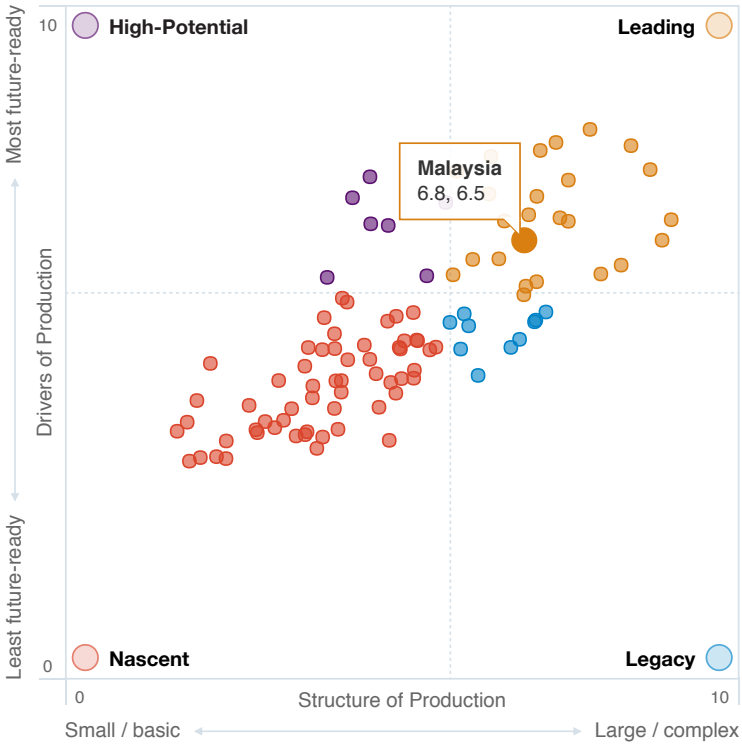
Drivers of Production 6.5

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	23rd	**5.9**
Human Capital	20%	21st	**6.5**
Global Trade & Investment	20%	7th	**7.4**
Institutional Framework	20%	30th	**6.6**
Sustainable Resources	5%	60th	**6.0**
Demand Environment	15%	17th	**6.3**

Structure of Production 6.8

Structure	Weighting	Rank	Score /10
Complexity	60%	30th	**6.8**
Scale	40%	7th	**6.8**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	30	6.8
1.01 Economic complexity (2.5) – 2.5 (best)	30	0.8
Structure: Scale 0-10 (best)	7	6.8
1.02 Manufacturing value added in economy % GDP	5	23.9
1.03 Manufacturing value added US$ millions	24	79,820.6
Driver: Technology & Innovation 0-10 (best)	23	5.9
Technology Platform 0-10 (best)	4	8.3
2.01 Mobile-cellular telephone subscriptions /100 pop.	24	141.2
2.02 LTE mobile network coverage % population	44	88.0
2.03 Internet users % pop.	29	78.8
2.04 FDI and technology transfer 1-7 (best)	12	5.4
2.05 Firm-level technology absorption 1-7 (best)	15	5.4
2.06 Impact of ICTs on new services and products 1-7 (best)	19	5.6
2.07 Cybersecurity commitment 0–1 (best)	3	0.9
Ability to Innovate 0-10 (best)	30	3.4
2.08 State of cluster development 1-7 (best)	12	5.1
2.09 Company investment in emerging technology 1–7 (best)	11	5.1
2.10 Gov't procurement of advanced technology products 1-7 (best)	4	5.0
2.11 Companies embracing disruptive ideas 1-7 (best)	4	5.0
2.12 Multi-stakeholder collaboration 1-7 (best)	8	5.2
2.13 R&D expenditures % GDP	30	1.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP	50	12.3
2.15 Patent applications applications/million pop.	36	5.66
2.16 Venture capital deal volume US$ millions	37	6,155.5
2.17 Venture capital deal volume per size of economy US$/GDP	46	19.8
Driver: Human Capital 0-10 (best)	21	6.5
Current Labor Force 0-10 (best)	42	6.8
3.01 Manufacturing employment % working population	18	16.5
3.02 Knowledge-intensive employment % working pop.	45	25.5
3.03 Female participation in labor force ratio	66	0.63
3.04 Mean years of schooling Years	47	10.1
3.05 Availability of scientists and engineers 1-7 (best)	7	5.3
3.06 Digital skills among population 1-7 (best)	14	5.4
Future Labor Force 0-10 (best)	15	6.2
3.07 Migration migrants/100,000 pop.	20	14.8
3.08 Country capacity to attract and retain talent 1-7 (best)	12	5.0
3.09 Quality of universities Count	23	9.0
3.10 Quality of math and science education 1-7 (best)	16	5.3
3.11 Quality of vocational training 1-7 (best)	11	5.3
3.12 School life expectancy Years	72	12.9
3.13 Pupil-to-teacher ratio in primary education Ratio	15	11.5
3.14 Critical thinking in teaching 1-7 (best)	14	4.8
3.15 Active labor policies 1-7 (best)	9	5.0
3.16 On-the-job training 1-7 (best)	12	5.4
3.17 Hiring and firing practices 1-7 (best)	10	4.9

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	7	7.4
Trade 0-10 (best)	24	8.2
4.01 Trade % GDP	14	128.1
4.02 Trade tariffs % duty	57	0.05
4.03 Prevalence of non-tariff barriers 1-7 (best)	29	4.8
4.04 Logistics performance 1 – 5 (best)	32	3.4
Investment 0-10 (best)	12	6.2
4.05 Greenfield investments US$ millions	12	14,772.0
4.06 FDI inflows US$ millions	25	10,655.8
4.07 Domestic credit to private sector % GDP	18	123.9
Infrastructure 0-10 (best)	22	7.8
4.08 Transport infrastructure 0-100 (best)	22	62.9
4.09 Electricity infrastructure 0-100 (best)	19	93.4
Driver: Institutional Framework 0-10 (best)	30	6.6
Government 0-10 (best)	30	6.6
5.01 Regulatory efficiency 0 – 100 (best)	7	83.0
5.02 Incidence of corruption 0-100 (best)	40	49.0
5.03 Future orientation of government 1-7 (best)	7	5.3
5.04 Rule of law (2.5) - 2.0 (best)	37	0.5
Driver: Sustainable Resources 0-10 (best)	60	6.0
Sustainability 0-10 (best)	60	6.0
6.01 Alternative and nuclear energy use % total energy use	86	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	82	0.7
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	66	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	39	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	53	2.1
6.06 Wastewater treatment 0 – 5 (worst)	52	77.2
Driver: Demand Environment 0-10 (best)	17	6.3
Foreign and Domestic Demand 0-10 (best)	21	6.6
7.01 Market size 0-100 (best)	21	66.3
Consumer Base 0-10 (best)	13	6.0
7.02 Buyer sophistication 1-7 (best)	16	4.4
7.03 Extent of market dominance 1-7 (best)	14	4.8

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Key economic indicators

Population millions	1.3	**GDP per capita** US$	9,424.5
GDP US$ billions	12.0	**Unemployment rate** %	7.2

Key production indicators

Manufacturing value added 2010 millions US$	1,678.9	**Manufacturing value added growth** Annual %	2.1
Manufacturing value added in economy % GDP	14.1	**Medium hi-tech & hi-tech industries** % of manu. value added	8.9
Manufacturing employment % working population	14.2	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

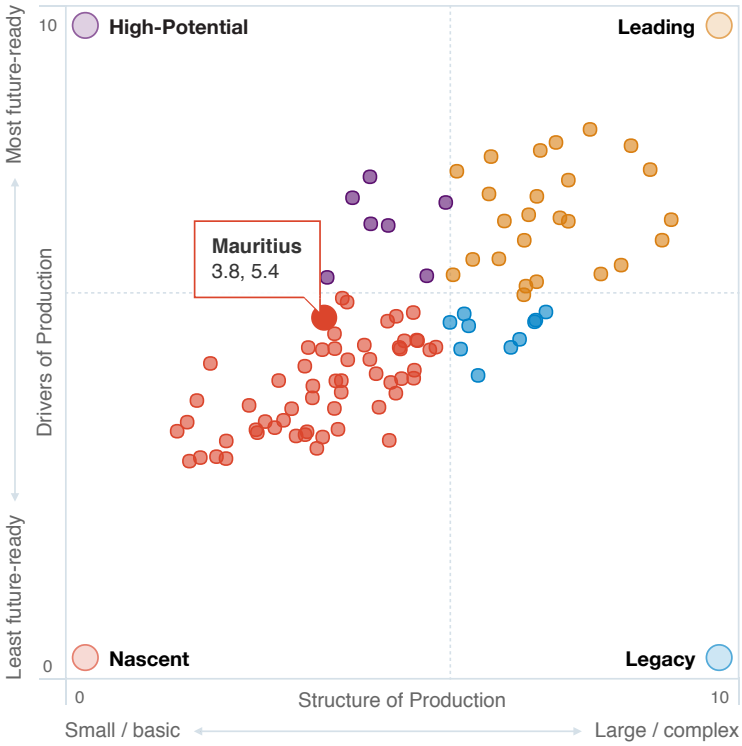
Drivers of Production 5.4

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	30th	**5.1**
Human Capital	20%	49th	**5.2**
Global Trade & Investment	20%	33rd	**6.0**
Institutional Framework	20%	32nd	**6.5**
Sustainable Resources	5%	54th	**6.2**
Demand Environment	15%	87th	**3.5**

Structure of Production 3.8

Structure	Weighting	Rank	Score /10
Complexity	60%	66th	**4.5**
Scale	40%	77th	**2.8**

Archetype



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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

Index Component	Rank /100	Value
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$ billiions)	48	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	45	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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

Legacy

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	122.3	**GDP per capita** US$	8,554.6
GDP US$ billions	1,046.0	**Unemployment rate** %	3.9

Key production indicators

Manufacturing value added 2010 millions US$	204,982.5	**Manufacturing value added growth** Annual %	1.3
Manufacturing value added in economy % GDP	16.6	**Medium hi-tech & hi-tech industries** % of manu. value added	39.8
Manufacturing employment % working population	16.0	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

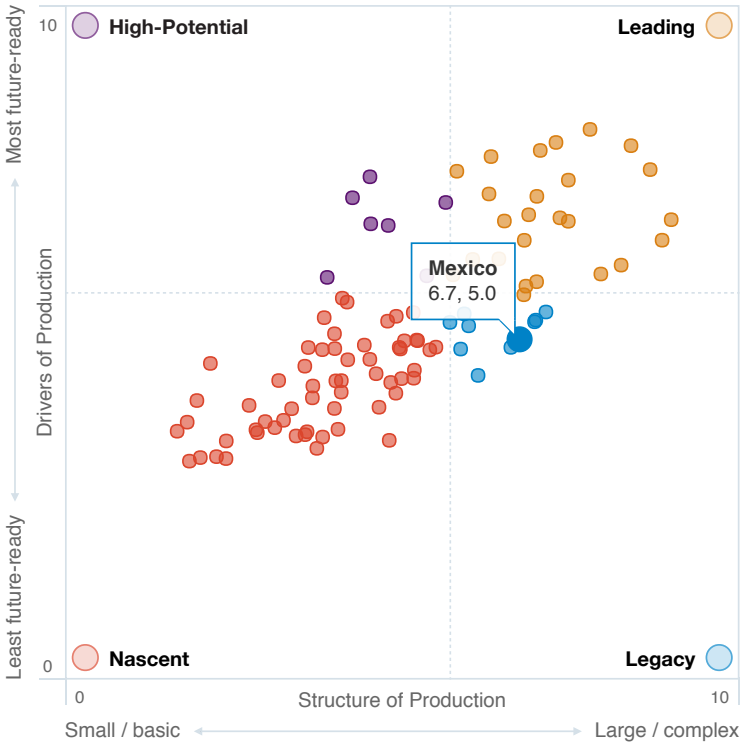
Drivers of Production 5.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	43rd	**4.5**
Human Capital	20%	73rd	**4.5**
Global Trade & Investment	20%	25th	**6.3**
Institutional Framework	20%	84th	**4.2**
Sustainable Resources	5%	61st	**5.9**
Demand Environment	15%	25th	**5.8**

Structure of Production 6.7

Structure	Weighting	Rank	Score /10
Complexity	60%	25th	**7.2**
Scale	40%	13th	**6.1**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	25	7.2
1.01 Economic complexity (2.5) – 2.5 (best)	25	1.0
Structure: Scale 0-10 (best)	13	6.1
1.02 Manufacturing value added in economy % GDP	27	16.6
1.03 Manufacturing value added US$ millions	12	204,982.5
Driver: Technology & Innovation 0-10 (best)	43	4.5
Technology Platform 0-10 (best)	41	6.6
2.01 Mobile-cellular telephone subscriptions /100 pop.	87	88.2
2.02 LTE mobile network coverage % population	52	83.8
2.03 Internet users % pop.	60	59.5
2.04 FDI and technology transfer 1-7 (best)	24	5.0
2.05 Firm-level technology absorption 1-7 (best)	50	4.6
2.06 Impact of ICTs on new services and products 1-7 (best)	36	5.0
2.07 Cybersecurity commitment 0–1 (best)	31	0.7
Ability to Innovate 0-10 (best)	49	2.4
2.08 State of cluster development 1-7 (best)	35	4.2
2.09 Company investment in emerging technology 1–7 (best)	59	3.5
2.10 Gov't procurement of advanced technology products 1-7 (best)	67	3.1
2.11 Companies embracing disruptive ideas 1-7 (best)	69	3.3
2.12 Multi-stakeholder collaboration 1-7 (best)	46	3.7
2.13 R&D expenditures % GDP	58	0.6
2.14 Scientific and technical publications Number per Billion PPP$ GDP	73	5.8
2.15 Patent applications applications/million pop.	52	1.33
2.16 Venture capital deal volume US$ millions	21	29,976.3
2.17 Venture capital deal volume per size of economy US$/GDP	36	25.7
Driver: Human Capital 0-10 (best)	73	4.5
Current Labor Force 0-10 (best)	66	5.5
3.01 Manufacturing employment % working population	21	16.0
3.02 Knowledge-intensive employment % working pop.	68	18.9
3.03 Female participation in labor force ratio	70	0.58
3.04 Mean years of schooling Years	68	8.6
3.05 Availability of scientists and engineers 1-7 (best)	48	4.2
3.06 Digital skills among population 1-7 (best)	73	3.8
Future Labor Force 0-10 (best)	70	3.4
3.07 Migration migrants/100,000 pop.	86	-9.4
3.08 Country capacity to attract and retain talent 1-7 (best)	41	3.5
3.09 Quality of universities Count	16	14.0
3.10 Quality of math and science education 1-7 (best)	90	2.9
3.11 Quality of vocational training 1-7 (best)	47	4.2
3.12 School life expectancy Years	67	13.3
3.13 Pupil-to-teacher ratio in primary education Ratio	81	27.4
3.14 Critical thinking in teaching 1-7 (best)	82	3.0
3.15 Active labor policies 1-7 (best)	78	2.8
3.16 On-the-job training 1-7 (best)	60	4.1
3.17 Hiring and firing practices 1-7 (best)	68	3.4

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	25	6.3
Trade 0-10 (best)	48	6.6
4.01 Trade % GDP	52	78.1
4.02 Trade tariffs % duty	65	0.05
4.03 Prevalence of non-tariff barriers 1-7 (best)	48	4.5
4.04 Logistics performance 1 – 5 (best)	50	3.2
Investment 0-10 (best)	15	5.5
4.05 Greenfield investments US$ millions	5	28,377.0
4.06 FDI inflows US$ millions	13	29,798.0
4.07 Domestic credit to private sector % GDP	75	35.0
Infrastructure 0-10 (best)	48	6.6
4.08 Transport infrastructure 0-100 (best)	31	57.3
4.09 Electricity infrastructure 0-100 (best)	72	75.3
Driver: Institutional Framework 0-10 (best)	84	4.2
Government 0-10 (best)	84	4.2
5.01 Regulatory efficiency 0 – 100 (best)	56	69.1
5.02 Incidence of corruption 0-100 (best)	84	30.0
5.03 Future orientation of government 1-7 (best)	72	3.3
5.04 Rule of law (2.5) - 2.0 (best)	82	-0.5
Driver: Sustainable Resources 0-10 (best)	61	5.9
Sustainability 0-10 (best)	61	5.9
6.01 Alternative and nuclear energy use % total energy use	73	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	51	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	57	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	43	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	79	3.5
6.06 Wastewater treatment 0 – 5 (worst)	46	80.3
Driver: Demand Environment 0-10 (best)	25	5.8
Foreign and Domestic Demand 0-10 (best)	11	7.6
7.01 Market size 0-100 (best)	11	75.8
Consumer Base 0-10 (best)	64	4.1
7.02 Buyer sophistication 1-7 (best)	52	3.5
7.03 Extent of market dominance 1-7 (best)	73	3.5

Moldova

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Key economic indicators

Population millions	3.6	**GDP per capita** US$	1,900.9
GDP US$ billions	6.8	**Unemployment rate** %	4.2

Key production indicators

Manufacturing value added 2010 millions US$	768.4	**Manufacturing value added growth** Annual %	-0.5
Manufacturing value added in economy % GDP	10.8	**Medium hi-tech & hi-tech industries** % of manu. value added	18.8
Manufacturing employment % working population	10.0	**CO2 emission per unit of value added** kg/USD	1.1

Readiness Overall Assessment

Drivers of Production 4.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	75th	**3.5**
Human Capital	20%	59th	**4.9**
Global Trade & Investment	20%	70th	**4.5**
Institutional Framework	20%	86th	**3.8**
Sustainable Resources	5%	73rd	**5.4**
Demand Environment	15%	99th	**2.7**

Structure of Production 3.4

Structure	Weighting	Rank	Score /10
Complexity	60%	70th	**4.4**
Scale	40%	91st	**1.8**

Archetype

Moldova

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	70	4.4
1.01 Economic complexity (2.5) – 2.5 (best)	70	-0.3
Structure: Scale 0-10 (best)	91	1.8
1.02 Manufacturing value added in economy % GDP	67	10.8
1.03 Manufacturing value added US$ millions	99	768.4
Driver: Technology & Innovation 0-10 (best)	75	3.5
Technology Platform 0-10 (best)	66	5.6
2.01 Mobile-cellular telephone subscriptions /100 pop.	68	111.0
2.02 LTE mobile network coverage % population	30	97.0
2.03 Internet users % pop.	43	71.0
2.04 FDI and technology transfer 1-7 (best)	81	4.0
2.05 Firm-level technology absorption 1-7 (best)	88	4.0
2.06 Impact of ICTs on new services and products 1-7 (best)	90	4.0
2.07 Cybersecurity commitment 0–1 (best)	71	0.4
Ability to Innovate 0-10 (best)	98	1.4
2.08 State of cluster development 1-7 (best)	100	2.6
2.09 Company investment in emerging technology 1–7 (best)	92	2.9
2.10 Gov't procurement of advanced technology products 1-7 (best)	96	2.5
2.11 Companies embracing disruptive ideas 1-7 (best)	71	3.2
2.12 Multi-stakeholder collaboration 1-7 (best)	93	3.0
2.13 R&D expenditures % GDP	70	0.4
2.14 Scientific and technical publications Number per Billion PPP$ GDP	49	13.2
2.15 Patent applications applications/million pop.	70	0.26
2.16 Venture capital deal volume US$ millions	100	3.5
2.17 Venture capital deal volume per size of economy US$/GDP	98	0.5
Driver: Human Capital 0-10 (best)	59	4.9
Current Labor Force 0-10 (best)	33	7.0
3.01 Manufacturing employment % working population	70	10.0
3.02 Knowledge-intensive employment % working pop.	43	28.1
3.03 Female participation in labor force ratio	1	1.14
3.04 Mean years of schooling Years	31	11.6
3.05 Availability of scientists and engineers 1-7 (best)	97	3.1
3.06 Digital skills among population 1-7 (best)	46	4.5
Future Labor Force 0-10 (best)	94	2.8
3.07 Migration migrants/100,000 pop.	97	-29.0
3.08 Country capacity to attract and retain talent 1-7 (best)	99	1.9
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	58	4.1
3.11 Quality of vocational training 1-7 (best)	89	3.4
3.12 School life expectancy Years	88	11.6
3.13 Pupil-to-teacher ratio in primary education Ratio	53	17.5
3.14 Critical thinking in teaching 1-7 (best)	58	3.2
3.15 Active labor policies 1-7 (best)	76	2.8
3.16 On-the-job training 1-7 (best)	91	3.5
3.17 Hiring and firing practices 1-7 (best)	69	3.4

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	70	4.5
Trade 0-10 (best)	29	7.9
4.01 Trade % GDP	22	115.4
4.02 Trade tariffs % duty	42	0.03
4.03 Prevalence of non-tariff barriers 1-7 (best)	66	4.2
4.04 Logistics performance 1 – 5 (best)	81	2.7
Investment 0-10 (best)	95	0.5
4.05 Greenfield investments US$ millions	97	259.0
4.06 FDI inflows US$ millions	100	202.0
4.07 Domestic credit to private sector % GDP	84	30.6
Infrastructure 0-10 (best)	82	5.1
4.08 Transport infrastructure 0-100 (best)	63	43.8
4.09 Electricity infrastructure 0-100 (best)	86	57.9
Driver: Institutional Framework 0-10 (best)	86	3.8
Government 0-10 (best)	86	3.8
5.01 Regulatory efficiency 0 – 100 (best)	88	59.0
5.02 Incidence of corruption 0-100 (best)	84	30.0
5.03 Future orientation of government 1-7 (best)	87	2.9
5.04 Rule of law (2.5) - 2.0 (best)	84	-0.5
Driver: Sustainable Resources 0-10 (best)	73	5.4
Sustainability 0-10 (best)	73	5.4
6.01 Alternative and nuclear energy use % total energy use	76	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	92	1.0
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	81	0.4
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	81	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	42	1.5
6.06 Wastewater treatment 0 – 5 (worst)	59	72.8
Driver: Demand Environment 0-10 (best)	99	2.7
Foreign and Domestic Demand 0-10 (best)	100	2.1
7.01 Market size 0-100 (best)	100	21.1
Consumer Base 0-10 (best)	92	3.3
7.02 Buyer sophistication 1-7 (best)	85	2.9
7.03 Extent of market dominance 1-7 (best)	96	3.0

Mongolia

Nascent

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	3.0	**GDP per capita** US$	3,659.8
GDP US$ billions	11.0	**Unemployment rate** %	7.9

Key production indicators

Manufacturing value added 2010 millions US$	616.1	**Manufacturing value added growth** Annual %	-4.2
Manufacturing value added in economy % GDP	5.3	**Medium hi-tech & hi-tech industries** % of manu. value added	6.7
Manufacturing employment % working population	7.1	**CO2 emission per unit of value added** kg/USD	2.4

Readiness Overall Assessment

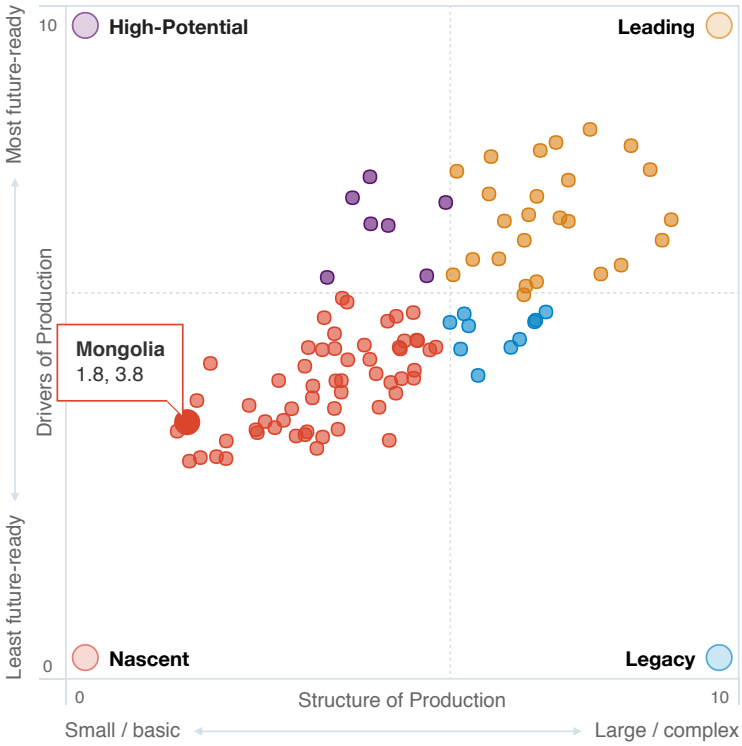
Drivers of Production 3.8

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	93rd	**3.0**
Human Capital	20%	68th	**4.5**
Global Trade & Investment	20%	67th	**4.6**
Institutional Framework	20%	73rd	**4.5**
Sustainable Resources	5%	100th	**1.9**
Demand Environment	15%	100th	**2.7**

Structure of Production 1.8

Structure	Weighting	Rank	Score /10
Complexity	60%	92nd	**2.5**
Scale	40%	100th	**0.7**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	92	2.5
1.01 Economic complexity (2.5) – 2.5 (best)	92	-1.1
Structure: Scale 0-10 (best)	100	0.7
1.02 Manufacturing value added in economy % GDP	95	5.3
1.03 Manufacturing value added US$ millions	100	616.1
Driver: Technology & Innovation 0-10 (best)	93	3.0
Technology Platform 0-10 (best)	95	3.9
2.01 Mobile-cellular telephone subscriptions /100 pop.	65	113.6
2.02 LTE mobile network coverage % population	94	6.9
2.03 Internet users % pop.	95	22.3
2.04 FDI and technology transfer 1-7 (best)	85	3.9
2.05 Firm-level technology absorption 1-7 (best)	72	4.3
2.06 Impact of ICTs on new services and products 1-7 (best)	75	4.3
2.07 Cybersecurity commitment 0–1 (best)	91	0.2
Ability to Innovate 0-10 (best)	67	2.0
2.08 State of cluster development 1-7 (best)	99	2.8
2.09 Company investment in emerging technology 1–7 (best)	71	3.3
2.10 Gov't procurement of advanced technology products 1-7 (best)	83	2.8
2.11 Companies embracing disruptive ideas 1-7 (best)	91	3.0
2.12 Multi-stakeholder collaboration 1-7 (best)	91	3.1
2.13 R&D expenditures % GDP	87	0.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	67	6.5
2.15 Patent applications applications/million pop.	64	0.56
2.16 Venture capital deal volume US$ millions	70	512.6
2.17 Venture capital deal volume per size of economy US$/GDP	24	43.8
Driver: Human Capital 0-10 (best)	68	4.5
Current Labor Force 0-10 (best)	52	6.1
3.01 Manufacturing employment % working population	87	7.1
3.02 Knowledge-intensive employment % working pop.	49	24.7
3.03 Female participation in labor force ratio	23	0.92
3.04 Mean years of schooling Years	54	9.8
3.05 Availability of scientists and engineers 1-7 (best)	55	4.0
3.06 Digital skills among population 1-7 (best)	78	3.7
Future Labor Force 0-10 (best)	81	3.0
3.07 Migration migrants/100,000 pop.	77	-5.1
3.08 Country capacity to attract and retain talent 1-7 (best)	85	2.5
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	47	4.3
3.11 Quality of vocational training 1-7 (best)	90	3.4
3.12 School life expectancy Years	45	15.0
3.13 Pupil-to-teacher ratio in primary education Ratio	82	28.2
3.14 Critical thinking in teaching 1-7 (best)	90	2.7
3.15 Active labor policies 1-7 (best)	75	2.8
3.16 On-the-job training 1-7 (best)	92	3.5
3.17 Hiring and firing practices 1-7 (best)	51	3.7

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	67	4.6
Trade 0-10 (best)	38	7.5
4.01 Trade % GDP	37	97.6
4.02 Trade tariffs % duty	55	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	80	4.0
4.04 Logistics performance 1 – 5 (best)	85	2.6
Investment 0-10 (best)	63	1.5
4.05 Greenfield investments US$ millions	63	1,613.9
4.06 FDI inflows US$ millions	87	619.2
4.07 Domestic credit to private sector % GDP	51	58.6
Infrastructure 0-10 (best)	85	4.8
4.08 Transport infrastructure 0-100 (best)	91	28.1
4.09 Electricity infrastructure 0-100 (best)	80	68.5
Driver: Institutional Framework 0-10 (best)	73	4.5
Government 0-10 (best)	73	4.5
5.01 Regulatory efficiency 0 – 100 (best)	39	72.0
5.02 Incidence of corruption 0-100 (best)	63	38.0
5.03 Future orientation of government 1-7 (best)	95	2.6
5.04 Rule of law (2.5) - 2.0 (best)	66	-0.2
Driver: Sustainable Resources 0-10 (best)	100	1.9
Sustainability 0-10 (best)	100	1.9
6.01 Alternative and nuclear energy use % total energy use	85	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	98	1.5
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	97	0.9
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	97	0.9
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	84	4.0
6.06 Wastewater treatment 0 – 5 (worst)	75	53.6
Driver: Demand Environment 0-10 (best)	100	2.7
Foreign and Domestic Demand 0-10 (best)	93	2.7
7.01 Market size 0-100 (best)	93	27.3
Consumer Base 0-10 (best)	100	2.6
7.02 Buyer sophistication 1-7 (best)	88	2.9
7.03 Extent of market dominance 1-7 (best)	100	2.3

Morocco

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Key economic indicators

Population millions	33.8	**GDP per capita** US$	3,063.1
GDP US$ billions	103.6	**Unemployment rate** %	9.4

Key production indicators

Manufacturing value added 2010 millions US$	16,780.1	**Manufacturing value added growth** Annual %	2.9
Manufacturing value added in economy % GDP	14.5	**Medium hi-tech & hi-tech industries** % of manu. value added	27.7
Manufacturing employment % working population	10.9	**CO2 emission per unit of value added** kg/USD	0.4

Readiness Overall Assessment

Drivers of Production 4.4

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	56th	**4.1**
Human Capital	20%	94th	**3.4**
Global Trade & Investment	20%	65th	**4.7**
Institutional Framework	20%	65th	**4.8**
Sustainable Resources	5%	82nd	**4.8**
Demand Environment	15%	53rd	**4.7**

Structure of Production 3.7

Structure	Weighting	Rank	Score /10
Complexity	60%	86th	**3.3**
Scale	40%	47th	**4.3**

Archetype

Morocco

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	86	3.3
1.01 Economic complexity (2.5) – 2.5 (best)	86	-0.8
Structure: Scale 0-10 (best)	47	4.3
1.02 Manufacturing value added in economy % GDP	37	14.5
1.03 Manufacturing value added US$ millions	52	16,780.1
Driver: Technology & Innovation 0-10 (best)	56	4.1
Technology Platform 0-10 (best)	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 0-10 (best)	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 0-10 (best)	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 Years	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 Count	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

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	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 0-10 (best)	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 0-10 (best)	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$ billiions)	74	0.6
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	44	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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
Driver: Demand Environment 0-10 (best)	53	4.7
Foreign and Domestic Demand 0-10 (best)	52	5.1
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

Leading

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	17.0	**GDP per capita** US$	45,282.6
GDP US$ billions	771.2	**Unemployment rate** %	5.9

Key production indicators

Manufacturing value added 2010 millions US$	94,456.1	**Manufacturing value added growth** Annual %	1.3
Manufacturing value added in economy % GDP	10.8	**Medium hi-tech & hi-tech industries** % of manu. value added	48.2
Manufacturing employment % working population	9.5	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

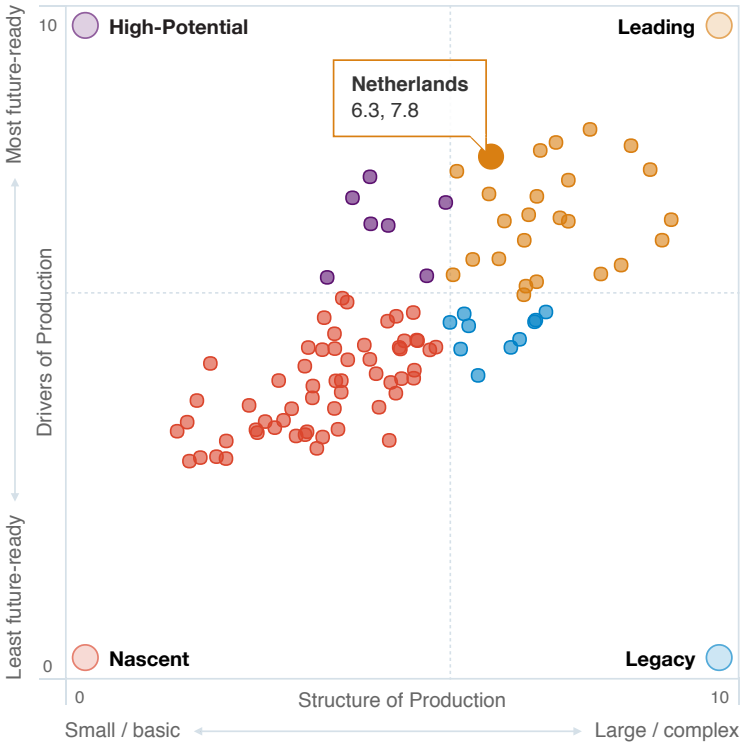
Drivers of Production 7.8

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	4th	**7.7**
Human Capital	20%	13th	**7.1**
Global Trade & Investment	20%	3rd	**8.4**
Institutional Framework	20%	8th	**8.7**
Sustainable Resources	5%	15th	**7.7**
Demand Environment	15%	9th	**6.6**

Structure of Production 6.3

Structure	Weighting	Rank	Score /10
Complexity	60%	22nd	**7.4**
Scale	40%	38th	**4.6**

Archetype



Netherlands

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	22	7.4
1.01 Economic complexity (2.5) – 2.5 (best)	22	1.1
Structure: Scale 0-10 (best)	38	4.6
1.02 Manufacturing value added in economy % GDP	66	10.8
1.03 Manufacturing value added US$ millions	21	94,456.1
Driver: Technology & Innovation 0-10 (best)	4	7.7
Technology Platform 0-10 (best)	3	8.3
2.01 Mobile-cellular telephone subscriptions /100 pop.	36	130.0
2.02 LTE mobile network coverage % population	11	99.0
2.03 Internet users % pop.	10	90.4
2.04 FDI and technology transfer 1-7 (best)	8	5.5
2.05 Firm-level technology absorption 1-7 (best)	3	5.9
2.06 Impact of ICTs on new services and products 1-7 (best)	3	6.1
2.07 Cybersecurity commitment 0–1 (best)	17	0.8
Ability to Innovate 0-10 (best)	4	7.1
2.08 State of cluster development 1-7 (best)	4	5.4
2.09 Company investment in emerging technology 1–7 (best)	6	5.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	16	4.1
2.11 Companies embracing disruptive ideas 1-7 (best)	13	4.5
2.12 Multi-stakeholder collaboration 1-7 (best)	6	5.3
2.13 R&D expenditures % GDP	19	2.0
2.14 Scientific and technical publications Number per Billion PPP$ GDP	12	42.9
2.15 Patent applications applications/million pop.	10	141.48
2.16 Venture capital deal volume US$ millions	9	78,632.5
2.17 Venture capital deal volume per size of economy US$/GDP	9	98.3
Driver: Human Capital 0-10 (best)	13	7.1
Current Labor Force 0-10 (best)	10	8.3
3.01 Manufacturing employment % working population	73	9.5
3.02 Knowledge-intensive employment % working pop.	7	46.6
3.03 Female participation in labor force ratio	28	0.90
3.04 Mean years of schooling Years	24	12.1
3.05 Availability of scientists and engineers 1-7 (best)	18	4.9
3.06 Digital skills among population 1-7 (best)	3	5.9
Future Labor Force 0-10 (best)	16	5.9
3.07 Migration migrants/100,000 pop.	41	3.0
3.08 Country capacity to attract and retain talent 1-7 (best)	8	5.2
3.09 Quality of universities Count	17	13.0
3.10 Quality of math and science education 1-7 (best)	5	5.7
3.11 Quality of vocational training 1-7 (best)	4	5.6
3.12 School life expectancy Years	8	18.1
3.13 Pupil-to-teacher ratio in primary education Ratio	16	11.6
3.14 Critical thinking in teaching 1-7 (best)	9	5.1
3.15 Active labor policies 1-7 (best)	8	5.0
3.16 On-the-job training 1-7 (best)	2	5.8
3.17 Hiring and firing practices 1-7 (best)	29	4.2

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	3	8.4
Trade 0-10 (best)	3	9.0
4.01 Trade % GDP	11	150.7
4.02 Trade tariffs % duty	13	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	11	5.2
4.04 Logistics performance 1 – 5 (best)	3	4.2
Investment 0-10 (best)	9	7.2
4.05 Greenfield investments US$ millions	30	7,199.1
4.06 FDI inflows US$ millions	7	57,658.4
4.07 Domestic credit to private sector % GDP	23	110.3
Infrastructure 0-10 (best)	4	8.9
4.08 Transport infrastructure 0-100 (best)	7	82.6
4.09 Electricity infrastructure 0-100 (best)	11	96.0
Driver: Institutional Framework 0-10 (best)	8	8.7
Government 0-10 (best)	8	8.7
5.01 Regulatory efficiency 0 – 100 (best)	14	78.8
5.02 Incidence of corruption 0-100 (best)	8	83.0
5.03 Future orientation of government 1-7 (best)	12	5.1
5.04 Rule of law (2.5) - 2.0 (best)	7	1.9
Driver: Sustainable Resources 0-10 (best)	15	7.7
Sustainability 0-10 (best)	15	7.7
6.01 Alternative and nuclear energy use % total energy use	79	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	17	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	13	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	16	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	47	1.7
6.06 Wastewater treatment 0 – 5 (worst)	2	99.7
Driver: Demand Environment 0-10 (best)	9	6.6
Foreign and Domestic Demand 0-10 (best)	19	6.8
7.01 Market size 0-100 (best)	19	67.5
Consumer Base 0-10 (best)	7	6.4
7.02 Buyer sophistication 1-7 (best)	17	4.4
7.03 Extent of market dominance 1-7 (best)	5	5.2

New Zealand

High Potential

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	4.7	**GDP per capita** US$	38,345.4
GDP US$ billions	182.0	**Unemployment rate** %	5.1

Key production indicators

Manufacturing value added 2010 millions US$	16,978.4	**Manufacturing value added growth** Annual %	1.0
Manufacturing value added in economy % GDP	9.9	**Medium hi-tech & hi-tech industries** % of manu. value added	17.2
Manufacturing employment % working population	9.9	**CO2 emission per unit of value added** kg/USD	0.4

Readiness Overall Assessment

Drivers of Production 6.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	22nd	**6.1**
Human Capital	20%	10th	**7.4**
Global Trade & Investment	20%	45th	**5.5**
Institutional Framework	20%	2nd	**9.1**
Sustainable Resources	5%	14th	**7.8**
Demand Environment	15%	50th	**4.8**

Structure of Production 4.8

Structure	Weighting	Rank	Score /10
Complexity	60%	45th	**5.7**
Scale	40%	68th	**3.5**

Archetype

New Zealand

High Potential

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	45	5.7
1.01 Economic complexity (2.5) – 2.5 (best)	45	0.3
Structure: Scale 0-10 (best)	68	3.5
1.02 Manufacturing value added in economy % GDP	78	9.9
1.03 Manufacturing value added US$ millions	51	16,978.4
Driver: Technology & Innovation 0-10 (best)	22	6.1
Technology Platform 0-10 (best)	17	7.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	46	125.0
2.02 LTE mobile network coverage % population	39	90.0
2.03 Internet users % pop.	14	88.5
2.04 FDI and technology transfer 1-7 (best)	20	5.2
2.05 Firm-level technology absorption 1-7 (best)	14	5.5
2.06 Impact of ICTs on new services and products 1-7 (best)	15	5.6
2.07 Cybersecurity commitment 0–1 (best)	21	0.7
Ability to Innovate 0-10 (best)	24	4.4
2.08 State of cluster development 1-7 (best)	39	4.1
2.09 Company investment in emerging technology 1–7 (best)	14	4.9
2.10 Gov't procurement of advanced technology products 1-7 (best)	24	3.8
2.11 Companies embracing disruptive ideas 1-7 (best)	5	4.9
2.12 Multi-stakeholder collaboration 1-7 (best)	14	4.9
2.13 R&D expenditures % GDP	36	1.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	6	50.9
2.15 Patent applications applications/million pop.	21	45.83
2.16 Venture capital deal volume US$ millions	38	5,488.6
2.17 Venture capital deal volume per size of economy US$/GDP	30	29.3
Driver: Human Capital 0-10 (best)	10	7.4
Current Labor Force 0-10 (best)	11	8.3
3.01 Manufacturing employment % working population	54	11.2
3.02 Knowledge-intensive employment % working pop.	17	42.9
3.03 Female participation in labor force ratio	14	0.97
3.04 Mean years of schooling Years	14	12.5
3.05 Availability of scientists and engineers 1-7 (best)	25	4.7
3.06 Digital skills among population 1-7 (best)	13	5.4
Future Labor Force 0-10 (best)	11	6.5
3.07 Migration migrants/100,000 pop.	17	16.3
3.08 Country capacity to attract and retain talent 1-7 (best)	13	4.9
3.09 Quality of universities Count	28	8.0
3.10 Quality of math and science education 1-7 (best)	17	5.3
3.11 Quality of vocational training 1-7 (best)	10	5.4
3.12 School life expectancy Years	4	19.4
3.13 Pupil-to-teacher ratio in primary education Ratio	33	14.4
3.14 Critical thinking in teaching 1-7 (best)	5	5.3
3.15 Active labor policies 1-7 (best)	15	4.7
3.16 On-the-job training 1-7 (best)	13	5.4
3.17 Hiring and firing practices 1-7 (best)	13	4.6

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	45	5.5
Trade 0-10 (best)	63	6.0
4.01 Trade % GDP	74	55.2
4.02 Trade tariffs % duty	31	0.02
4.03 Prevalence of non-tariff barriers 1-7 (best)	4	5.6
4.04 Logistics performance 1 – 5 (best)	36	3.4
Investment 0-10 (best)	33	3.6
4.05 Greenfield investments US$ millions	70	1,233.2
4.06 FDI inflows US$ millions	63	1,805.9
4.07 Domestic credit to private sector % GDP	6	176.2
Infrastructure 0-10 (best)	34	7.1
4.08 Transport infrastructure 0-100 (best)	46	50.1
4.09 Electricity infrastructure 0-100 (best)	28	92.0
Driver: Institutional Framework 0-10 (best)	2	9.1
Government 0-10 (best)	2	9.1
5.01 Regulatory efficiency 0 – 100 (best)	2	89.4
5.02 Incidence of corruption 0-100 (best)	1	90.0
5.03 Future orientation of government 1-7 (best)	6	5.3
5.04 Rule of law (2.5) - 2.0 (best)	5	1.9
Driver: Sustainable Resources 0-10 (best)	14	7.8
Sustainability 0-10 (best)	14	7.8
6.01 Alternative and nuclear energy use % total energy use	26	0.4
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	15	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	53	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	66	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	40	1.4
6.06 Wastewater treatment 0 – 5 (worst)	25	90.5
Driver: Demand Environment 0-10 (best)	50	4.8
Foreign and Domestic Demand 0-10 (best)	63	4.4
7.01 Market size 0-100 (best)	63	44.0
Consumer Base 0-10 (best)	25	5.3
7.02 Buyer sophistication 1-7 (best)	24	4.0
7.03 Extent of market dominance 1-7 (best)	25	4.3

Nigeria

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	183.6	**GDP per capita** US$	2,210.6
GDP US$ billions	406.0	**Unemployment rate** %	13.4

Key production indicators

Manufacturing value added 2010 millions US$	46,977.3	**Manufacturing value added growth** Annual %	1.4
Manufacturing value added in economy % GDP	10.3	**Medium hi-tech & hi-tech industries** % of manu. value added	33.4
Manufacturing employment % working population	11.0	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

Drivers of Production 3.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	77th	**3.5**
Human Capital	20%	89th	**3.7**
Global Trade & Investment	20%	97th	**2.4**
Institutional Framework	20%	97th	**3.2**
Sustainable Resources	5%	32nd	**6.8**
Demand Environment	15%	38th	**5.3**

Structure of Production 1.7

Structure	Weighting	Rank	Score /10
Complexity	60%	100th	**0.0**
Scale	40%	49th	**4.2**

Archetype

Nigeria

Nascent

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	100	0.0
1.01 Economic complexity (2.5) – 2.5 (best)	100	-2.2
Structure: Scale 0-10 (best)	49	4.2
1.02 Manufacturing value added in economy % GDP	72	10.3
1.03 Manufacturing value added US$ millions	33	46,977.3
Driver: Technology & Innovation 0-10 (best)	77	3.5
Technology Platform 0-10 (best)	70	5.3
2.01 Mobile-cellular telephone subscriptions /100 pop.	91	81.8
2.02 LTE mobile network coverage % population	75	50.8
2.03 Internet users % pop.	89	25.7
2.04 FDI and technology transfer 1-7 (best)	67	4.2
2.05 Firm-level technology absorption 1-7 (best)	67	4.3
2.06 Impact of ICTs on new services and products 1-7 (best)	61	4.5
2.07 Cybersecurity commitment 0–1 (best)	47	0.6
Ability to Innovate 0-10 (best)	91	1.6
2.08 State of cluster development 1-7 (best)	78	3.4
2.09 Company investment in emerging technology 1–7 (best)	94	2.9
2.10 Gov't procurement of advanced technology products 1-7 (best)	75	2.9
2.11 Companies embracing disruptive ideas 1-7 (best)	59	3.4
2.12 Multi-stakeholder collaboration 1-7 (best)	85	3.2
2.13 R&D expenditures % GDP	82	0.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	90	2.3
2.15 Patent applications applications/million pop.	98	0.00
2.16 Venture capital deal volume US$ millions	34	7,342.2
2.17 Venture capital deal volume per size of economy US$/GDP	54	15.1
Driver: Human Capital 0-10 (best)	89	3.7
Current Labor Force 0-10 (best)	86	4.5
3.01 Manufacturing employment % working population	60	11.0
3.02 Knowledge-intensive employment % working pop.		No data
3.03 Female participation in labor force ratio	72	0.56
3.04 Mean years of schooling Years	92	6.0
3.05 Availability of scientists and engineers 1-7 (best)	71	3.8
3.06 Digital skills among population 1-7 (best)	91	3.4
Future Labor Force 0-10 (best)	92	2.8
3.07 Migration migrants/100,000 pop.	58	-1.6
3.08 Country capacity to attract and retain talent 1-7 (best)	43	3.5
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	91	2.9
3.11 Quality of vocational training 1-7 (best)	99	2.9
3.12 School life expectancy Years	97	8.6
3.13 Pupil-to-teacher ratio in primary education Ratio	92	37.6
3.14 Critical thinking in teaching 1-7 (best)	93	2.6
3.15 Active labor policies 1-7 (best)	99	2.3
3.16 On-the-job training 1-7 (best)	64	4.0
3.17 Hiring and firing practices 1-7 (best)	11	4.8

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	97	2.4
Trade 0-10 (best)	98	2.3
4.01 Trade % GDP	100	21.4
4.02 Trade tariffs % duty	89	0.11
4.03 Prevalence of non-tariff barriers 1-7 (best)	31	4.8
4.04 Logistics performance 1 – 5 (best)	80	2.7
Investment 0-10 (best)	68	1.5
4.05 Greenfield investments US$ millions	29	7,444.1
4.06 FDI inflows US$ millions	40	4,988.5
4.07 Domestic credit to private sector % GDP	94	15.7
Infrastructure 0-10 (best)	94	3.4
4.08 Transport infrastructure 0-100 (best)	99	24.7
4.09 Electricity infrastructure 0-100 (best)	93	42.7
Driver: Institutional Framework 0-10 (best)	97	3.2
Government 0-10 (best)	97	3.2
5.01 Regulatory efficiency 0 – 100 (best)	69	64.7
5.02 Incidence of corruption 0-100 (best)	92	28.0
5.03 Future orientation of government 1-7 (best)	89	2.8
5.04 Rule of law (2.5) - 2.0 (best)	97	-1.1
Driver: Sustainable Resources 0-10 (best)	32	6.8
Sustainability 0-10 (best)	32	6.8
6.01 Alternative and nuclear energy use % total energy use	5	0.8
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	13	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	77	0.3
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	64	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	12	0.3
6.06 Wastewater treatment 0 – 5 (worst)	88	22.6
Driver: Demand Environment 0-10 (best)	38	5.3
Foreign and Domestic Demand 0-10 (best)	25	6.4
7.01 Market size 0-100 (best)	25	64.2
Consumer Base 0-10 (best)	63	4.1
7.02 Buyer sophistication 1-7 (best)	66	3.3
7.03 Extent of market dominance 1-7 (best)	58	3.7

Norway

High Potential

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	5.3	**GDP per capita** US$	70,391.6
GDP US$ billions	370.4	**Unemployment rate** %	4.7

Key production indicators

Manufacturing value added 2010 millions US$	34,854.7	**Manufacturing value added growth** Annual %	0.6
Manufacturing value added in economy % GDP	7.4	**Medium hi-tech & hi-tech industries** % of manu. value added	46.1
Manufacturing employment % working population	8.6	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

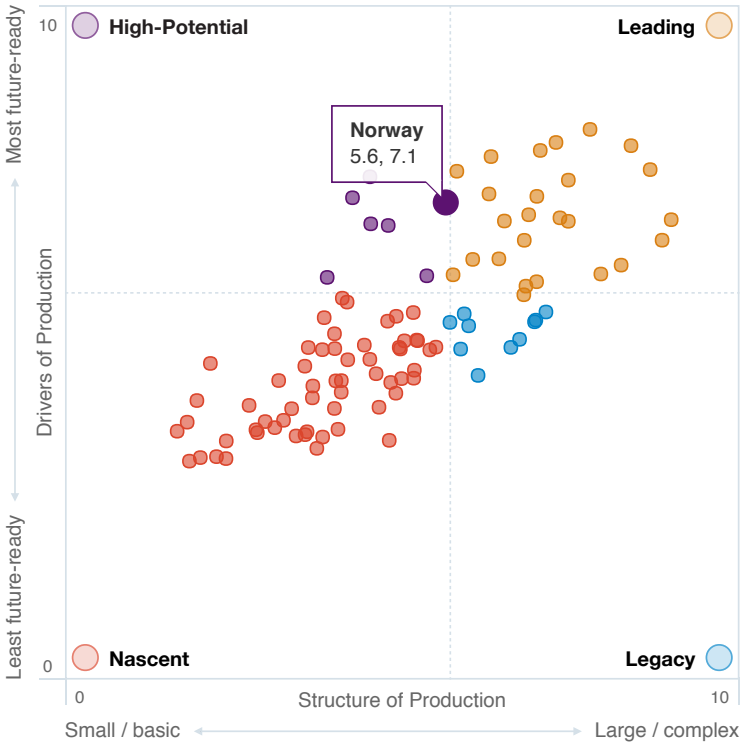
Drivers of Production 7.1

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	13th	**6.9**
Human Capital	20%	5th	**7.8**
Global Trade & Investment	20%	38th	**5.7**
Institutional Framework	20%	7th	**8.7**
Sustainable Resources	5%	1st	**8.8**
Demand Environment	15%	32nd	**5.5**

Structure of Production 5.6

Structure	Weighting	Rank	Score /10
Complexity	60%	26th	**7.1**
Scale	40%	67th	**3.5**

Archetype



Norway

High Potential

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	26	7.1
1.01 Economic complexity (2.5) – 2.5 (best)	26	0.9
Structure: Scale 0-10 (best)	67	3.5
1.02 Manufacturing value added in economy % GDP	86	7.4
1.03 Manufacturing value added US$ millions	39	34,854.7
Driver: Technology & Innovation 0-10 (best)	13	6.9
Technology Platform 0-10 (best)	7	8.2
2.01 Mobile-cellular telephone subscriptions /100 pop.	69	110.1
2.02 LTE mobile network coverage % population	11	99.0
2.03 Internet users % pop.	2	97.3
2.04 FDI and technology transfer 1-7 (best)	21	5.1
2.05 Firm-level technology absorption 1-7 (best)	6	5.8
2.06 Impact of ICTs on new services and products 1-7 (best)	9	5.8
2.07 Cybersecurity commitment 0–1 (best)	12	0.8
Ability to Innovate 0-10 (best)	16	5.5
2.08 State of cluster development 1-7 (best)	13	5.0
2.09 Company investment in emerging technology 1–7 (best)	10	5.2
2.10 Gov't procurement of advanced technology products 1-7 (best)	15	4.1
2.11 Companies embracing disruptive ideas 1-7 (best)	11	4.5
2.12 Multi-stakeholder collaboration 1-7 (best)	11	5.0
2.13 R&D expenditures % GDP	21	1.9
2.14 Scientific and technical publications Number per Billion PPP$ GDP	19	35.0
2.15 Patent applications applications/million pop.	15	92.84
2.16 Venture capital deal volume US$ millions	24	21,358.0
2.17 Venture capital deal volume per size of economy US$/GDP	19	51.0
Driver: Human Capital 0-10 (best)	5	7.8
Current Labor Force 0-10 (best)	8	8.5
3.01 Manufacturing employment % working population	78	8.6
3.02 Knowledge-intensive employment % working pop.	3	51.7
3.03 Female participation in labor force ratio	21	0.94
3.04 Mean years of schooling Years	9	12.8
3.05 Availability of scientists and engineers 1-7 (best)	14	5.1
3.06 Digital skills among population 1-7 (best)	2	5.9
Future Labor Force 0-10 (best)	8	7.0
3.07 Migration migrants/100,000 pop.	12	28.9
3.08 Country capacity to attract and retain talent 1-7 (best)	11	5.1
3.09 Quality of universities Count	45	5.0
3.10 Quality of math and science education 1-7 (best)	22	4.9
3.11 Quality of vocational training 1-7 (best)	8	5.4
3.12 School life expectancy Years	12	17.7
3.13 Pupil-to-teacher ratio in primary education Ratio	2	8.9
3.14 Critical thinking in teaching 1-7 (best)	10	5.1
3.15 Active labor policies 1-7 (best)	5	5.2
3.16 On-the-job training 1-7 (best)	6	5.6
3.17 Hiring and firing practices 1-7 (best)	71	3.4

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	38	5.7
Trade 0-10 (best)	54	6.3
4.01 Trade % GDP	58	66.3
4.02 Trade tariffs % duty	37	0.03
4.03 Prevalence of non-tariff barriers 1-7 (best)	55	4.4
4.04 Logistics performance 1 – 5 (best)	24	3.7
Investment 0-10 (best)	31	3.6
4.05 Greenfield investments US$ millions	76	884.2
4.06 FDI inflows US$ millions	45	4,187.6
4.07 Domestic credit to private sector % GDP	11	144.8
Infrastructure 0-10 (best)	38	7.0
4.08 Transport infrastructure 0-100 (best)	55	47.4
4.09 Electricity infrastructure 0-100 (best)	22	93.0
Driver: Institutional Framework 0-10 (best)	7	8.7
Government 0-10 (best)	7	8.7
5.01 Regulatory efficiency 0 – 100 (best)	45	71.4
5.02 Incidence of corruption 0-100 (best)	6	85.0
5.03 Future orientation of government 1-7 (best)	13	5.0
5.04 Rule of law (2.5) - 2.0 (best)	2	2.0
Driver: Sustainable Resources 0-10 (best)	1	8.8
Sustainability 0-10 (best)	1	8.8
6.01 Alternative and nuclear energy use % total energy use	21	0.4
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	3	0.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	3	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	13	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	16	0.4
6.06 Wastewater treatment 0 – 5 (worst)	16	93.9
Driver: Demand Environment 0-10 (best)	32	5.5
Foreign and Domestic Demand 0-10 (best)	48	5.3
7.01 Market size 0-100 (best)	48	53.1
Consumer Base 0-10 (best)	17	5.8
7.02 Buyer sophistication 1-7 (best)	19	4.3
7.03 Extent of market dominance 1-7 (best)	17	4.7

Oman

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Key economic indicators

Population millions	4.0	**GDP per capita** US$	15,964.0
GDP US$ billions	63.2		

Key production indicators

Manufacturing value added 2010 millions US$	7,256.4	**Manufacturing value added growth** Annual %	5.4
Manufacturing value added in economy % GDP	10.4	**Medium hi-tech & hi-tech industries** % of manu. value added	19.9
Manufacturing employment % working population	5.6	**CO2 emission per unit of value added** kg/USD	3.4

Readiness Overall Assessment

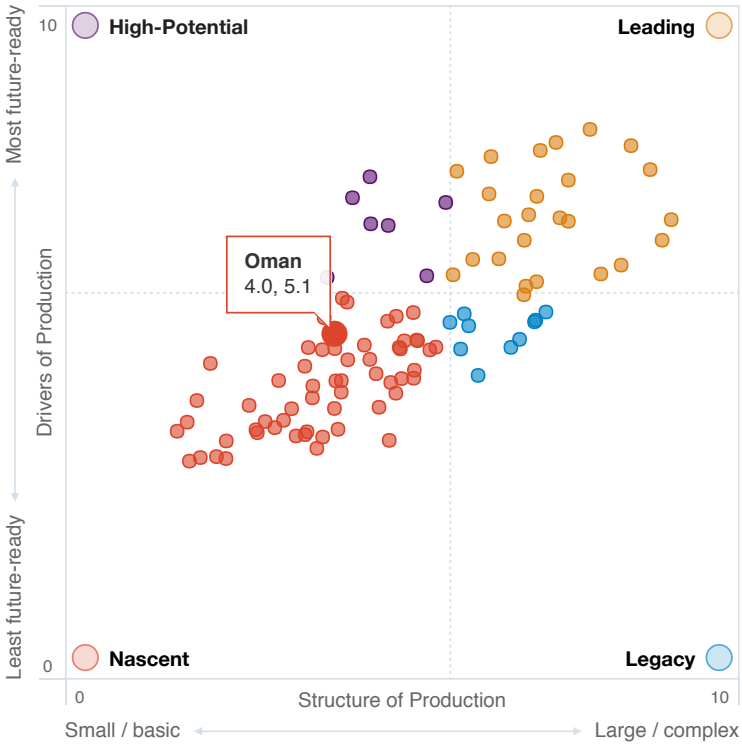
Drivers of Production 5.1

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	40th	**4.6**
Human Capital	20%	50th	**5.1**
Global Trade & Investment	20%	36th	**5.8**
Institutional Framework	20%	40th	**6.1**
Sustainable Resources	5%	97th	**3.5**
Demand Environment	15%	66th	**4.2**

Structure of Production 4.0

Structure	Weighting	Rank	Score /10
Complexity	60%	64th	**4.6**
Scale	40%	74th	**3.1**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	64	4.6
1.01 Economic complexity (2.5) – 2.5 (best)	64	-0.2
Structure: Scale 0-10 (best)	74	3.1
1.02 Manufacturing value added in economy % GDP	70	10.4
1.03 Manufacturing value added US$ millions	67	7,256.4
Driver: Technology & Innovation 0-10 (best)	40	4.6
Technology Platform 0-10 (best)	25	7.4
2.01 Mobile-cellular telephone subscriptions /100 pop.	10	159.2
2.02 LTE mobile network coverage % population	43	88.8
2.03 Internet users % pop.	46	69.8
2.04 FDI and technology transfer 1-7 (best)	72	4.1
2.05 Firm-level technology absorption 1-7 (best)	47	4.7
2.06 Impact of ICTs on new services and products 1-7 (best)	74	4.3
2.07 Cybersecurity commitment 0–1 (best)	4	0.9
Ability to Innovate 0-10 (best)	82	1.8
2.08 State of cluster development 1-7 (best)	61	3.7
2.09 Company investment in emerging technology 1–7 (best)		-
2.10 Gov't procurement of advanced technology products 1-7 (best)	29	3.7
2.11 Companies embracing disruptive ideas 1-7 (best)	75	3.2
2.12 Multi-stakeholder collaboration 1-7 (best)	43	3.7
2.13 R&D expenditures % GDP	78	0.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	82	4.2
2.15 Patent applications applications/million pop.	72	0.18
2.16 Venture capital deal volume US$ millions	75	341.2
2.17 Venture capital deal volume per size of economy US$/GDP	83	4.7
Driver: Human Capital 0-10 (best)	50	5.1
Current Labor Force 0-10 (best)	81	4.8
3.01 Manufacturing employment % working population	90	5.6
3.02 Knowledge-intensive employment % working pop.		No data
3.03 Female participation in labor force ratio	100	0.11
3.04 Mean years of schooling Years	56	9.6
3.05 Availability of scientists and engineers 1-7 (best)	67	3.8
3.06 Digital skills among population 1-7 (best)		-
Future Labor Force 0-10 (best)	24	5.4
3.07 Migration migrants/100,000 pop.	1	229.4
3.08 Country capacity to attract and retain talent 1-7 (best)	30	4.2
3.09 Quality of universities Count	62	1.0
3.10 Quality of math and science education 1-7 (best)	67	3.7
3.11 Quality of vocational training 1-7 (best)	63	3.8
3.12 School life expectancy Years	61	13.7
3.13 Pupil-to-teacher ratio in primary education Ratio	67	19.9
3.14 Critical thinking in teaching 1-7 (best)	40	3.6
3.15 Active labor policies 1-7 (best)	38	3.9
3.16 On-the-job training 1-7 (best)	69	3.9
3.17 Hiring and firing practices 1-7 (best)	87	3.1

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	36	5.8
Trade 0-10 (best)	25	8.1
4.01 Trade % GDP	25	108.6
4.02 Trade tariffs % duty	54	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	35	4.6
4.04 Logistics performance 1 – 5 (best)	46	3.2
Investment 0-10 (best)	50	2.3
4.05 Greenfield investments US$ millions	44	3,371.2
4.06 FDI inflows US$ millions	84	685.9
4.07 Domestic credit to private sector % GDP	37	75.6
Infrastructure 0-10 (best)	39	7.0
4.08 Transport infrastructure 0-100 (best)	30	58.6
4.09 Electricity infrastructure 0-100 (best)	55	81.2
Driver: Institutional Framework 0-10 (best)	40	6.1
Government 0-10 (best)	40	6.1
5.01 Regulatory efficiency 0 – 100 (best)	34	73.1
5.02 Incidence of corruption 0-100 (best)	47	45.0
5.03 Future orientation of government 1-7 (best)	15	4.8
5.04 Rule of law (2.5) - 2.0 (best)	44	0.4
Driver: Sustainable Resources 0-10 (best)	97	3.5
Sustainability 0-10 (best)	97	3.5
6.01 Alternative and nuclear energy use % total energy use	96	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	87	0.8
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	88	0.5
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	9	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	91	4.9
6.06 Wastewater treatment 0 – 5 (worst)	68	61.5
Driver: Demand Environment 0-10 (best)	66	4.2
Foreign and Domestic Demand 0-10 (best)	59	4.6
7.01 Market size 0-100 (best)	59	46.3
Consumer Base 0-10 (best)	78	3.8
7.02 Buyer sophistication 1-7 (best)	61	3.3
7.03 Extent of market dominance 1-7 (best)	88	3.2

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Key economic indicators

Population millions	193.6	**GDP per capita** US$	1,468.2
GDP US$ billions	284.2	**Unemployment rate** %	6.0

Key production indicators

Manufacturing value added 2010 millions US$	29,341.7	**Manufacturing value added growth** Annual %	6.0
Manufacturing value added in economy % GDP	13.1	**Medium hi-tech & hi-tech industries** % of manu. value added	24.6
Manufacturing employment % working population	13.0	**CO2 emission per unit of value added** kg/USD	1.2

Readiness Overall Assessment

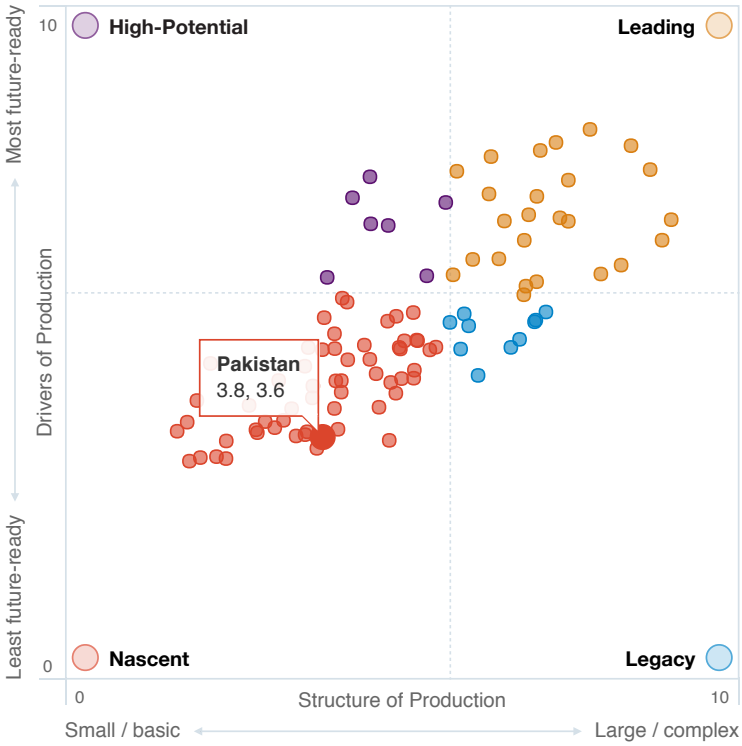
Drivers of Production 3.6

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	88th	**3.2**
Human Capital	20%	90th	**3.6**
Global Trade & Investment	20%	94th	**2.7**
Institutional Framework	20%	89th	**3.7**
Sustainable Resources	5%	99th	**2.9**
Demand Environment	15%	35th	**5.4**

Structure of Production 3.8

Structure	Weighting	Rank	Score /10
Complexity	60%	83rd	**3.5**
Scale	40%	44th	**4.4**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	83	3.5
1.01 Economic complexity (2.5) – 2.5 (best)	83	-0.7
Structure: Scale 0-10 (best)	44	4.4
1.02 Manufacturing value added in economy % GDP	49	13.1
1.03 Manufacturing value added US$ millions	44	29,341.7
Driver: Technology & Innovation 0-10 (best)	88	3.2
Technology Platform 0-10 (best)	87	4.5
2.01 Mobile-cellular telephone subscriptions /100 pop.	97	71.4
2.02 LTE mobile network coverage % population	86	27.0
2.03 Internet users % pop.	98	15.5
2.04 FDI and technology transfer 1-7 (best)	60	4.4
2.05 Firm-level technology absorption 1-7 (best)	74	4.3
2.06 Impact of ICTs on new services and products 1-7 (best)	73	4.3
2.07 Cybersecurity commitment 0–1 (best)	66	0.4
Ability to Innovate 0-10 (best)	80	1.8
2.08 State of cluster development 1-7 (best)	47	3.9
2.09 Company investment in emerging technology 1–7 (best)	43	3.9
2.10 Gov't procurement of advanced technology products 1-7 (best)	26	3.8
2.11 Companies embracing disruptive ideas 1-7 (best)	39	3.7
2.12 Multi-stakeholder collaboration 1-7 (best)	49	3.7
2.13 R&D expenditures % GDP	79	0.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	60	8.7
2.15 Patent applications applications/million pop.	86	0.04
2.16 Venture capital deal volume US$ millions	66	558.2
2.17 Venture capital deal volume per size of economy US$/GDP	90	2.1
Driver: Human Capital 0-10 (best)	90	3.6
Current Labor Force 0-10 (best)	90	4.3
3.01 Manufacturing employment % working population	37	13.0
3.02 Knowledge-intensive employment % working pop.	66	19.5
3.03 Female participation in labor force ratio	99	0.13
3.04 Mean years of schooling Years	95	5.2
3.05 Availability of scientists and engineers 1-7 (best)	56	4.0
3.06 Digital skills among population 1-7 (best)	62	4.1
Future Labor Force 0-10 (best)	83	3.0
3.07 Migration migrants/100,000 pop.	83	-8.6
3.08 Country capacity to attract and retain talent 1-7 (best)	47	3.5
3.09 Quality of universities Count	38	6.0
3.10 Quality of math and science education 1-7 (best)	74	3.5
3.11 Quality of vocational training 1-7 (best)	73	3.6
3.12 School life expectancy Years	100	8.2
3.13 Pupil-to-teacher ratio in primary education Ratio	97	46.3
3.14 Critical thinking in teaching 1-7 (best)	42	3.6
3.15 Active labor policies 1-7 (best)	46	3.7
3.16 On-the-job training 1-7 (best)	77	3.8
3.17 Hiring and firing practices 1-7 (best)	48	3.8

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	94	2.7
Trade 0-10 (best)	100	1.9
4.01 Trade % GDP	99	24.5
4.02 Trade tariffs % duty	100	0.17
4.03 Prevalence of non-tariff barriers 1-7 (best)	84	3.9
4.04 Logistics performance 1 – 5 (best)	63	3.0
Investment 0-10 (best)	69	1.5
4.05 Greenfield investments US$ millions	25	8,506.6
4.06 FDI inflows US$ millions	69	1,385.5
4.07 Domestic credit to private sector % GDP	93	16.5
Infrastructure 0-10 (best)	86	4.8
4.08 Transport infrastructure 0-100 (best)	64	42.2
4.09 Electricity infrastructure 0-100 (best)	88	53.5
Driver: Institutional Framework 0-10 (best)	89	3.7
Government 0-10 (best)	89	3.7
5.01 Regulatory efficiency 0 – 100 (best)	90	57.9
5.02 Incidence of corruption 0-100 (best)	80	32.0
5.03 Future orientation of government 1-7 (best)	55	3.6
5.04 Rule of law (2.5) - 2.0 (best)	92	-0.8
Driver: Sustainable Resources 0-10 (best)	99	2.9
Sustainability 0-10 (best)	99	2.9
6.01 Alternative and nuclear energy use % total energy use	25	0.4
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	77	0.6
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	89	0.5
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	88	0.2
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	86	4.3
6.06 Wastewater treatment 0 – 5 (worst)	90	16.6
Driver: Demand Environment 0-10 (best)	35	5.4
Foreign and Domestic Demand 0-10 (best)	28	6.4
7.01 Market size 0-100 (best)	28	63.7
Consumer Base 0-10 (best)	51	4.4
7.02 Buyer sophistication 1-7 (best)	47	3.6
7.03 Extent of market dominance 1-7 (best)	60	3.7

Panama

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Key economic indicators

Population millions	4.0	**GDP per capita** US$	13,654.1
GDP US$ billions	55.1	**Unemployment rate** %	5.5

Key production indicators

Manufacturing value added 2010 millions US$	2,521.4	**Manufacturing value added growth** Annual %	1.6
Manufacturing value added in economy % GDP	5.7	**Medium hi-tech & hi-tech industries** % of manu. value added	6.2
Manufacturing employment % working population	7.4	**CO2 emission per unit of value added** kg/USD	1.1

Readiness Overall Assessment

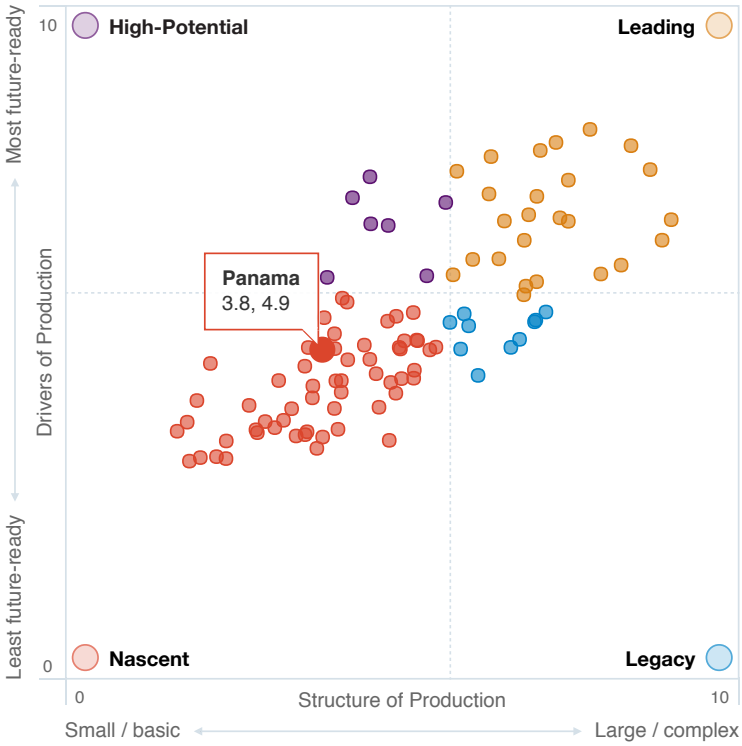
Drivers of Production 4.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	64th	**3.9**
Human Capital	20%	60th	**4.9**
Global Trade & Investment	20%	42nd	**5.6**
Institutional Framework	20%	56th	**5.0**
Sustainable Resources	5%	17th	**7.6**
Demand Environment	15%	62nd	**4.3**

Structure of Production 3.8

Structure	Weighting	Rank	Score /10
Complexity	60%	56th	**5.3**
Scale	40%	92nd	**1.6**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	56	5.3
1.01 Economic complexity (2.5) – 2.5 (best)	56	0.1
Structure: Scale 0-10 (best)	92	1.6
1.02 Manufacturing value added in economy % GDP	93	5.7
1.03 Manufacturing value added US$ millions	86	2,521.4
Driver: Technology & Innovation 0-10 (best)	64	3.9
Technology Platform 0-10 (best)	61	5.9
2.01 Mobile-cellular telephone subscriptions /100 pop.	6	172.3
2.02 LTE mobile network coverage % population	92	11.0
2.03 Internet users % pop.	67	54.0
2.04 FDI and technology transfer 1-7 (best)	7	5.5
2.05 Firm-level technology absorption 1-7 (best)	31	5.1
2.06 Impact of ICTs on new services and products 1-7 (best)	28	5.2
2.07 Cybersecurity commitment 0–1 (best)	61	0.5
Ability to Innovate 0-10 (best)	70	2.0
2.08 State of cluster development 1-7 (best)	41	4.1
2.09 Company investment in emerging technology 1–7 (best)	48	3.7
2.10 Gov't procurement of advanced technology products 1-7 (best)	38	3.5
2.11 Companies embracing disruptive ideas 1-7 (best)	41	3.7
2.12 Multi-stakeholder collaboration 1-7 (best)	44	3.7
2.13 R&D expenditures % GDP	98	0.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	81	4.5
2.15 Patent applications applications/million pop.	56	1.15
2.16 Venture capital deal volume US$ millions	59	1,009.4
2.17 Venture capital deal volume per size of economy US$/GDP	48	19.4
Driver: Human Capital 0-10 (best)	60	4.9
Current Labor Force 0-10 (best)	62	5.6
3.01 Manufacturing employment % working population	85	7.4
3.02 Knowledge-intensive employment % working pop.	51	24.0
3.03 Female participation in labor force ratio	63	0.67
3.04 Mean years of schooling Years	52	9.9
3.05 Availability of scientists and engineers 1-7 (best)	57	4.0
3.06 Digital skills among population 1-7 (best)	67	4.0
Future Labor Force 0-10 (best)	47	4.2
3.07 Migration migrants/100,000 pop.	36	7.4
3.08 Country capacity to attract and retain talent 1-7 (best)	17	4.6
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	87	3.1
3.11 Quality of vocational training 1-7 (best)	46	4.2
3.12 School life expectancy Years	74	12.8
3.13 Pupil-to-teacher ratio in primary education Ratio	70	22.0
3.14 Critical thinking in teaching 1-7 (best)	59	3.2
3.15 Active labor policies 1-7 (best)	49	3.4
3.16 On-the-job training 1-7 (best)	62	4.1
3.17 Hiring and firing practices 1-7 (best)	70	3.4

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	42	5.6
Trade 0-10 (best)	31	7.8
4.01 Trade % GDP	38	94.3
4.02 Trade tariffs % duty	58	0.05
4.03 Prevalence of non-tariff barriers 1-7 (best)	26	4.9
4.04 Logistics performance 1 – 5 (best)	42	3.3
Investment 0-10 (best)	41	2.8
4.05 Greenfield investments US$ millions	51	2,644.1
4.06 FDI inflows US$ millions	43	4,342.2
4.07 Domestic credit to private sector % GDP	30	91.0
Infrastructure 0-10 (best)	60	6.2
4.08 Transport infrastructure 0-100 (best)	38	53.4
4.09 Electricity infrastructure 0-100 (best)	79	69.9
Driver: Institutional Framework 0-10 (best)	56	5.0
Government 0-10 (best)	56	5.0
5.01 Regulatory efficiency 0 – 100 (best)	68	65.2
5.02 Incidence of corruption 0-100 (best)	63	38.0
5.03 Future orientation of government 1-7 (best)	59	3.5
5.04 Rule of law (2.5) - 2.0 (best)	53	0.0
Driver: Sustainable Resources 0-10 (best)	17	7.6
Sustainability 0-10 (best)	17	7.6
6.01 Alternative and nuclear energy use % total energy use	58	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	31	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	42	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	33	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	17	0.4
6.06 Wastewater treatment 0 – 5 (worst)	60	72.3
Driver: Demand Environment 0-10 (best)	62	4.3
Foreign and Domestic Demand 0-10 (best)	76	3.8
7.01 Market size 0-100 (best)	76	37.8
Consumer Base 0-10 (best)	40	4.7
7.02 Buyer sophistication 1-7 (best)	46	3.6
7.03 Extent of market dominance 1-7 (best)	37	4.1

Paraguay

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Key economic indicators

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

Key production indicators

Manufacturing value added 2010 millions US$	2,776.2	**Manufacturing value added growth** Annual %	1.5
Manufacturing value added in economy % GDP	10.6	**Medium hi-tech & hi-tech industries** % of manu. value added	21.9
Manufacturing employment % working population	12.2	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

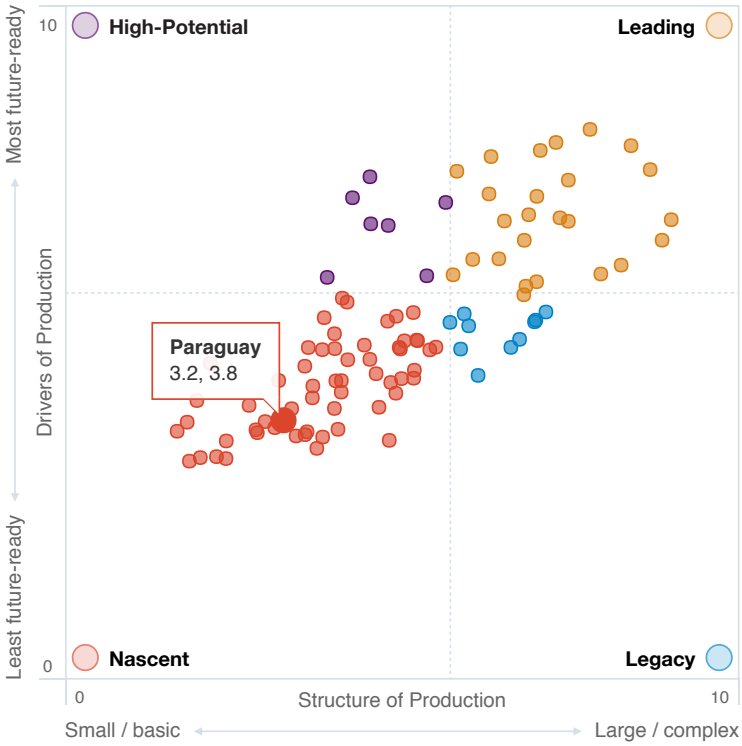
Drivers of Production 3.8

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	91st	**3.0**
Human Capital	20%	84th	**4.0**
Global Trade & Investment	20%	71st	**4.5**
Institutional Framework	20%	88th	**3.7**
Sustainable Resources	5%	57th	**6.0**
Demand Environment	15%	90th	**3.4**

Structure of Production 3.2

Structure	Weighting	Rank	Score /10
Complexity	60%	80th	**3.7**
Scale	40%	80th	**2.5**

Archetype



Paraguay

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	80	3.7
1.01 Economic complexity (2.5) – 2.5 (best)	80	-0.6
Structure: Scale 0-10 (best)	80	2.5
1.02 Manufacturing value added in economy % GDP	69	10.6
1.03 Manufacturing value added US$ millions	84	2,776.2
Driver: Technology & Innovation 0-10 (best)	91	3.0
Technology Platform 0-10 (best)	79	4.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	77	104.8
2.02 LTE mobile network coverage % population	57	78.5
2.03 Internet users % pop.	72	51.3
2.04 FDI and technology transfer 1-7 (best)	84	3.9
2.05 Firm-level technology absorption 1-7 (best)	92	4.0
2.06 Impact of ICTs on new services and products 1-7 (best)	93	3.9
2.07 Cybersecurity commitment 0–1 (best)	79	0.3
Ability to Innovate 0-10 (best)	100	1.2
2.08 State of cluster development 1-7 (best)	88	3.1
2.09 Company investment in emerging technology 1–7 (best)	95	2.9
2.10 Gov't procurement of advanced technology products 1-7 (best)	74	2.9
2.11 Companies embracing disruptive ideas 1-7 (best)	86	3.1
2.12 Multi-stakeholder collaboration 1-7 (best)	97	3.0
2.13 R&D expenditures % GDP	90	0.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	92	1.6
2.15 Patent applications applications/million pop.	99	0.00
2.16 Venture capital deal volume US$ millions	97	42.9
2.17 Venture capital deal volume per size of economy US$/GDP	95	1.5
Driver: Human Capital 0-10 (best)	84	4.0
Current Labor Force 0-10 (best)	76	5.1
3.01 Manufacturing employment % working population	46	12.2
3.02 Knowledge-intensive employment % working pop.	67	19.0
3.03 Female participation in labor force ratio	64	0.65
3.04 Mean years of schooling Years	71	8.4
3.05 Availability of scientists and engineers 1-7 (best)	99	2.8
3.06 Digital skills among population 1-7 (best)	96	3.3
Future Labor Force 0-10 (best)	91	2.8
3.07 Migration migrants/100,000 pop.	78	-6.0
3.08 Country capacity to attract and retain talent 1-7 (best)	62	3.3
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	100	2.4
3.11 Quality of vocational training 1-7 (best)	94	3.2
3.12 School life expectancy Years	82	12.3
3.13 Pupil-to-teacher ratio in primary education Ratio	77	24.2
3.14 Critical thinking in teaching 1-7 (best)	87	2.8
3.15 Active labor policies 1-7 (best)	90	2.6
3.16 On-the-job training 1-7 (best)	96	3.4
3.17 Hiring and firing practices 1-7 (best)	72	3.3

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	71	4.5
Trade 0-10 (best)	56	6.3
4.01 Trade % GDP	49	81.5
4.02 Trade tariffs % duty	72	0.07
4.03 Prevalence of non-tariff barriers 1-7 (best)	63	4.3
4.04 Logistics performance 1 – 5 (best)	86	2.6
Investment 0-10 (best)	77	1.2
4.05 Greenfield investments US$ millions	92	375.0
4.06 FDI inflows US$ millions	98	342.3
4.07 Domestic credit to private sector % GDP	57	54.4
Infrastructure 0-10 (best)	69	5.9
4.08 Transport infrastructure 0-100 (best)	96	26.5
4.09 Electricity infrastructure 0-100 (best)	33	91.4
Driver: Institutional Framework 0-10 (best)	88	3.7
Government 0-10 (best)	88	3.7
5.01 Regulatory efficiency 0 – 100 (best)	97	56.4
5.02 Incidence of corruption 0-100 (best)	84	30.0
5.03 Future orientation of government 1-7 (best)	80	3.1
5.04 Rule of law (2.5) - 2.0 (best)	87	-0.7
Driver: Sustainable Resources 0-10 (best)	57	6.0
Sustainability 0-10 (best)	57	6.0
6.01 Alternative and nuclear energy use % total energy use	6	0.8
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	20	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	95	0.8
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	92	0.3
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	2	0.0
6.06 Wastewater treatment 0 – 5 (worst)	85	39.8
Driver: Demand Environment 0-10 (best)	90	3.4
Foreign and Domestic Demand 0-10 (best)	83	3.3
7.01 Market size 0-100 (best)	83	33.2
Consumer Base 0-10 (best)	91	3.4
7.02 Buyer sophistication 1-7 (best)	80	3.0
7.03 Extent of market dominance 1-7 (best)	91	3.1

Peru

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	31.5	**GDP per capita** US$	6,198.6
GDP US$ billions	195.1	**Unemployment rate** %	6.7

Key production indicators

Manufacturing value added 2010 millions US$	27,266.4	**Manufacturing value added growth** Annual %	3.1
Manufacturing value added in economy % GDP	14.1	**Medium hi-tech & hi-tech industries** % of manu. value added	14.7
Manufacturing employment % working population	15.0	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

Drivers of Production 4.2

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	81st	**3.3**
Human Capital	20%	77th	**4.2**
Global Trade & Investment	20%	78th	**4.0**
Institutional Framework	20%	77th	**4.3**
Sustainable Resources	5%	50th	**6.3**
Demand Environment	15%	55th	**4.6**

Structure of Production 3.7

Structure	Weighting	Rank	Score /10
Complexity	60%	87th	**3.1**
Scale	40%	43rd	**4.5**

Archetype

Peru

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	87	3.1
1.01 Economic complexity (2.5) – 2.5 (best)	87	-0.8
Structure: Scale 0-10 (best)	43	4.5
1.02 Manufacturing value added in economy % GDP	42	14.1
1.03 Manufacturing value added US$ millions	46	27,266.4
Driver: Technology & Innovation 0-10 (best)	81	3.3
Technology Platform 0-10 (best)	76	5.0
2.01 Mobile-cellular telephone subscriptions /100 pop.	57	117.1
2.02 LTE mobile network coverage % population	77	44.0
2.03 Internet users % pop.	77	45.5
2.04 FDI and technology transfer 1-7 (best)	55	4.5
2.05 Firm-level technology absorption 1-7 (best)	87	4.1
2.06 Impact of ICTs on new services and products 1-7 (best)	67	4.5
2.07 Cybersecurity commitment 0–1 (best)	73	0.4
Ability to Innovate 0-10 (best)	87	1.7
2.08 State of cluster development 1-7 (best)	84	3.2
2.09 Company investment in emerging technology 1–7 (best)	86	3.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	88	2.7
2.11 Companies embracing disruptive ideas 1-7 (best)	73	3.2
2.12 Multi-stakeholder collaboration 1-7 (best)	78	3.3
2.13 R&D expenditures % GDP	93	0.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	87	2.7
2.15 Patent applications applications/million pop.	75	0.17
2.16 Venture capital deal volume US$ millions	40	4,789.4
2.17 Venture capital deal volume per size of economy US$/GDP	38	24.7
Driver: Human Capital 0-10 (best)	77	4.2
Current Labor Force 0-10 (best)	72	5.3
3.01 Manufacturing employment % working population	25	15.0
3.02 Knowledge-intensive employment % working pop.	77	14.6
3.03 Female participation in labor force ratio	67	0.63
3.04 Mean years of schooling Years	62	9.1
3.05 Availability of scientists and engineers 1-7 (best)	88	3.5
3.06 Digital skills among population 1-7 (best)	79	3.7
Future Labor Force 0-10 (best)	75	3.1
3.07 Migration migrants/100,000 pop.	87	-9.6
3.08 Country capacity to attract and retain talent 1-7 (best)	39	3.6
3.09 Quality of universities Count	50	3.0
3.10 Quality of math and science education 1-7 (best)	94	2.7
3.11 Quality of vocational training 1-7 (best)	61	3.9
3.12 School life expectancy Years	63	13.4
3.13 Pupil-to-teacher ratio in primary education Ratio	55	18.0
3.14 Critical thinking in teaching 1-7 (best)	70	3.1
3.15 Active labor policies 1-7 (best)	98	2.3
3.16 On-the-job training 1-7 (best)	72	3.9
3.17 Hiring and firing practices 1-7 (best)	93	2.7

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	78	4.0
Trade 0-10 (best)	75	4.8
4.01 Trade % GDP	82	44.8
4.02 Trade tariffs % duty	34	0.02
4.03 Prevalence of non-tariff barriers 1-7 (best)	57	4.4
4.04 Logistics performance 1 – 5 (best)	64	2.9
Investment 0-10 (best)	59	1.7
4.05 Greenfield investments US$ millions	40	3,826.0
4.06 FDI inflows US$ millions	35	8,564.9
4.07 Domestic credit to private sector % GDP	74	36.2
Infrastructure 0-10 (best)	77	5.4
4.08 Transport infrastructure 0-100 (best)	82	31.9
4.09 Electricity infrastructure 0-100 (best)	69	77.0
Driver: Institutional Framework 0-10 (best)	77	4.3
Government 0-10 (best)	77	4.3
5.01 Regulatory efficiency 0 – 100 (best)	41	71.8
5.02 Incidence of corruption 0-100 (best)	72	35.0
5.03 Future orientation of government 1-7 (best)	69	3.3
5.04 Rule of law (2.5) - 2.0 (best)	81	-0.5
Driver: Sustainable Resources 0-10 (best)	50	6.3
Sustainability 0-10 (best)	50	6.3
6.01 Alternative and nuclear energy use % total energy use	55	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	39	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	50	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	50	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	67	3.2
6.06 Wastewater treatment 0 – 5 (worst)	47	79.9
Driver: Demand Environment 0-10 (best)	55	4.6
Foreign and Domestic Demand 0-10 (best)	47	5.4
7.01 Market size 0-100 (best)	47	53.5
Consumer Base 0-10 (best)	73	3.9
7.02 Buyer sophistication 1-7 (best)	65	3.3
7.03 Extent of market dominance 1-7 (best)	79	3.4

Philippines

Legacy

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	104.2	**GDP per capita** US$	2,924.3
GDP US$ billions	304.7	**Unemployment rate** %	5.5

Key production indicators

Manufacturing value added 2010 millions US$	63,880.5	**Manufacturing value added growth** Annual %	6.8
Manufacturing value added in economy % GDP	22.5	**Medium hi-tech & hi-tech industries** % of manu. value added	45.9
Manufacturing employment % working population	8.3	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

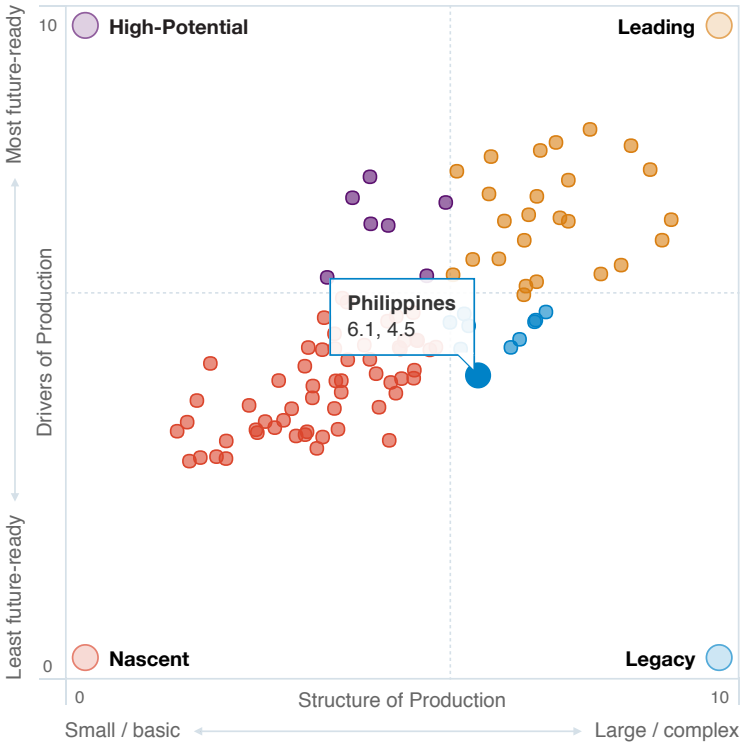
Drivers of Production 4.5

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	59th	**4.0**
Human Capital	20%	66th	**4.6**
Global Trade & Investment	20%	69th	**4.5**
Institutional Framework	20%	76th	**4.4**
Sustainable Resources	5%	69th	**5.5**
Demand Environment	15%	45th	**4.9**

Structure of Production 6.1

Structure	Weighting	Rank	Score /10
Complexity	60%	43rd	**5.9**
Scale	40%	11th	**6.4**

Archetype



Philippines

Legacy

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	43	5.9
1.01 Economic complexity (2.5) – 2.5 (best)	43	0.4
Structure: Scale 0-10 (best)	11	6.4
1.02 Manufacturing value added in economy % GDP	6	22.5
1.03 Manufacturing value added US$ millions	28	63,880.5
Driver: Technology & Innovation 0-10 (best)	59	4.0
Technology Platform 0-10 (best)	47	6.3
2.01 Mobile-cellular telephone subscriptions /100 pop.	72	109.2
2.02 LTE mobile network coverage % population	55	80.0
2.03 Internet users % pop.	65	55.5
2.04 FDI and technology transfer 1-7 (best)	56	4.5
2.05 Firm-level technology absorption 1-7 (best)	46	4.7
2.06 Impact of ICTs on new services and products 1-7 (best)	52	4.6
2.07 Cybersecurity commitment 0–1 (best)	39	0.6
Ability to Innovate 0-10 (best)	85	1.8
2.08 State of cluster development 1-7 (best)	54	3.8
2.09 Company investment in emerging technology 1–7 (best)	54	3.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	68	3.0
2.11 Companies embracing disruptive ideas 1-7 (best)	35	3.8
2.12 Multi-stakeholder collaboration 1-7 (best)	40	3.8
2.13 R&D expenditures % GDP	89	0.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	92	1.6
2.15 Patent applications applications/million pop.	68	0.30
2.16 Venture capital deal volume US$ millions	43	3,722.8
2.17 Venture capital deal volume per size of economy US$/GDP	59	12.7
Driver: Human Capital 0-10 (best)	66	4.6
Current Labor Force 0-10 (best)	61	5.6
3.01 Manufacturing employment % working population	79	8.3
3.02 Knowledge-intensive employment % working pop.	50	24.0
3.03 Female participation in labor force ratio	68	0.60
3.04 Mean years of schooling Years	61	9.1
3.05 Availability of scientists and engineers 1-7 (best)	66	3.8
3.06 Digital skills among population 1-7 (best)	42	4.5
Future Labor Force 0-10 (best)	63	3.5
3.07 Migration migrants/100,000 pop.	81	-7.0
3.08 Country capacity to attract and retain talent 1-7 (best)	50	3.4
3.09 Quality of universities Count	47	4.0
3.10 Quality of math and science education 1-7 (best)	60	3.9
3.11 Quality of vocational training 1-7 (best)	40	4.3
3.12 School life expectancy Years	77	12.7
3.13 Pupil-to-teacher ratio in primary education Ratio	87	31.4
3.14 Critical thinking in teaching 1-7 (best)	35	3.8
3.15 Active labor policies 1-7 (best)	65	3.0
3.16 On-the-job training 1-7 (best)	34	4.6
3.17 Hiring and firing practices 1-7 (best)	55	3.6

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	69	4.5
Trade 0-10 (best)	65	5.8
4.01 Trade % GDP	59	64.9
4.02 Trade tariffs % duty	51	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	53	4.4
4.04 Logistics performance 1 – 5 (best)	65	2.9
Investment 0-10 (best)	47	2.4
4.05 Greenfield investments US$ millions	27	7,873.9
4.06 FDI inflows US$ millions	41	4,967.6
4.07 Domestic credit to private sector % GDP	69	44.7
Infrastructure 0-10 (best)	78	5.4
4.08 Transport infrastructure 0-100 (best)	92	27.9
4.09 Electricity infrastructure 0-100 (best)	61	79.8
Driver: Institutional Framework 0-10 (best)	76	4.4
Government 0-10 (best)	76	4.4
5.01 Regulatory efficiency 0 – 100 (best)	64	66.8
5.02 Incidence of corruption 0-100 (best)	72	35.0
5.03 Future orientation of government 1-7 (best)	68	3.4
5.04 Rule of law (2.5) - 2.0 (best)	78	-0.4
Driver: Sustainable Resources 0-10 (best)	69	5.5
Sustainability 0-10 (best)	69	5.5
6.01 Alternative and nuclear energy use % total energy use	27	0.4
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	54	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	67	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	52	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	71	3.3
6.06 Wastewater treatment 0 – 5 (worst)	77	51.1
Driver: Demand Environment 0-10 (best)	45	4.9
Foreign and Domestic Demand 0-10 (best)	30	6.3
7.01 Market size 0-100 (best)	30	62.9
Consumer Base 0-10 (best)	86	3.6
7.02 Buyer sophistication 1-7 (best)	63	3.3
7.03 Extent of market dominance 1-7 (best)	94	3.0

Poland

Leading

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	38.0	**GDP per capita** US$	12,315.6
GDP US$ billions	467.6	**Unemployment rate** %	6.2

Key production indicators

Manufacturing value added 2010 millions US$	101,093.6	**Manufacturing value added growth** Annual %	5.5
Manufacturing value added in economy % GDP	17.7	**Medium hi-tech & hi-tech industries** % of manu. value added	35.4
Manufacturing employment % working population	19.3	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

Drivers of Production 5.8

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	37th	**4.8**
Human Capital	20%	36th	**5.7**
Global Trade & Investment	20%	23rd	**6.4**
Institutional Framework	20%	39th	**6.1**
Sustainable Resources	5%	25th	**7.1**
Demand Environment	15%	23rd	**5.9**

Structure of Production 6.8

Structure	Weighting	Rank	Score /10
Complexity	60%	21st	**7.5**
Scale	40%	15th	**5.9**

Archetype

Poland

Leading

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	21	7.5
1.01 Economic complexity (2.5) – 2.5 (best)	21	1.1
Structure: Scale 0-10 (best)	15	5.9
1.02 Manufacturing value added in economy % GDP	23	17.7
1.03 Manufacturing value added US$ millions	19	101,093.6
Driver: Technology & Innovation 0-10 (best)	37	4.8
Technology Platform 0-10 (best)	31	6.9
2.01 Mobile-cellular telephone subscriptions /100 pop.	21	146.2
2.02 LTE mobile network coverage % population	1	100.0
2.03 Internet users % pop.	41	73.3
2.04 FDI and technology transfer 1-7 (best)	34	4.9
2.05 Firm-level technology absorption 1-7 (best)	49	4.6
2.06 Impact of ICTs on new services and products 1-7 (best)	47	4.8
2.07 Cybersecurity commitment 0–1 (best)	36	0.6
Ability to Innovate 0-10 (best)	43	2.6
2.08 State of cluster development 1-7 (best)	56	3.8
2.09 Company investment in emerging technology 1–7 (best)	56	3.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	66	3.1
2.11 Companies embracing disruptive ideas 1-7 (best)	78	3.2
2.12 Multi-stakeholder collaboration 1-7 (best)	88	3.1
2.13 R&D expenditures % GDP	38	1.0
2.14 Scientific and technical publications Number per Billion PPP$ GDP	31	25.1
2.15 Patent applications applications/million pop.	29	10.35
2.16 Venture capital deal volume US$ millions	33	7,975.1
2.17 Venture capital deal volume per size of economy US$/GDP	52	16.0
Driver: Human Capital 0-10 (best)	36	5.7
Current Labor Force 0-10 (best)	26	7.5
3.01 Manufacturing employment % working population	6	19.3
3.02 Knowledge-intensive employment % working pop.	25	37.6
3.03 Female participation in labor force ratio	33	0.89
3.04 Mean years of schooling Years	11	12.7
3.05 Availability of scientists and engineers 1-7 (best)	47	4.2
3.06 Digital skills among population 1-7 (best)	54	4.3
Future Labor Force 0-10 (best)	51	3.8
3.07 Migration migrants/100,000 pop.	53	-1.0
3.08 Country capacity to attract and retain talent 1-7 (best)	77	2.8
3.09 Quality of universities Count	23	9.0
3.10 Quality of math and science education 1-7 (best)	42	4.5
3.11 Quality of vocational training 1-7 (best)	77	3.6
3.12 School life expectancy Years	27	16.1
3.13 Pupil-to-teacher ratio in primary education Ratio	6	10.2
3.14 Critical thinking in teaching 1-7 (best)	60	3.2
3.15 Active labor policies 1-7 (best)	57	3.2
3.16 On-the-job training 1-7 (best)	41	4.4
3.17 Hiring and firing practices 1-7 (best)	67	3.4

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	23	6.4
Trade 0-10 (best)	15	8.6
4.01 Trade % GDP	32	100.7
4.02 Trade tariffs % duty	8	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	44	4.6
4.04 Logistics performance 1 – 5 (best)	30	3.5
Investment 0-10 (best)	37	3.1
4.05 Greenfield investments US$ millions	22	9,018.8
4.06 FDI inflows US$ millions	31	9,485.5
4.07 Domestic credit to private sector % GDP	56	54.6
Infrastructure 0-10 (best)	27	7.6
4.08 Transport infrastructure 0-100 (best)	29	59.0
4.09 Electricity infrastructure 0-100 (best)	27	92.1
Driver: Institutional Framework 0-10 (best)	39	6.1
Government 0-10 (best)	39	6.1
5.01 Regulatory efficiency 0 – 100 (best)	46	71.3
5.02 Incidence of corruption 0-100 (best)	25	62.0
5.03 Future orientation of government 1-7 (best)	83	3.1
5.04 Rule of law (2.5) - 2.0 (best)	35	0.7
Driver: Sustainable Resources 0-10 (best)	25	7.1
Sustainability 0-10 (best)	25	7.1
6.01 Alternative and nuclear energy use % total energy use	75	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	70	0.5
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	34	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	51	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	38	1.3
6.06 Wastewater treatment 0 – 5 (worst)	31	87.4
Driver: Demand Environment 0-10 (best)	23	5.9
Foreign and Domestic Demand 0-10 (best)	20	6.7
7.01 Market size 0-100 (best)	20	67.2
Consumer Base 0-10 (best)	28	5.1
7.02 Buyer sophistication 1-7 (best)	57	3.4
7.03 Extent of market dominance 1-7 (best)	15	4.7

Portugal

High Potential

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	10.3	**GDP per capita** US$	19,831.6
GDP US$ billions	204.8	**Unemployment rate** %	11.1

Key production indicators

Manufacturing value added 2010 millions US$	26,850.9	**Manufacturing value added growth** Annual %	0.2
Manufacturing value added in economy % GDP	11.7	**Medium hi-tech & hi-tech industries** % of manu. value added	25.7
Manufacturing employment % working population	16.9	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

Drivers of Production 6.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	28th	**5.5**
Human Capital	20%	29th	**6.0**
Global Trade & Investment	20%	28th	**6.1**
Institutional Framework	20%	26th	**6.9**
Sustainable Resources	5%	34th	**6.7**
Demand Environment	15%	40th	**5.0**

Structure of Production 5.4

Structure	Weighting	Rank	Score /10
Complexity	60%	39th	**6.2**
Scale	40%	52nd	**4.1**

Archetype

Portugal

High Potential

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	39	6.2
1.01 Economic complexity (2.5) – 2.5 (best)	39	0.6
Structure: Scale 0-10 (best)	52	4.1
1.02 Manufacturing value added in economy % GDP	58	11.7
1.03 Manufacturing value added US$ millions	47	26,850.9
Driver: Technology & Innovation 0-10 (best)	28	5.5
Technology Platform 0-10 (best)	32	6.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	73	109.1
2.02 LTE mobile network coverage % population	20	98.8
2.03 Internet users % pop.	44	70.4
2.04 FDI and technology transfer 1-7 (best)	14	5.3
2.05 Firm-level technology absorption 1-7 (best)	26	5.2
2.06 Impact of ICTs on new services and products 1-7 (best)	13	5.7
2.07 Cybersecurity commitment 0–1 (best)	56	0.5
Ability to Innovate 0-10 (best)	25	4.1
2.08 State of cluster development 1-7 (best)	36	4.2
2.09 Company investment in emerging technology 1–7 (best)	36	4.1
2.10 Gov't procurement of advanced technology products 1-7 (best)	35	3.5
2.11 Companies embracing disruptive ideas 1-7 (best)	31	3.8
2.12 Multi-stakeholder collaboration 1-7 (best)	35	3.9
2.13 R&D expenditures % GDP	31	1.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP	11	45.5
2.15 Patent applications applications/million pop.	31	8.61
2.16 Venture capital deal volume US$ millions	30	12,717.2
2.17 Venture capital deal volume per size of economy US$/GDP	17	60.2
Driver: Human Capital 0-10 (best)	29	6.0
Current Labor Force 0-10 (best)	27	7.3
3.01 Manufacturing employment % working population	15	16.9
3.02 Knowledge-intensive employment % working pop.	31	35.6
3.03 Female participation in labor force ratio	4	1.06
3.04 Mean years of schooling Years	65	8.9
3.05 Availability of scientists and engineers 1-7 (best)	27	4.7
3.06 Digital skills among population 1-7 (best)	43	4.5
Future Labor Force 0-10 (best)	38	4.7
3.07 Migration migrants/100,000 pop.	30	9.7
3.08 Country capacity to attract and retain talent 1-7 (best)	49	3.4
3.09 Quality of universities Count	35	7.0
3.10 Quality of math and science education 1-7 (best)	25	4.8
3.11 Quality of vocational training 1-7 (best)	35	4.4
3.12 School life expectancy Years	20	16.5
3.13 Pupil-to-teacher ratio in primary education Ratio	28	13.3
3.14 Critical thinking in teaching 1-7 (best)	31	3.9
3.15 Active labor policies 1-7 (best)	35	3.9
3.16 On-the-job training 1-7 (best)	43	4.4
3.17 Hiring and firing practices 1-7 (best)	84	3.1

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$ billiions)	23	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	27	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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

Qatar

High Potential

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	2.6	**GDP per capita** US$	60,786.7
GDP US$ billions	156.7		

Key production indicators

Manufacturing value added 2010 millions US$	16,157.9	**Manufacturing value added growth** Annual %	3.2
Manufacturing value added in economy % GDP	9.0	**Medium hi-tech & hi-tech industries** % of manu. value added	66.9
Manufacturing employment % working population	6.9	**CO2 emission per unit of value added** kg/USD	0.9

Readiness Overall Assessment

Drivers of Production 6.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	29th	**5.2**
Human Capital	20%	26th	**6.1**
Global Trade & Investment	20%	37th	**5.8**
Institutional Framework	20%	22nd	**7.1**
Sustainable Resources	5%	67th	**5.5**
Demand Environment	15%	29th	**5.8**

Structure of Production 3.9

Structure	Weighting	Rank	Score /10
Complexity	60%	74th	**4.3**
Scale	40%	71st	**3.3**

Archetype

Qatar

High Potential

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	74	4.3
1.01 Economic complexity (2.5) – 2.5 (best)	74	-0.3
Structure: Scale 0-10 (best)	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 0-10 (best)	29	5.2
Technology Platform 0-10 (best)	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 0-10 (best)	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 0-10 (best)	26	6.1
Current Labor Force 0-10 (best)	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 0-10 (best)	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 0-10 (best)	37	5.8
Trade 0-10 (best)	32	7.8
4.01 Trade % GDP	43	89.1
4.02 Trade tariffs % duty	49	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	8	5.3
4.04 Logistics performance 1 – 5 (best)	28	3.6
Investment 0-10 (best)	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 0-10 (best)	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 0-10 (best)	22	7.1
Government 0-10 (best)	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 0-10 (best)	67	5.5
Sustainability 0-10 (best)	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$ billiions)	58	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	17	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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 0-10 (best)	29	5.8
Foreign and Domestic Demand 0-10 (best)	50	5.3
7.01 Market size 0-100 (best)	50	52.5
Consumer Base 0-10 (best)	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

Legacy

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	19.8	**GDP per capita** US$	9,465.4
GDP US$ billions	187.0	**Unemployment rate** %	5.9

Key production indicators

Manufacturing value added 2010 millions US$	38,988.6	**Manufacturing value added growth** Annual %	4.7
Manufacturing value added in economy % GDP	19.6	**Medium hi-tech & hi-tech industries** % of manu. value added	37.9
Manufacturing employment % working population	18.2	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

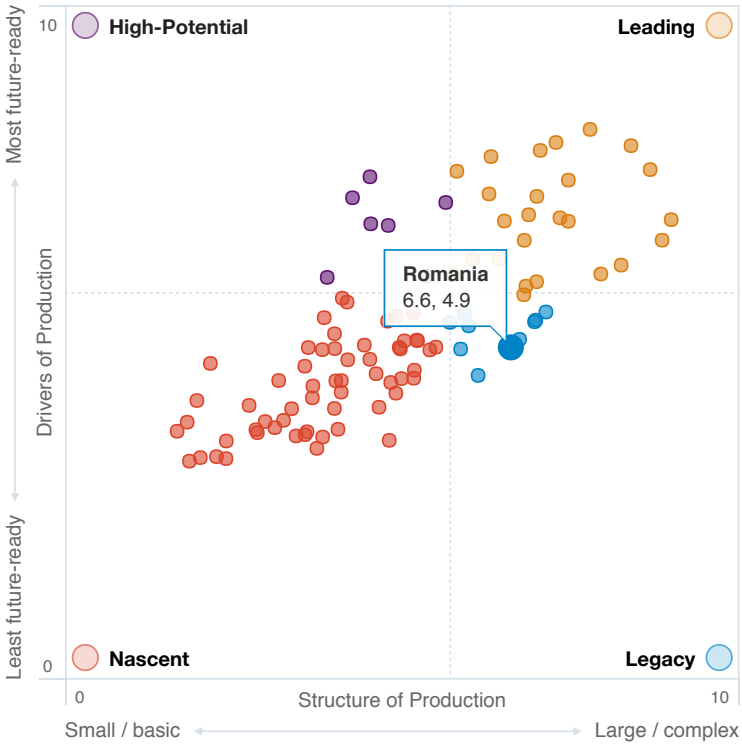
Drivers of Production 4.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	67th	**3.9**
Human Capital	20%	57th	**4.9**
Global Trade & Investment	20%	58th	**5.1**
Institutional Framework	20%	46th	**5.5**
Sustainable Resources	5%	23rd	**7.3**
Demand Environment	15%	57th	**4.6**

Structure of Production 6.6

Structure	Weighting	Rank	Score /10
Complexity	60%	24th	**7.3**
Scale	40%	19th	**5.7**

Archetype



Romania

Legacy

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	24	7.3
1.01 Economic complexity (2.5) – 2.5 (best)	24	1.0
Structure: Scale 0-10 (best)	19	5.7
1.02 Manufacturing value added in economy % GDP	12	19.6
1.03 Manufacturing value added US$ millions	37	38,988.6
Driver: Technology & Innovation 0-10 (best)	67	3.9
Technology Platform 0-10 (best)	57	6.0
2.01 Mobile-cellular telephone subscriptions /100 pop.	74	106.4
2.02 LTE mobile network coverage % population	60	75.2
2.03 Internet users % pop.	61	59.5
2.04 FDI and technology transfer 1-7 (best)	71	4.1
2.05 Firm-level technology absorption 1-7 (best)	80	4.2
2.06 Impact of ICTs on new services and products 1-7 (best)	64	4.5
2.07 Cybersecurity commitment 0–1 (best)	43	0.6
Ability to Innovate 0-10 (best)	89	1.7
2.08 State of cluster development 1-7 (best)	92	3.0
2.09 Company investment in emerging technology 1–7 (best)	91	3.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	99	2.3
2.11 Companies embracing disruptive ideas 1-7 (best)	67	3.3
2.12 Multi-stakeholder collaboration 1-7 (best)	86	3.2
2.13 R&D expenditures % GDP	69	0.4
2.14 Scientific and technical publications Number per Billion PPP$ GDP	39	16.5
2.15 Patent applications applications/million pop.	45	2.76
2.16 Venture capital deal volume US$ millions	57	1,421.5
2.17 Venture capital deal volume per size of economy US$/GDP	71	7.6
Driver: Human Capital 0-10 (best)	57	4.9
Current Labor Force 0-10 (best)	44	6.5
3.01 Manufacturing employment % working population	12	18.2
3.02 Knowledge-intensive employment % working pop.	55	22.7
3.03 Female participation in labor force ratio	42	0.84
3.04 Mean years of schooling Years	39	11.0
3.05 Availability of scientists and engineers 1-7 (best)	72	3.8
3.06 Digital skills among population 1-7 (best)	59	4.2
Future Labor Force 0-10 (best)	71	3.3
3.07 Migration migrants/100,000 pop.	64	-2.3
3.08 Country capacity to attract and retain talent 1-7 (best)	96	2.0
3.09 Quality of universities Count	47	4.0
3.10 Quality of math and science education 1-7 (best)	21	5.0
3.11 Quality of vocational training 1-7 (best)	66	3.7
3.12 School life expectancy Years	50	14.9
3.13 Pupil-to-teacher ratio in primary education Ratio	60	18.9
3.14 Critical thinking in teaching 1-7 (best)	95	2.6
3.15 Active labor policies 1-7 (best)	47	3.5
3.16 On-the-job training 1-7 (best)	81	3.8
3.17 Hiring and firing practices 1-7 (best)	41	4.0

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	58	5.1
Trade 0-10 (best)	42	7.4
4.01 Trade % GDP	48	83.7
4.02 Trade tariffs % duty	22	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	37	4.6
4.04 Logistics performance 1 – 5 (best)	58	3.0
Investment 0-10 (best)	60	1.6
4.05 Greenfield investments US$ millions	31	6,610.7
4.06 FDI inflows US$ millions	47	3,594.6
4.07 Domestic credit to private sector % GDP	87	28.2
Infrastructure 0-10 (best)	55	6.4
4.08 Transport infrastructure 0-100 (best)	59	45.5
4.09 Electricity infrastructure 0-100 (best)	52	82.1
Driver: Institutional Framework 0-10 (best)	46	5.5
Government 0-10 (best)	46	5.5
5.01 Regulatory efficiency 0 – 100 (best)	49	70.7
5.02 Incidence of corruption 0-100 (best)	42	48.0
5.03 Future orientation of government 1-7 (best)	74	3.2
5.04 Rule of law (2.5) - 2.0 (best)	47	0.3
Driver: Sustainable Resources 0-10 (best)	23	7.3
Sustainability 0-10 (best)	23	7.3
6.01 Alternative and nuclear energy use % total energy use	37	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	52	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	48	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	59	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	24	0.8
6.06 Wastewater treatment 0 – 5 (worst)	56	74.3
Driver: Demand Environment 0-10 (best)	57	4.6
Foreign and Domestic Demand 0-10 (best)	40	5.7
7.01 Market size 0-100 (best)	40	56.6
Consumer Base 0-10 (best)	90	3.5
7.02 Buyer sophistication 1-7 (best)	97	2.6
7.03 Extent of market dominance 1-7 (best)	62	3.6

Russian Federation

Legacy

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	143.4	**GDP per capita** US$	8,928.7
GDP US$ billions	1,280.7	**Unemployment rate** %	5.5

Key production indicators

Manufacturing value added 2010 millions US$	202,188.2	**Manufacturing value added growth** Annual %	-1.9
Manufacturing value added in economy % GDP	12.7	**Medium hi-tech & hi-tech industries** % of manu. value added	25.6
Manufacturing employment % working population	14.3	**CO2 emission per unit of value added** kg/USD	0.8

Readiness Overall Assessment

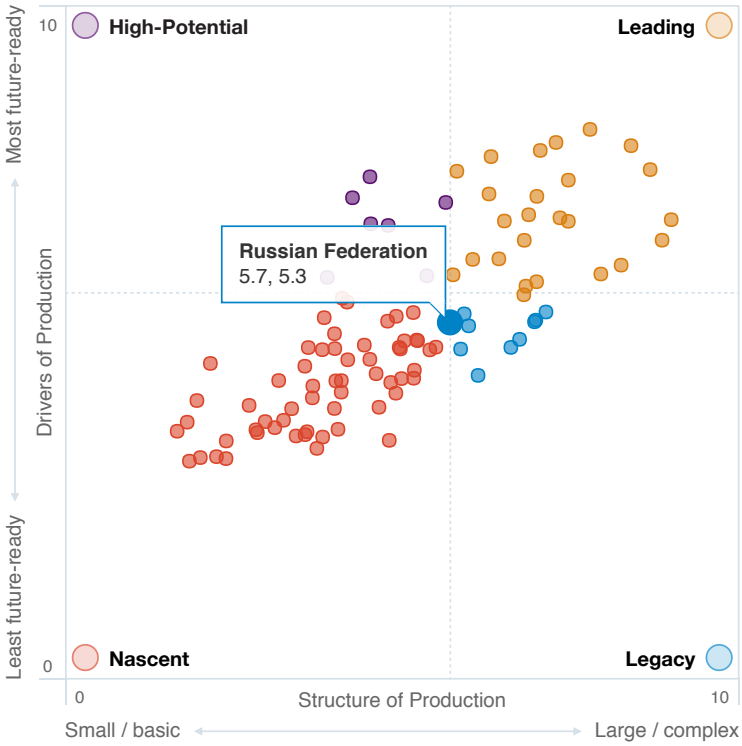
Drivers of Production 5.3

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	39th	**4.7**
Human Capital	20%	25th	**6.3**
Global Trade & Investment	20%	49th	**5.4**
Institutional Framework	20%	87th	**3.8**
Sustainable Resources	5%	35th	**6.7**
Demand Environment	15%	20th	**6.2**

Structure of Production 5.7

Structure	Weighting	Rank	Score /10
Complexity	60%	44th	**5.9**
Scale	40%	25th	**5.4**

Archetype



Russian Federation

Legacy

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	44	5.9
1.01 Economic complexity (2.5) – 2.5 (best)	44	0.4
Structure: Scale 0-10 (best)	25	5.4
1.02 Manufacturing value added in economy % GDP	50	12.7
1.03 Manufacturing value added US$ millions	13	202,188.2
Driver: Technology & Innovation 0-10 (best)	39	4.7
Technology Platform 0-10 (best)	39	6.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	8	163.3
2.02 LTE mobile network coverage % population	70	59.0
2.03 Internet users % pop.	34	76.4
2.04 FDI and technology transfer 1-7 (best)	87	3.7
2.05 Firm-level technology absorption 1-7 (best)	62	4.4
2.06 Impact of ICTs on new services and products 1-7 (best)	82	4.2
2.07 Cybersecurity commitment 0–1 (best)	11	0.8
Ability to Innovate 0-10 (best)	45	2.5
2.08 State of cluster development 1-7 (best)	70	3.5
2.09 Company investment in emerging technology 1–7 (best)	44	3.8
2.10 Gov't procurement of advanced technology products 1-7 (best)	48	3.4
2.11 Companies embracing disruptive ideas 1-7 (best)	51	3.5
2.12 Multi-stakeholder collaboration 1-7 (best)	36	3.9
2.13 R&D expenditures % GDP	61	0.5
2.14 Scientific and technical publications Number per Billion PPP$ GDP	59	8.8
2.15 Patent applications applications/million pop.	42	3.12
2.16 Venture capital deal volume US$ millions	18	37,577.5
2.17 Venture capital deal volume per size of economy US$/GDP	39	23.9
Driver: Human Capital 0-10 (best)	25	6.3
Current Labor Force 0-10 (best)	18	7.9
3.01 Manufacturing employment % working population	29	14.3
3.02 Knowledge-intensive employment % working pop.	13	44.4
3.03 Female participation in labor force ratio	15	0.97
3.04 Mean years of schooling Years	26	12.0
3.05 Availability of scientists and engineers 1-7 (best)	46	4.3
3.06 Digital skills among population 1-7 (best)	37	4.6
Future Labor Force 0-10 (best)	39	4.6
3.07 Migration migrants/100,000 pop.	34	7.6
3.08 Country capacity to attract and retain talent 1-7 (best)	55	3.4
3.09 Quality of universities Count	11	24.0
3.10 Quality of math and science education 1-7 (best)	44	4.4
3.11 Quality of vocational training 1-7 (best)	51	4.1
3.12 School life expectancy Years	38	15.4
3.13 Pupil-to-teacher ratio in primary education Ratio	66	19.8
3.14 Critical thinking in teaching 1-7 (best)	30	3.9
3.15 Active labor policies 1-7 (best)	41	3.8
3.16 On-the-job training 1-7 (best)	52	4.2
3.17 Hiring and firing practices 1-7 (best)	38	4.0

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	49	5.4
Trade 0-10 (best)	81	4.2
4.01 Trade % GDP	80	46.3
4.02 Trade tariffs % duty	64	0.05
4.03 Prevalence of non-tariff barriers 1-7 (best)	89	3.9
4.04 Logistics performance 1 – 5 (best)	84	2.6
Investment 0-10 (best)	17	5.4
4.05 Greenfield investments US$ millions	11	14,900.9
4.06 FDI inflows US$ millions	12	32,045.8
4.07 Domestic credit to private sector % GDP	55	54.7
Infrastructure 0-10 (best)	43	6.8
4.08 Transport infrastructure 0-100 (best)	44	51.0
4.09 Electricity infrastructure 0-100 (best)	48	84.0
Driver: Institutional Framework 0-10 (best)	87	3.8
Government 0-10 (best)	87	3.8
5.01 Regulatory efficiency 0 – 100 (best)	82	61.0
5.02 Incidence of corruption 0-100 (best)	89	29.0
5.03 Future orientation of government 1-7 (best)	40	3.8
5.04 Rule of law (2.5) - 2.0 (best)	91	-0.8
Driver: Sustainable Resources 0-10 (best)	35	6.7
Sustainability 0-10 (best)	35	6.7
6.01 Alternative and nuclear energy use % total energy use	74	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	85	0.7
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	73	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	35	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	35	1.2
6.06 Wastewater treatment 0 – 5 (worst)	23	91.3
Driver: Demand Environment 0-10 (best)	20	6.2
Foreign and Domestic Demand 0-10 (best)	6	8.0
7.01 Market size 0-100 (best)	6	79.8
Consumer Base 0-10 (best)	48	4.4
7.02 Buyer sophistication 1-7 (best)	49	3.5
7.03 Extent of market dominance 1-7 (best)	54	3.7

Saudi Arabia

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	31.7	**GDP per capita** US$	20,150.1
GDP US$ billions	639.6	**Unemployment rate** %	5.6

Key production indicators

Manufacturing value added 2010 millions US$	81,058.1	**Manufacturing value added growth** Annual %	4.4
Manufacturing value added in economy % GDP	11.9	**Medium hi-tech & hi-tech industries** % of manu. value added	35.4
Manufacturing employment % working population	8.2	**CO2 emission per unit of value added** kg/USD	1.7

Readiness Overall Assessment

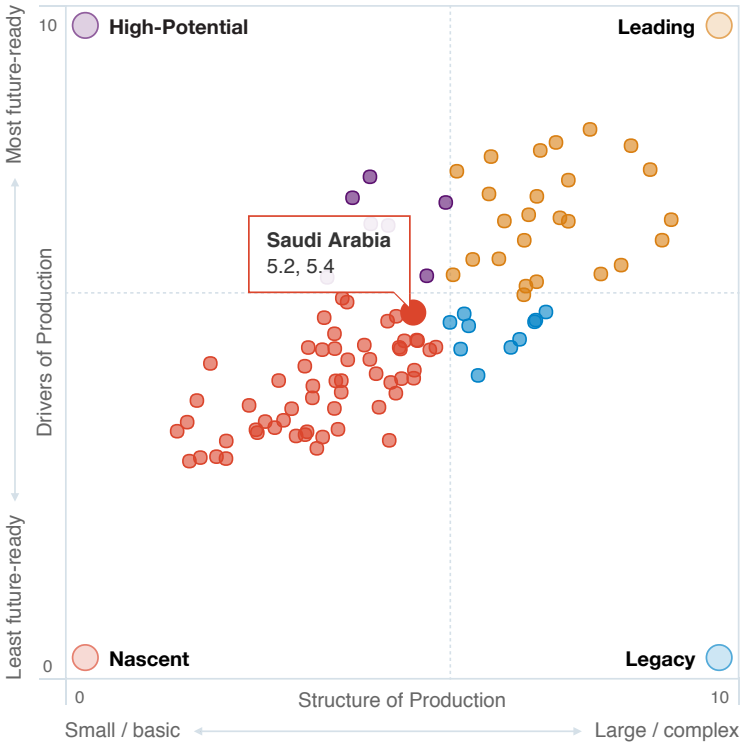
Drivers of Production 5.4

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	44th	**4.5**
Human Capital	20%	48th	**5.2**
Global Trade & Investment	20%	50th	**5.4**
Institutional Framework	20%	38th	**6.2**
Sustainable Resources	5%	76th	**5.0**
Demand Environment	15%	19th	**6.2**

Structure of Production 5.2

Structure	Weighting	Rank	Score /10
Complexity	60%	50th	**5.4**
Scale	40%	35th	**4.8**

Archetype



Saudi Arabia

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	50	5.4
1.01 Economic complexity (2.5) – 2.5 (best)	50	0.2
Structure: Scale 0-10 (best)	35	4.8
1.02 Manufacturing value added in economy % GDP	54	11.9
1.03 Manufacturing value added US$ millions	23	81,058.1
Driver: Technology & Innovation 0-10 (best)	44	4.5
Technology Platform 0-10 (best)	35	6.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	12	157.6
2.02 LTE mobile network coverage % population	44	88.0
2.03 Internet users % pop.	40	73.8
2.04 FDI and technology transfer 1-7 (best)	36	4.8
2.05 Firm-level technology absorption 1-7 (best)	28	5.1
2.06 Impact of ICTs on new services and products 1-7 (best)	41	4.9
2.07 Cybersecurity commitment 0–1 (best)	47	0.6
Ability to Innovate 0-10 (best)	55	2.2
2.08 State of cluster development 1-7 (best)	20	4.7
2.09 Company investment in emerging technology 1–7 (best)	27	4.3
2.10 Gov't procurement of advanced technology products 1-7 (best)	12	4.2
2.11 Companies embracing disruptive ideas 1-7 (best)	45	3.6
2.12 Multi-stakeholder collaboration 1-7 (best)	38	3.8
2.13 R&D expenditures % GDP	56	0.6
2.14 Scientific and technical publications Number per Billion PPP$ GDP	62	8.0
2.15 Patent applications applications/million pop.	38	4.17
2.16 Venture capital deal volume US$ millions	58	1,305.8
2.17 Venture capital deal volume per size of economy US$/GDP	91	1.9
Driver: Human Capital 0-10 (best)	48	5.2
Current Labor Force 0-10 (best)	73	5.2
3.01 Manufacturing employment % working population	80	8.2
3.02 Knowledge-intensive employment % working pop.	44	27.3
3.03 Female participation in labor force ratio	97	0.15
3.04 Mean years of schooling Years	58	9.4
3.05 Availability of scientists and engineers 1-7 (best)	32	4.6
3.06 Digital skills among population 1-7 (best)	26	4.9
Future Labor Force 0-10 (best)	27	5.2
3.07 Migration migrants/100,000 pop.	31	9.5
3.08 Country capacity to attract and retain talent 1-7 (best)	21	4.5
3.09 Quality of universities Count	28	8.0
3.10 Quality of math and science education 1-7 (best)	53	4.2
3.11 Quality of vocational training 1-7 (best)	50	4.1
3.12 School life expectancy Years	28	16.1
3.13 Pupil-to-teacher ratio in primary education Ratio	9	10.9
3.14 Critical thinking in teaching 1-7 (best)	28	4.0
3.15 Active labor policies 1-7 (best)	23	4.4
3.16 On-the-job training 1-7 (best)	54	4.2
3.17 Hiring and firing practices 1-7 (best)	32	4.2

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	50	5.4
Trade 0-10 (best)	68	5.6
4.01 Trade % GDP	66	60.9
4.02 Trade tariffs % duty	53	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	47	4.5
4.04 Logistics performance 1 – 5 (best)	51	3.1
Investment 0-10 (best)	36	3.2
4.05 Greenfield investments US$ millions	23	8,993.8
4.06 FDI inflows US$ millions	34	8,930.5
4.07 Domestic credit to private sector % GDP	52	58.0
Infrastructure 0-10 (best)	31	7.4
4.08 Transport infrastructure 0-100 (best)	32	57.0
4.09 Electricity infrastructure 0-100 (best)	34	91.1
Driver: Institutional Framework 0-10 (best)	38	6.2
Government 0-10 (best)	38	6.2
5.01 Regulatory efficiency 0 – 100 (best)	48	70.8
5.02 Incidence of corruption 0-100 (best)	46	46.0
5.03 Future orientation of government 1-7 (best)	10	5.2
5.04 Rule of law (2.5) - 2.0 (best)	40	0.5
Driver: Sustainable Resources 0-10 (best)	76	5.0
Sustainability 0-10 (best)	76	5.0
6.01 Alternative and nuclear energy use % total energy use	95	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	83	0.7
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	26	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	8	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	93	5.0
6.06 Wastewater treatment 0 – 5 (worst)	35	85.8
Driver: Demand Environment 0-10 (best)	19	6.2
Foreign and Domestic Demand 0-10 (best)	15	7.1
7.01 Market size 0-100 (best)	15	71.5
Consumer Base 0-10 (best)	27	5.2
7.02 Buyer sophistication 1-7 (best)	25	4.0
7.03 Extent of market dominance 1-7 (best)	27	4.3

Senegal

Nascent

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	15.4	**GDP per capita** US$	959.7
GDP US$ billions	14.8		

Key production indicators

Manufacturing value added 2010 millions US$	1,895.6	**Manufacturing value added growth** Annual %	3.7
Manufacturing value added in economy % GDP	11.2	**Medium hi-tech & hi-tech industries** % of manu. value added	21.6
Manufacturing employment % working population	13.1	**CO2 emission per unit of value added** kg/USD	0.7

Readiness Overall Assessment

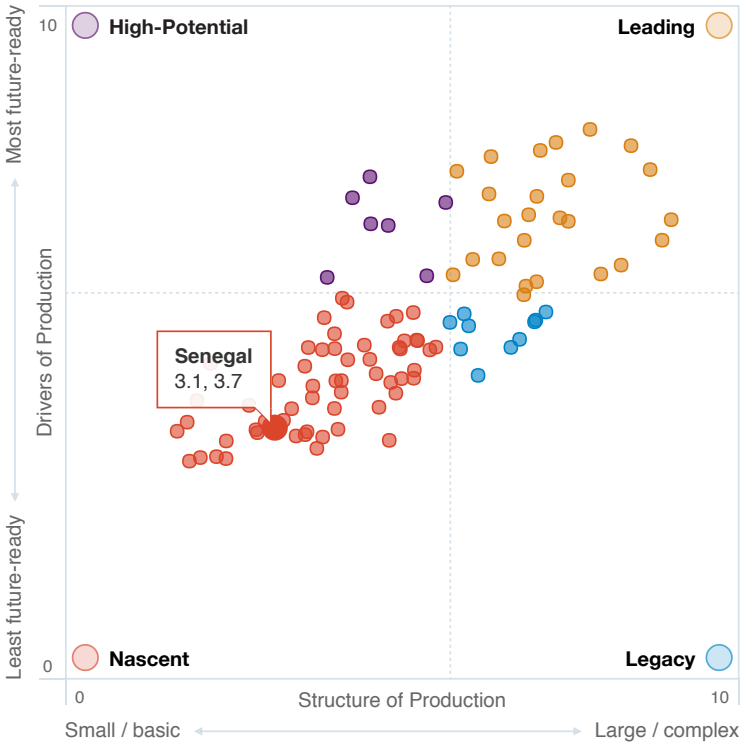
Drivers of Production 3.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	85th	**3.2**
Human Capital	20%	92nd	**3.5**
Global Trade & Investment	20%	88th	**3.4**
Institutional Framework	20%	62nd	**4.9**
Sustainable Resources	5%	83rd	**4.8**
Demand Environment	15%	91st	**3.3**

Structure of Production 3.1

Structure	Weighting	Rank	Score /10
Complexity	60%	82nd	**3.6**
Scale	40%	86th	**2.4**

Archetype



Senegal

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	82	3.6
1.01 Economic complexity (2.5) – 2.5 (best)	82	-0.6
Structure: Scale 0-10 (best)	86	2.4
1.02 Manufacturing value added in economy % GDP	63	11.2
1.03 Manufacturing value added US$ millions	91	1,895.6
Driver: Technology & Innovation 0-10 (best)	85	3.2
Technology Platform 0-10 (best)	89	4.5
2.01 Mobile-cellular telephone subscriptions /100 pop.	81	98.7
2.02 LTE mobile network coverage % population	87	21.6
2.03 Internet users % pop.	90	25.7
2.04 FDI and technology transfer 1-7 (best)	66	4.2
2.05 Firm-level technology absorption 1-7 (best)	44	4.8
2.06 Impact of ICTs on new services and products 1-7 (best)	53	4.6
2.07 Cybersecurity commitment 0–1 (best)	82	0.3
Ability to Innovate 0-10 (best)	78	1.9
2.08 State of cluster development 1-7 (best)	74	3.5
2.09 Company investment in emerging technology 1–7 (best)	46	3.7
2.10 Gov't procurement of advanced technology products 1-7 (best)	36	3.5
2.11 Companies embracing disruptive ideas 1-7 (best)	82	3.1
2.12 Multi-stakeholder collaboration 1-7 (best)	50	3.7
2.13 R&D expenditures % GDP	59	0.5
2.14 Scientific and technical publications Number per Billion PPP$ GDP	55	10.3
2.15 Patent applications applications/million pop.	89	0.02
2.16 Venture capital deal volume US$ millions	91	85.2
2.17 Venture capital deal volume per size of economy US$/GDP	74	5.9
Driver: Human Capital 0-10 (best)	92	3.5
Current Labor Force 0-10 (best)	95	3.8
3.01 Manufacturing employment % working population	35	13.1
3.02 Knowledge-intensive employment % working pop.		No data
3.03 Female participation in labor force ratio	87	0.34
3.04 Mean years of schooling Years	99	2.8
3.05 Availability of scientists and engineers 1-7 (best)	76	3.7
3.06 Digital skills among population 1-7 (best)	40	4.6
Future Labor Force 0-10 (best)	74	3.2
3.07 Migration migrants/100,000 pop.	80	-6.6
3.08 Country capacity to attract and retain talent 1-7 (best)	52	3.4
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	62	3.9
3.11 Quality of vocational training 1-7 (best)	27	4.6
3.12 School life expectancy Years	96	9.0
3.13 Pupil-to-teacher ratio in primary education Ratio	89	32.1
3.14 Critical thinking in teaching 1-7 (best)	45	3.5
3.15 Active labor policies 1-7 (best)	80	2.8
3.16 On-the-job training 1-7 (best)	39	4.4
3.17 Hiring and firing practices 1-7 (best)	62	3.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	88	3.4
Trade 0-10 (best)	73	5.2
4.01 Trade % GDP	56	73.9
4.02 Trade tariffs % duty	84	0.11
4.03 Prevalence of non-tariff barriers 1-7 (best)	90	3.9
4.04 Logistics performance 1 – 5 (best)	94	2.3
Investment 0-10 (best)	85	0.7
4.05 Greenfield investments US$ millions	73	1,050.4
4.06 FDI inflows US$ millions	97	345.6
4.07 Domestic credit to private sector % GDP	81	33.3
Infrastructure 0-10 (best)	88	4.5
4.08 Transport infrastructure 0-100 (best)	84	31.3
4.09 Electricity infrastructure 0-100 (best)	85	58.0
Driver: Institutional Framework 0-10 (best)	62	4.9
Government 0-10 (best)	62	4.9
5.01 Regulatory efficiency 0 – 100 (best)	89	58.6
5.02 Incidence of corruption 0-100 (best)	47	45.0
5.03 Future orientation of government 1-7 (best)	31	4.1
5.04 Rule of law (2.5) - 2.0 (best)	65	-0.2
Driver: Sustainable Resources 0-10 (best)	83	4.8
Sustainability 0-10 (best)	83	4.8
6.01 Alternative and nuclear energy use % total energy use	20	0.5
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	75	0.6
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	92	0.6
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	94	0.5
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	11	0.2
6.06 Wastewater treatment 0 – 5 (worst)	86	34.3
Driver: Demand Environment 0-10 (best)	91	3.3
Foreign and Domestic Demand 0-10 (best)	92	2.8
7.01 Market size 0-100 (best)	92	28.0
Consumer Base 0-10 (best)	74	3.8
7.02 Buyer sophistication 1-7 (best)	95	2.7
7.03 Extent of market dominance 1-7 (best)	46	3.9

Serbia

Nascent

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	7.0	**GDP per capita** US$	5,376.3
GDP US$ billions	37.7	**Unemployment rate** %	15.9

Key production indicators

Manufacturing value added 2010 millions US$	5,719.7	**Manufacturing value added growth** Annual %	0.4
Manufacturing value added in economy % GDP	13.9	**Medium hi-tech & hi-tech industries** % of manu. value added	23.9
Manufacturing employment % working population	16.1	**CO2 emission per unit of value added** kg/USD	0.6

Readiness Overall Assessment

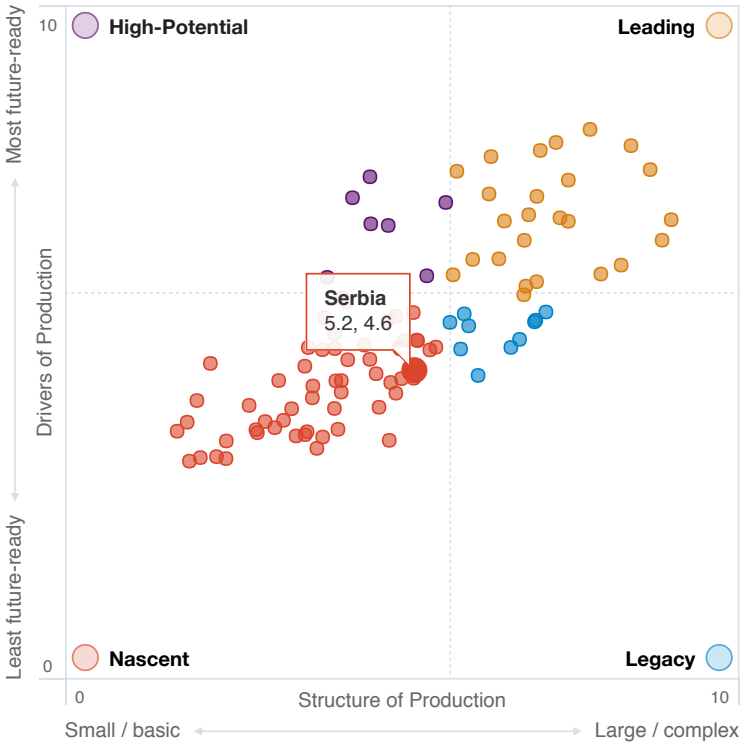
Drivers of Production 4.6

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	69th	**3.8**
Human Capital	20%	54th	**5.0**
Global Trade & Investment	20%	60th	**5.1**
Institutional Framework	20%	60th	**4.9**
Sustainable Resources	5%	53rd	**6.2**
Demand Environment	15%	85th	**3.5**

Structure of Production 5.2

Structure	Weighting	Rank	Score /10
Complexity	60%	37th	**6.3**
Scale	40%	63rd	**3.5**

Archetype



Serbia

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	37	6.3
1.01 Economic complexity (2.5) – 2.5 (best)	37	0.6
Structure: Scale 0-10 (best)	63	3.5
1.02 Manufacturing value added in economy % GDP	46	13.9
1.03 Manufacturing value added US$ millions	69	5,719.7
Driver: Technology & Innovation 0-10 (best)	69	3.8
Technology Platform 0-10 (best)	72	5.1
2.01 Mobile-cellular telephone subscriptions /100 pop.	52	120.6
2.02 LTE mobile network coverage % population	58	78.2
2.03 Internet users % pop.	49	67.1
2.04 FDI and technology transfer 1-7 (best)	83	3.9
2.05 Firm-level technology absorption 1-7 (best)	97	3.9
2.06 Impact of ICTs on new services and products 1-7 (best)	80	4.2
2.07 Cybersecurity commitment 0–1 (best)	84	0.3
Ability to Innovate 0-10 (best)	47	2.5
2.08 State of cluster development 1-7 (best)	80	3.4
2.09 Company investment in emerging technology 1–7 (best)	89	3.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	79	2.8
2.11 Companies embracing disruptive ideas 1-7 (best)	94	3.0
2.12 Multi-stakeholder collaboration 1-7 (best)	76	3.3
2.13 R&D expenditures % GDP	45	0.8
2.14 Scientific and technical publications Number per Billion PPP$ GDP	7	49.2
2.15 Patent applications applications/million pop.	48	2.15
2.16 Venture capital deal volume US$ millions	84	156.3
2.17 Venture capital deal volume per size of economy US$/GDP	85	3.9
Driver: Human Capital 0-10 (best)	54	5.0
Current Labor Force 0-10 (best)	40	6.8
3.01 Manufacturing employment % working population	20	16.1
3.02 Knowledge-intensive employment % working pop.	42	28.9
3.03 Female participation in labor force ratio	37	0.86
3.04 Mean years of schooling Years	38	11.0
3.05 Availability of scientists and engineers 1-7 (best)	60	3.9
3.06 Digital skills among population 1-7 (best)	58	4.2
Future Labor Force 0-10 (best)	73	3.2
3.07 Migration migrants/100,000 pop.	93	-14.1
3.08 Country capacity to attract and retain talent 1-7 (best)	98	1.9
3.09 Quality of universities Count	62	1.0
3.10 Quality of math and science education 1-7 (best)	26	4.8
3.11 Quality of vocational training 1-7 (best)	67	3.7
3.12 School life expectancy Years	54	14.6
3.13 Pupil-to-teacher ratio in primary education Ratio	35	15.2
3.14 Critical thinking in teaching 1-7 (best)	68	3.1
3.15 Active labor policies 1-7 (best)	66	3.0
3.16 On-the-job training 1-7 (best)	80	3.8
3.17 Hiring and firing practices 1-7 (best)	57	3.6

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	60	5.1
Trade 0-10 (best)	37	7.7
4.01 Trade % GDP	24	109.2
4.02 Trade tariffs % duty	66	0.05
4.03 Prevalence of non-tariff barriers 1-7 (best)	81	4.0
4.04 Logistics performance 1 – 5 (best)	69	2.8
Investment 0-10 (best)	67	1.5
4.05 Greenfield investments US$ millions	41	3,649.2
4.06 FDI inflows US$ millions	56	2,240.3
4.07 Domestic credit to private sector % GDP	71	43.4
Infrastructure 0-10 (best)	63	6.1
4.08 Transport infrastructure 0-100 (best)	47	50.0
4.09 Electricity infrastructure 0-100 (best)	77	71.7
Driver: Institutional Framework 0-10 (best)	60	4.9
Government 0-10 (best)	60	4.9
5.01 Regulatory efficiency 0 – 100 (best)	51	69.9
5.02 Incidence of corruption 0-100 (best)	53	42.0
5.03 Future orientation of government 1-7 (best)	63	3.4
5.04 Rule of law (2.5) - 2.0 (best)	62	-0.1
Driver: Sustainable Resources 0-10 (best)	53	6.2
Sustainability 0-10 (best)	53	6.2
6.01 Alternative and nuclear energy use % total energy use	63	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	88	0.9
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	60	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	75	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	20	0.6
6.06 Wastewater treatment 0 – 5 (worst)	67	64.0
Driver: Demand Environment 0-10 (best)	85	3.5
Foreign and Domestic Demand 0-10 (best)	71	4.0
7.01 Market size 0-100 (best)	71	40.4
Consumer Base 0-10 (best)	97	3.0
7.02 Buyer sophistication 1-7 (best)	99	2.4
7.03 Extent of market dominance 1-7 (best)	89	3.2

Singapore

Leading

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Key economic indicators

Population millions	5.6	**GDP per capita** US$	52,960.7
GDP US$ billions	297.0	**Unemployment rate** %	2.1

Key production indicators

Manufacturing value added 2010 millions US$	52,782.2	**Manufacturing value added growth** Annual %	-1.2
Manufacturing value added in economy % GDP	18.2	**Medium hi-tech & hi-tech industries** % of manu. value added	80.4
Manufacturing employment % working population	11.1	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

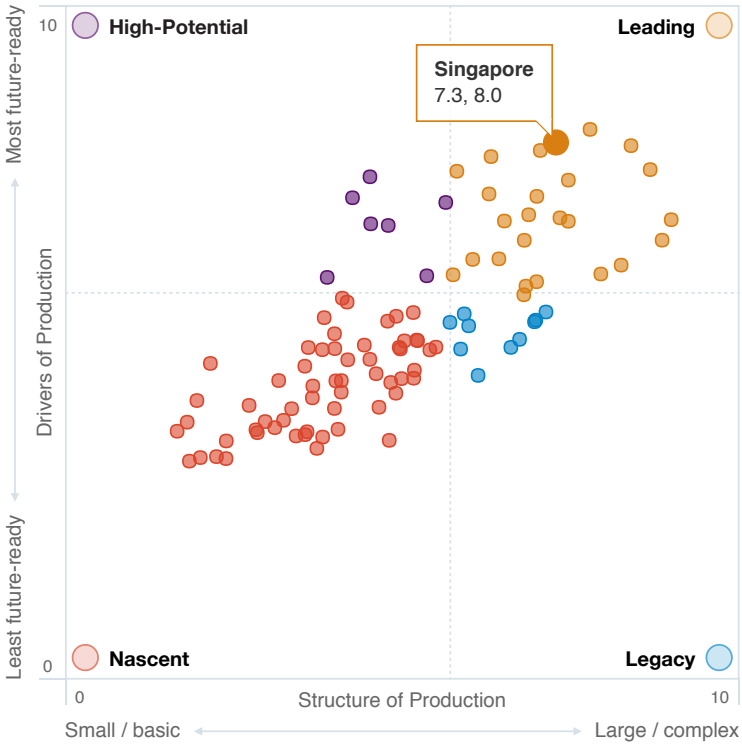
Drivers of Production 8.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	6th	**7.4**
Human Capital	20%	2nd	**8.0**
Global Trade & Investment	20%	1st	**9.0**
Institutional Framework	20%	1st	**9.1**
Sustainable Resources	5%	56th	**6.1**
Demand Environment	15%	14th	**6.4**

Structure of Production 7.3

Structure	Weighting	Rank	Score /10
Complexity	60%	11th	**8.4**
Scale	40%	22nd	**5.6**

Archetype



Singapore

Leading

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	11	8.4
1.01 Economic complexity (2.5) – 2.5 (best)	11	1.5
Structure: Scale 0-10 (best)	22	5.6
1.02 Manufacturing value added in economy % GDP	20	18.2
1.03 Manufacturing value added US$ millions	31	52,782.2
Driver: Technology & Innovation 0-10 (best)	6	7.4
Technology Platform 0-10 (best)	1	8.7
2.01 Mobile-cellular telephone subscriptions /100 pop.	19	146.9
2.02 LTE mobile network coverage % population	1	100.0
2.03 Internet users % pop.	23	81.0
2.04 FDI and technology transfer 1-7 (best)	2	5.9
2.05 Firm-level technology absorption 1-7 (best)	12	5.6
2.06 Impact of ICTs on new services and products 1-7 (best)	7	5.8
2.07 Cybersecurity commitment 0–1 (best)	1	0.9
Ability to Innovate 0-10 (best)	11	6.0
2.08 State of cluster development 1-7 (best)	9	5.2
2.09 Company investment in emerging technology 1–7 (best)	12	5.1
2.10 Gov't procurement of advanced technology products 1-7 (best)	5	4.9
2.11 Companies embracing disruptive ideas 1-7 (best)	16	4.4
2.12 Multi-stakeholder collaboration 1-7 (best)	12	5.0
2.13 R&D expenditures % GDP	17	2.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	27	26.1
2.15 Patent applications applications/million pop.	13	100.94
2.16 Venture capital deal volume US$ millions	23	22,867.8
2.17 Venture capital deal volume per size of economy US$/GDP	11	76.1
Driver: Human Capital 0-10 (best)	2	8.0
Current Labor Force 0-10 (best)	9	8.4
3.01 Manufacturing employment % working population	58	11.1
3.02 Knowledge-intensive employment % working pop.	1	54.3
3.03 Female participation in labor force ratio	35	0.87
3.04 Mean years of schooling Years	32	11.5
3.05 Availability of scientists and engineers 1-7 (best)	9	5.2
3.06 Digital skills among population 1-7 (best)	6	5.8
Future Labor Force 0-10 (best)	2	7.6
3.07 Migration migrants/100,000 pop.	5	72.3
3.08 Country capacity to attract and retain talent 1-7 (best)	4	5.7
3.09 Quality of universities Count	50	3.0
3.10 Quality of math and science education 1-7 (best)	1	6.5
3.11 Quality of vocational training 1-7 (best)	9	5.4
3.12 School life expectancy Years	36	15.4
3.13 Pupil-to-teacher ratio in primary education Ratio	52	17.4
3.14 Critical thinking in teaching 1-7 (best)	18	4.4
3.15 Active labor policies 1-7 (best)	2	5.6
3.16 On-the-job training 1-7 (best)	3	5.7
3.17 Hiring and firing practices 1-7 (best)	3	5.6

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	1	9.0
Trade 0-10 (best)	1	9.3
4.01 Trade % GDP	2	318.4
4.02 Trade tariffs % duty	2	0.00
4.03 Prevalence of non-tariff barriers 1-7 (best)	1	5.9
4.04 Logistics performance 1 – 5 (best)	4	4.1
Investment 0-10 (best)	6	8.4
4.05 Greenfield investments US$ millions	18	10,291.1
4.06 FDI inflows US$ millions	6	63,714.3
4.07 Domestic credit to private sector % GDP	16	132.9
Infrastructure 0-10 (best)	1	9.4
4.08 Transport infrastructure 0-100 (best)	2	87.0
4.09 Electricity infrastructure 0-100 (best)	1	100.0
Driver: Institutional Framework 0-10 (best)	1	9.1
Government 0-10 (best)	1	9.1
5.01 Regulatory efficiency 0 – 100 (best)	1	90.1
5.02 Incidence of corruption 0-100 (best)	7	84.0
5.03 Future orientation of government 1-7 (best)	1	6.2
5.04 Rule of law (2.5) - 2.0 (best)	9	1.8
Driver: Sustainable Resources 0-10 (best)	56	6.1
Sustainability 0-10 (best)	56	6.1
6.01 Alternative and nuclear energy use % total energy use	87	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	10	0.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	4	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	5	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	94	5.0
6.06 Wastewater treatment 0 – 5 (worst)	1	100.0
Driver: Demand Environment 0-10 (best)	14	6.4
Foreign and Domestic Demand 0-10 (best)	27	6.4
7.01 Market size 0-100 (best)	27	64.1
Consumer Base 0-10 (best)	8	6.4
7.02 Buyer sophistication 1-7 (best)	12	4.6
7.03 Extent of market dominance 1-7 (best)	10	5.0

Slovak Republic

Legacy

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	5.4	**GDP per capita** US$	16,498.5
GDP US$ billions	89.5	**Unemployment rate** %	9.6

Key production indicators

Manufacturing value added 2010 millions US$	22,309.2	**Manufacturing value added growth** Annual %	6.4
Manufacturing value added in economy % GDP	21.5	**Medium hi-tech & hi-tech industries** % of manu. value added	48.2
Manufacturing employment % working population	24.7	**CO2 emission per unit of value added** kg/USD	0.4

Readiness Overall Assessment

Drivers of Production 5.3

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	51st	**4.2**
Human Capital	20%	45th	**5.3**
Global Trade & Investment	20%	34th	**5.9**
Institutional Framework	20%	42nd	**5.9**
Sustainable Resources	5%	9th	**8.3**
Demand Environment	15%	61st	**4.3**

Structure of Production 7.0

Structure	Weighting	Rank	Score /10
Complexity	60%	16th	**7.9**
Scale	40%	20th	**5.6**

Archetype

Slovak Republic

Legacy

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	16	7.9
1.01 Economic complexity (2.5) – 2.5 (best)	16	1.3
Structure: Scale 0-10 (best)	20	5.6
1.02 Manufacturing value added in economy % GDP	8	21.5
1.03 Manufacturing value added US$ millions	49	22,309.2
Driver: Technology & Innovation 0-10 (best)	51	4.2
Technology Platform 0-10 (best)	53	6.1
2.01 Mobile-cellular telephone subscriptions /100 pop.	40	128.0
2.02 LTE mobile network coverage % population	47	87.0
2.03 Internet users % pop.	25	80.5
2.04 FDI and technology transfer 1-7 (best)	15	5.2
2.05 Firm-level technology absorption 1-7 (best)	43	4.8
2.06 Impact of ICTs on new services and products 1-7 (best)	40	4.9
2.07 Cybersecurity commitment 0–1 (best)	75	0.4
Ability to Innovate 0-10 (best)	51	2.3
2.08 State of cluster development 1-7 (best)	49	3.8
2.09 Company investment in emerging technology 1–7 (best)	41	3.9
2.10 Gov't procurement of advanced technology products 1-7 (best)	58	3.2
2.11 Companies embracing disruptive ideas 1-7 (best)	62	3.4
2.12 Multi-stakeholder collaboration 1-7 (best)	59	3.6
2.13 R&D expenditures % GDP	40	0.9
2.14 Scientific and technical publications Number per Billion PPP$ GDP	35	19.6
2.15 Patent applications applications/million pop.	34	7.45
2.16 Venture capital deal volume US$ millions	65	672.8
2.17 Venture capital deal volume per size of economy US$/GDP	73	7.3
Driver: Human Capital 0-10 (best)	45	5.3
Current Labor Force 0-10 (best)	28	7.2
3.01 Manufacturing employment % working population	2	24.7
3.02 Knowledge-intensive employment % working pop.	38	31.9
3.03 Female participation in labor force ratio	34	0.88
3.04 Mean years of schooling Years	12	12.7
3.05 Availability of scientists and engineers 1-7 (best)	89	3.5
3.06 Digital skills among population 1-7 (best)	36	4.7
Future Labor Force 0-10 (best)	67	3.5
3.07 Migration migrants/100,000 pop.	42	2.8
3.08 Country capacity to attract and retain talent 1-7 (best)	94	2.2
3.09 Quality of universities Count	62	1.0
3.10 Quality of math and science education 1-7 (best)	65	3.8
3.11 Quality of vocational training 1-7 (best)	81	3.6
3.12 School life expectancy Years	48	15.0
3.13 Pupil-to-teacher ratio in primary education Ratio	36	15.2
3.14 Critical thinking in teaching 1-7 (best)	83	3.0
3.15 Active labor policies 1-7 (best)	43	3.7
3.16 On-the-job training 1-7 (best)	58	4.1
3.17 Hiring and firing practices 1-7 (best)	85	3.1

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	34	5.9
Trade 0-10 (best)	17	8.5
4.01 Trade % GDP	6	183.9
4.02 Trade tariffs % duty	28	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	51	4.5
4.04 Logistics performance 1 – 5 (best)	39	3.3
Investment 0-10 (best)	62	1.5
4.05 Greenfield investments US$ millions	56	2,025.8
4.06 FDI inflows US$ millions	89	510.7
4.07 Domestic credit to private sector % GDP	53	57.0
Infrastructure 0-10 (best)	24	7.7
4.08 Transport infrastructure 0-100 (best)	36	54.4
4.09 Electricity infrastructure 0-100 (best)	1	100.0
Driver: Institutional Framework 0-10 (best)	42	5.9
Government 0-10 (best)	42	5.9
5.01 Regulatory efficiency 0 – 100 (best)	63	66.8
5.02 Incidence of corruption 0-100 (best)	39	51.0
5.03 Future orientation of government 1-7 (best)	84	3.0
5.04 Rule of law (2.5) - 2.0 (best)	34	0.7
Driver: Sustainable Resources 0-10 (best)	9	8.3
Sustainability 0-10 (best)	9	8.3
6.01 Alternative and nuclear energy use % total energy use	28	0.4
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	47	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	24	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	28	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	10	0.2
6.06 Wastewater treatment 0 – 5 (worst)	34	86.2
Driver: Demand Environment 0-10 (best)	61	4.3
Foreign and Domestic Demand 0-10 (best)	57	4.9
7.01 Market size 0-100 (best)	57	48.6
Consumer Base 0-10 (best)	80	3.7
7.02 Buyer sophistication 1-7 (best)	83	2.9
7.03 Extent of market dominance 1-7 (best)	71	3.5

Slovenia

Leading

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	2.1	**GDP per capita** US$	21,320.2
GDP US$ billions	44.0	**Unemployment rate** %	8.0

Key production indicators

Manufacturing value added 2010 millions US$	9,251.5	**Manufacturing value added growth** Annual %	2.5
Manufacturing value added in economy % GDP	18.4	**Medium hi-tech & hi-tech industries** % of manu. value added	48.7
Manufacturing employment % working population	23.4	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

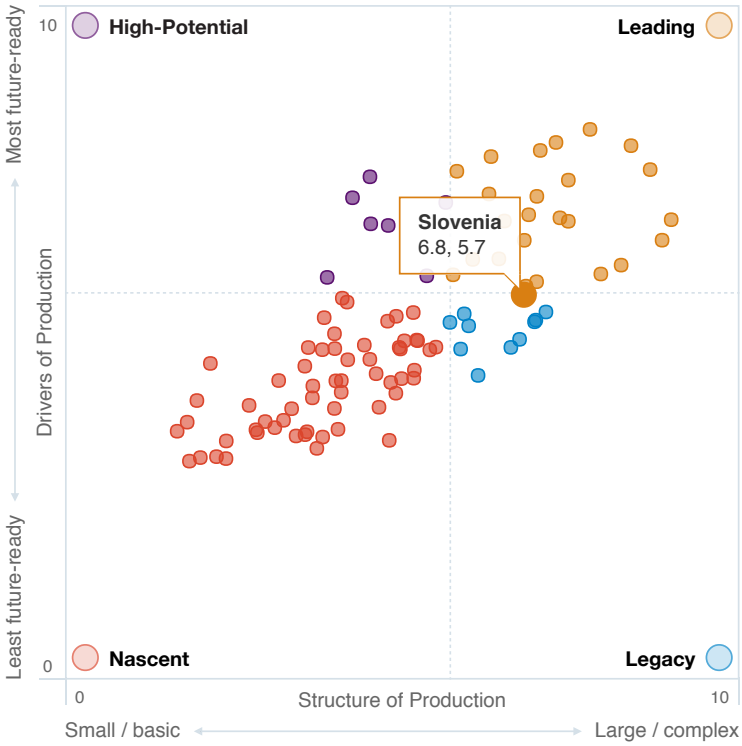
Drivers of Production 5.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	35th	**4.8**
Human Capital	20%	27th	**6.0**
Global Trade & Investment	20%	40th	**5.6**
Institutional Framework	20%	27th	**6.8**
Sustainable Resources	5%	5th	**8.6**
Demand Environment	15%	67th	**4.2**

Structure of Production 6.8

Structure	Weighting	Rank	Score /10
Complexity	60%	12th	**8.3**
Scale	40%	39th	**4.6**

Archetype



Slovenia

Leading

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	12	8.3
1.01 Economic complexity (2.5) – 2.5 (best)	12	1.5
Structure: Scale 0-10 (best)	39	4.6
1.02 Manufacturing value added in economy % GDP	18	18.4
1.03 Manufacturing value added US$ millions	60	9,251.5
Driver: Technology & Innovation 0-10 (best)	35	4.8
Technology Platform 0-10 (best)	60	5.9
2.01 Mobile-cellular telephone subscriptions /100 pop.	62	114.6
2.02 LTE mobile network coverage % population	28	97.4
2.03 Internet users % pop.	38	75.5
2.04 FDI and technology transfer 1-7 (best)	68	4.2
2.05 Firm-level technology absorption 1-7 (best)	41	4.9
2.06 Impact of ICTs on new services and products 1-7 (best)	38	5.0
2.07 Cybersecurity commitment 0–1 (best)	77	0.3
Ability to Innovate 0-10 (best)	28	3.7
2.08 State of cluster development 1-7 (best)	64	3.7
2.09 Company investment in emerging technology 1–7 (best)	39	4.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	91	2.6
2.11 Companies embracing disruptive ideas 1-7 (best)	57	3.4
2.12 Multi-stakeholder collaboration 1-7 (best)	41	3.8
2.13 R&D expenditures % GDP	35	1.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	3	55.5
2.15 Patent applications applications/million pop.	22	45.72
2.16 Venture capital deal volume US$ millions	60	985.3
2.17 Venture capital deal volume per size of economy US$/GDP	42	21.7
Driver: Human Capital 0-10 (best)	27	6.0
Current Labor Force 0-10 (best)	23	7.7
3.01 Manufacturing employment % working population	3	23.4
3.02 Knowledge-intensive employment % working pop.	19	41.7
3.03 Female participation in labor force ratio	29	0.90
3.04 Mean years of schooling Years	18	12.4
3.05 Availability of scientists and engineers 1-7 (best)	61	3.9
3.06 Digital skills among population 1-7 (best)	29	4.8
Future Labor Force 0-10 (best)	43	4.4
3.07 Migration migrants/100,000 pop.	28	10.7
3.08 Country capacity to attract and retain talent 1-7 (best)	78	2.8
3.09 Quality of universities Count	53	2.0
3.10 Quality of math and science education 1-7 (best)	11	5.4
3.11 Quality of vocational training 1-7 (best)	55	4.0
3.12 School life expectancy Years	13	17.3
3.13 Pupil-to-teacher ratio in primary education Ratio	45	16.9
3.14 Critical thinking in teaching 1-7 (best)	56	3.3
3.15 Active labor policies 1-7 (best)	31	4.2
3.16 On-the-job training 1-7 (best)	44	4.4
3.17 Hiring and firing practices 1-7 (best)	96	2.4

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	40	5.6
Trade 0-10 (best)	18	8.5
4.01 Trade % GDP	12	148.5
4.02 Trade tariffs % duty	29	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	38	4.6
4.04 Logistics performance 1 – 5 (best)	48	3.2
Investment 0-10 (best)	81	1.0
4.05 Greenfield investments US$ millions	95	297.1
4.06 FDI inflows US$ millions	86	632.3
4.07 Domestic credit to private sector % GDP	66	46.7
Infrastructure 0-10 (best)	29	7.4
4.08 Transport infrastructure 0-100 (best)	40	52.9
4.09 Electricity infrastructure 0-100 (best)	14	95.9
Driver: Institutional Framework 0-10 (best)	27	6.8
Government 0-10 (best)	27	6.8
5.01 Regulatory efficiency 0 – 100 (best)	28	75.4
5.02 Incidence of corruption 0-100 (best)	27	61.0
5.03 Future orientation of government 1-7 (best)	64	3.4
5.04 Rule of law (2.5) - 2.0 (best)	25	1.1
Driver: Sustainable Resources 0-10 (best)	5	8.6
Sustainability 0-10 (best)	5	8.6
6.01 Alternative and nuclear energy use % total energy use	22	0.4
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	40	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	21	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	26	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	5	0.0
6.06 Wastewater treatment 0 – 5 (worst)	30	87.8
Driver: Demand Environment 0-10 (best)	67	4.2
Foreign and Domestic Demand 0-10 (best)	77	3.7
7.01 Market size 0-100 (best)	77	36.5
Consumer Base 0-10 (best)	41	4.7
7.02 Buyer sophistication 1-7 (best)	62	3.3
7.03 Extent of market dominance 1-7 (best)	24	4.3

South Africa

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	55.9	**GDP per capita** US$	5,260.9
GDP US$ billions	294.1	**Unemployment rate** %	26.7

Key production indicators

Manufacturing value added 2010 millions US$	51,204.4	**Manufacturing value added growth** Annual %	-1.3
Manufacturing value added in economy % GDP	12.3	**Medium hi-tech & hi-tech industries** % of manu. value added	24.4
Manufacturing employment % working population	11.2	**CO2 emission per unit of value added** kg/USD	1.0

Readiness Overall Assessment

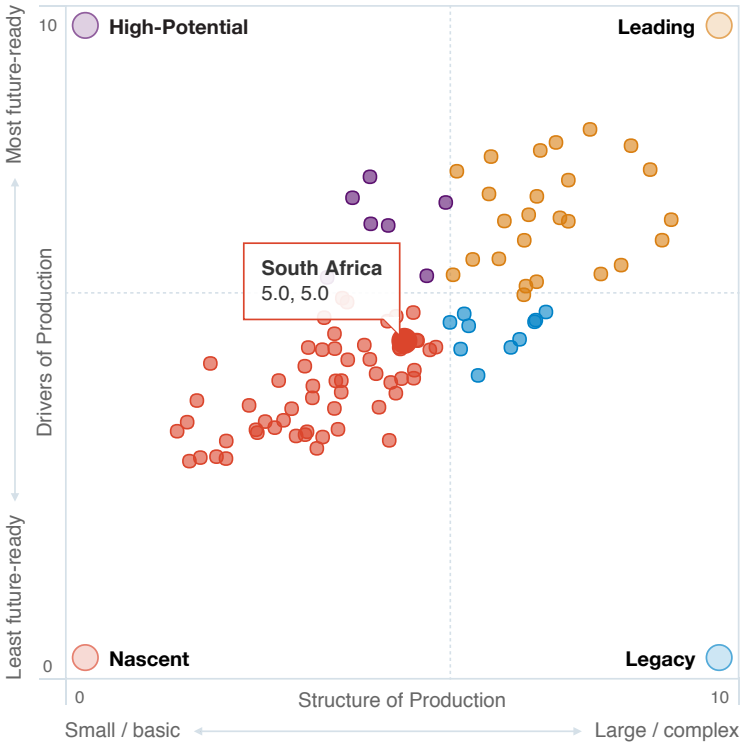
Drivers of Production 5.0

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	46th	**4.5**
Human Capital	20%	67th	**4.5**
Global Trade & Investment	20%	41st	**5.6**
Institutional Framework	20%	49th	**5.0**
Sustainable Resources	5%	75th	**5.3**
Demand Environment	15%	33rd	**5.5**

Structure of Production 5.0

Structure	Weighting	Rank	Score /10
Complexity	60%	53rd	**5.4**
Scale	40%	40th	**4.5**

Archetype



South Africa

Nascent

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	53	5.4
1.01 Economic complexity (2.5) – 2.5 (best)	53	0.2
Structure: Scale 0-10 (best)	40	4.5
1.02 Manufacturing value added in economy % GDP	52	12.3
1.03 Manufacturing value added US$ millions	32	51,204.4
Driver: Technology & Innovation 0-10 (best)	46	4.5
Technology Platform 0-10 (best)	52	6.2
2.01 Mobile-cellular telephone subscriptions /100 pop.	23	142.4
2.02 LTE mobile network coverage % population	59	77.6
2.03 Internet users % pop.	67	54.0
2.04 FDI and technology transfer 1-7 (best)	53	4.5
2.05 Firm-level technology absorption 1-7 (best)	34	5.0
2.06 Impact of ICTs on new services and products 1-7 (best)	55	4.6
2.07 Cybersecurity commitment 0–1 (best)	58	0.5
Ability to Innovate 0-10 (best)	38	2.8
2.08 State of cluster development 1-7 (best)	27	4.5
2.09 Company investment in emerging technology 1–7 (best)	33	4.2
2.10 Gov't procurement of advanced technology products 1-7 (best)	44	3.4
2.11 Companies embracing disruptive ideas 1-7 (best)	27	3.9
2.12 Multi-stakeholder collaboration 1-7 (best)	30	4.2
2.13 R&D expenditures % GDP	47	0.7
2.14 Scientific and technical publications Number per Billion PPP$ GDP	38	17.2
2.15 Patent applications applications/million pop.	46	2.40
2.16 Venture capital deal volume US$ millions	32	8,681.9
2.17 Venture capital deal volume per size of economy US$/GDP	33	27.0
Driver: Human Capital 0-10 (best)	67	4.5
Current Labor Force 0-10 (best)	53	6.0
3.01 Manufacturing employment % working population	54	11.2
3.02 Knowledge-intensive employment % working pop.	56	22.5
3.03 Female participation in labor force ratio	48	0.79
3.04 Mean years of schooling Years	45	10.3
3.05 Availability of scientists and engineers 1-7 (best)	86	3.5
3.06 Digital skills among population 1-7 (best)	94	3.3
Future Labor Force 0-10 (best)	78	3.1
3.07 Migration migrants/100,000 pop.	60	-1.8
3.08 Country capacity to attract and retain talent 1-7 (best)	61	3.3
3.09 Quality of universities Count	23	9.0
3.10 Quality of math and science education 1-7 (best)	95	2.6
3.11 Quality of vocational training 1-7 (best)	72	3.6
3.12 School life expectancy Years	65	13.3
3.13 Pupil-to-teacher ratio in primary education Ratio	90	33.6
3.14 Critical thinking in teaching 1-7 (best)	69	3.1
3.15 Active labor policies 1-7 (best)	88	2.7
3.16 On-the-job training 1-7 (best)	38	4.5
3.17 Hiring and firing practices 1-7 (best)	90	2.9

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	41	5.6
Trade 0-10 (best)	69	5.6
4.01 Trade % GDP	68	60.5
4.02 Trade tariffs % duty	68	0.06
4.03 Prevalence of non-tariff barriers 1-7 (best)	58	4.4
4.04 Logistics performance 1 – 5 (best)	19	3.8
Investment 0-10 (best)	24	4.6
4.05 Greenfield investments US$ millions	32	6,242.6
4.06 FDI inflows US$ millions	42	4,534.5
4.07 Domestic credit to private sector % GDP	12	144.4
Infrastructure 0-10 (best)	47	6.7
4.08 Transport infrastructure 0-100 (best)	41	52.7
4.09 Electricity infrastructure 0-100 (best)	57	80.7
Driver: Institutional Framework 0-10 (best)	49	5.0
Government 0-10 (best)	49	5.0
5.01 Regulatory efficiency 0 – 100 (best)	66	65.6
5.02 Incidence of corruption 0-100 (best)	47	45.0
5.03 Future orientation of government 1-7 (best)	78	3.2
5.04 Rule of law (2.5) - 2.0 (best)	50	0.1
Driver: Sustainable Resources 0-10 (best)	75	5.3
Sustainability 0-10 (best)	75	5.3
6.01 Alternative and nuclear energy use % total energy use	66	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	97	1.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	51	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	62	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	63	3.0
6.06 Wastewater treatment 0 – 5 (worst)	48	79.4
Driver: Demand Environment 0-10 (best)	33	5.5
Foreign and Domestic Demand 0-10 (best)	32	6.2
7.01 Market size 0-100 (best)	32	61.8
Consumer Base 0-10 (best)	38	4.8
7.02 Buyer sophistication 1-7 (best)	30	3.9
7.03 Extent of market dominance 1-7 (best)	45	3.9

Spain

Leading

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	46.3	**GDP per capita** US$	26,608.9
GDP US$ billions	1,232.6	**Unemployment rate** %	19.6

Key production indicators

Manufacturing value added 2010 millions US$	164,249.1	**Manufacturing value added growth** Annual %	2.3
Manufacturing value added in economy % GDP	11.3	**Medium hi-tech & hi-tech industries** % of manu. value added	40.2
Manufacturing employment % working population	12.5	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

Drivers of Production 6.2

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	26th	**5.7**
Human Capital	20%	31st	**5.9**
Global Trade & Investment	20%	15th	**6.8**
Institutional Framework	20%	31st	**6.5**
Sustainable Resources	5%	29th	**6.9**
Demand Environment	15%	22nd	**5.9**

Structure of Production 6.0

Structure	Weighting	Rank	Score /10
Complexity	60%	32nd	**6.7**
Scale	40%	30th	**5.1**

Archetype

Spain

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WORLD ECONOMIC FORUM

Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	32	6.7
1.01 Economic complexity (2.5) – 2.5 (best)	32	0.8
Structure: Scale 0-10 (best)	30	5.1
1.02 Manufacturing value added in economy % GDP	62	11.3
1.03 Manufacturing value added US$ millions	15	164,249.1
Driver: Technology & Innovation 0-10 (best)	26	5.7
Technology Platform 0-10 (best)	27	7.3
2.01 Mobile-cellular telephone subscriptions /100 pop.	70	109.7
2.02 LTE mobile network coverage % population	38	91.3
2.03 Internet users % pop.	24	80.6
2.04 FDI and technology transfer 1-7 (best)	29	4.9
2.05 Firm-level technology absorption 1-7 (best)	48	4.6
2.06 Impact of ICTs on new services and products 1-7 (best)	22	5.4
2.07 Cybersecurity commitment 0–1 (best)	21	0.7
Ability to Innovate 0-10 (best)	26	4.1
2.08 State of cluster development 1-7 (best)	33	4.3
2.09 Company investment in emerging technology 1–7 (best)	49	3.7
2.10 Gov't procurement of advanced technology products 1-7 (best)	64	3.1
2.11 Companies embracing disruptive ideas 1-7 (best)	68	3.3
2.12 Multi-stakeholder collaboration 1-7 (best)	73	3.4
2.13 R&D expenditures % GDP	33	1.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	22	32.1
2.15 Patent applications applications/million pop.	25	22.14
2.16 Venture capital deal volume US$ millions	12	63,073.6
2.17 Venture capital deal volume per size of economy US$/GDP	20	49.8
Driver: Human Capital 0-10 (best)	31	5.9
Current Labor Force 0-10 (best)	32	7.0
3.01 Manufacturing employment % working population	42	12.5
3.02 Knowledge-intensive employment % working pop.	36	32.9
3.03 Female participation in labor force ratio	27	0.90
3.04 Mean years of schooling Years	51	9.9
3.05 Availability of scientists and engineers 1-7 (best)	37	4.5
3.06 Digital skills among population 1-7 (best)	60	4.1
Future Labor Force 0-10 (best)	36	4.8
3.07 Migration migrants/100,000 pop.	26	12.9
3.08 Country capacity to attract and retain talent 1-7 (best)	64	3.2
3.09 Quality of universities Count	12	23.0
3.10 Quality of math and science education 1-7 (best)	59	4.1
3.11 Quality of vocational training 1-7 (best)	45	4.2
3.12 School life expectancy Years	10	17.9
3.13 Pupil-to-teacher ratio in primary education Ratio	27	13.2
3.14 Critical thinking in teaching 1-7 (best)	66	3.2
3.15 Active labor policies 1-7 (best)	48	3.5
3.16 On-the-job training 1-7 (best)	61	4.1
3.17 Hiring and firing practices 1-7 (best)	82	3.2

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	15	6.8
Trade 0-10 (best)	50	6.4
4.01 Trade % GDP	63	63.2
4.02 Trade tariffs % duty	14	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	33	4.7
4.04 Logistics performance 1 – 5 (best)	22	3.7
Investment 0-10 (best)	14	5.8
4.05 Greenfield investments US$ millions	16	10,806.3
4.06 FDI inflows US$ millions	15	21,884.9
4.07 Domestic credit to private sector % GDP	22	111.3
Infrastructure 0-10 (best)	11	8.4
4.08 Transport infrastructure 0-100 (best)	8	82.2
4.09 Electricity infrastructure 0-100 (best)	44	85.0
Driver: Institutional Framework 0-10 (best)	31	6.5
Government 0-10 (best)	31	6.5
5.01 Regulatory efficiency 0 – 100 (best)	55	69.3
5.02 Incidence of corruption 0-100 (best)	31	58.0
5.03 Future orientation of government 1-7 (best)	57	3.5
5.04 Rule of law (2.5) - 2.0 (best)	28	1.0
Driver: Sustainable Resources 0-10 (best)	29	6.9
Sustainability 0-10 (best)	29	6.9
6.01 Alternative and nuclear energy use % total energy use	36	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	19	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	19	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	25	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	82	3.7
6.06 Wastewater treatment 0 – 5 (worst)	7	97.5
Driver: Demand Environment 0-10 (best)	22	5.9
Foreign and Domestic Demand 0-10 (best)	17	7.1
7.01 Market size 0-100 (best)	17	71.2
Consumer Base 0-10 (best)	39	4.7
7.02 Buyer sophistication 1-7 (best)	55	3.4
7.03 Extent of market dominance 1-7 (best)	28	4.3

Sri Lanka

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Key economic indicators

Population millions	21.3	**GDP per capita** US$	3,887.5
GDP US$ billions	82.6	**Unemployment rate** %	4.0

Key production indicators

Manufacturing value added 2010 millions US$	13,081.9	**Manufacturing value added growth** Annual %	5.6
Manufacturing value added in economy % GDP	18.1	**Medium hi-tech & hi-tech industries** % of manu. value added	6.7
Manufacturing employment % working population	18.2	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

Drivers of Production 4.3

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	73rd	**3.5**
Human Capital	20%	69th	**4.5**
Global Trade & Investment	20%	83rd	**3.8**
Institutional Framework	20%	63rd	**4.8**
Sustainable Resources	5%	89th	**4.6**
Demand Environment	15%	56th	**4.6**

Structure of Production 4.1

Structure	Weighting	Rank	Score /10
Complexity	60%	81st	**3.7**
Scale	40%	36th	**4.7**

Archetype

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	81	3.7
1.01 Economic complexity (2.5) – 2.5 (best)	81	-0.6
Structure: Scale 0-10 (best)	36	4.7
1.02 Manufacturing value added in economy % GDP	21	18.1
1.03 Manufacturing value added US$ millions	56	13,081.9
Driver: Technology & Innovation 0-10 (best)	73	3.5
Technology Platform 0-10 (best)	77	5.0
2.01 Mobile-cellular telephone subscriptions /100 pop.	55	118.5
2.02 LTE mobile network coverage % population	84	36.0
2.03 Internet users % pop.	84	32.1
2.04 FDI and technology transfer 1-7 (best)	82	4.0
2.05 Firm-level technology absorption 1-7 (best)	66	4.3
2.06 Impact of ICTs on new services and products 1-7 (best)	65	4.5
2.07 Cybersecurity commitment 0–1 (best)	70	0.4
Ability to Innovate 0-10 (best)	61	2.1
2.08 State of cluster development 1-7 (best)	46	3.9
2.09 Company investment in emerging technology 1–7 (best)	62	3.5
2.10 Gov't procurement of advanced technology products 1-7 (best)	53	3.3
2.11 Companies embracing disruptive ideas 1-7 (best)	61	3.4
2.12 Multi-stakeholder collaboration 1-7 (best)	55	3.6
2.13 R&D expenditures % GDP	94	0.1
2.14 Scientific and technical publications Number per Billion PPP$ GDP	83	3.5
2.15 Patent applications applications/million pop.	71	0.22
2.16 Venture capital deal volume US$ millions	50	2,651.2
2.17 Venture capital deal volume per size of economy US$/GDP	29	33.0
Driver: Human Capital 0-10 (best)	69	4.5
Current Labor Force 0-10 (best)	69	5.4
3.01 Manufacturing employment % working population	12	18.2
3.02 Knowledge-intensive employment % working pop.	72	16.9
3.03 Female participation in labor force ratio	82	0.41
3.04 Mean years of schooling Years	40	10.9
3.05 Availability of scientists and engineers 1-7 (best)	49	4.2
3.06 Digital skills among population 1-7 (best)	71	3.9
Future Labor Force 0-10 (best)	60	3.6
3.07 Migration migrants/100,000 pop.	94	-15.1
3.08 Country capacity to attract and retain talent 1-7 (best)	66	3.2
3.09 Quality of universities Count	62	1.0
3.10 Quality of math and science education 1-7 (best)	34	4.6
3.11 Quality of vocational training 1-7 (best)	48	4.1
3.12 School life expectancy Years	59	14.0
3.13 Pupil-to-teacher ratio in primary education Ratio	73	23.2
3.14 Critical thinking in teaching 1-7 (best)	54	3.3
3.15 Active labor policies 1-7 (best)	55	3.3
3.16 On-the-job training 1-7 (best)	50	4.3
3.17 Hiring and firing practices 1-7 (best)	66	3.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	83	3.8
Trade 0-10 (best)	85	4.0
4.01 Trade % GDP	77	50.5
4.02 Trade tariffs % duty	93	0.12
4.03 Prevalence of non-tariff barriers 1-7 (best)	64	4.3
4.04 Logistics performance 1 – 5 (best)		-
Investment 0-10 (best)	78	1.2
4.05 Greenfield investments US$ millions	59	1,837.4
4.06 FDI inflows US$ millions	79	869.3
4.07 Domestic credit to private sector % GDP	67	46.0
Infrastructure 0-10 (best)	57	6.3
4.08 Transport infrastructure 0-100 (best)	56	46.1
4.09 Electricity infrastructure 0-100 (best)	59	80.1
Driver: Institutional Framework 0-10 (best)	63	4.8
Government 0-10 (best)	63	4.8
5.01 Regulatory efficiency 0 – 100 (best)	58	68.8
5.02 Incidence of corruption 0-100 (best)	69	36.0
5.03 Future orientation of government 1-7 (best)	76	3.2
5.04 Rule of law (2.5) - 2.0 (best)	57	0.0
Driver: Sustainable Resources 0-10 (best)	89	4.6
Sustainability 0-10 (best)	89	4.6
6.01 Alternative and nuclear energy use % total energy use	17	0.5
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	29	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	72	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	48	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	61	3.0
6.06 Wastewater treatment 0 – 5 (worst)	92	0.0
Driver: Demand Environment 0-10 (best)	56	4.6
Foreign and Domestic Demand 0-10 (best)	56	4.9
7.01 Market size 0-100 (best)	56	49.0
Consumer Base 0-10 (best)	52	4.3
7.02 Buyer sophistication 1-7 (best)	48	3.6
7.03 Extent of market dominance 1-7 (best)	61	3.6

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Key economic indicators

Population millions	10.0	**GDP per capita** US$	51,164.5
GDP US$ billions	511.4	**Unemployment rate** %	7.0

Key production indicators

Manufacturing value added 2010 millions US$	90,213.0	**Manufacturing value added growth** Annual %	7.7
Manufacturing value added in economy % GDP	16.2	**Medium hi-tech & hi-tech industries** % of manu. value added	48.9
Manufacturing employment % working population	10.4	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

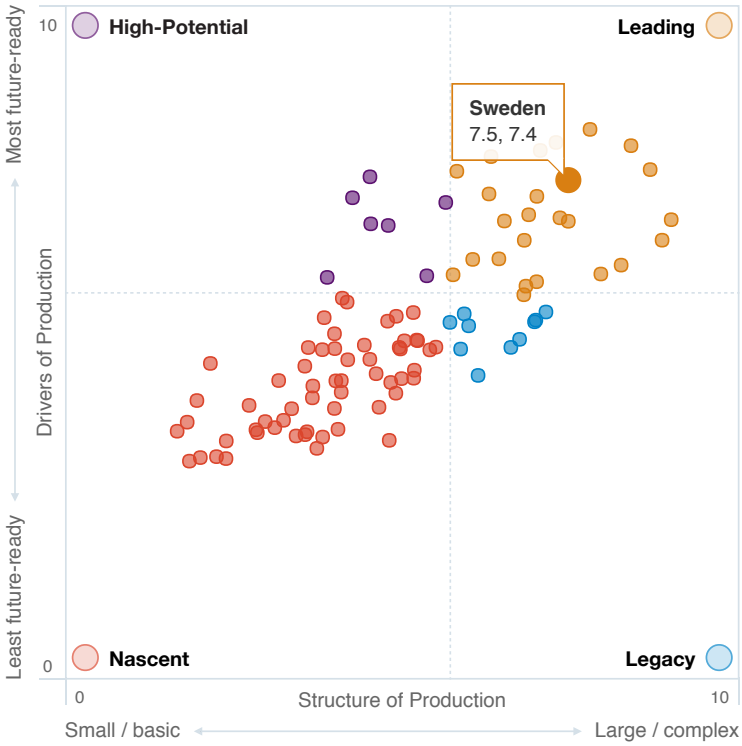
Drivers of Production 7.4

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	7th	**7.3**
Human Capital	20%	6th	**7.5**
Global Trade & Investment	20%	19th	**6.8**
Institutional Framework	20%	6th	**8.8**
Sustainable Resources	5%	2nd	**8.8**
Demand Environment	15%	24th	**5.9**

Structure of Production 7.5

Structure	Weighting	Rank	Score /10
Complexity	60%	5th	**8.7**
Scale	40%	23rd	**5.6**

Archetype



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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)	23	5.6
1.02 Manufacturing value added in economy % GDP	32	16.2
1.03 Manufacturing value added US$ millions	22	90,213.0
Driver: Technology & Innovation 0-10 (best)	7	7.3
Technology Platform 0-10 (best)	9	8.2
2.01 Mobile-cellular telephone subscriptions /100 pop.	44	126.7
2.02 LTE mobile network coverage % population	6	100.0
2.03 Internet users % pop.	8	91.5
2.04 FDI and technology transfer 1-7 (best)	13	5.3
2.05 Firm-level technology absorption 1-7 (best)	1	6.0
2.06 Impact of ICTs on new services and products 1-7 (best)	6	5.9
2.07 Cybersecurity commitment 0–1 (best)	19	0.7
Ability to Innovate 0-10 (best)	7	6.4
2.08 State of cluster development 1-7 (best)	14	5.0
2.09 Company investment in emerging technology 1–7 (best)	5	5.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	14	4.2
2.11 Companies embracing disruptive ideas 1-7 (best)	3	5.0
2.12 Multi-stakeholder collaboration 1-7 (best)	7	5.3
2.13 R&D expenditures % GDP	15	2.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	5	52.8
2.15 Patent applications applications/million pop.	6	216.33
2.16 Venture capital deal volume US$ millions	20	32,918.6
2.17 Venture capital deal volume per size of economy US$/GDP	16	62.5
Driver: Human Capital 0-10 (best)	6	7.5
Current Labor Force 0-10 (best)	4	8.7
3.01 Manufacturing employment % working population	67	10.4
3.02 Knowledge-intensive employment % working pop.	4	50.4
3.03 Female participation in labor force ratio	9	0.98
3.04 Mean years of schooling Years	19	12.3
3.05 Availability of scientists and engineers 1-7 (best)	19	4.8
3.06 Digital skills among population 1-7 (best)	5	5.9
Future Labor Force 0-10 (best)	14	6.3
3.07 Migration migrants/100,000 pop.	14	20.4
3.08 Country capacity to attract and retain talent 1-7 (best)	18	4.6
3.09 Quality of universities Count	20	10.0
3.10 Quality of math and science education 1-7 (best)	40	4.6
3.11 Quality of vocational training 1-7 (best)	16	5.1
3.12 School life expectancy Years	7	18.6
3.13 Pupil-to-teacher ratio in primary education Ratio	21	12.1
3.14 Critical thinking in teaching 1-7 (best)	4	5.4
3.15 Active labor policies 1-7 (best)	19	4.6
3.16 On-the-job training 1-7 (best)	9	5.5
3.17 Hiring and firing practices 1-7 (best)	63	3.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	19	6.8
Trade 0-10 (best)	27	8.0
4.01 Trade % GDP	47	84.2
4.02 Trade tariffs % duty	21	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	14	5.1
4.04 Logistics performance 1 – 5 (best)	1	4.2
Investment 0-10 (best)	26	4.2
4.05 Greenfield investments US$ millions	54	2,187.7
4.06 FDI inflows US$ millions	24	11,383.4
4.07 Domestic credit to private sector % GDP	17	128.7
Infrastructure 0-10 (best)	17	8.1
4.08 Transport infrastructure 0-100 (best)	20	65.2
4.09 Electricity infrastructure 0-100 (best)	12	96.0
Driver: Institutional Framework 0-10 (best)	6	8.8
Government 0-10 (best)	6	8.8
5.01 Regulatory efficiency 0 – 100 (best)	22	76.4
5.02 Incidence of corruption 0-100 (best)	4	88.0
5.03 Future orientation of government 1-7 (best)	14	4.9
5.04 Rule of law (2.5) - 2.0 (best)	1	2.0
Driver: Sustainable Resources 0-10 (best)	2	8.8
Sustainability 0-10 (best)	2	8.8
6.01 Alternative and nuclear energy use % total energy use	7	0.7
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	2	0.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	5	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	12	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	37	1.3
6.06 Wastewater treatment 0 – 5 (worst)	11	96.1
Driver: Demand Environment 0-10 (best)	24	5.9
Foreign and Domestic Demand 0-10 (best)	38	5.7
7.01 Market size 0-100 (best)	38	57.4
Consumer Base 0-10 (best)	12	6.0
7.02 Buyer sophistication 1-7 (best)	11	4.7
7.03 Extent of market dominance 1-7 (best)	18	4.6

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Key economic indicators

Population millions	8.3	**GDP per capita** US$	79,242.3
GDP US$ billions	659.9	**Unemployment rate** %	3.3

Key production indicators

Manufacturing value added 2010 millions US$	121,205.8	**Manufacturing value added growth** Annual %	1.4
Manufacturing value added in economy % GDP	19.2	**Medium hi-tech & hi-tech industries** % of manu. value added	63.0
Manufacturing employment % working population	12.5	**CO2 emission per unit of value added** kg/USD	0.0

Readiness Overall Assessment

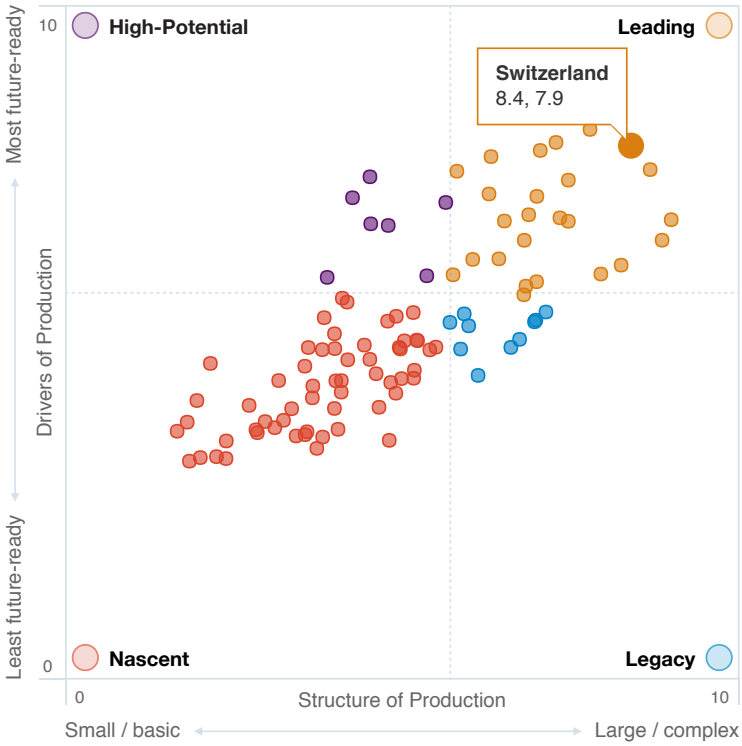
Drivers of Production 7.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	3rd	**7.9**
Human Capital	20%	1st	**8.5**
Global Trade & Investment	20%	10th	**7.2**
Institutional Framework	20%	5th	**8.8**
Sustainable Resources	5%	3rd	**8.8**
Demand Environment	15%	7th	**6.7**

Structure of Production 8.4

Structure	Weighting	Rank	Score /10
Complexity	60%	2nd	**9.8**
Scale	40%	12th	**6.2**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	2	9.8
1.01 Economic complexity (2.5) – 2.5 (best)	2	2.2
Structure: Scale 0-10 (best)	12	6.2
1.02 Manufacturing value added in economy % GDP	15	19.2
1.03 Manufacturing value added US$ millions	17	121,205.8
Driver: Technology & Innovation 0-10 (best)	3	7.9
Technology Platform 0-10 (best)	6	8.2
2.01 Mobile-cellular telephone subscriptions /100 pop.	29	135.6
2.02 LTE mobile network coverage % population	11	99.0
2.03 Internet users % pop.	13	89.4
2.04 FDI and technology transfer 1-7 (best)	11	5.4
2.05 Firm-level technology absorption 1-7 (best)	4	5.9
2.06 Impact of ICTs on new services and products 1-7 (best)	1	6.2
2.07 Cybersecurity commitment 0–1 (best)	20	0.7
Ability to Innovate 0-10 (best)	3	7.5
2.08 State of cluster development 1-7 (best)	11	5.1
2.09 Company investment in emerging technology 1–7 (best)	4	5.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	28	3.7
2.11 Companies embracing disruptive ideas 1-7 (best)	14	4.4
2.12 Multi-stakeholder collaboration 1-7 (best)	2	5.5
2.13 R&D expenditures % GDP	9	3.0
2.14 Scientific and technical publications Number per Billion PPP$ GDP	2	58.1
2.15 Patent applications applications/million pop.	3	268.02
2.16 Venture capital deal volume US$ millions	11	63,522.8
2.17 Venture capital deal volume per size of economy US$/GDP	10	93.7
Driver: Human Capital 0-10 (best)	1	8.5
Current Labor Force 0-10 (best)	3	8.7
3.01 Manufacturing employment % working population	42	12.5
3.02 Knowledge-intensive employment % working pop.	2	53.0
3.03 Female participation in labor force ratio	30	0.90
3.04 Mean years of schooling Years	2	13.7
3.05 Availability of scientists and engineers 1-7 (best)	12	5.1
3.06 Digital skills among population 1-7 (best)	8	5.7
Future Labor Force 0-10 (best)	1	8.2
3.07 Migration migrants/100,000 pop.	8	38.6
3.08 Country capacity to attract and retain talent 1-7 (best)	1	6.1
3.09 Quality of universities Count	23	9.0
3.10 Quality of math and science education 1-7 (best)	3	6.1
3.11 Quality of vocational training 1-7 (best)	1	6.6
3.12 School life expectancy Years	26	16.2
3.13 Pupil-to-teacher ratio in primary education Ratio	5	10.1
3.14 Critical thinking in teaching 1-7 (best)	2	5.5
3.15 Active labor policies 1-7 (best)	1	5.7
3.16 On-the-job training 1-7 (best)	1	6.2
3.17 Hiring and firing practices 1-7 (best)	2	5.6

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	10	7.2
Trade 0-10 (best)	14	8.6
4.01 Trade % GDP	23	114.1
4.02 Trade tariffs % duty	43	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	27	4.8
4.04 Logistics performance 1 – 5 (best)	10	4.0
Investment 0-10 (best)	25	4.4
4.05 Greenfield investments US$ millions	52	2,487.0
4.06 FDI inflows US$ millions	23	13,153.6
4.07 Domestic credit to private sector % GDP	7	175.3
Infrastructure 0-10 (best)	8	8.6
4.08 Transport infrastructure 0-100 (best)	11	80.9
4.09 Electricity infrastructure 0-100 (best)	30	91.6
Driver: Institutional Framework 0-10 (best)	5	8.8
Government 0-10 (best)	5	8.8
5.01 Regulatory efficiency 0 – 100 (best)	15	77.8
5.02 Incidence of corruption 0-100 (best)	5	86.0
5.03 Future orientation of government 1-7 (best)	8	5.2
5.04 Rule of law (2.5) - 2.0 (best)	4	1.9
Driver: Sustainable Resources 0-10 (best)	3	8.8
Sustainability 0-10 (best)	3	8.8
6.01 Alternative and nuclear energy use % total energy use	13	0.5
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	1	0.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	2	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	3	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	31	1.1
6.06 Wastewater treatment 0 – 5 (worst)	5	98.2
Driver: Demand Environment 0-10 (best)	7	6.7
Foreign and Domestic Demand 0-10 (best)	36	5.9
7.01 Market size 0-100 (best)	36	58.7
Consumer Base 0-10 (best)	1	7.5
7.02 Buyer sophistication 1-7 (best)	3	5.1
7.03 Extent of market dominance 1-7 (best)	1	5.9

Tanzania

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Key economic indicators

Population millions	48.6	**GDP per capita** US$	970.2
GDP US$ billions	47.2		

Key production indicators

Manufacturing value added 2010 millions US$	3,182.4	**Manufacturing value added growth** Annual %	8.4
Manufacturing value added in economy % GDP	6.9	**Medium hi-tech & hi-tech industries** % of manu. value added	6.8
Manufacturing employment % working population	3.0	**CO2 emission per unit of value added** kg/USD	0.6

Readiness Overall Assessment

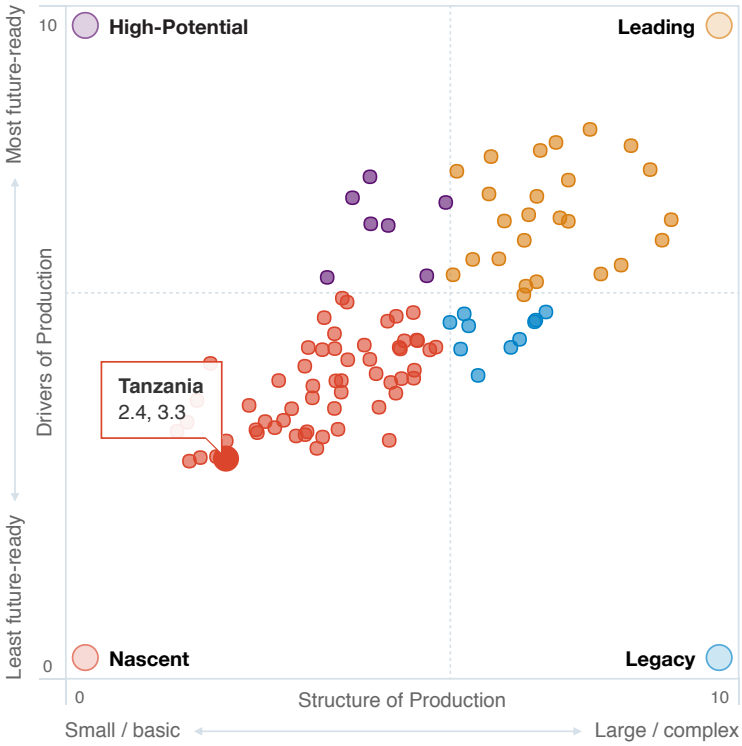
Drivers of Production 3.3

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	95th	**2.8**
Human Capital	20%	100th	**2.8**
Global Trade & Investment	20%	98th	**2.2**
Institutional Framework	20%	75th	**4.4**
Sustainable Resources	5%	78th	**4.9**
Demand Environment	15%	77th	**3.9**

Structure of Production 2.4

Structure	Weighting	Rank	Score /10
Complexity	60%	91st	**2.7**
Scale	40%	89th	**2.0**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	91	2.7
1.01 Economic complexity (2.5) – 2.5 (best)	91	-1.0
Structure: Scale 0-10 (best)	89	2.0
1.02 Manufacturing value added in economy % GDP	87	6.9
1.03 Manufacturing value added US$ millions	79	3,182.4
Driver: Technology & Innovation 0-10 (best)	95	2.8
Technology Platform 0-10 (best)	98	3.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	96	74.4
2.02 LTE mobile network coverage % population	91	13.0
2.03 Internet users % pop.	100	13.0
2.04 FDI and technology transfer 1-7 (best)	76	4.0
2.05 Firm-level technology absorption 1-7 (best)	86	4.1
2.06 Impact of ICTs on new services and products 1-7 (best)	85	4.1
2.07 Cybersecurity commitment 0–1 (best)	81	0.3
Ability to Innovate 0-10 (best)	81	1.8
2.08 State of cluster development 1-7 (best)	50	3.8
2.09 Company investment in emerging technology 1–7 (best)	60	3.5
2.10 Gov't procurement of advanced technology products 1-7 (best)	39	3.5
2.11 Companies embracing disruptive ideas 1-7 (best)	52	3.5
2.12 Multi-stakeholder collaboration 1-7 (best)	62	3.6
2.13 R&D expenditures % GDP	60	0.5
2.14 Scientific and technical publications Number per Billion PPP$ GDP	70	6.2
2.15 Patent applications applications/million pop.	97	0.00
2.16 Venture capital deal volume US$ millions	80	252.6
2.17 Venture capital deal volume per size of economy US$/GDP	77	5.4
Driver: Human Capital 0-10 (best)	100	2.8
Current Labor Force 0-10 (best)	100	3.0
3.01 Manufacturing employment % working population	98	3.0
3.02 Knowledge-intensive employment % working pop.	90	3.4
3.03 Female participation in labor force ratio	75	0.50
3.04 Mean years of schooling Years	93	5.5
3.05 Availability of scientists and engineers 1-7 (best)	75	3.7
3.06 Digital skills among population 1-7 (best)	90	3.4
Future Labor Force 0-10 (best)	96	2.7
3.07 Migration migrants/100,000 pop.	70	-2.8
3.08 Country capacity to attract and retain talent 1-7 (best)	57	3.3
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	92	2.8
3.11 Quality of vocational training 1-7 (best)	56	4.0
3.12 School life expectancy Years	99	8.4
3.13 Pupil-to-teacher ratio in primary education Ratio	94	43.1
3.14 Critical thinking in teaching 1-7 (best)	72	3.0
3.15 Active labor policies 1-7 (best)	69	3.0
3.16 On-the-job training 1-7 (best)	85	3.7
3.17 Hiring and firing practices 1-7 (best)	58	3.6

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	98	2.2
Trade 0-10 (best)	92	3.2
4.01 Trade % GDP	91	36.8
4.02 Trade tariffs % duty	82	0.10
4.03 Prevalence of non-tariff barriers 1-7 (best)	88	3.9
4.04 Logistics performance 1 – 5 (best)	56	3.0
Investment 0-10 (best)	96	0.3
4.05 Greenfield investments US$ millions	64	1,523.3
4.06 FDI inflows US$ millions	65	1,766.6
4.07 Domestic credit to private sector % GDP	97	14.3
Infrastructure 0-10 (best)	97	3.0
4.08 Transport infrastructure 0-100 (best)	90	29.3
4.09 Electricity infrastructure 0-100 (best)	96	31.7
Driver: Institutional Framework 0-10 (best)	75	4.4
Government 0-10 (best)	75	4.4
5.01 Regulatory efficiency 0 – 100 (best)	81	61.3
5.02 Incidence of corruption 0-100 (best)	80	32.0
5.03 Future orientation of government 1-7 (best)	34	3.9
5.04 Rule of law (2.5) - 2.0 (best)	76	-0.4
Driver: Sustainable Resources 0-10 (best)	78	4.9
Sustainability 0-10 (best)	78	4.9
6.01 Alternative and nuclear energy use % total energy use	3	0.9
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	32	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	96	0.8
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	95	0.6
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	44	1.5
6.06 Wastewater treatment 0 – 5 (worst)	81	45.5
Driver: Demand Environment 0-10 (best)	77	3.9
Foreign and Domestic Demand 0-10 (best)	68	4.2
7.01 Market size 0-100 (best)	68	41.9
Consumer Base 0-10 (best)	88	3.6
7.02 Buyer sophistication 1-7 (best)	91	2.8
7.03 Extent of market dominance 1-7 (best)	72	3.5

Thailand

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Key economic indicators

Population millions	69.0	**GDP per capita** US$	5,899.4
GDP US$ billions	406.9	**Unemployment rate** %	0.8

Key production indicators

Manufacturing value added 2010 millions US$	116,650.5	**Manufacturing value added growth** Annual %	3.6
Manufacturing value added in economy % GDP	28.7	**Medium hi-tech & hi-tech industries** % of manu. value added	40.7
Manufacturing employment % working population	16.5	**CO2 emission per unit of value added** kg/USD	0.5

Readiness Overall Assessment

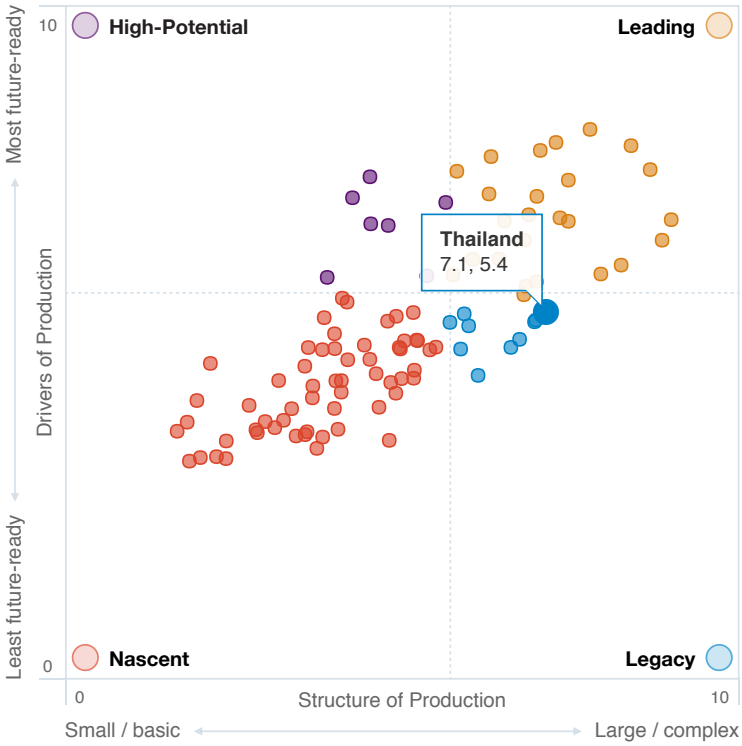
Drivers of Production 5.4

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	41st	**4.6**
Human Capital	20%	53rd	**5.0**
Global Trade & Investment	20%	20th	**6.7**
Institutional Framework	20%	51st	**5.0**
Sustainable Resources	5%	49th	**6.3**
Demand Environment	15%	28th	**5.8**

Structure of Production 7.1

Structure	Weighting	Rank	Score /10
Complexity	60%	33rd	**6.6**
Scale	40%	3rd	**7.9**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	33	6.6
1.01 Economic complexity (2.5) – 2.5 (best)	33	0.7
Structure: Scale 0-10 (best)	3	7.9
1.02 Manufacturing value added in economy % GDP	3	28.7
1.03 Manufacturing value added US$ millions	18	116,650.5
Driver: Technology & Innovation 0-10 (best)	41	4.6
Technology Platform 0-10 (best)	29	7.0
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 0-10 (best)	63	2.1
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 volume per size of economy US$/GDP	67	10.0
Driver: Human Capital 0-10 (best)	53	5.0
Current Labor Force 0-10 (best)	56	5.9
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 0-10 (best)	45	4.2
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

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	20	6.7
Trade 0-10 (best)	33	7.8
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 0-10 (best)	51	5.0
Government 0-10 (best)	51	5.0
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 0-10 (best)	49	6.3
Sustainability 0-10 (best)	49	6.3
6.01 Alternative and nuclear energy use % total energy use	56	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	78	0.6
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	62	0.2
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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 0-10 (best)	28	5.8
Foreign and Domestic Demand 0-10 (best)	18	6.9
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
7.03 Extent of market dominance 1-7 (best)	76	3.4

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Key economic indicators

Population millions	11.2	**GDP per capita** US$	3,730.4
GDP US$ billions	41.9	**Unemployment rate** %	14.0

Key production indicators

Manufacturing value added 2010 millions US$	7,835.6	**Manufacturing value added growth** Annual %	1.9
Manufacturing value added in economy % GDP	16.3	**Medium hi-tech & hi-tech industries** % of manu. value added	20.0
Manufacturing employment % working population	18.8	**CO2 emission per unit of value added** kg/USD	0.7

Readiness Overall Assessment

Drivers of Production 4.4

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	62nd	**4.0**
Human Capital	20%	80th	**4.1**
Global Trade & Investment	20%	68th	**4.6**
Institutional Framework	20%	52nd	**5.0**
Sustainable Resources	5%	64th	**5.7**
Demand Environment	15%	76th	**3.9**

Structure of Production 4.8

Structure	Weighting	Rank	Score /10
Complexity	60%	55th	**5.3**
Scale	40%	50th	**4.1**

Archetype

Tunisia

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	55	5.3
1.01 Economic complexity (2.5) – 2.5 (best)	55	0.1
Structure: Scale 0-10 (best)	50	4.1
1.02 Manufacturing value added in economy % GDP	29	16.3
1.03 Manufacturing value added US$ millions	64	7,835.6
Driver: Technology & Innovation 0-10 (best)	62	4.0
Technology Platform 0-10 (best)	58	6.0
2.01 Mobile-cellular telephone subscriptions /100 pop.	45	125.8
2.02 LTE mobile network coverage % population	62	73.0
2.03 Internet users % pop.	73	50.9
2.04 FDI and technology transfer 1-7 (best)	70	4.2
2.05 Firm-level technology absorption 1-7 (best)	93	4.0
2.06 Impact of ICTs on new services and products 1-7 (best)	60	4.5
2.07 Cybersecurity commitment 0–1 (best)	41	0.6
Ability to Innovate 0-10 (best)	73	1.9
2.08 State of cluster development 1-7 (best)	91	3.0
2.09 Company investment in emerging technology 1–7 (best)	78	3.2
2.10 Gov't procurement of advanced technology products 1-7 (best)	92	2.6
2.11 Companies embracing disruptive ideas 1-7 (best)	100	2.8
2.12 Multi-stakeholder collaboration 1-7 (best)	94	3.0
2.13 R&D expenditures % GDP	51	0.6
2.14 Scientific and technical publications Number per Billion PPP$ GDP	23	31.8
2.15 Patent applications applications/million pop.	69	0.28
2.16 Venture capital deal volume US$ millions	95	48.0
2.17 Venture capital deal volume per size of economy US$/GDP	96	1.1
Driver: Human Capital 0-10 (best)	80	4.1
Current Labor Force 0-10 (best)	75	5.2
3.01 Manufacturing employment % working population	8	18.8
3.02 Knowledge-intensive employment % working pop.	61	21.0
3.03 Female participation in labor force ratio	85	0.39
3.04 Mean years of schooling Years	86	6.7
3.05 Availability of scientists and engineers 1-7 (best)	40	4.4
3.06 Digital skills among population 1-7 (best)	53	4.3
Future Labor Force 0-10 (best)	77	3.1
3.07 Migration migrants/100,000 pop.	71	-2.9
3.08 Country capacity to attract and retain talent 1-7 (best)	84	2.5
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	38	4.6
3.11 Quality of vocational training 1-7 (best)	78	3.6
3.12 School life expectancy Years	52	14.8
3.13 Pupil-to-teacher ratio in primary education Ratio	37	15.8
3.14 Critical thinking in teaching 1-7 (best)	88	2.8
3.15 Active labor policies 1-7 (best)	71	3.0
3.16 On-the-job training 1-7 (best)	88	3.6
3.17 Hiring and firing practices 1-7 (best)	94	2.7

Index Component	Rank /100	Value
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$ billiions)	76	0.6
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	43	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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

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Key economic indicators

Population millions	79.8	**GDP per capita** US$	10,742.7
GDP US$ billions	857.4	**Unemployment rate** %	10.9

Key production indicators

Manufacturing value added 2010 millions US$	147,420.0	**Manufacturing value added growth** Annual %	3.3
Manufacturing value added in economy % GDP	15.8	**Medium hi-tech & hi-tech industries** % of manu. value added	29.9
Manufacturing employment % working population	18.7	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

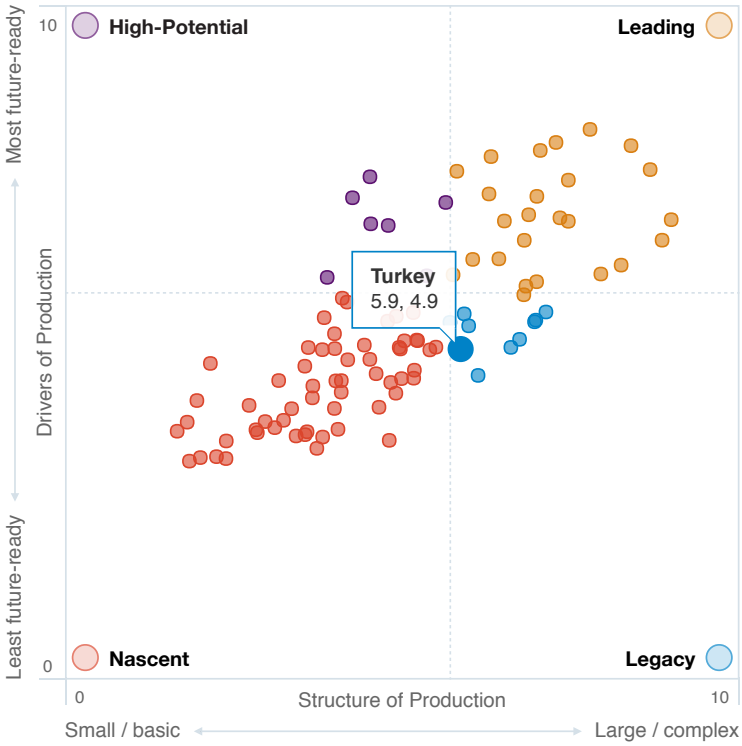
Drivers of Production 4.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	54th	**4.2**
Human Capital	20%	72nd	**4.5**
Global Trade & Investment	20%	57th	**5.1**
Institutional Framework	20%	64th	**4.8**
Sustainable Resources	5%	51st	**6.3**
Demand Environment	15%	26th	**5.8**

Structure of Production 5.9

Structure	Weighting	Rank	Score /10
Complexity	60%	42nd	**5.9**
Scale	40%	18th	**5.8**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	42	5.9
1.01 Economic complexity (2.5) – 2.5 (best)	42	0.4
Structure: Scale 0-10 (best)	18	5.8
1.02 Manufacturing value added in economy % GDP	34	15.8
1.03 Manufacturing value added US$ millions	16	147,420.0
Driver: Technology & Innovation 0-10 (best)	54	4.2
Technology Platform 0-10 (best)	46	6.3
2.01 Mobile-cellular telephone subscriptions /100 pop.	83	96.9
2.02 LTE mobile network coverage % population	53	82.5
2.03 Internet users % pop.	62	58.3
2.04 FDI and technology transfer 1-7 (best)	54	4.5
2.05 Firm-level technology absorption 1-7 (best)	42	4.8
2.06 Impact of ICTs on new services and products 1-7 (best)	48	4.8
2.07 Cybersecurity commitment 0–1 (best)	44	0.6
Ability to Innovate 0-10 (best)	62	2.1
2.08 State of cluster development 1-7 (best)	51	3.8
2.09 Company investment in emerging technology 1–7 (best)		-
2.10 Gov't procurement of advanced technology products 1-7 (best)	49	3.4
2.11 Companies embracing disruptive ideas 1-7 (best)	92	3.0
2.12 Multi-stakeholder collaboration 1-7 (best)	67	3.5
2.13 R&D expenditures % GDP	52	0.6
2.14 Scientific and technical publications Number per Billion PPP$ GDP	37	17.5
2.15 Patent applications applications/million pop.	47	2.17
2.16 Venture capital deal volume US$ millions	35	7,175.1
2.17 Venture capital deal volume per size of economy US$/GDP	70	8.1
Driver: Human Capital 0-10 (best)	72	4.5
Current Labor Force 0-10 (best)	74	5.2
3.01 Manufacturing employment % working population	10	18.7
3.02 Knowledge-intensive employment % working pop.	64	20.5
3.03 Female participation in labor force ratio	84	0.40
3.04 Mean years of schooling Years	72	8.1
3.05 Availability of scientists and engineers 1-7 (best)	45	4.3
3.06 Digital skills among population 1-7 (best)		-
Future Labor Force 0-10 (best)	57	3.7
3.07 Migration migrants/100,000 pop.	40	4.4
3.08 Country capacity to attract and retain talent 1-7 (best)	75	2.9
3.09 Quality of universities Count	18	11.0
3.10 Quality of math and science education 1-7 (best)	80	3.3
3.11 Quality of vocational training 1-7 (best)	97	3.2
3.12 School life expectancy Years	16	17.2
3.13 Pupil-to-teacher ratio in primary education Ratio	64	19.3
3.14 Critical thinking in teaching 1-7 (best)	100	2.3
3.15 Active labor policies 1-7 (best)	56	3.3
3.16 On-the-job training 1-7 (best)	79	3.8
3.17 Hiring and firing practices 1-7 (best)	60	3.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	57	5.1
Trade 0-10 (best)	76	4.7
4.01 Trade % GDP	78	47.1
4.02 Trade tariffs % duty	67	0.06
4.03 Prevalence of non-tariff barriers 1-7 (best)	39	4.6
4.04 Logistics performance 1 – 5 (best)	34	3.4
Investment 0-10 (best)	28	3.9
4.05 Greenfield investments US$ millions	19	10,023.8
4.06 FDI inflows US$ millions	22	13,239.4
4.07 Domestic credit to private sector % GDP	41	69.9
Infrastructure 0-10 (best)	44	6.7
4.08 Transport infrastructure 0-100 (best)	24	61.7
4.09 Electricity infrastructure 0-100 (best)	73	73.1
Driver: Institutional Framework 0-10 (best)	64	4.8
Government 0-10 (best)	64	4.8
5.01 Regulatory efficiency 0 – 100 (best)	79	61.7
5.02 Incidence of corruption 0-100 (best)	54	41.0
5.03 Future orientation of government 1-7 (best)	39	3.9
5.04 Rule of law (2.5) - 2.0 (best)	64	-0.2
Driver: Sustainable Resources 0-10 (best)	51	6.3
Sustainability 0-10 (best)	51	6.3
6.01 Alternative and nuclear energy use % total energy use	72	0.1
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	53	0.4
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	33	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	36	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	62	3.0
6.06 Wastewater treatment 0 – 5 (worst)	49	79.0
Driver: Demand Environment 0-10 (best)	26	5.8
Foreign and Domestic Demand 0-10 (best)	14	7.3
7.01 Market size 0-100 (best)	14	72.6
Consumer Base 0-10 (best)	50	4.4
7.02 Buyer sophistication 1-7 (best)	54	3.4
7.03 Extent of market dominance 1-7 (best)	49	3.8

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Key economic indicators

Population millions	41.1	**GDP per capita** US$	637.6
GDP US$ billions	26.2		

Key production indicators

Manufacturing value added 2010 millions US$	2,254.6	**Manufacturing value added growth** Annual %	5.1
Manufacturing value added in economy % GDP	8.7	**Medium hi-tech & hi-tech industries** % of manu. value added	11.1
Manufacturing employment % working population	4.4		

Readiness Overall Assessment

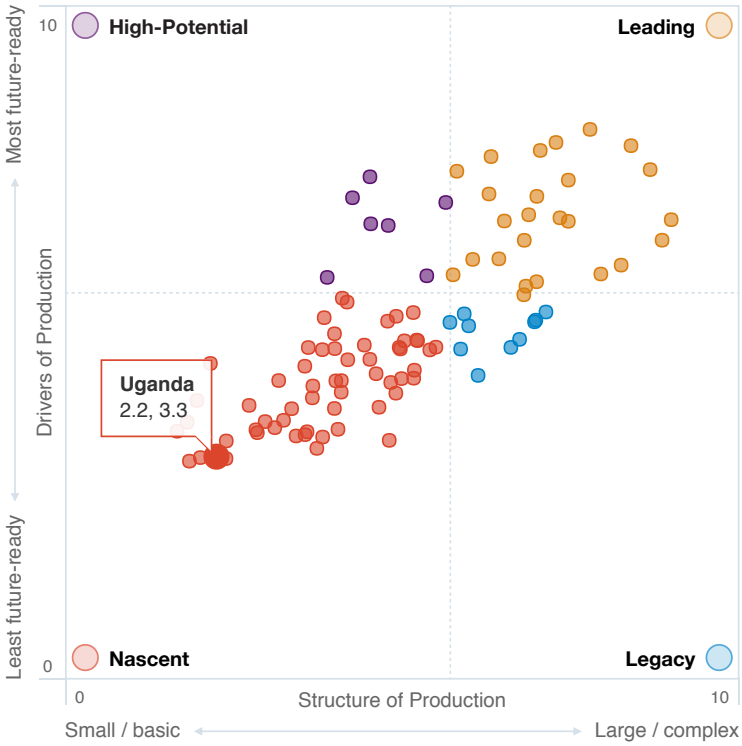
Drivers of Production 3.3

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	87th	**3.2**
Human Capital	20%	99th	**3.0**
Global Trade & Investment	20%	99th	**2.0**
Institutional Framework	20%	71st	**4.5**
Sustainable Resources	5%	65th	**5.7**
Demand Environment	15%	95th	**3.2**

Structure of Production 2.2

Structure	Weighting	Rank	Score /10
Complexity	60%	96th	**2.4**
Scale	40%	88th	**2.1**

Archetype



Uganda

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	96	2.4
1.01 Economic complexity (2.5) – 2.5 (best)	96	-1.2
Structure: Scale 0-10 (best)	88	2.1
1.02 Manufacturing value added in economy % GDP	83	8.7
1.03 Manufacturing value added US$ millions	87	2,254.6
Driver: Technology & Innovation 0-10 (best)	87	3.2
Technology Platform 0-10 (best)	88	4.5
2.01 Mobile-cellular telephone subscriptions /100 pop.	99	55.1
2.02 LTE mobile network coverage % population	89	15.0
2.03 Internet users % pop.	96	21.9
2.04 FDI and technology transfer 1-7 (best)	69	4.2
2.05 Firm-level technology absorption 1-7 (best)	89	4.0
2.06 Impact of ICTs on new services and products 1-7 (best)	83	4.1
2.07 Cybersecurity commitment 0–1 (best)	53	0.5
Ability to Innovate 0-10 (best)	79	1.8
2.08 State of cluster development 1-7 (best)	68	3.6
2.09 Company investment in emerging technology 1–7 (best)	73	3.3
2.10 Gov't procurement of advanced technology products 1-7 (best)	37	3.5
2.11 Companies embracing disruptive ideas 1-7 (best)	50	3.6
2.12 Multi-stakeholder collaboration 1-7 (best)	52	3.6
2.13 R&D expenditures % GDP	63	0.5
2.14 Scientific and technical publications Number per Billion PPP$ GDP	52	12.0
2.15 Patent applications applications/million pop.	95	0.01
2.16 Venture capital deal volume US$ millions	92	72.9
2.17 Venture capital deal volume per size of economy US$/GDP	88	2.7
Driver: Human Capital 0-10 (best)	99	3.0
Current Labor Force 0-10 (best)	98	3.4
3.01 Manufacturing employment % working population	94	4.4
3.02 Knowledge-intensive employment % working pop.	88	4.1
3.03 Female participation in labor force ratio	74	0.51
3.04 Mean years of schooling Years	96	5.1
3.05 Availability of scientists and engineers 1-7 (best)	53	4.1
3.06 Digital skills among population 1-7 (best)	85	3.6
Future Labor Force 0-10 (best)	99	2.6
3.07 Migration migrants/100,000 pop.	73	-3.8
3.08 Country capacity to attract and retain talent 1-7 (best)	70	3.0
3.09 Quality of universities Count	62	1.0
3.10 Quality of math and science education 1-7 (best)	85	3.1
3.11 Quality of vocational training 1-7 (best)	91	3.4
3.12 School life expectancy Years	94	10.0
3.13 Pupil-to-teacher ratio in primary education Ratio	96	45.6
3.14 Critical thinking in teaching 1-7 (best)	89	2.8
3.15 Active labor policies 1-7 (best)	95	2.4
3.16 On-the-job training 1-7 (best)	67	3.9
3.17 Hiring and firing practices 1-7 (best)	31	4.2

Index Component	Rank /100	Value
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$ billiions)	21	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	90	0.5
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	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
Consumer Base 0-10 (best)	98	2.8
7.02 Buyer sophistication 1-7 (best)	98	2.5
7.03 Extent of market dominance 1-7 (best)	98	2.9

Ukraine

Nascent

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	42.5	**GDP per capita** US$	2,194.4
GDP US$ billions	93.3	**Unemployment rate** %	9.3

Key production indicators

Manufacturing value added 2010 millions US$	15,620.8	**Manufacturing value added growth** Annual %	1.8
Manufacturing value added in economy % GDP	12.3	**Medium hi-tech & hi-tech industries** % of manu. value added	30.4
Manufacturing employment % working population	12.6	**CO2 emission per unit of value added** kg/USD	3.0

Readiness Overall Assessment

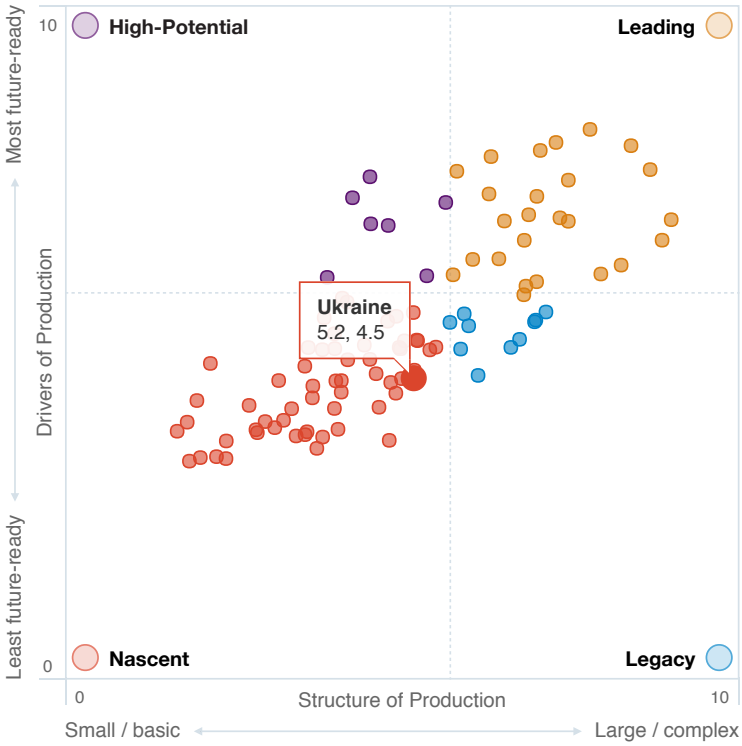
Drivers of Production 4.5

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	74th	**3.5**
Human Capital	20%	34th	**5.8**
Global Trade & Investment	20%	59th	**5.1**
Institutional Framework	20%	94th	**3.4**
Sustainable Resources	5%	88th	**4.6**
Demand Environment	15%	58th	**4.5**

Structure of Production 5.2

Structure	Weighting	Rank	Score /10
Complexity	60%	41st	**6.0**
Scale	40%	57th	**3.9**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	41	6.0
1.01 Economic complexity (2.5) – 2.5 (best)	41	0.5
Structure: Scale 0-10 (best)	57	3.9
1.02 Manufacturing value added in economy % GDP	51	12.3
1.03 Manufacturing value added US$ millions	55	15,620.8
Driver: Technology & Innovation 0-10 (best)	74	3.5
Technology Platform 0-10 (best)	75	5.0
2.01 Mobile-cellular telephone subscriptions /100 pop.	32	132.6
2.02 LTE mobile network coverage % population	98	1.4
2.03 Internet users % pop.	71	52.5
2.04 FDI and technology transfer 1-7 (best)	95	3.5
2.05 Firm-level technology absorption 1-7 (best)	71	4.3
2.06 Impact of ICTs on new services and products 1-7 (best)	92	4.0
2.07 Cybersecurity commitment 0–1 (best)	59	0.5
Ability to Innovate 0-10 (best)	68	2.0
2.08 State of cluster development 1-7 (best)	87	3.1
2.09 Company investment in emerging technology 1–7 (best)	60	3.5
2.10 Gov't procurement of advanced technology products 1-7 (best)	72	3.0
2.11 Companies embracing disruptive ideas 1-7 (best)	72	3.2
2.12 Multi-stakeholder collaboration 1-7 (best)	47	3.7
2.13 R&D expenditures % GDP	50	0.7
2.14 Scientific and technical publications Number per Billion PPP$ GDP	51	12.2
2.15 Patent applications applications/million pop.	58	1.08
2.16 Venture capital deal volume US$ millions	56	1,643.5
2.17 Venture capital deal volume per size of economy US$/GDP	53	15.5
Driver: Human Capital 0-10 (best)	34	5.8
Current Labor Force 0-10 (best)	20	7.8
3.01 Manufacturing employment % working population	41	12.6
3.02 Knowledge-intensive employment % working pop.	26	37.6
3.03 Female participation in labor force ratio	6	1.00
3.04 Mean years of schooling Years	34	11.3
3.05 Availability of scientists and engineers 1-7 (best)	24	4.7
3.06 Digital skills among population 1-7 (best)	32	4.7
Future Labor Force 0-10 (best)	52	3.8
3.07 Migration migrants/100,000 pop.	51	-0.9
3.08 Country capacity to attract and retain talent 1-7 (best)	90	2.4
3.09 Quality of universities Count	38	6.0
3.10 Quality of math and science education 1-7 (best)	24	4.8
3.11 Quality of vocational training 1-7 (best)	43	4.3
3.12 School life expectancy Years	41	15.3
3.13 Pupil-to-teacher ratio in primary education Ratio	46	16.9
3.14 Critical thinking in teaching 1-7 (best)	32	3.8
3.15 Active labor policies 1-7 (best)	45	3.7
3.16 On-the-job training 1-7 (best)	65	4.0
3.17 Hiring and firing practices 1-7 (best)	42	4.0

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	59	5.1
Trade 0-10 (best)	30	7.8
4.01 Trade % GDP	29	104.8
4.02 Trade tariffs % duty	39	0.03
4.03 Prevalence of non-tariff barriers 1-7 (best)	97	3.8
4.04 Logistics performance 1 – 5 (best)	71	2.8
Investment 0-10 (best)	70	1.5
4.05 Greenfield investments US$ millions	53	2,212.6
4.06 FDI inflows US$ millions	46	3,921.4
4.07 Domestic credit to private sector % GDP	64	47.3
Infrastructure 0-10 (best)	66	6.0
4.08 Transport infrastructure 0-100 (best)	74	38.2
4.09 Electricity infrastructure 0-100 (best)	51	82.3
Driver: Institutional Framework 0-10 (best)	94	3.4
Government 0-10 (best)	94	3.4
5.01 Regulatory efficiency 0 – 100 (best)	99	52.8
5.02 Incidence of corruption 0-100 (best)	89	29.0
5.03 Future orientation of government 1-7 (best)	91	2.7
5.04 Rule of law (2.5) - 2.0 (best)	90	-0.8
Driver: Sustainable Resources 0-10 (best)	88	4.6
Sustainability 0-10 (best)	88	4.6
6.01 Alternative and nuclear energy use % total energy use	50	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	99	1.8
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	93	0.6
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	87	0.2
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	54	2.1
6.06 Wastewater treatment 0 – 5 (worst)	58	73.3
Driver: Demand Environment 0-10 (best)	58	4.5
Foreign and Domestic Demand 0-10 (best)	45	5.4
7.01 Market size 0-100 (best)	45	54.5
Consumer Base 0-10 (best)	85	3.6
7.02 Buyer sophistication 1-7 (best)	78	3.1
7.03 Extent of market dominance 1-7 (best)	83	3.2

United Arab Emirates

High Potential

Readiness for the Future of Production Assessment 2018 edition

WORLD ECONOMIC FORUM

Key economic indicators

Population millions	9.9	**GDP per capita** US$	37,677.9
GDP US$ billions	371.4		

Key production indicators

Manufacturing value added 2010 millions US$	33,359.6	**Manufacturing value added growth** Annual %	2.0
Manufacturing value added in economy % GDP	8.9	**Medium hi-tech & hi-tech industries** % of manu. value added	12.6
Manufacturing employment % working population	8.7	**CO2 emission per unit of value added** kg/USD	2.1

Readiness Overall Assessment

Drivers of Production 6.8

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	20th	**6.3**
Human Capital	20%	19th	**6.6**
Global Trade & Investment	20%	11th	**7.2**
Institutional Framework	20%	19th	**7.5**
Sustainable Resources	5%	70th	**5.4**
Demand Environment	15%	11th	**6.5**

Structure of Production 4.5

Structure	Weighting	Rank	Score /10
Complexity	60%	58th	**5.0**
Scale	40%	59th	**3.8**

Archetype

United Arab Emirates

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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	58	5.0
1.01 Economic complexity (2.5) – 2.5 (best)	58	0.0
Structure: Scale 0-10 (best)	59	3.8
1.02 Manufacturing value added in economy % GDP	81	9.2
1.03 Manufacturing value added US$ millions	42	33,359.6
Driver: Technology & Innovation 0-10 (best)	20	6.3
Technology Platform 0-10 (best)	22	7.5
2.01 Mobile-cellular telephone subscriptions /100 pop.	3	204.0
2.02 LTE mobile network coverage % population	21	98.0
2.03 Internet users % pop.	9	90.6
2.04 FDI and technology transfer 1-7 (best)	3	5.6
2.05 Firm-level technology absorption 1-7 (best)	9	5.7
2.06 Impact of ICTs on new services and products 1-7 (best)	10	5.7
2.07 Cybersecurity commitment 0–1 (best)	50	0.6
Ability to Innovate 0-10 (best)	22	5.0
2.08 State of cluster development 1-7 (best)	2	5.4
2.09 Company investment in emerging technology 1–7 (best)	3	5.6
2.10 Gov't procurement of advanced technology products 1-7 (best)	1	5.5
2.11 Companies embracing disruptive ideas 1-7 (best)	9	4.6
2.12 Multi-stakeholder collaboration 1-7 (best)	17	4.8
2.13 R&D expenditures % GDP	41	0.9
2.14 Scientific and technical publications Number per Billion PPP$ GDP	83	3.5
2.15 Patent applications applications/million pop.	41	3.19
2.16 Venture capital deal volume US$ millions	10	72,794.2
2.17 Venture capital deal volume per size of economy US$/GDP	2	196.8
Driver: Human Capital 0-10 (best)	19	6.6
Current Labor Force 0-10 (best)	51	6.1
3.01 Manufacturing employment % working population	77	8.7
3.02 Knowledge-intensive employment % working pop.	28	36.1
3.03 Female participation in labor force ratio	98	0.14
3.04 Mean years of schooling Years	57	9.5
3.05 Availability of scientists and engineers 1-7 (best)	3	5.4
3.06 Digital skills among population 1-7 (best)	9	5.6
Future Labor Force 0-10 (best)	5	7.2
3.07 Migration migrants/100,000 pop.	6	56.1
3.08 Country capacity to attract and retain talent 1-7 (best)	2	6.0
3.09 Quality of universities Count	38	6.0
3.10 Quality of math and science education 1-7 (best)	13	5.3
3.11 Quality of vocational training 1-7 (best)	19	4.9
3.12 School life expectancy Years	66	13.3
3.13 Pupil-to-teacher ratio in primary education Ratio	74	23.6
3.14 Critical thinking in teaching 1-7 (best)	8	5.1
3.15 Active labor policies 1-7 (best)	14	4.8
3.16 On-the-job training 1-7 (best)	21	5.2
3.17 Hiring and firing practices 1-7 (best)	4	5.5

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	11	7.2
Trade 0-10 (best)	9	8.7
4.01 Trade % GDP	4	205.3
4.02 Trade tariffs % duty	50	0.04
4.03 Prevalence of non-tariff barriers 1-7 (best)	5	5.6
4.04 Logistics performance 1 – 5 (best)	12	3.9
Investment 0-10 (best)	27	4.2
4.05 Greenfield investments US$ millions	20	9,979.7
4.06 FDI inflows US$ millions	29	9,820.9
4.07 Domestic credit to private sector % GDP	31	85.9
Infrastructure 0-10 (best)	7	8.6
4.08 Transport infrastructure 0-100 (best)	9	82.1
4.09 Electricity infrastructure 0-100 (best)	36	90.5
Driver: Institutional Framework 0-10 (best)	19	7.5
Government 0-10 (best)	19	7.5
5.01 Regulatory efficiency 0 – 100 (best)	12	80.1
5.02 Incidence of corruption 0-100 (best)	22	66.0
5.03 Future orientation of government 1-7 (best)	2	6.1
5.04 Rule of law (2.5) - 2.0 (best)	30	0.9
Driver: Sustainable Resources 0-10 (best)	70	5.4
Sustainability 0-10 (best)	70	5.4
6.01 Alternative and nuclear energy use % total energy use	93	0.0
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	65	0.5
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	35	0.1
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	27	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	94	5.0
6.06 Wastewater treatment 0 – 5 (worst)	14	94.6
Driver: Demand Environment 0-10 (best)	11	6.5
Foreign and Domestic Demand 0-10 (best)	26	6.4
7.01 Market size 0-100 (best)	26	64.1
Consumer Base 0-10 (best)	5	6.6
7.02 Buyer sophistication 1-7 (best)	5	4.9
7.03 Extent of market dominance 1-7 (best)	9	5.0

United Kingdom

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	65.6	**GDP per capita** US$	40,095.9
GDP US$ billions	2,629.2	**Unemployment rate** %	4.9

Key production indicators

Manufacturing value added 2010 millions US$	226,271.1	**Manufacturing value added growth** Annual %	-0.4
Manufacturing value added in economy % GDP	8.3	**Medium hi-tech & hi-tech industries** % of manu. value added	47.4
Manufacturing employment % working population	9.6	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

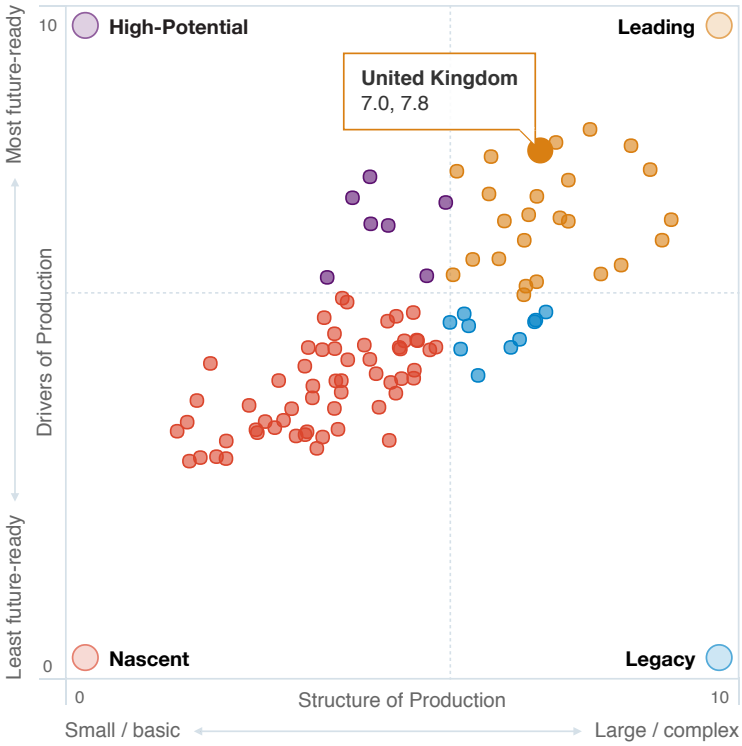
Drivers of Production 7.8

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	2nd	**8.0**
Human Capital	20%	8th	**7.5**
Global Trade & Investment	20%	4th	**8.3**
Institutional Framework	20%	13th	**8.2**
Sustainable Resources	5%	22nd	**7.4**
Demand Environment	15%	6th	**7.1**

Structure of Production 7.0

Structure	Weighting	Rank	Score /10
Complexity	60%	8th	**8.6**
Scale	40%	37th	**4.7**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	8	8.6
1.01 Economic complexity (2.5) – 2.5 (best)	8	1.6
Structure: Scale 0-10 (best)	37	4.7
1.02 Manufacturing value added in economy % GDP	84	8.3
1.03 Manufacturing value added US$ millions	10	226,271.1
Driver: Technology & Innovation 0-10 (best)	2	8.0
Technology Platform 0-10 (best)	5	8.3
2.01 Mobile-cellular telephone subscriptions /100 pop.	50	122.3
2.02 LTE mobile network coverage % population	11	99.0
2.03 Internet users % pop.	4	94.8
2.04 FDI and technology transfer 1-7 (best)	6	5.5
2.05 Firm-level technology absorption 1-7 (best)	11	5.6
2.06 Impact of ICTs on new services and products 1-7 (best)	4	5.9
2.07 Cybersecurity commitment 0–1 (best)	14	0.8
Ability to Innovate 0-10 (best)	2	7.8
2.08 State of cluster development 1-7 (best)	5	5.4
2.09 Company investment in emerging technology 1–7 (best)	9	5.2
2.10 Gov't procurement of advanced technology products 1-7 (best)	21	3.9
2.11 Companies embracing disruptive ideas 1-7 (best)	7	4.7
2.12 Multi-stakeholder collaboration 1-7 (best)	10	5.0
2.13 R&D expenditures % GDP	24	1.7
2.14 Scientific and technical publications Number per Billion PPP$ GDP	13	41.6
2.15 Patent applications applications/million pop.	17	84.36
2.16 Venture capital deal volume US$ millions	2	413,438.1
2.17 Venture capital deal volume per size of economy US$/GDP	4	146.3
Driver: Human Capital 0-10 (best)	8	7.5
Current Labor Force 0-10 (best)	13	8.2
3.01 Manufacturing employment % working population	72	9.6
3.02 Knowledge-intensive employment % working pop.	6	47.6
3.03 Female participation in labor force ratio	16	0.96
3.04 Mean years of schooling Years	10	12.7
3.05 Availability of scientists and engineers 1-7 (best)	17	4.9
3.06 Digital skills among population 1-7 (best)	31	4.7
Future Labor Force 0-10 (best)	9	6.7
3.07 Migration migrants/100,000 pop.	22	13.8
3.08 Country capacity to attract and retain talent 1-7 (best)	5	5.7
3.09 Quality of universities Count	2	78.0
3.10 Quality of math and science education 1-7 (best)	36	4.6
3.11 Quality of vocational training 1-7 (best)	28	4.6
3.12 School life expectancy Years	9	17.9
3.13 Pupil-to-teacher ratio in primary education Ratio	50	17.4
3.14 Critical thinking in teaching 1-7 (best)	12	5.0
3.15 Active labor policies 1-7 (best)	27	4.2
3.16 On-the-job training 1-7 (best)	16	5.4
3.17 Hiring and firing practices 1-7 (best)	7	5.1

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	4	8.3
Trade 0-10 (best)	52	6.4
4.01 Trade % GDP	70	58.1
4.02 Trade tariffs % duty	10	0.01
4.03 Prevalence of non-tariff barriers 1-7 (best)	10	5.2
4.04 Logistics performance 1 – 5 (best)	8	4.1
Investment 0-10 (best)	1	10.0
4.05 Greenfield investments US$ millions	3	45,273.8
4.06 FDI inflows US$ millions	4	89,769.3
4.07 Domestic credit to private sector % GDP	15	134.4
Infrastructure 0-10 (best)	10	8.5
4.08 Transport infrastructure 0-100 (best)	10	82.0
4.09 Electricity infrastructure 0-100 (best)	40	87.9
Driver: Institutional Framework 0-10 (best)	13	8.2
Government 0-10 (best)	13	8.2
5.01 Regulatory efficiency 0 – 100 (best)	8	82.6
5.02 Incidence of corruption 0-100 (best)	10	81.0
5.03 Future orientation of government 1-7 (best)	21	4.5
5.04 Rule of law (2.5) - 2.0 (best)	14	1.6
Driver: Sustainable Resources 0-10 (best)	22	7.4
Sustainability 0-10 (best)	22	7.4
6.01 Alternative and nuclear energy use % total energy use	61	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	8	0.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	10	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	14	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	56	2.6
6.06 Wastewater treatment 0 – 5 (worst)	3	98.9
Driver: Demand Environment 0-10 (best)	6	7.1
Foreign and Domestic Demand 0-10 (best)	7	7.7
7.01 Market size 0-100 (best)	7	77.2
Consumer Base 0-10 (best)	6	6.5
7.02 Buyer sophistication 1-7 (best)	8	4.8
7.03 Extent of market dominance 1-7 (best)	12	5.0

United States

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Key economic indicators

Population millions	323.3	**GDP per capita** US$	57,436.4
GDP US$ billions	18,569.1	**Unemployment rate** %	4.9

Key production indicators

Manufacturing value added 2010 millions US$	1,968,888.7	**Manufacturing value added growth** Annual %	0.8
Manufacturing value added in economy % GDP	11.7	**Medium hi-tech & hi-tech industries** % of manu. value added	41.2
Manufacturing employment % working population	10.2	**CO2 emission per unit of value added** kg/USD	0.2

Readiness Overall Assessment

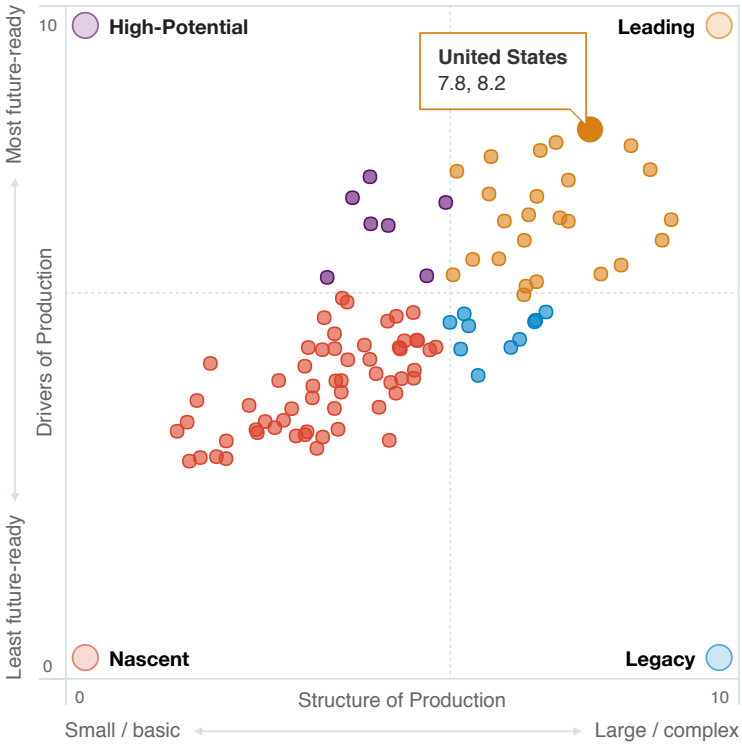
Drivers of Production 8.2

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	1st	**8.5**
Human Capital	20%	3rd	**7.9**
Global Trade & Investment	20%	5th	**7.7**
Institutional Framework	20%	9th	**8.6**
Sustainable Resources	5%	37th	**6.7**
Demand Environment	15%	1st	**8.5**

Structure of Production 7.8

Structure	Weighting	Rank	Score /10
Complexity	60%	8th	**8.6**
Scale	40%	10th	**6.6**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	8	8.6
1.01 Economic complexity (2.5) – 2.5 (best)	8	1.6
Structure: Scale 0-10 (best)	10	6.6
1.02 Manufacturing value added in economy % GDP	60	11.7
1.03 Manufacturing value added US$ millions	2	1,968,888.7
Driver: Technology & Innovation 0-10 (best)	1	8.5
Technology Platform 0-10 (best)	2	8.7
2.01 Mobile-cellular telephone subscriptions /100 pop.	42	127.2
2.02 LTE mobile network coverage % population	8	99.7
2.03 Internet users % pop.	35	76.2
2.04 FDI and technology transfer 1-7 (best)	4	5.6
2.05 Firm-level technology absorption 1-7 (best)	2	6.0
2.06 Impact of ICTs on new services and products 1-7 (best)	8	5.8
2.07 Cybersecurity commitment 0–1 (best)	2	0.9
Ability to Innovate 0-10 (best)	1	8.3
2.08 State of cluster development 1-7 (best)	1	5.7
2.09 Company investment in emerging technology 1–7 (best)	1	6.0
2.10 Gov't procurement of advanced technology products 1-7 (best)	2	5.1
2.11 Companies embracing disruptive ideas 1-7 (best)	1	5.3
2.12 Multi-stakeholder collaboration 1-7 (best)	1	5.6
2.13 R&D expenditures % GDP	10	2.7
2.14 Scientific and technical publications Number per Billion PPP$ GDP	34	19.8
2.15 Patent applications applications/million pop.	11	124.71
2.16 Venture capital deal volume US$ millions	1	2,121,482.0
2.17 Venture capital deal volume per size of economy US$/GDP	8	117.9
Driver: Human Capital 0-10 (best)	3	7.9
Current Labor Force 0-10 (best)	5	8.5
3.01 Manufacturing employment % working population	68	10.3
3.02 Knowledge-intensive employment % working pop.	24	38.0
3.03 Female participation in labor force ratio	31	0.89
3.04 Mean years of schooling Years	3	13.5
3.05 Availability of scientists and engineers 1-7 (best)	2	5.7
3.06 Digital skills among population 1-7 (best)	1	6.0
Future Labor Force 0-10 (best)	4	7.3
3.07 Migration migrants/100,000 pop.	19	15.6
3.08 Country capacity to attract and retain talent 1-7 (best)	3	5.8
3.09 Quality of universities Count	1	159.0
3.10 Quality of math and science education 1-7 (best)	10	5.4
3.11 Quality of vocational training 1-7 (best)	7	5.4
3.12 School life expectancy Years	18	16.5
3.13 Pupil-to-teacher ratio in primary education Ratio	34	14.5
3.14 Critical thinking in teaching 1-7 (best)	7	5.2
3.15 Active labor policies 1-7 (best)	7	5.1
3.16 On-the-job training 1-7 (best)	4	5.7
3.17 Hiring and firing practices 1-7 (best)	5	5.4

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	5	7.7
Trade 0-10 (best)	80	4.4
4.01 Trade % GDP	96	28.0
4.02 Trade tariffs % duty	32	0.02
4.03 Prevalence of non-tariff barriers 1-7 (best)	12	5.2
4.04 Logistics performance 1 – 5 (best)	9	4.0
Investment 0-10 (best)	1	10.0
4.05 Greenfield investments US$ millions	2	65,528.8
4.06 FDI inflows US$ millions	1	255,508.0
4.07 Domestic credit to private sector % GDP	4	192.2
Infrastructure 0-10 (best)	6	8.8
4.08 Transport infrastructure 0-100 (best)	6	83.0
4.09 Electricity infrastructure 0-100 (best)	20	93.4
Driver: Institutional Framework 0-10 (best)	9	8.6
Government 0-10 (best)	9	8.6
5.01 Regulatory efficiency 0 – 100 (best)	6	85.2
5.02 Incidence of corruption 0-100 (best)	16	74.0
5.03 Future orientation of government 1-7 (best)	3	5.7
5.04 Rule of law (2.5) - 2.0 (best)	13	1.7
Driver: Sustainable Resources 0-10 (best)	37	6.7
Sustainability 0-10 (best)	37	6.7
6.01 Alternative and nuclear energy use % total energy use	60	0.2
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	45	0.3
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	22	0.0
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	23	0.0
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	58	2.9
6.06 Wastewater treatment 0 – 5 (worst)	39	84.2
Driver: Demand Environment 0-10 (best)	1	8.5
Foreign and Domestic Demand 0-10 (best)	2	9.8
7.01 Market size 0-100 (best)	2	98.0
Consumer Base 0-10 (best)	3	7.3
7.02 Buyer sophistication 1-7 (best)	1	5.3
7.03 Extent of market dominance 1-7 (best)	3	5.5

Uruguay

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Key economic indicators

Population millions	3.5	**GDP per capita** US$	15,679.2
GDP US$ billions	54.6	**Unemployment rate** %	7.9

Key production indicators

Manufacturing value added 2010 millions US$	5,617.1	**Manufacturing value added growth** Annual %	-1.0
Manufacturing value added in economy % GDP	11.7	**Medium hi-tech & hi-tech industries** % of manu. value added	15.3
Manufacturing employment % working population	11.1	**CO2 emission per unit of value added** kg/USD	0.1

Readiness Overall Assessment

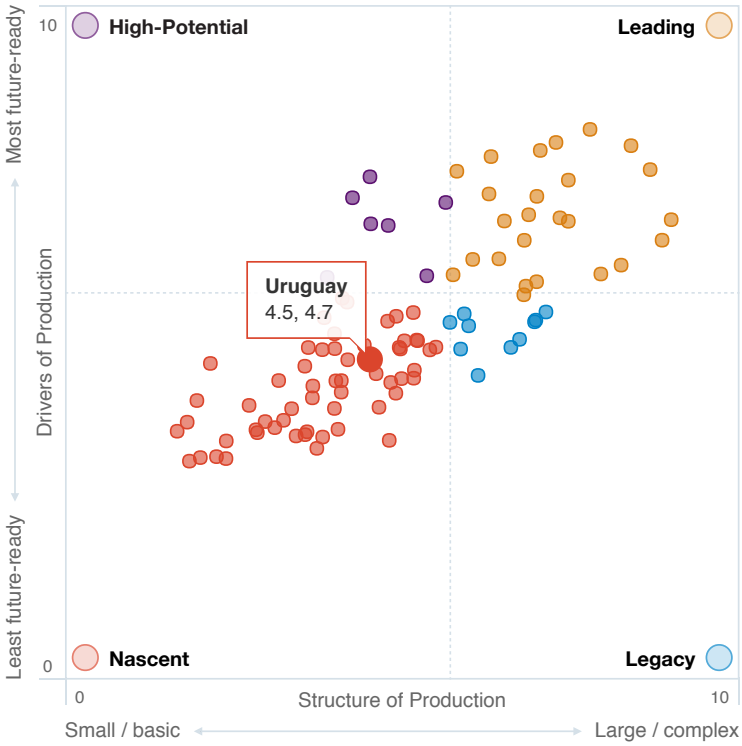
Drivers of Production 4.7

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	47th	**4.5**
Human Capital	20%	61st	**4.8**
Global Trade & Investment	20%	85th	**3.6**
Institutional Framework	20%	34th	**6.4**
Sustainable Resources	5%	38th	**6.7**
Demand Environment	15%	80th	**3.8**

Structure of Production 4.5

Structure	Weighting	Rank	Score /10
Complexity	60%	49th	**5.4**
Scale	40%	73rd	**3.1**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	49	5.4
1.01 Economic complexity (2.5) – 2.5 (best)	49	0.2
Structure: Scale 0-10 (best)	73	3.1
1.02 Manufacturing value added in economy % GDP	59	11.7
1.03 Manufacturing value added US$ millions	71	5,617.1
Driver: Technology & Innovation 0-10 (best)	47	4.5
Technology Platform 0-10 (best)	33	6.8
2.01 Mobile-cellular telephone subscriptions /100 pop.	16	148.7
2.02 LTE mobile network coverage % population	44	88.0
2.03 Internet users % pop.	50	66.4
2.04 FDI and technology transfer 1-7 (best)	35	4.8
2.05 Firm-level technology absorption 1-7 (best)	59	4.4
2.06 Impact of ICTs on new services and products 1-7 (best)	37	5.0
2.07 Cybersecurity commitment 0–1 (best)	32	0.6
Ability to Innovate 0-10 (best)	60	2.1
2.08 State of cluster development 1-7 (best)	83	3.3
2.09 Company investment in emerging technology 1–7 (best)	82	3.1
2.10 Gov't procurement of advanced technology products 1-7 (best)	80	2.8
2.11 Companies embracing disruptive ideas 1-7 (best)	88	3.1
2.12 Multi-stakeholder collaboration 1-7 (best)	75	3.4
2.13 R&D expenditures % GDP	25	1.7
2.14 Scientific and technical publications Number per Billion PPP$ GDP	48	13.2
2.15 Patent applications applications/million pop.	50	1.51
2.16 Venture capital deal volume US$ millions	89	97.6
2.17 Venture capital deal volume per size of economy US$/GDP	93	1.8
Driver: Human Capital 0-10 (best)	61	4.8
Current Labor Force 0-10 (best)	49	6.1
3.01 Manufacturing employment % working population	58	11.1
3.02 Knowledge-intensive employment % working pop.	61	21.0
3.03 Female participation in labor force ratio	45	0.81
3.04 Mean years of schooling Years	67	8.7
3.05 Availability of scientists and engineers 1-7 (best)	87	3.5
3.06 Digital skills among population 1-7 (best)	39	4.6
Future Labor Force 0-10 (best)	61	3.6
3.07 Migration migrants/100,000 pop.	84	-8.7
3.08 Country capacity to attract and retain talent 1-7 (best)	72	3.0
3.09 Quality of universities Count	53	2.0
3.10 Quality of math and science education 1-7 (best)	89	3.0
3.11 Quality of vocational training 1-7 (best)	29	4.6
3.12 School life expectancy Years	46	15.0
3.13 Pupil-to-teacher ratio in primary education Ratio	13	11.5
3.14 Critical thinking in teaching 1-7 (best)	74	3.0
3.15 Active labor policies 1-7 (best)	42	3.7
3.16 On-the-job training 1-7 (best)	55	4.2
3.17 Hiring and firing practices 1-7 (best)	91	2.8

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	85	3.6
Trade 0-10 (best)	86	3.9
4.01 Trade % GDP	83	41.5
4.02 Trade tariffs % duty	78	0.08
4.03 Prevalence of non-tariff barriers 1-7 (best)	52	4.4
4.04 Logistics performance 1 – 5 (best)	59	3.0
Investment 0-10 (best)	92	0.6
4.05 Greenfield investments US$ millions	78	840.6
4.06 FDI inflows US$ millions	57	2,071.2
4.07 Domestic credit to private sector % GDP	88	28.2
Infrastructure 0-10 (best)	58	6.3
4.08 Transport infrastructure 0-100 (best)	66	41.3
4.09 Electricity infrastructure 0-100 (best)	46	84.6
Driver: Institutional Framework 0-10 (best)	34	6.4
Government 0-10 (best)	34	6.4
5.01 Regulatory efficiency 0 – 100 (best)	53	69.7
5.02 Incidence of corruption 0-100 (best)	19	71.0
5.03 Future orientation of government 1-7 (best)	53	3.6
5.04 Rule of law (2.5) - 2.0 (best)	36	0.6
Driver: Sustainable Resources 0-10 (best)	38	6.7
Sustainability 0-10 (best)	38	6.7
6.01 Alternative and nuclear energy use % total energy use	12	0.5
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	6	0.1
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	78	0.3
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	83	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	25	0.9
6.06 Wastewater treatment 0 – 5 (worst)	79	47.5
Driver: Demand Environment 0-10 (best)	80	3.8
Foreign and Domestic Demand 0-10 (best)	84	3.3
7.01 Market size 0-100 (best)	84	33.1
Consumer Base 0-10 (best)	57	4.2
7.02 Buyer sophistication 1-7 (best)	50	3.5
7.03 Extent of market dominance 1-7 (best)	68	3.6

Viet Nam

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WORLD ECONOMIC FORUM

Key economic indicators

Population millions	92.6	**GDP per capita** US$	2,173.3
GDP US$ billions	201.3	**Unemployment rate** %	2.3

Key production indicators

Manufacturing value added 2010 millions US$	34,512.0	**Manufacturing value added growth** Annual %	9.8
Manufacturing value added in economy % GDP	21.0	**Medium hi-tech & hi-tech industries** % of manu. value added	40.4
Manufacturing employment % working population	14.4	**CO2 emission per unit of value added** kg/USD	1.7

Readiness Overall Assessment

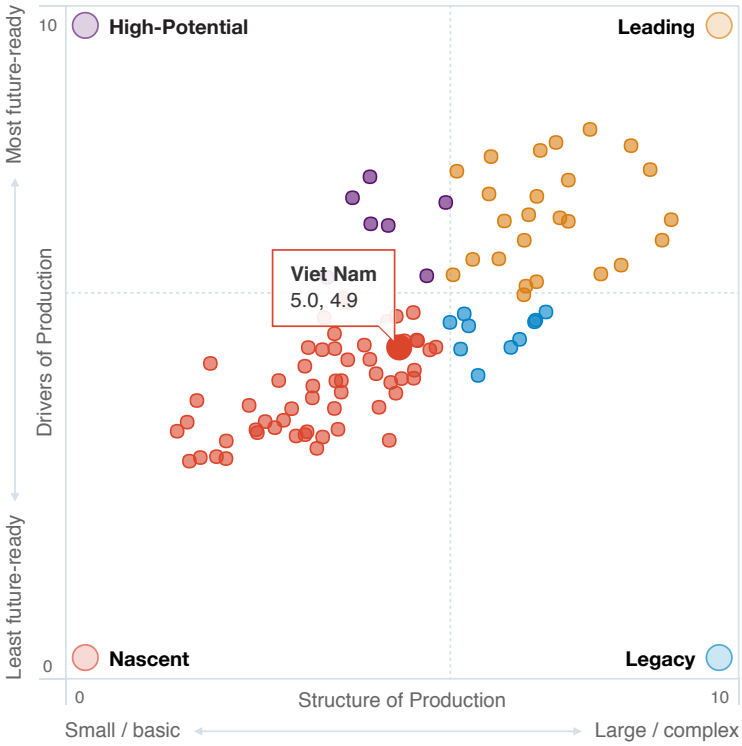
Drivers of Production 4.9

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	90th	**3.1**
Human Capital	20%	70th	**4.5**
Global Trade & Investment	20%	13th	**7.0**
Institutional Framework	20%	53rd	**5.0**
Sustainable Resources	5%	87th	**4.6**
Demand Environment	15%	39th	**5.2**

Structure of Production 5.0

Structure	Weighting	Rank	Score /10
Complexity	60%	72nd	**4.4**
Scale	40%	17th	**5.8**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	72	4.4
1.01 Economic complexity (2.5) – 2.5 (best)	72	-0.3
Structure: Scale 0-10 (best)	17	5.8
1.02 Manufacturing value added in economy % GDP	9	21.0
1.03 Manufacturing value added US$ millions	40	34,512.0
Driver: Technology & Innovation 0-10 (best)	90	3.1
Technology Platform 0-10 (best)	92	4.3
2.01 Mobile-cellular telephone subscriptions /100 pop.	39	128.0
2.02 LTE mobile network coverage % population	96	5.0
2.03 Internet users % pop.	76	46.5
2.04 FDI and technology transfer 1-7 (best)	73	4.1
2.05 Firm-level technology absorption 1-7 (best)	78	4.2
2.06 Impact of ICTs on new services and products 1-7 (best)	70	4.4
2.07 Cybersecurity commitment 0–1 (best)	90	0.2
Ability to Innovate 0-10 (best)	77	1.9
2.08 State of cluster development 1-7 (best)	59	3.8
2.09 Company investment in emerging technology 1–7 (best)	50	3.7
2.10 Gov't procurement of advanced technology products 1-7 (best)	31	3.6
2.11 Companies embracing disruptive ideas 1-7 (best)	47	3.6
2.12 Multi-stakeholder collaboration 1-7 (best)	72	3.5
2.13 R&D expenditures % GDP	84	0.2
2.14 Scientific and technical publications Number per Billion PPP$ GDP	74	5.6
2.15 Patent applications applications/million pop.	73	0.18
2.16 Venture capital deal volume US$ millions	49	2,712.8
2.17 Venture capital deal volume per size of economy US$/GDP	55	14.0
Driver: Human Capital 0-10 (best)	70	4.5
Current Labor Force 0-10 (best)	70	5.4
3.01 Manufacturing employment % working population	28	14.4
3.02 Knowledge-intensive employment % working pop.	81	10.8
3.03 Female participation in labor force ratio	57	0.73
3.04 Mean years of schooling Years	74	8.0
3.05 Availability of scientists and engineers 1-7 (best)	70	3.8
3.06 Digital skills among population 1-7 (best)	66	4.0
Future Labor Force 0-10 (best)	62	3.5
3.07 Migration migrants/100,000 pop.	63	-2.2
3.08 Country capacity to attract and retain talent 1-7 (best)	44	3.5
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	68	3.7
3.11 Quality of vocational training 1-7 (best)	80	3.6
3.12 School life expectancy Years	79	12.6
3.13 Pupil-to-teacher ratio in primary education Ratio	62	19.2
3.14 Critical thinking in teaching 1-7 (best)	63	3.2
3.15 Active labor policies 1-7 (best)	50	3.4
3.16 On-the-job training 1-7 (best)	74	3.8
3.17 Hiring and firing practices 1-7 (best)	39	4.0

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	13	7.0
Trade 0-10 (best)	40	7.5
4.01 Trade % GDP	5	184.7
4.02 Trade tariffs % duty	76	0.08
4.03 Prevalence of non-tariff barriers 1-7 (best)	87	3.9
4.04 Logistics performance 1 – 5 (best)	57	3.0
Investment 0-10 (best)	10	7.0
4.05 Greenfield investments US$ millions	7	21,947.1
4.06 FDI inflows US$ millions	27	10,173.6
4.07 Domestic credit to private sector % GDP	19	123.8
Infrastructure 0-10 (best)	51	6.5
4.08 Transport infrastructure 0-100 (best)	57	45.6
4.09 Electricity infrastructure 0-100 (best)	45	84.9
Driver: Institutional Framework 0-10 (best)	53	5.0
Government 0-10 (best)	53	5.0
5.01 Regulatory efficiency 0 – 100 (best)	65	66.5
5.02 Incidence of corruption 0-100 (best)	78	33.0
5.03 Future orientation of government 1-7 (best)	43	3.8
5.04 Rule of law (2.5) - 2.0 (best)	51	0.0
Driver: Sustainable Resources 0-10 (best)	87	4.6
Sustainability 0-10 (best)	87	4.6
6.01 Alternative and nuclear energy use % total energy use	33	0.3
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	90	0.9
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	82	0.4
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	79	0.1
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	29	1.0
6.06 Wastewater treatment 0 – 5 (worst)	89	19.8
Driver: Demand Environment 0-10 (best)	39	5.2
Foreign and Domestic Demand 0-10 (best)	29	6.4
7.01 Market size 0-100 (best)	29	63.6
Consumer Base 0-10 (best)	67	4.1
7.02 Buyer sophistication 1-7 (best)	59	3.3
7.03 Extent of market dominance 1-7 (best)	64	3.6

Zambia

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Key economic indicators

Population millions	16.7	**GDP per capita** US$	1,274.8
GDP US$ billions	21.3		

Key production indicators

Manufacturing value added 2010 millions US$	2,086.5	**Manufacturing value added growth** Annual %	2.0
Manufacturing value added in economy % GDP	7.6	**Medium hi-tech & hi-tech industries** % of manu. value added	21.1
Manufacturing employment % working population	4.1	**CO2 emission per unit of value added** kg/USD	0.3

Readiness Overall Assessment

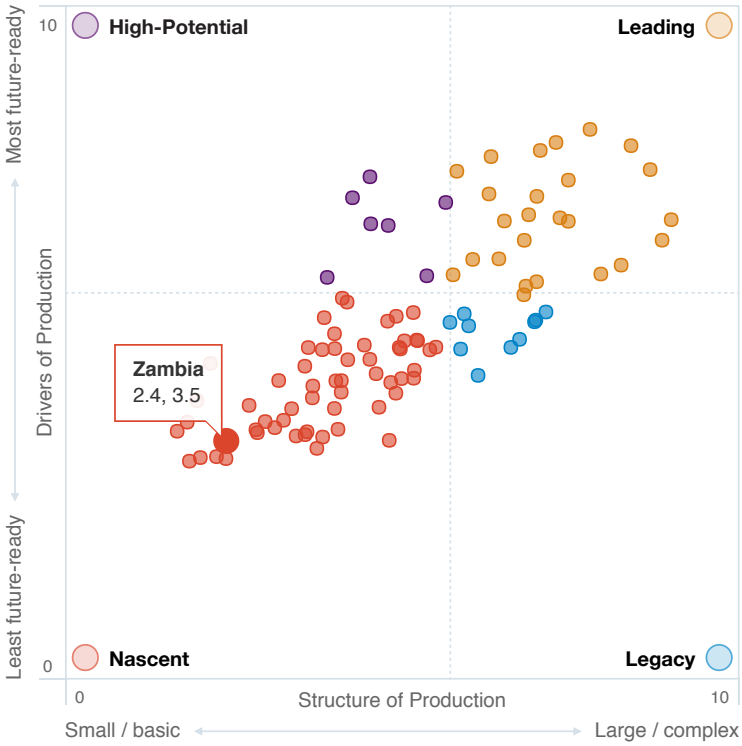
Drivers of Production 3.5

Driver	Weighting	Rank	Score /10
Technology & Innovation	20%	97th	**2.7**
Human Capital	20%	98th	**3.1**
Global Trade & Investment	20%	90th	**3.2**
Institutional Framework	20%	74th	**4.5**
Sustainable Resources	5%	45th	**6.5**
Demand Environment	15%	86th	**3.5**

Structure of Production 2.4

Structure	Weighting	Rank	Score /10
Complexity	60%	90th	**2.7**
Scale	40%	90th	**1.9**

Archetype



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Index Component	Rank /100	Value
Structure: Complexity 0-10 (best)	90	2.7
1.01 Economic complexity (2.5) – 2.5 (best)	90	-1.0
Structure: Scale 0-10 (best)	90	1.9
1.02 Manufacturing value added in economy % GDP	85	7.6
1.03 Manufacturing value added US$ millions	88	2,086.5
Driver: Technology & Innovation 0-10 (best)	97	2.7
Technology Platform 0-10 (best)	99	3.6
2.01 Mobile-cellular telephone subscriptions /100 pop.	95	74.9
2.02 LTE mobile network coverage % population	95	5.8
2.03 Internet users % pop.	92	25.5
2.04 FDI and technology transfer 1-7 (best)	80	4.0
2.05 Firm-level technology absorption 1-7 (best)	95	3.9
2.06 Impact of ICTs on new services and products 1-7 (best)	95	3.8
2.07 Cybersecurity commitment 0–1 (best)	85	0.3
Ability to Innovate 0-10 (best)	88	1.7
2.08 State of cluster development 1-7 (best)	71	3.5
2.09 Company investment in emerging technology 1–7 (best)	76	3.2
2.10 Gov't procurement of advanced technology products 1-7 (best)	42	3.5
2.11 Companies embracing disruptive ideas 1-7 (best)	76	3.2
2.12 Multi-stakeholder collaboration 1-7 (best)	74	3.4
2.13 R&D expenditures % GDP	75	0.3
2.14 Scientific and technical publications Number per Billion PPP$ GDP	76	5.4
2.15 Patent applications applications/million pop.	94	0.01
2.16 Venture capital deal volume US$ millions	82	237.5
2.17 Venture capital deal volume per size of economy US$/GDP	64	10.5
Driver: Human Capital 0-10 (best)	98	3.1
Current Labor Force 0-10 (best)	99	3.2
3.01 Manufacturing employment % working population	96	4.1
3.02 Knowledge-intensive employment % working pop.	85	7.3
3.03 Female participation in labor force ratio	88	0.33
3.04 Mean years of schooling Years	84	6.9
3.05 Availability of scientists and engineers 1-7 (best)	69	3.8
3.06 Digital skills among population 1-7 (best)	83	3.6
Future Labor Force 0-10 (best)	79	3.0
3.07 Migration migrants/100,000 pop.	67	-2.5
3.08 Country capacity to attract and retain talent 1-7 (best)	53	3.4
3.09 Quality of universities Count	75	0.0
3.10 Quality of math and science education 1-7 (best)	70	3.7
3.11 Quality of vocational training 1-7 (best)	60	3.9
3.12 School life expectancy Years	81	12.5
3.13 Pupil-to-teacher ratio in primary education Ratio	98	47.9
3.14 Critical thinking in teaching 1-7 (best)	55	3.3
3.15 Active labor policies 1-7 (best)	81	2.8
3.16 On-the-job training 1-7 (best)	63	4.0
3.17 Hiring and firing practices 1-7 (best)	43	3.9

Index Component	Rank /100	Value
Driver: Global Trade & Investment 0-10 (best)	90	3.2
Trade 0-10 (best)	62	6.0
4.01 Trade % GDP	46	84.3
4.02 Trade tariffs % duty	85	0.11
4.03 Prevalence of non-tariff barriers 1-7 (best)	74	4.2
4.04 Logistics performance 1 – 5 (best)	91	2.5
Investment 0-10 (best)	97	0.2
4.05 Greenfield investments US$ millions	72	1,167.3
4.06 FDI inflows US$ millions	58	1,911.9
4.07 Domestic credit to private sector % GDP	99	12.0
Infrastructure 0-10 (best)	95	3.3
4.08 Transport infrastructure 0-100 (best)	88	29.7
4.09 Electricity infrastructure 0-100 (best)	95	36.8
Driver: Institutional Framework 0-10 (best)	74	4.5
Government 0-10 (best)	74	4.5
5.01 Regulatory efficiency 0 – 100 (best)	78	61.8
5.02 Incidence of corruption 0-100 (best)	63	38.0
5.03 Future orientation of government 1-7 (best)	62	3.4
5.04 Rule of law (2.5) - 2.0 (best)	71	-0.3
Driver: Sustainable Resources 0-10 (best)	45	6.5
Sustainability 0-10 (best)	45	6.5
6.01 Alternative and nuclear energy use % total energy use	2	0.9
6.02 CO2 intensity level CO2 emissions in megatons/GDP (US$ billiions)	14	0.2
6.03 CH4 intensity level CH4 emissions in megatons/GDP (US$ billiions)	87	0.5
6.04 N2O intensity level N2O emissions in megatons/GDP (US$ billiions)	98	1.2
6.05 Baseline water stress Annual withdrawals, % of annual available blue water	7	0.1
6.06 Wastewater treatment 0 – 5 (worst)	71	58.1
Driver: Demand Environment 0-10 (best)	86	3.5
Foreign and Domestic Demand 0-10 (best)	82	3.3
7.01 Market size 0-100 (best)	82	33.3
Consumer Base 0-10 (best)	82	3.7
7.02 Buyer sophistication 1-7 (best)	92	2.8
7.03 Extent of market dominance 1-7 (best)	67	3.6

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