Productivity Innovation and Competitiveness

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PRODUCTIVITY, INNOVATION, AND COMPETITIVENESS: DIAGNOSTIC FOR APO MEMBER ECONOMIES

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Productivity, Innovation, and Competitiveness: Diagnostic for APO Member Countries

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FOREWORD

Building productivity for socioeconomic development and growth can provide the foundation for improved standards of living. Sustaining productivity is also an important building block of a resilient economy. Nations must therefore strive to build productivity in the long run through sustained efforts. These efforts must center on factors such as the quality of the business environment; cluster development; sophistication of companies, operations, and strategies; and, most importantly, the ability to innovate.

This research report aims to map out APO member countries' underlying determinants of productivity and innovation based on the parameters of Porter's National Diamond Framework. Since productivity is always at the center of national competitiveness, the approach is to extract the determinants of competitiveness. The assessment identifies key emerging areas of productivity growth resulting from a synthesis of the four attributes of the National Diamond Framework disaggregated into parameters including infrastructure, labor and productivity, financial access, trade, ease of starting a business, and innovation. Country profiles constructed based on those parameters give insights into enhancing specific advantages and addressing constraints faced.

The results show the need for countries to encourage innovation, improve trade practices, and invest in reducing social disparities to both improve and sustain their productivity levels in the long run. Policy must be oriented toward the creation of a more conducive environment for innovation and R&D. Promoting innovations in high-value industries also provides a competitive advantage and productivity gains through spillover channels. Deciphering challenges in the volatile global market, diversifying exports, and removing barriers to starting a business or accessing credit are also crucial to raising national productivity. Integration with global value chains and frontier firms is another strategy to increase productivity, complement development efforts in multiple spheres, and avoid problems such as inequality.

An important objective of the present report is to supplement the APO Productivity Databook. Together with other research projects focusing on country-level productivity analyses, these sources are expected to give productivity stakeholders in APO member countries a detailed picture of national productivity status and performance. This is part of continuous efforts to support APO member governments in strengthening their capacity to enhance productivity. It is hoped that Productivity, Innovation, and Competitiveness: Diagnostics for APO Member Countries can serve as a useful guide for stakeholders in productivity movements in the Asia-Pacific region.

Dr. AKP Mochtan
Secretary-General

EXECUTIVE SUMMARY

In building a resilient economy, a nation must ensure sustainable productivity through enhanced competitiveness. Various factors such as the endowments present in a country; the quality of the business environment; the state of cluster development, the sophistication of companies in terms of operations and strategy, and the ability to innovate play pertinent roles in enhancing the competitiveness of a country and driving productivity. Perhaps one of the most prominent defining features of competitiveness would be the nation's ability to produce a high and rising standard of living as it attempts to develop and sustain a competitive advantage in the world market. Therefore, in today's world, it is vital to assess factors that not only drive competitiveness but also hinder it. How countries manage to boost productivity in the long run has a significant impact on its economic growth and significantly impacts the standard of living of its people.

This report, titled, Productivity, Innovation, and Competitiveness: Diagnostic for APO Member Economies, aims to map out significant determinants of competitiveness of APO member economies, based on Porter's National Diamond Framework parameters. Through this assessment, the report examines emerging areas of economic growth. It provides future action points for member countries to address constraints across the pillars of infrastructure, productivity, trade, starting a business, and innovation. All these pillars, individually as well as together, play a crucial role in building a country's economy. Thus, each country's profile provides insights for enhancing its specific advantages and addressing the constraints it faces. Therefore, each country must inculcate unique practices for development, based on its socio- and geo-political history. Findings from this analysis highlight some significant factors.

East Asian economies continue to thrive as they reap benefits from strategic development initiatives and successful growth models such as the exports-led growth seen in countries such as the Republic of Korea (ROK). Other Southeast and South Asian economies like Malaysia and India have showcased steady growth over the past years as they embarked upon the path to sustained growth and productivity. Even other economies, including Bangladesh, which were previously falling behind, have exhibited consistent efforts to improve their socioeconomic conditions.

However, looming challenges persist for APO member economies in various areas. In terms of trade, countries reliant on trade-led growth face risks due to the volatile global trade wars, and so, the need for innovation is more crucial now than ever before. However, various countries, including Nepal and Pakistan, have fallen behind in investing in innovation to boost productivity and development. Consequently, rising inequalities and uncertainties due to demographic shifts in developed economies like the ROK and Japan call for the need to address these challenges immediately in order to prevent adverse stagnation in growth and productivity.

Given the rising vulnerabilities and persisting challenges in the global economy, countries need to continually undertake development measures to innovate and boost productivity and growth across sectors and various sections of the population. This is key to ensuring a cohesive development. By building upon this report's findings and recommendations, APO member economies can raise productivity and generate shared prosperity and better integration with each other.

INTRODUCTION

Productivity plays a critical role in determining economic development. As per the APO Productivity Databook 2019 [1], an economy is considered to be productive when it can increase its production without increasing its input. Conversely, the level of consumption can decrease while the level of output remains the same.

For a nation to be competitive, it must possess a high level of productivity. Productivity gains not only drive economic growth but also improve the standard of living for its citizens. Thus, a competitive nation showcases sustained productivity growth by improving the quality of its products and services, amplifying efficiency in production, and fostering an environment of constant innovation. Nevertheless, nations with high levels of productivity do not necessarily amount to high levels of competitiveness. For instance, a country may showcase high levels of productivity in a non-tradable sector such as nursing homes. However, productivity growth from tradable sectors can enable competitiveness by lowering costs and allowing firms to sell more in global markets without depending on the government for any subsidies [2]. It is also equally critical to understand what factors and conditions have led countries to overcome constraints and achieve substantial economic gains.

Understanding Productivity and Growth in Asia

Asia's reemergence as a global superpower is an inevitable shift that is expected to happen over the coming years. This reemergence can be attributed primarily to higher productivity growth. Greater productivity requires efficiency, building overall capabilities, and lowering input costs, among others. Enhanced productivity gains provide for higher profitability and increased output, which further lead to reduced operating costs and greater efficiency. In order to encapsulate most of this productivity, Asia has to rely on economic cooperation among all its nations and better integration of economies.

Certain Asian countries like Singapore, Japan, and PR China have showcased exceptional growth over the past decade. Consequently, factor accumulation and total factor productivity (TFP) growth accounts for only a small portion of the growth in these countries. Rapid adoption and assimilation of technologies for East Asian economies have enabled higher rates of return on capital and investment [3].

Economies with high reliance on modern technologies and industries outperform nations that are heavily dependent on the agricultural sector. Findings from the APO Productivity Databook 2008 [3] reveal a negative correlation between share of the agriculture sector and the per capita GDP relative to the USA. This scenario calls for a reorientation of economies. Economies need to be directed towards modern, industrialized, and technology-driven growth. This ensures long-term growth and higher productivity.

Additionally, analyzing industry origins of the nation helps in measuring sector-wise growth and contribution to productivity growth. Intersectoral and intrasectoral effects break down productivity growth for the economy. To ensure higher economic growth, countries must shift to sectors that offer higher productivity to assimilate factor inputs [3].

Previous findings from APO articles [4–10] reveal specific characteristics present in countries that have attained superior levels of productivity. Countries such as Singapore and Japan are considered to be highly competitive. These nations have increased their productivity growth and also sustained it in the long run. To maintain productivity gains, countries must undergo significant structural changes. Such changes are related to rapid technological advancements, increased production efficiency and quality of products, and presence of specialized industries. All these determinants play a pivotal role in driving economic growth and productivity in conjugation with each other. With the rapid pace of globalization, more and more countries are attaining significant economic gains. Growth is not limited to western countries alone.

There is a shift towards a multipolar global economy. Over the past few decades, the share of developing economies in global trade has doubled to 40%. Developing countries now possess a more significant share of global foreign direct investment (FDI) flows, and their share of GDP has also increased from 15% to 30% [11]. Competition has intensified more than ever before. However, competitiveness is not only determined by economic gains but also by other factors such as labor market and local infrastructure.

Competitiveness of a nation stems from its industries being able to innovate and upgrade. Companies gain an advantage over their international competitors when they can perform under pressure and rise to the challenges. It is only due to local conditions that competitive advantage is created and sustained. Each unique factor such as history, culture, economic structure, and institutions contribute towards a nation realizing its competitive advantage. Countries compete and succeed in industries that provide a home-base advantage that is progressive, dynamic, and challenging.

How nations manage to achieve higher productivity is not determined by their natural endowments, geographical locations, or investment rates alone. Productivity is also determined by how nations are able to manage these resources and the novel innovations they implement. In a quest to achieve this higher productivity, and develop the state further, East Asian economies have been among the first to achieve success.

In taking the great leap towards economic transformation, East Asian economies such as Japan, Singapore, and the Republic of Korea (ROK) are cited as successful examples, even as other developing economies such as India and Bangladesh are yet to catch up.

Under the USA–Japan Security Treaty, Japan sought a way to focus on economic reconstruction and development. The reconstruction comprised an export-oriented policy and development of resource-economizing technologies. Creation of industrial zone was prioritized, and the government was responsible for infrastructure investment for industries, including ports and transportation systems. A ‘Foreign Capital Law’ was put in place to control the entry of foreign firms, along with strict financial control, which led to the import of selective advanced technologies with scarce foreign currencies [12]. These policies led to a swift growth for over two decades. Agricultural reforms supplied labor from rural areas to urban industrial areas; dissolution of the zaibatsu system

increased competitiveness; and labor reforms brought in greater cooperation between labor and management. Developments characterized in the ROK were also distinct and proved to be successful, unlike efforts made by countries such as India to achieve the same. The divergent outcomes in the formation of these countries include some primary differences in the installation of the state apparatus [13].

First, in the ROK, state managers were able to harness a leading segment of business class for their development agenda. The exports-led development model undertaken by the ROK, held the interest and support of the capitalist class. In contrast, the business class in India was against any disciplinary planning. State managers in India met with concerted opposition from domestic capital. Given India's import substitution model, Indian capital opposed disciplinary planning as a rational action.

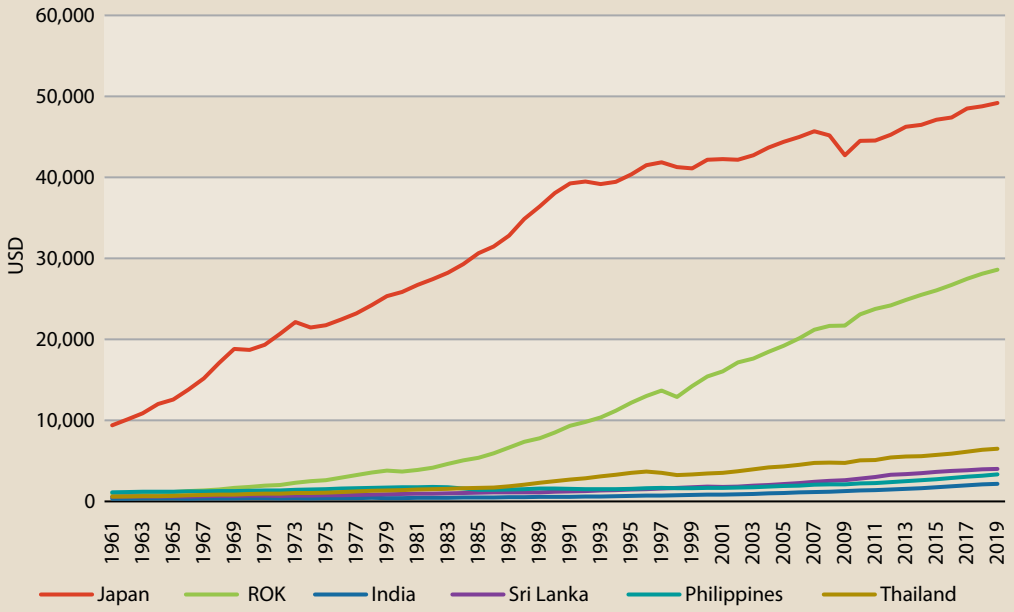
Second, conditions available to the ROK in the global economy were much more fruitful and beneficial, allowing it to switch from import substitution industrialization (ISI) to exports-led industrialization (ELI). The emphasis on exports-led growth in the 1960s was particularly significant for the ROK due to two reasons: (1) pressure by the USA to increase focus on exports, thus leading to the implementation of exports-led policies; and (2) the predicted saturation of domestic Korean market, which garnered support and willingness from firms to abide by the approach. Moreover, the government in the ROK recognized the need to generate export revenues to fulfil large import needs. A crucial enabler was Japan relinquishing markets in the USA to Korean firms along with their marketing and sales outlets, thereby providing Korean firms with finance and machinery. All these factors proved to be essential in building a competitive success for the country. Such conditions were not available to other countries such as India.

Indeed, these transformations remain heterogenous, given the specific approaches, policies adopted, and geopolitical histories. For example, Hong Kong and Singapore do not have conducive agricultural environments. Instead, they acquired success as financial centers and ports; while countries like the Democratic People's Republic of Korea and Cambodia embody an approach that looks inward, both economically and socially. Each country exhibits a unique approach and trend, though there may be a common thread tying them together. For instance, even before the 'East Asian Miracle' took place, the People's Republic of China (PR China), Japan, the ROK, and the Republic of China (ROC), all promoted intensive agriculture and exports-led manufacturing while providing a robust financial system to support the approach [14]. These policies went a long way in ensuring sustained growth for these nations, as seen in Figure 1. Other Asian economies in the southeastern and southern regions failed to incorporate such measures efficiently. Successful land-reform policies in the post-World War 2 era laid the foundation for a strong growth strategy for countries like Japan, the ROK, and the ROC. An approach towards building manufacturing and encouraging the local industries further promulgated the success of these nations as they moved from an intensive agricultural policy to an export-led manufacturing growth strategy. Such measures provided an environment that encouraged competitiveness.

Rapid success as a result of strategic state intervention and efficient policies remains elusive in countries such as India, Sri Lanka, Thailand, and the Philippines. However, there has been progress, both economic and otherwise, as other countries attempt to catch up to the developed world. Growth levels have been rising in South Asia, with increasing development prospects taking place in various economies including Bangladesh, Sri Lanka, and India. India accounted for 82% of this growth in the region in 2017 [1]. Various 'pockets of excellence' provide evidence of the massive growth potential of these countries:

FIGURE 1

PER CAPITA GDP GROWTH (CONSTANT 2010 USD) OF VARIOUS ASIAN COUNTRIES, 1961–2019.



Source: The World Bank, 2019.

- Apparel industries in Sri Lanka and Bangladesh are deemed to be as big as those in PR China and Vietnam on a per capita basis.

- The light manufacturing cluster in Sialkot, Pakistan, has achieved tremendous success in the global market, accruing dominant shares for products such as soccer balls and surgical instruments.

- Indian auto-parts firms have come up as global players through successful exports, and even acquisition of firms in leading markets such as Germany. Additionally, global electronics and auto-parts firms have established their global research and development (R&D) centers in India [15].

Countries, however, fail to meet their true potential and realize substantial economic benefits. Various factors including lack of diverse exports, stagnant growth models, stifled innovation practices, insufficiency of intraregional investments and local integration, and dearth of sophisticated exports present massive impediments to increasing competitiveness of these countries.

SUSTAINING PRODUCTIVITY THROUGH COMPETITIVENESS

Nations vary widely in terms of geographic location, access to natural resources, labor pool, investment rates, and currency value. These underlying factors reveal vast differences competitiveness patterns of countries [16]. In such a scenario, what matters is how countries face and overcome the challenges to enable their economies to attain higher productivity gains by unlocking their most profound potential. These gains ultimately translate into the national advantage for a country.

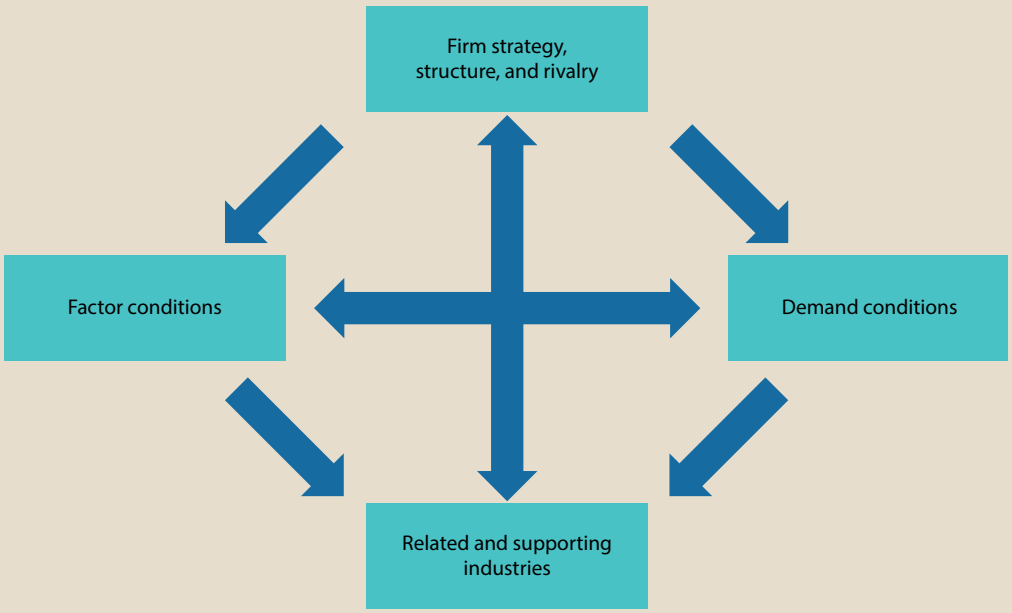
There are specific attributes present in a country, which individually as well as a system, provide the foundation for industries to operate. These attributes constitute the 'diamond of national advantage.' It allows nations to continuously innovate and upgrade, overcoming substantial barriers, allowing for the more sophisticated source of competitive advantage that eventually leads to success.

Porter's National Diamond of Competitive Advantage

Four crucial attributes play a major role in determining competitiveness of a nation. These are factor conditions; demand conditions; related and supporting industries; and firm strategy, structure, and rivalry. These attributes are derived from Porter's Diamond Framework, which provides the foundation for firms to operate in. They particularly help assess the competitive environment of a nation.

FIGURE 1

DETERMINANTS OF NATIONAL COMPETITIVE ADVANTAGE.



Factor conditions are the different types of resources that may or may not be present in a country. These include natural resources, skilled labor, and capital. Demand conditions, on the other hand, emphasize the home market demand. Competitive advantage is sustained as a result of strong and demanding home markets, forcing companies to innovate and upgrade. Consequently, the success of one industry relies on the success of related industries or suppliers. It offers cost-effective access to inputs, rapid information sharing, and even formation of new industries. This is why related and supporting industries are significant in ensuring success in international markets. Furthermore, firm strategy, structure, and rivalry also boost competitiveness. Intense local rivalry drives innovation, leading to enhanced efficiency and international success. All these attributes impact the ability of a country to compete, both singularly and as a system.

Porter's National Diamond helps assess the external competitive environment present in a country. It explains why some firms are more successful than others, why specific industries are more competitive, and how nations garner success and sustained competitiveness. The determinants in the national diamond provide clarity on these questions.

The following methodological framework offers an overarching understanding of the theoretical underpinning, objectives, and analytical approach taken for the research.

Methodological Framework

This report offers an assessment of APO member economies through the diamond of national advantage. It seeks to answer questions on how countries manage to attain competitive advantage and succeed in international markets.

Competitive advantage is realized through multiple factors coming into force. It is not merely favorable geographical conditions that affect production processes. It is the culmination of other elements such as technological advancements, improvements in the production process and product quality, and vigorous domestic competition that play a decisive role in determining the productivity of a country. A country can compete when it can enhance and sustain its productivity levels. These factors are not easy to achieve or replicate, which is precisely why they play an incremental role in providing a competitive advantage to a country. Research and development, for example, may have spillovers, but the results they generate are highly valuable.

In an effort to sustain competitive advantage, countries must continuously put in efforts to improve it. The four attributes making up the diamond, individually as well as together as a system, constitute the competitive advantage that nations possess. The four attributes include factor conditions, diamond conditions, related and supporting industries, and firm strategy, structure, and rivalry.

Factor conditions refer to natural endowments that a country may possess. These include natural resources, availability of skilled labor force, strong infrastructure, and scientific knowledge. It is not just the presence of such conditions that ensures a competitive advantage. Success in international markets is warranted based on how these factor conditions are utilized. Moreover, countries can create advantageous factor conditions and continuously improve upon them to sustain their competitive advantage.

Demand conditions pertain to home demand conditions such as the presence of sophisticated demands from local customers that push companies to upgrade their services and meet the needs of

their customers. In doing so, companies are able to gain insights into the emerging needs of the customer across border. Companies become better equipped in competing with foreign rivals when they invest in meeting buyer needs through fast-paced innovations.

Presence of related and supporting industries, especially supplier industries are crucial in magnifying efficiency. Companies benefit when they have cost-effective inputs, access to components and machinery, and close working relationships that drive innovation. The process enables companies to be successful in international markets and helps boost productivity; even more when supplier industries also compete internationally.

The national structure under which companies operate fundamentally determines how companies are created, organized, and managed. Likewise, it is the intensity of domestic rivalry that pushes companies to innovate and upgrade their production processes. Domestic rivalry consequently reinforces competition and assures competitive advantage.

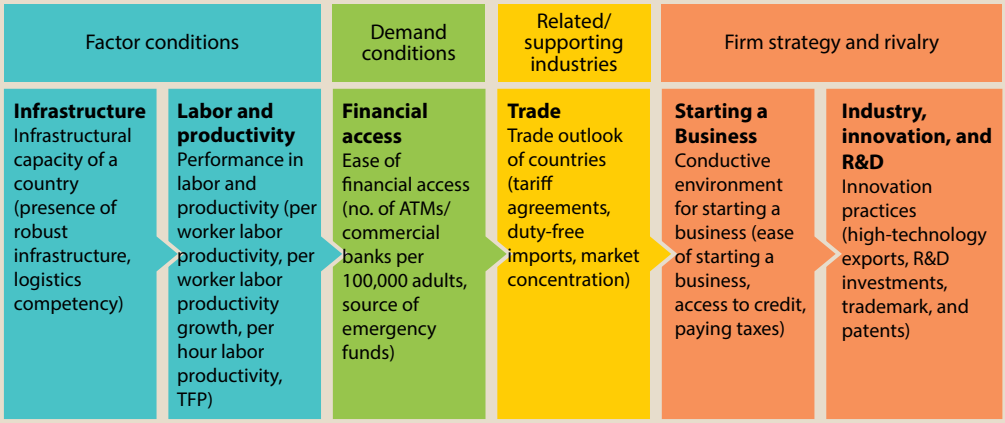
To gauge the national advantage of the countries, the indicators selected for this study are derived from Porter's Diamond of National Advantage. All indicators are thematically placed under the four attributes of the national diamond, i.e., factor conditions, demand conditions, related and supporting industries, and firm strategy, structure, and rivalry. The analysis will be done for twenty APO member economies, namely, Bangladesh, Cambodia, the ROC, Fiji, Hong Kong, India, Indonesia, Islamic Republic of Iran, Japan, the ROK, Lao PDR, Malaysia, Mongolia, Nepal, Pakistan, the Philippines, Singapore, Sri Lanka, Thailand, and Vietnam.

The data will provide insights into the local environments that help firms compete at the national level by improving their production efficiency, making technological advances to innovate, and upgrading their products continually. Alternatively, the data also brings to light obstacles that nations face, which hinder their economic growth and affect their competitiveness.

All indicators selected within each sector are given equal weightage. Furthermore, all data points will be standardized so as to allow for an easy comparison by making all values unitless. The index for the report with an exhaustive list of indicators, scoring process, and weightage assigned, is presented in the appendix. Figure 3 demonstrates the framework adopted for this report.

FIGURE 2

FRAMEWORK FOR THE APO PRODUCTIVITY DIAGNOSTIC.



Limitations

Each study, research project, or report contains certain limitations. These limitations influence the interpretations of the report findings. There are two primary limitations in this report. First, the premise is particularly based on productivity, innovation, and competitiveness, and the research process was started well before the onset of the COVID-19 pandemic. Even though the global pandemic will impact all APO member economies, it has not been covered extensively due to various constraints. Second, the constraints emerging due to nonavailability of data for various indicators for some APO member countries have also impacted the interpretations and findings of the study.

Assessment Process

Assessment will be carried out under the umbrella of four major pillars drawn from Porter's Diamond Framework: factor conditions; demand conditions; presence of related and supporting industries; and firm strategy, structure, and rivalry. All four pillars will be assigned equal weightage since each indicator plays a crucial role in enabling productivity. The data has been uncovered from multiple sources including national government databases, International Monetary Fund (IMF), World Bank, World Integrated Trade Solution (WITS), Logistics Performance Index, and World Development Index. The comprehensive list of indicators is provided in the appendix.

The analysis of this report will

- assess the current level of competitiveness and productivity performance of APO member economies (not a ranking);
- demonstrate the significant factors that drive productivity among these nations as well as the challenges faced by them by assessing their critical performance drivers and transaction costs; and
- based on the findings, provide a list of measures to address the challenges and constraints faced by member nations.

Further considerations for each country will be made based on its population, level of income, and resources available, i.e., whether a country is resource-rich or not and whether the country is a developing nation or a developed one. All such factors characterize not only competitiveness but also the contours of productivity growth of countries. The analysis delineates a second measure of productivity while simultaneously identifying inefficiencies and offering ways to address them.

Specific Country Profiles of APO Member Economies

A country profile will be made for each APO member economy. The profiles will be based on data gathered from the indicators selected under the Diamond Framework. Country profiles will help identify sources of strengths and weaknesses that shape a country's economic forces and offer an understanding of the level of competitiveness for each country. The report will provide measures that can be undertaken by each country, facilitated by the APO, to address any weaknesses. Moreover, the country profiles will be set against the backdrop of other geographic details about each country such as its major export and import partners; employment rate; and economic factors such as GDP per capita, GDP growth, current account balance as a percentage of GDP, and the like.

Such details will cultivate country-specific understanding to identify the underlying issues. It will help furnish a precise and differentiated approach for addressing constraints in each country. The report is aimed at providing measures to address challenges that countries face and not just disseminate information regarding underlying patterns. The next chapter illustrates how APO member economies fare under the national Diamond framework and the trends that emerge among the countries.

GROWTH TRAJECTORIES AND COMPETITIVENESS IN ASIA

This report, Productivity, Innovation, and Competitiveness: Diagnostic for APO Member Economies aims to generate a comprehensive understanding of forces that determine productivity gains through a distinctive view of the national Diamond framework. In doing so, this report does not seek to induce productivity of the nations. Instead, it seeks to divulge ways of sustaining long-term growth by assessing factors that affect competition among these countries. By emphasizing long-term gains, qualitative factors related to socioeconomic conditions such as access to clean water are also given due importance. Furthermore, this report will grapple with inefficiencies present in the system that hinder any form of competitive advantage. When nations are able to ensure long-term growth for their citizens, they are able to raise the standard of living as well. In creating an integrated, productive economy, prosperity is always assured. Table 1 illustrates the performance of all APO member economies based on the four attributes of the national diamond.

TABLE 1

APO PRODUCTIVITY DIAGNOSTIC SCORES OF MEMBER ECONOMIES.

Countries	Infrastructure	Labor/ productivity	Financial access	Trade	Starting a business	Industry, innovation, and R&D	Final scores
Bangladesh	17.78	45.59	13.24	3.82	0.00	1.32	13.63
Cambodia	17.80	41.84	35.21	0.00	44.30	0.00	23.19
ROC	76.38	73.05	68.73	79.49	87.85	67.32	75.47
Fiji	0.00	30.60	44.23	33.27	45.23	10.92	27.38
Hongkong	95.16	88.27	100.00	67.17	98.45	36.28	80.89
India	52.84	60.49	27.36	60.37	62.04	40.73	50.64
Indonesia	54.51	17.99	39.43	31.45	69.48	10.10	37.16
IR Iran	33.75	50.15	76.60	40.81	44.94	15.97	43.70
Japan	100.00	42.46	73.81	100.00	78.36	82.34	79.50
ROK	77.98	57.66	74.94	81.85	92.60	100.00	80.84
Lao PDR	22.82	48.34	9.38	29.79	41.40	13.14	27.48
Malaysia	56.68	54.12	37.89	41.50	85.63	39.87	52.62
Mongolia	4.84	13.54	78.65	33.12	88.39	15.90	39.07
Nepal	13.40	34.77	47.44	14.50	56.78	1.04	27.99
Pakistan	8.95	46.06	0.00	21.72	40.15	3.73	20.10
Philippines	38.78	69.83	32.11	23.82	43.49	28.99	39.50
Singapore	99.31	100.00	46.86	83.94	100.00	50.66	80.13
Sri Lanka	15.74	0.00	44.57	50.56	43.18	0.21	25.71
Thailand	67.44	69.04	55.61	45.60	84.19	21.75	57.27
Turkey	53.38	60.86	53.52	71.30	97.66	17.77	59.08
Vietnam	59.74	66.11	25.70	36.94	80.16	29.72	49.73

Dominance of East Asian Economies and Other Emerging Asian Economies

Table 1 shows that East Asian economies continue to fare well, emerging as top performers across various indicators. They include Japan (infrastructure, trade); the ROK (industry, innovation, and R&D); and Singapore (labor and productivity, starting a business). Other East Asian Economies, including Hong Kong and the ROC, also fared well compared with other APO members. These growth levels are a result of consistent efforts made over the past decades. Investments made in the past decades have consistently paid off for these economies, with some of the most backward and overpopulated countries transforming into the fastest growing regions in the world. Extensive growth, as a result of swift technology adoption, coupled with large-scale capital accumulation and increased labor participation rate, has played a vital role in driving a somewhat miraculous growth [17]. The factors that augmented such growth levels, however, did not take place over night, but were result of the approach, strategies, and growth models undertaken in around thirty years.

In identifying the factors that accrued positive growth and development for countries like Singapore, the ROC, and the ROK, other developing nations may hope to replicate the results, even though no two countries have the exact environment for growth. A closer look at policies adopted in various East Asian countries shows the individual and distinct initiatives that each economy took. These policies range from highly interventionist strategies in Japan and the ROK to non-interventionist strategies in Hong Kong and Thailand; explicitly redistributive policies in Malaysia; and clientelism in Indonesia and Thailand. One also sees strong autonomous states in Japan, the ROK, and Singapore; and emphasis on large conglomerates in the ROK in contrast with the emphasis on small, entrepreneurial firms in the ROC [18]. Evidently, there is no simplistic, uniform approach to development for all countries.

Other developing and newly developed economies, including India, Malaysia, Thailand have exhibited steady growth levels over the years. Deliberate measures such as the New Economic Policy, and the accompanying structural changes over the past three-to-five decades have led countries like Malaysia to make economic and governmental transformations in a bid to become high-income economies. In the 2000s, India became the largest South Asian economy as expansion took place at an almost double-digit rate, nearly on par with the growth levels of PR China. India's per capita GDP increased by 5.9%, even higher than the growth East Asian countries at that time [19]. Maintaining such high growth consistently is difficult, and so by 2010, the growth levels started to become stagnant. In this context, it becomes even more crucial to understand the significance of ensuring sustained growth.

On the other end of the spectrum, countries appear to do well on specific pillars even though their overall performance appears to be lacking. Mongolia for instance does well on pillars of financial access and starting a business but its performance on other indicators such as infrastructure, labor and productivity, trade, and innovation remains way below average. In fact, measures undertaken by Mongolia have led it to triple its GDP since 1991; make rapid development in healthcare with maternal mortality declining to 45 per 100,000 live births in 2017 and child mortality declining to 16 per 1,000 live births in 2018; and do well in education with primary school enrollments rising to 97% [20]. However, without a cohesive development across all sectors, Mongolia would inadvertently fail to sustain growth levels in the long term.

Similarly, Bangladesh had made consistent advances since its independence, doubling its GDP by 1975, through macroeconomic policies adopted in the 1990s. Although, in order to acquire and sustain higher productivity levels, Bangladesh needs to invest in measures that promote innovation,

improve its trade outlook and financial access, and fortify its performance on labor and productivity. Increased promotion of trade and diversified merchandise export basket play a vital role in ensuring competitiveness.

Looming Challenges to Trade

In the modern era of globalization, protectionist approaches and tariff barriers have the potential to deeply impact countries, especially those that accrue growth from their trade. Countries such as Cambodia, Thailand, and the Philippines face this threat. After being facilitated with the WTO, Cambodia took upon trade openness leading to a rise in exports, and foreign investments. The FDI earnings are vital to Cambodia's growing economy. This also brings about other vulnerabilities, wherein Cambodia remains susceptible to threats form trade wars, rising tariff barriers, and volatile global markets. Global trade tensions particularly threaten exports for the Philippines. Both the USA and PR China account for significant partners that facilitate trade for the Philippines. Rising trade war between these nations could potentially have negative repercussions for the Philippines.

Rising geopolitical tensions for the ROC threatens its exports. Although there have not been major adverse effects to its economy yet, the ROC must also stay cautious and vigilant for the swift changes occurring in the world economy.

Economies like Cambodia, which have recently been facilitated with the WTO, have made advances towards an open and liberal trading system. FDI earnings are vital to the Cambodian economy's growth. Nevertheless, when nations rely heavily on trade for their economic gains, they encounter other pressing issues such as rising inequalities, increased red tapism, volatility of global markets, and rising protectionism among countries. They must, therefore, make amendments in their approach towards trade such as diversifying their export basket to counter some volatility in the global market.

A significant approach to increasing competitiveness is retained through reducing barriers to markets. Trade policy measures that liberalize trade and reduce tariffs therefore prove to accelerate growth and boost competitiveness. Notwithstanding this fact, countries still face constraints in trade, even when having benefits of preferential market access. Such barriers include macroeconomic policies that distort market entry, poor factor conditions, inefficient infrastructure and logistics, and under-provisioning of public good, which prevents exploitation of intraindustry and interindustry spillovers. To navigate these constraints, it becomes imperative to "align macro incentives, improve backbone services, reduce cost transactions, and provide proactive policies for overcoming government and market failures" [21].

Trade can enable competitiveness among countries while offering significant economic gains. In terms of trade and productivity, a country's capability is derived from the set of goods it can produce and the quality and productivity of the produce. It drives the relationship between quality, income, and sectoral mix of exports. Since some goods have fewer high-quality producers or countries than others, they have a comparative advantage. Further, imperfect information allows for high- and low-quality producers to coexist. In a general equilibrium multi-country setting, a product range will showcase a coexistence of producers from countries with different income levels. In such a product range, Sutton and Trefler [22] state that emerging countries compete with high-quality exports. With the rise in quality, a country moves into production of higher-ranked goods. This leads to an increase in equilibrium wage and GDP per capita and indicates an inverted-U

relation with quality and GDP per capita. With the rise in quality, market share and wage also rise. The increase in wage causes an adequate increase in cost level while the global market share of the industry falls. The inverted-U relation provides the basis for a selection effect that links a country's wealth to its product mix.

Dynamics in terms of trade affect productivity in the nations as well as firms at the local level. Regulation of trade in a country, therefore, provides an important area of assessment to understand the obstacles that impede competitiveness. Consequently, it enables an understanding of factors that encourage competitiveness.

One of the most vital attributes that steer productivity and growth is derived from innovation. Continually rising innovation practices warrant increased standard of living and growth levels in a country.

Lack of Efficiency in Innovation Practices

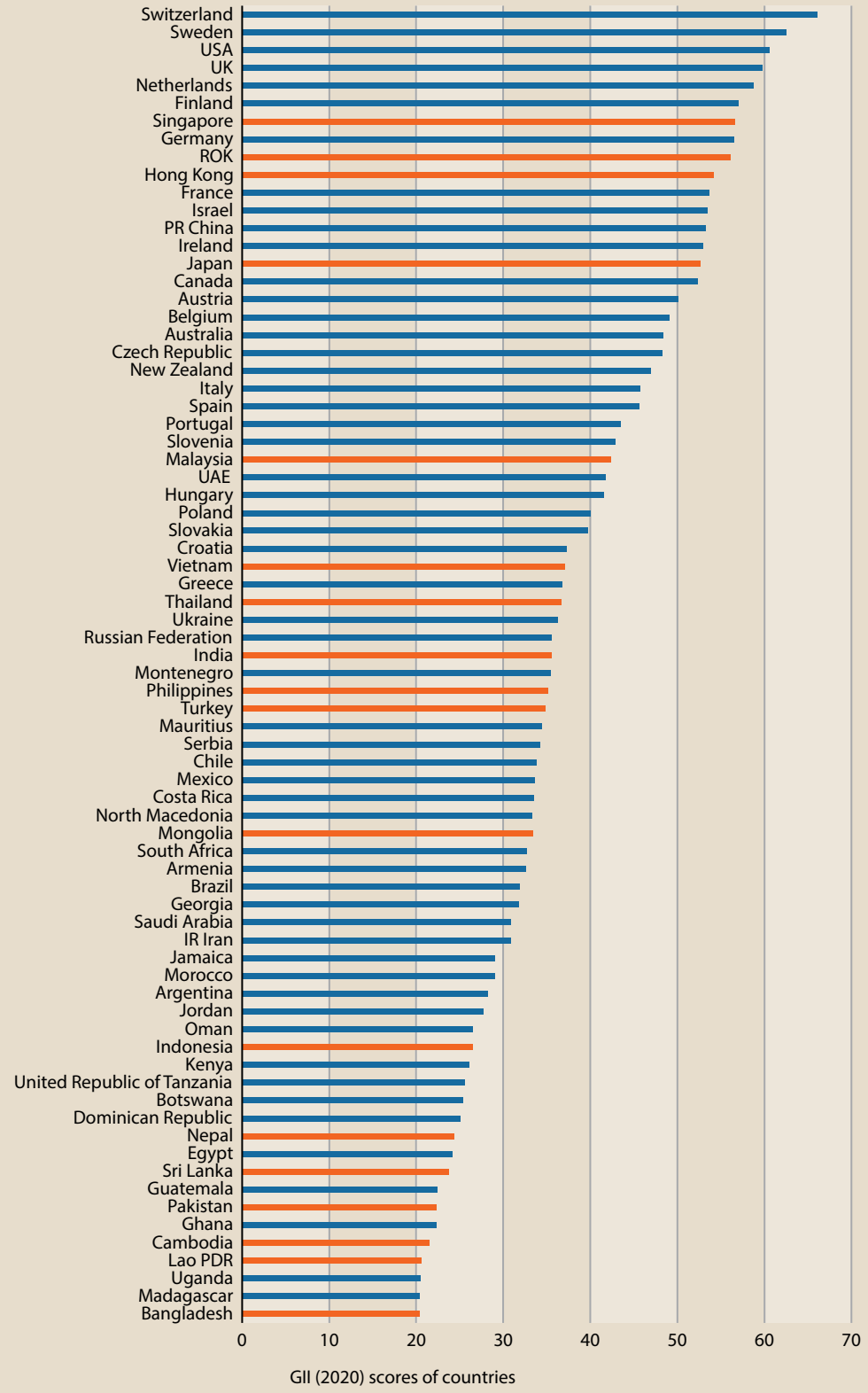
Constant upgradation of technology and innovation is particularly crucial for sustainable growth. However, all countries do not make any form of advancements at the same pace. Divergence in major economies is also brought to light by Cirera and Maloney [23] in their study on the 'innovation paradox.' A large part of income growth is derived from productivity growth. Innovations mainly play an essential role in driving forth this growth. With the rise of digitization and automation, innovation can uncover exponential growth levels in any economy. In developing economies, innovation appears to be more complicated due to potential market failure and missing complementarities. Three factors that drive innovation include (1) complements to investment; (2) key firm capabilities including managerial and organizational practices; and (3) government capabilities for implementing. In developing countries, there is a marginal improvement in productivity even after investments. This is because of low-level investment in innovation. Such a scenario gives rise to the innovation paradox. In an innovation paradox, there is a low level of innovation investment in developing countries. Along with high returns, the companies in developing countries would adopt more productive technology to catch up (Schumpeterian catchup) to levels of productivity in the advanced nations (productivity frontier). There is often a lack of complementarities wherein firms may invest in innovation but lack physical or human capital to import the required technology.

An analysis of cross-country evolution of technology diffusion over the last two centuries brings to light that the vast gap between poor and rich countries has converged. However, Comin and Mestieri [24] analyzed income divergence despite the presence of technology in significant countries. The gap of adoption of technologies in rich countries has diverged. This divergence accounts for the wide income disparity among the nations. In the 19th century, divergence occurred due to a lack of technology adoption. In the 20th century, divergence occurred due to differences in intensity of use of technology.

The countries that fared well across all indicators often performed well in industry, innovation, and R&D. However, it was the better-developed nations such as Japan, the ROK, and the ROC that also took cognizance of the importance of innovation. Also, India has world-renowned IT hubs, whereas the expansion of IT capital is growing considerably in Thailand [1]. While both these nations have tremendous potential for innovation, there appears to be insufficiency in planning and investments in R&D practices, translating into failure in capturing the potential for innovation completely.

FIGURE 1

INNOVATION SCORES OF VARIOUS COUNTRIES.



Source: Global Innovation Index, 2020.

The scores from the Global Innovation Index (GII) [25] in 2020 indicate how countries fared based on parameters such as innovation infrastructures; social, political, and economic adoption; R&D; business environment; and knowledge and technology outputs (see Figure 1.) Certain countries that employ better innovative practices also demonstrate better growth levels (e.g., ROK, Japan). Other economies such as Sri Lanka and Cambodia rank low both in terms of innovation and productivity, as shown by the Competitiveness scores in this report.

Japan, for instance, has recognized the importance of innovation. The R&D investment as a percentage of GDP in Japan is 3.3% [26]. Given the onset of the digital age, the importance of innovation, technology, data, and IT cannot be emphasized enough. Japan has emerged as a prominent powerhouse in this area. It is leading Asia in terms of IT capital contributing to economic growth. APO data suggests that manufacturing contributes about 79% towards productivity growth in Japan. It has consistently performed well in GII over the years. In 2020, Tokyo–Yokohama emerged as the top hotspot for science and technology. Subsequently, the capacity for innovation is particularly crucial to enable competitive advantage for a nation. Successfully implementing innovative concepts such as gamification to help advance the SME sector has also yielded great benefits for the country [27]. Promoting small innovations in SMEs encourages practices that prove to be integral to the growth of innovation, long-term productivity, and improved standard of living.

Conversely, for Indonesia, R&D investments as a percentage of GDP account for only 0.2% [26]. The 2017 Global Innovation Index [28] reflected that Indonesia ranked 105th among 127 countries in terms of R&D spending. The GII report also states the importance of support from private industry in advancing research capabilities in a country. For Indonesia, the support from private sector also needs to be accelerated, along with increased business incentives, policies, and industry awareness. The 2020 GII [25] saw Indonesia rise to the 85th rank out of 131 countries, though concentration of research activities and lack of funding deplete Indonesia's potential for innovation.

Challenges to Developed Economies

Challenges pertaining to issues such as demographic shifts (Japan) or threats arising due to geopolitical scenarios (ROC) have the potential to impede productivity growth, thereby resulting in adverse consequences. Such issues are prevalent in developed, high-income economies more significantly. Demographic challenges threaten developments on both social and economic fronts. Japan and the ROK both face ageing populations, coupled with factors such as rise of single-child families. Declines in population growth rates expose countries to labor and productivity challenges. Additionally, countries must address issues pertaining to healthcare. Social policies that provide long-term healthcare to this ageing population and ensure other benefits become imperative and help maintain efficiency and ward off further risks to the labor market. Another concern for developed economies arises in terms of growth rates becoming stagnant or even declining after reaching a certain level which can heavily deter productivity.

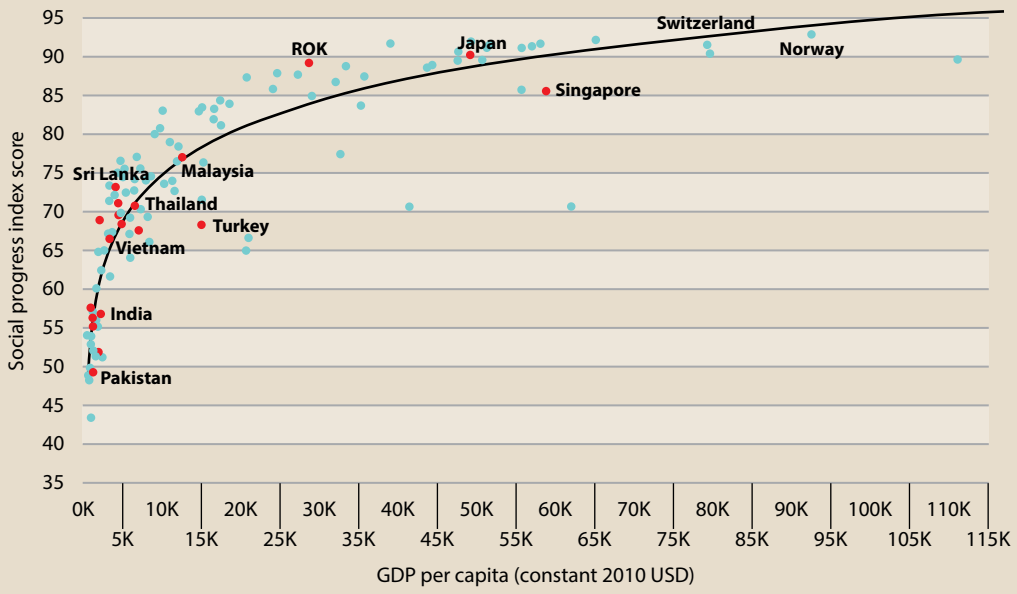
Rising geopolitical disturbances are threat to all nations, but countries such as the ROC remain more vulnerable to such challenges due to their volatile history and relations in the international economy. Trade in particular can witness severe impact. In such a scenario, economies must remain vigilant, while continuing to build upon their existing strengths, increasing productivity, enhancing innovation practices, and pursuing diverse services, to deter possible consequences of such challenges.

Concerns on Inequality

Persisting inequalities, both social and economic, raise a major concern across Cambodia, Indonesia, and India. However, these inequalities also pertain to developed countries such as the ROK, which has witnessed a major income disparity that continues to rise. Income disparity and widening socioeconomic gaps remain a major impediment to growth for various Asian economies. While higher GDP per capita does not ensure dismissal of inequalities in a country, it does, however, warrant a better standard of living. The data from GDP per capita and Social Progress Index [29] show that richer countries such as Singapore and Japan also prove to be more socially progressive (see Figure 2).

FIGURE 2

GDP PER CAPITA VS. SOCIAL PROGRESS SCORES.



Sources: The World Bank, 2019; Social Progress Index, 2020.

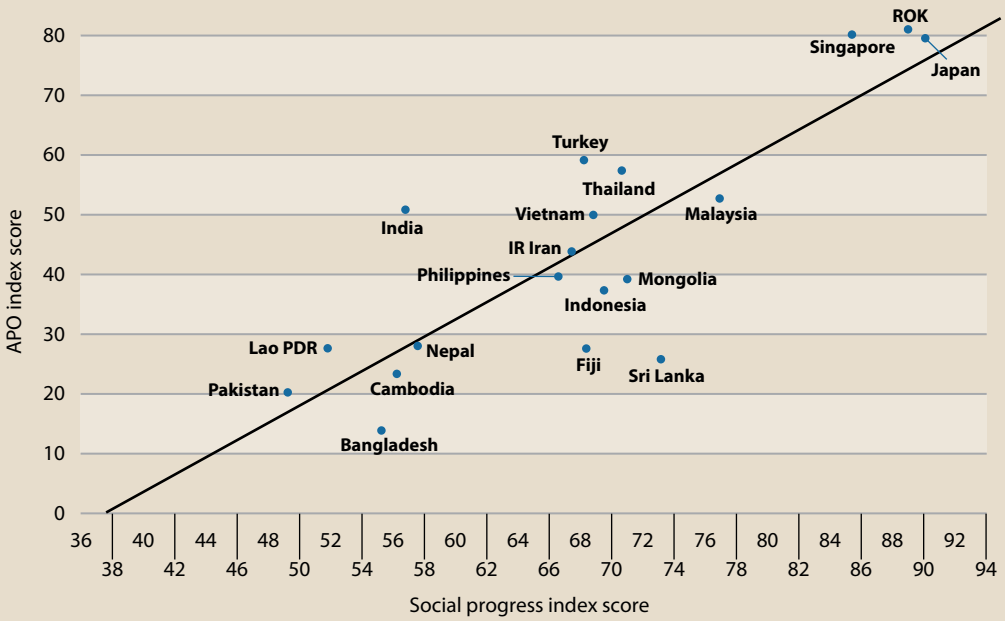
Evidence from this study, which measures competitiveness among APO member economies, and the Social Progress Index 2020, suggest that productive nations also appear to perform well in social progress (Figure 3). Evidently, it is the East Asian economies that emerge as top performers on both the indices.

Another common issue that arises in terms of inequalities comes from lopsided development processes. When countries make swift advances, it often happens that these developments do not take place across sectors and sections of the population. On one hand, while India boasts of a booming IT cluster, on the other hand, a large section of its rural population does not have access to internet. Nevertheless, countries such as the ROK are not devoid of inequalities, though it is much lesser than in many other countries. There is a growing divide between the rich and the poor in the ROK. Data indicates that the bottom 10% saw no increase in their wage distribution over the last two decades [30].

Financial access is a cause for concern in countries such as Bangladesh and Pakistan, wherein sections of the population do not have consistent access to financial services. On the other hand,

FIGURE 3

SOCIAL PROGRESS SCORES VS. COMPETITIVENESS SCORES.



Sources: Social Progress Index, 2020; APO Productivity Diagnostic, 2020.

while the ROC has built a robust financial services system and financial resources remain available to the masses (relative to its performance across other pillars), it may further improve its financial system. Providing a smoother system for acquiring credit, for people and new businesses, is particularly crucial.

To build a sustained economy that warrants consistent productivity growth, these disparities must be curtailed. Without such measures, countries will not be able to remain competitive in the global market. While advanced economies such as Singapore have exhibited consistent growth over the years, the rising efforts in governance and major structural changes made by other countries such as India and Malaysia have also added vastly to their steady development. Low-income economies, including Bangladesh, have demonstrated socioeconomic development over the past decades, despite being far from catching up with other advanced economies like Japan. Nevertheless, these steady growth measures and resilience of the countries assure a positive outlook in the long-term, provided these reforms to enhance productivity and reduce social disparities continue. A closer look at the factors that drive each country, therefore, becomes crucial. The ensuing section provides individual country profiles of all APO member economies.

BANGLADESH

Since its independence, Bangladesh has shown vast progress. The country's economic policies have addressed major challenges from being one of the lowest-income-decile countries at the time of independence to reviving from war in the 1970s and adoption of market-oriented liberalization reforms in the 1980s based on the World Bank and IMF guidelines. Bangladesh has exhibited sustained growth through its macroeconomic reforms of the 1990s, doubling its GDP since 1975. Life expectancy has risen from 50 years to 63 years, population growth rate has halved from 3%, child mortality rates have fallen 70% from 240 per 1000 births, literacy rate has doubled, and gender parity has been achieved in primary and secondary schools [31]. However, even with such advancements, Bangladesh still needs to take big leaps in order to ensure sustained high productivity and high level of competitiveness.

Table 1 offers an overview of Bangladesh and highlights significant trends and a historical trajectory that has shaped its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN BANGLADESH.

Overview				
Population (2019)	163,046,161			
Employment–population ratio (2018)	55.8%			
Labor force participation rate (2018)	58.3%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	57,628	114,508	194,466	169,604
GDP per capita, current USD	414	776	1,245	1,671
Real GDP growth, y-on-y, %	5.96	5.57	6.55	7.86
Current account balance, % of GDP	–0.30	1.84	1.33	–2.82

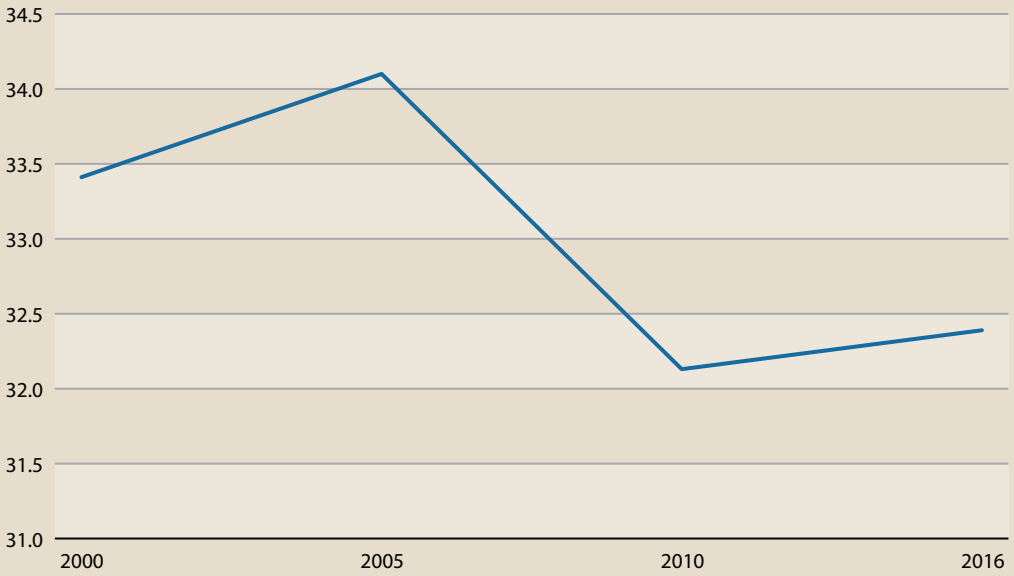
Sources: ILO and WDI Database; UNCTAD STAT (2018).

Bangladesh's path to development has had to encounter many roadblocks, e.g., a high density of population; high incidence of poverty and illiteracy; majority of population being in the agricultural sector; and a vast rural–urban divide. Given such preconditions, Bangladesh has made considerable improvement.

The increase in Gini coefficient (see Figure 1) further brings to light the concentration of income in only a certain section of the population, thus increasing the already persisting inequality. A paper by the Bangladesh Development Research Center (BDRC) [32] defines three key parameters that need to be improved in order for Bangladesh to compete in the world economy in its utmost capacity. These are inequality, employment, and poverty. While the progress already made in all these three areas cannot be negated, the need for further development cannot be denied either. The

FIGURE 1

SHOWCASING BANGLADESH'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2000–16.



Source: UNU-WIDER.

paper also asserts the rising inequalities that are a result of the wide rural–urban disparity. The incidence of poverty still requires constant attention, especially in areas prone to floods and other natural disasters. While there are several programs in place to counter these issues, constant and steady progress are imperative for long-term gains and sustainable development.

Table 2 offers an insight into Bangladesh's performance on various pillars to assess its prevailing level of competitiveness.

TABLE 2

SCORES INDICATING BANGLADESH'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**17.78**
Infrastructure	–0.83
International shipments	–1.00
Logistics competence	–0.94
Tracking and tracing	–0.56
Timeliness	–0.92
2. Labor and productivity	**45.59**
Per worker labor productivity	–0.91
Per worker labor productivity growth	0.72
Per hour labor productivity	–0.97
Per hour labor productivity growth	1.06

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Pillar	Score
TFP growth	–0.58
3. Financial access	**13.24**
No. of ATMs per 100,000 adults	–1.31
No. of commercial bank branches per 100,000 adults	–0.58
Account (% of those aged 15+)	–0.62
Borrowed money in the past year (% of those aged 15+)	–1.41
Outstanding deposits with commercial banks (% of GDP)	–0.60
Outstanding loans with commercial banks (% of GDP)	–0.55
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	–0.62
4. Trade	**3.82**
No. of tariff agreements	–0.68
Duty-free imports (USD thousand) between 2014–18	–0.78
Maximum rate (%) tariffs 2014–18	–0.82
Duty-free tariff lines share (%) 2014–18	–1.22
HH Market Concentration index	–0.43
Index of export market penetration	–0.71
5. Starting a business	**0**
Starting a business	–2.66
Registering property	–2.66
Getting credit	–1.04
Paying taxes	–1.13
6. Industry, innovation and R&D	**1.31**
High-technology exports as % of manufactured exports	–1.01
R&D expenditure as % of GDP	–0.61
High-technology exports (current USD)	–0.76
Patent applications of residents	–0.41
Direct resident trademark applications	0.70
Total	**13.62**

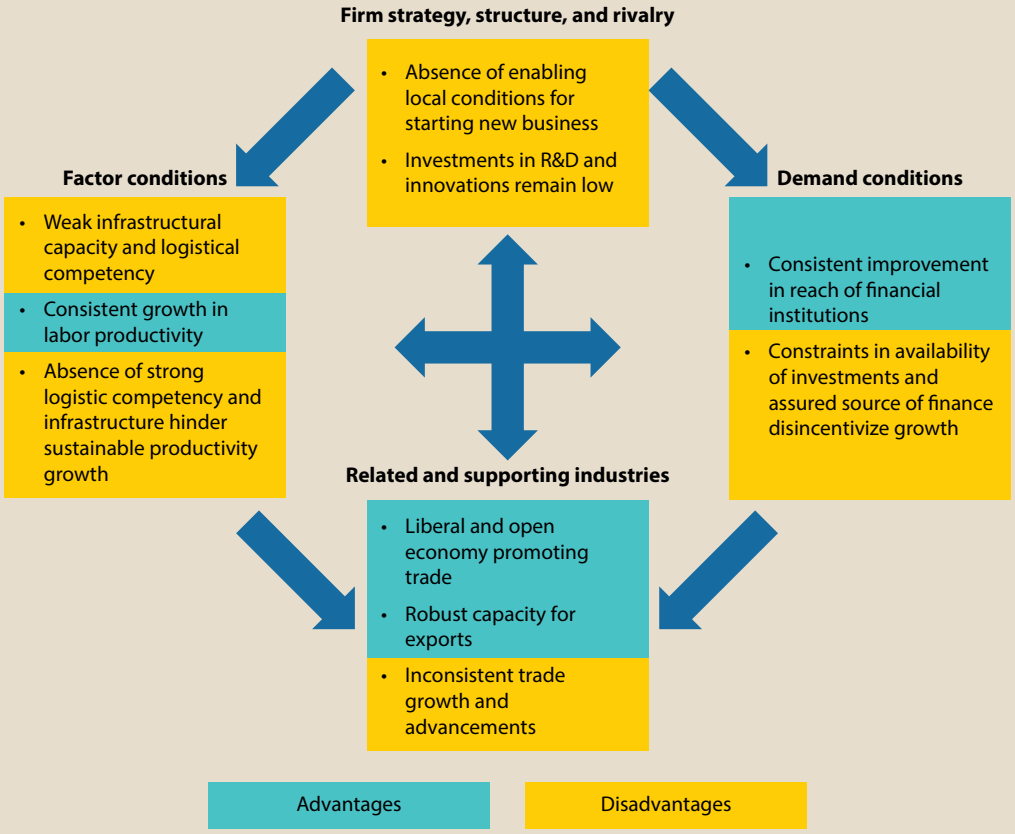
Key Observations

Based on the data in Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

Bangladesh has undertaken several measures that enable development, both in the social and economic spheres. This has perhaps led to its considerable growth in labor and productivity and its reach of financial institutions. However, as the aforementioned Diamond model points out, Bangladesh needs to make vast changes in its approach to trade, business environment, and investment in innovation and R&D. The following section discusses the four attributes of the diamond in detail.

FIGURE 2

KEY OBSERVATIONS ON BANGLADESH'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Infrastructure

TABLE 3

SCORES INDICATING BANGLADESH'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2014	2016	2018	Trend
Infrastructure	2.29	2.49	2.11	2.48	2.39	
International shipments	2.46	2.99	2.82	2.73	2.56	
Logistics competence	2.33	2.44	2.64	2.67	2.48	
Tracking and tracing	2.46	2.64	2.45	2.59	2.79	
Timeliness	3.33	3.46	3.18	2.9	2.92	

Source: Logistics Performance Index.

Bangladesh's infrastructure performance reveals major constraints in its factor conditions. Logistics performance indicates a network of services that enhance the physical movement of goods and

services impacting trade and businesses alike. Even though Bangladesh has made progress in its infrastructural capacity since its independence, it still has a long way to go, particularly in areas of trade, shipments, and logistical competency, which have witnessed a decline (see Table 3). With a lapse in its logistics and trade performance, the country risks smooth operationalizations that could inadvertently decrease productivity.

Labor and Productivity

TABLE 4

BANGLADESH'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	1.00	1.00	1.00	1.00	1.01	1.02	1.03	1.02	1.02	1.03	1.04	
Labor productivity (based on hours worked)	0.92	0.94	0.97	1.00	1.08	1.16	1.25	1.28	1.33	1.39	1.49	
Labor productivity (based on number of employments)	0.92	0.95	0.97	1.00	1.05	1.09	1.13	1.18	1.25	1.33	1.40	
Capital productivity	1.08	1.05	1.02	1.00	0.98	0.96	0.94	0.93	0.92	0.91	0.91	

Source: APO Productivity Database, 2019.
Note: Unit: Index (2010=1.0).

As a low-income developing nation, Bangladesh still has a long way to go in ensuring high economic gains. Nevertheless, it has shown consistent performance over the past decade with a labor productivity growth (see Table 4) that has been rather significant in the last few years [33]. Bangladesh has also shown high energy performance. Services in particular have contributed immensely to growth in labor and productivity in Bangladesh, accounting for almost two-thirds of growth [34]. The National Productivity Organization (NPO) of Bangladesh, established in 1983, acts as the focal point of carrying out activities and initiatives pertaining to productivity in the nation.

Financial Access

With regard to financial access, Bangladesh has shown consistent improvement over time, except for the outstanding deposits with commercial banks as a percentage of GDP, where there has been a decline See Table 5). Financial development allows economic growth to take place. Financial reforms since the 1990s and the adoption of liberalization policy have led to extensive market-led structural adjustments. Lee and Islam [35] arrive at the conclusion that financial constraints with regard to investment to cash stock are significant among firms in Bangladesh. With an increased financial development in terms of financial access, investments, and the like, firms will be able to address such issues better. Consequently, firms will be able to do better in production processes, entailing better economic returns.

TABLE 5

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN BANGLADESH, 2008–18.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	0.84	1.29	2.11	3.71	4.04	4.96	5.77	7.09	8.03	8.36	8.86	
No. of commercial bank branches per 100,000 adults	7.18	7.40	7.66	7.87	8.07	8.25	8.45	8.61	8.71	8.82	8.94	
Outstanding deposits with commercial banks (% of GDP)	41.51	44.33	46.89	49.89	51.22	51.89	53.03	52.67	52.15	49.98	47.84	
Outstanding loans with commercial banks (% of GDP)	33.18	34.54	39.10	41.44	41.50	38.78	40.28	40.53	40.37	42.66	43.45	

Source: IMF, 2008–18.

Underlying Concerns

Trade

TABLE 6

DATA INDICATING BANGLADESH'S TRADING OUTLOOK, 2008–15.

Trade	2008	2009	2010	2011	2012	2013	2015	Trend
No. of tariff agreements	1	1	1	1	1	1	5	
Duty-free imports (in USD billion)	2.83	4.10	6.14	10.25	2.31	3.63	4.72	
Maximum rate (%) tariffs	25	25	25	25	25	25	25	
Duty-free tariff lines share (%)	3.9	3.63	3.49	3.74	3.79	3.75	7.09	
HH Market concentration index	0.1	0.1	0.09	0.08	0.07	0.07	0.07	
Index of export market penetration	5.12	5.11	5.41	5.61	5.97	6.49	6.09	

Source: WITS, 2008–17.

Since the 1980s, trade liberalization has become an integral part of Bangladesh's strategic policy. Various measures to reduce protectionism have simplified tariff regime and streamline administrative procedures [36]. However, performance indicating trade outlook remains inconsistent (see Table 6) and must be addressed to make the most of the trade–productivity linkage, which is critical to the ability of a country to be compete internationally. Expansion of trade provides the opportunity for great economic gains.

TABLE 7

BANGLADESH'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %, 2015
USA	19.35
Germany	14.73
UK	11.03
Spain	5.82
France	5.53

Top 5 import partners	Partner share in %, 2015
PR China	21.53
India	12.24
Singapore	9.19
Hong Kong	5.82
Indonesia	5.49

Source: WITS, 2015.

Some traditional primary exports include jute, leather, and tea. A study by Sarker [37] on trade expansion, international competition, and export diversification in Bangladesh asserts that the country enjoys international competition in exports of garments and fish and seafood. During the study period, jute and leather sectors enjoyed comparative advantage, but the global competitiveness of these sectors declined over time. The readymade garments industry of Bangladesh has always been well renowned. It has contributed tremendously to the economic growth of the country, thus further highlighting the need to protect its workers, who have been subject to labor safety issues. Table 7 highlights the leading export and import partners of Bangladesh.

Starting a Business

TABLE 8

SCORES INDICATING BANGLADESH'S PERFORMANCE ON EASE OF STARTING A BUSINESS, 2014–19.

Starting a business	2014	2015	2016	2017	2018	2019	Trend
Starting a business	80.8	80.6	81.5	81.7	81.4	80.5	
Registering property	31	31.1	28.9	28.9	27.2	27.2	
Getting credit	25	25	25	25	25	25	
Paying taxes	59.7	59.7	56.1	56.1	55.8	56.3	

Source: Doing Business, The World Bank, 2010–19.

'Ease of doing business' is a crucial area for all countries, but it is particularly essential for low-income countries to enable local productivity and invite investments. Without a favorable business-enabling environment, countries fail to attract FDI inflows that can play a key role in providing economic gains. It is therefore crucial to streamline procedures to make it easy for new businesses to start. Bangladesh ranks 180th among 185 countries on the ease of registering for property [38],

as also reflected by the scores in Table 8. It scored zero on the depth of credit information index and 5.0 on the strength of legal rights index. Higher scores indicate more credit information and stronger legal rights for borrowers and lenders [39].

Industry, Innovation, and R&D

TABLE 9

BANGLADESH'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D, 2010–15.

Industry, innovation, and R&D	2010	2011	2012	2013	2015	Trend
High-technology exports as % of manufactured exports	0.2	0.2	0.5	0.3	0.3	
High-technology exports (in current USD billion)	0.038	0.044	0.105	0.069	0.094	
Patent applications of residents	66	37	67	60	41	
Direct resident trademark applications	7,857	8,632	8,294	8,001	9,322	

Source: World Development Index, 2009–16.

Bangladesh's performance on the industry, innovation, and R&D parameters has been susceptible to inconsistencies (see Table 9). However, it would be unfair to compare Bangladesh to its developed Asian counterparts such as Japan or Singapore. Bangladesh's performance on R&D innovation system, as Hossain, et al [40] point out, is a work in progress. It is undergoing 'the process of institutionalizing science and technology, through a complex construct of integrating and differentiating mechanisms.' The government has made efforts to strengthen university–industry relations so as to promote innovation. Nevertheless, the study also points out various limitations. For instance, 72% of the research articles in Bangladesh came from 11 specific institutions, one of which was particularly dominant. Government funding appeared to be inadequate in boosting the triple helix (TH) collaborations involving university, industry, and government sectors.

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats that would hinder Bangladesh's growth:

- Financing at an early stage of startups through routes such as angel investment and venture capital funds needs to be accelerated.
- Developing alternative financing institutions such as specialized microfinance institutions (MFIs), low-capital local banks, postal savings banks, and financial cooperatives can provide alternatives to get access to finances.
- Constant revision and attention must be paid to programs implemented for poverty reduction and to fight any threats that may arise due to corruption or information asymmetry.

- There is a need to ensure flexible procedures for new businesses to allow for a more business friendly environment.

- New innovations and developments for industries such as jute and leather should be promoted in order to ascertain a competitive advantage and sustain it in the long run.

- Insights should be developed to take strategic steps that tap into existing resources. This should be done to accrue the maximum benefit and allow for export expansion and diversification even with rising tariff barriers.

- Increase in collaboration between institutions, industry, and government is important. Consequently, government funding must also be increased to encourage greater participation and remove any issues due to cash crunch.

- Cohesive policy initiatives should be undertaken to strengthen R&D and innovation in the country.

Bangladesh's Competitiveness

Bangladesh has shown considerable and consistent growth in its attempts to achieve both social and economic developments. Its labor and productivity performance have been rather significant, and it has fared decently in terms of the reach of financial access for its citizens. Conversely, getting credit is not an easy process, neither is setting up of businesses. Infrastructural capacity needs to be improved further. Strategic outlook in terms of trading activities need to be revisited along with its investments in innovation and R&D. These play a pivotal role in not only improving productivity processes but also fortifying the ability of a nation to compete internationally in a successful manner.

Conclusion

In order to ensure sustained productivity gains and higher competitiveness levels, Bangladesh needs to revisit its initiatives to develop its economy and establish new measures towards that end, through novel innovations that promise a distinguished approach to economic growth and success.

CAMBODIA

Cambodia became independent only in 1953 after a French colonial rule. The country has rebuilt itself from a state of massive conflict, war, and genocide. It has dealt with an autocratic rule, a civil war, and an exiled government. It was only in 1993 that monarchy was restored after the Vietnamese occupation. Till 1991, Cambodia was one of the poorest nations in the world. Against a jarring background such as this, its rise over the past years has been remarkable. With the help of foreign investments and exports, Cambodia has made steady growth.

Table 1 offers an overview of Cambodia's economy and highlights significant historical trends that have shaped its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN CAMBODIA.

Overview				
Population (2019)	16,486,542			
Employment–population ratio (2017)	81.3%			
Labor force participation rate (2017)	81.4%			

Economic trends	2005	2010	2015	2018
GDP, current	6,293	11,242	18,050	24,393
GDP per capita, current USD	474	786	1,163	1,501
Real GDP growth, y-on-y, %	13.25	5.96	7.04	7.2
Current account balance, % of GDP	–4.88	–8.73	–8.68	–11.37

Sources: ILO and WDI Database; UNCTAD STAT (2018).

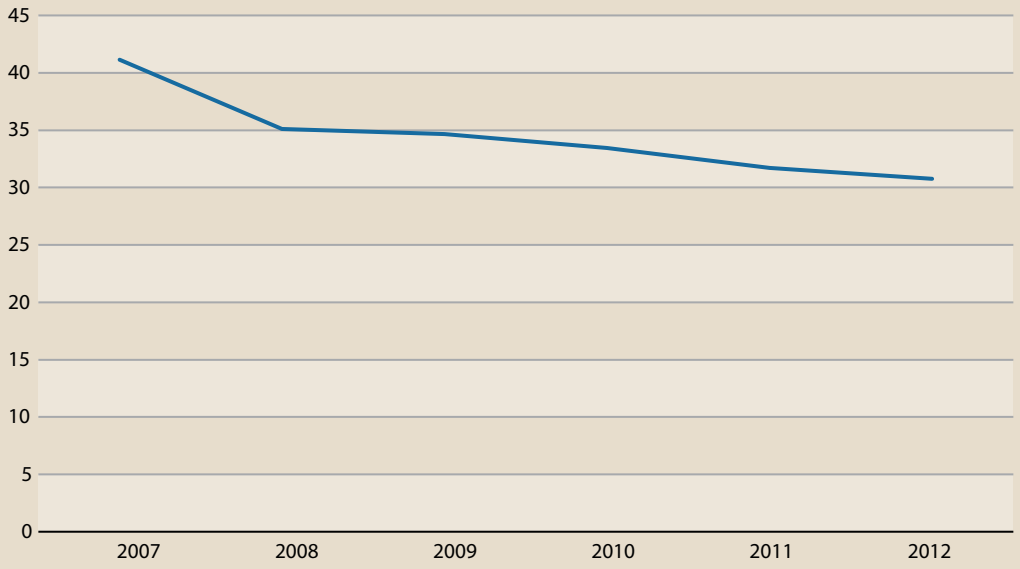
Spillover effects of foreign investment are seen explicitly on account of the investments made by PR China in Cambodia's real estate market. This has also resulted in increased land prices in the country. Furthermore, its economy built on textiles and agriculture calls for diversification to enable productivity growth in the long run, in today's age.

With a swiftly growing economy, inequalities have also become very stark. The rich have continued to become more prosperous, and the poor have continued to suffer. While poverty rates have fallen over the years, a large chunk of the population remains just above the poverty line. This indicates the vulnerable plight of the people as they may fall into poverty easily. The concentration of economic development in urban areas further increases existing inequalities.

Cambodia has emerged as one of the fastest-growing countries. However, lack of homogenous growth has led to pockets of economic growth. A study asserting the findings of a World Bank report states that inequality of income distribution per capita household consumption decreased from 0.347 in 1993 to 0.403 in 2004 and 0.431 in 2007. Income inequality started to decline

FIGURE 1

SHOWCASING CAMBODIA'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2007–12.



Source: UNU-WIDER.

gradually as it came down from 0.381 in 2008 to 0.343 in 2009, and to 0.341 in 2010 and 0.313 in 2011 [41]. Income inequality is influenced by Gini coefficients (see Figure 1) of the rural and urban areas. The disparity between rural and urban areas emerged in the 1990s and had not witnessed a significant difference in consumption pattern till 2007. Discrepancies would naturally exist as Cambodia is still a developing economy and is yet to make a substantial headway in social progress. Regardless of challenges, there has been a large extent of overall development, and with continuous efforts, inequalities may further be reduced and even eroded.

Table 2 offers an insight into Cambodia's performance on various pillars to assess its overall level of competitiveness.

TABLE 2

SCORES INDICATING CAMBODIA'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**17.79**
Infrastructure	–1.20
International shipments	–0.50
Logistics competence	–1.05
Tracking and tracing	–1.02
Tracking timeliness	–0.46
2. Labor and productivity	**41.83**
Per worker labor productivity	–0.98
Per worker labor productivity growth	0.43

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Pillar	Score
Per hour labor productivity	–1.03
Per hour labor productivity growth	–0.01
TFP growth	0.44
3. Financial access	**35.21**
No. of ATMs per 100,000 adults	–1.02
No. of commercial bank branches per 100,000 adults	–0.65
Account (% of those aged 15+)	–1.64
Borrowed money in the past year (% of those aged 15+)	0.57
Outstanding deposits with commercial banks (% of GDP)	–0.11
Outstanding loans with commercial banks (% of GDP)	–0.08
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	1.05
4. Trade	**0**
No. of tariff agreements	–1.13
Duty-free imports (USD thousand) between 2014–18	–0.79
Maximum rate (%) tariffs 2014–18	–0.81
Duty-free tariff lines share (%) 2014–18	–1.08
HH Market Concentration index	–0.50
Index of export market penetration	–0.75
5. Starting a business	**44.3**
Starting a business	–1.99
Registering property	–0.77
Getting credit	1.05
Paying taxes	–0.75
6. Industry, innovation, and R&D	**0**
High-technology exports as % of manufactured exports	–0.93
R&D expenditure as % of GDP	–0.79
High-technology exports (current USD)	–0.76
Patent applications of residents	–0.41
Direct resident trademark applications	–0.78
Total	**23.19**

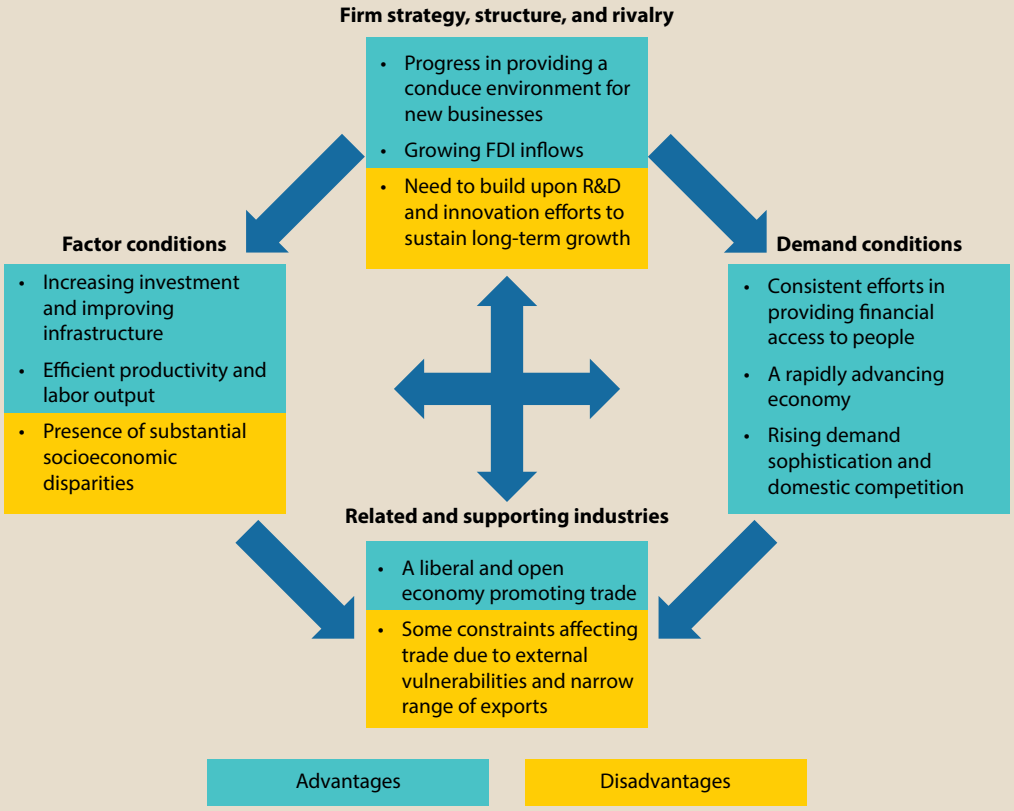
Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model:

The national diamond attributes showcase strides made by the Cambodian government towards becoming one of the fastest-growing economies. Embracing policies and approaches that promote growth across the country has played a vital role in its success. Areas of concern stem from attributes related to trade; and industry, innovation, and R&D. The following section discusses the attributes in detail.

FIGURE 2

KEY OBSERVATIONS ON CAMBODIA'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Infrastructure

TABLE 3

SCORES INDICATING CAMBODIA'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	2.3	2.12	2.2	2.58	2.36	2.14	
International shipments	2.47	2.19	2.61	2.83	3.11	2.79	
Logistics competence	2.47	2.29	2.5	2.67	2.6	2.41	
Tracking and tracing	2.53	2.5	2.77	2.92	2.7	2.52	
Timeliness	3.05	2.84	2.95	2.75	3.3	3.16	

Source: Logistics Performance Index.

The effort to build and develop infrastructure is highly crucial for any economy. However, it becomes even more vital for an emerging economy as it lays the foundation for its economic progress. At the time of the Paris Peace Accord, the state of the Cambodian infrastructure was in ruins. Cambodia has thus, made extensive efforts and investment in building a robust infrastructure,

including construction and power generation, which will go a long way in increasing the standard of living of the people. Cambodia needs to strengthen its logistics performance further so that it can enable significant international trade, which is another essential attribute required for building a sustainable economy. Furthermore, infrastructure and logistics can propel domestic competition and growth. Table 3 provides scores on various infrastructural parameters.

Labor and Productivity

TABLE 4

CAMBODIA'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	1.09	1.08	1.01	1.00	1.06	1.05	1.05	1.05	1.05	1.08	1.10	
Labor productivity (based on hours worked)	0.96	0.99	0.96	1.00	1.10	1.12	1.15	1.20	1.24	1.30	1.35	
Labor productivity (based on number of employments)	0.96	0.99	0.96	1.00	1.11	1.13	1.16	1.22	1.28	1.34	1.40	
Capital productivity	1.17	1.13	1.03	1.00	1.05	1.03	1.01	1.01	1.01	1.01	1.01	

Source: APO Productivity Database, 2019.
Note: Unit: Index (2010=1.0).

In terms of labor and productivity, Cambodia does not perform too modestly (see Table 4). The economy is focused narrowly on areas of agriculture, textiles, and tourism, despite an increasing encouragement of the manufacturing sector. Thus, the economy is concentrated mostly on labor-induced jobs. By diversifying into a more skilled labor force, Cambodia would be able to transcend limitations that may hinder its growth in the long run.

Financial Access

TABLE 5

DATA INDICATING THE REACH OF FINANCIAL INSTITUTIONS IN CAMBODIA.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	3.72	4.36	5.25	6.03	7.18	8.48	10.92	13.34	14.49	16.72	19.45	
No. of commercial bank branches per 100,000 adults	3.14	3.96	4.12	4.28	4.49	4.77	5.69	6.12	7.24	7.52	7.84	
Outstanding deposits with commercial banks (% of GDP)	22.40	30.21	34.56	38.04	43.62	45.91	54.30	58.05	68.55	77.56	89.07	
Outstanding loans with commercial banks (% of GDP)	23.05	23.59	26.75	32.01	40.74	42.28	52.80	61.66	67.43	72.14	80.12	

Source: IMF, 2008–18.

As a post-war country, Cambodia has managed to make considerable changes to its economy. Initiatives that promote and ensure financial inclusivity have indeed led to fruitful results for the country. A look at Table 5 provides a glimpse into this achievement. Cambodia may not have ensured complete financial inclusivity, but it has made significant efforts in the direction. The economy has also witnessed an influx of various foreign banks in the state, which further highlights its rapidly advancing economy.

Starting a Business

TABLE 6

SCORES INDICATING CAMBODIA'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	34.0	35.1	38.8	43.5	35.7	37.3	54.5	50.9	51.9	52.8	
Registering property	64.9	64.9	65.1	65.1	64.8	64.8	54.9	55	55	55.2	
Getting credit	50	50	50	69	75	75	75	80	80	80	
Paying taxes	76.1	73.6	73.6	73.1	73.1	73.1	61.3	61.3	61.3	61.3	

Source: Doing Business, The World Bank, 2010–19.

Cambodia has made efforts in improving its business environment, as seen from the scores in Table 6. Initiatives include the creation of a credit bureau to provide credit scores to banks and financial institutions. Improving access to credit information have helped small and medium enterprises in establishing their businesses. SMEs with a good credit history would easily be able to acquire loans. Reforms that make the process of registering property smoother and quicker would also boost the business environment in the country.

Underlying Concerns

Cambodia had to confront various challenges over the past decades before it was regarded as one of the fastest-growing economies. The efforts have led to favorable results in terms of economic gains for the country. Emphasis on addressing challenges related to the areas of trade, innovation, and R&D would go a long way in producing tangible results for the economy.

Trade

TABLE 7

DATA INDICATING CAMBODIA'S TRADING OUTLOOK.

Trade	2006	2007	2008	2010	2011	2012	2014	2016	Trend
No. of tariff agreements	2	3	2	1	1	1	7	1	
Duty-free imports (in USD million)	193.47	294.30	362.62	784.51	905.03	964.75	3,715.35	1,671.55	
Maximum rate (%) tariffs	35	35	35	35	35	35	35	35	

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Trade	2006	2007	2008	2010	2011	2012	2014	2016	Trend
Duty-free tariff lines share (%)	9.01	8.56	8.79	10.11	11.47	11.44	23.25	11.40	
HH Market concentration index	0.34	0.32	0.27	0.19	0.15	0.11	0.08	0.06	
Index of export market penetration	3.34	3.52	4.05	4.17	4.27	4.77	5.22	5.76	

Source: WITS, 2006–16.

Since its facilitation into the WTO, Cambodia has embraced international trade openness to the fullest, as also indicated by data in Table 7. As a result, foreign investments have also risen to a large extent. Garment exports are the primary source of earnings in this regard. Immediately after the peace settlement, it was mainly foreign aid and official development assistance that provided revenues for the country. After the expansion of liberalization and international trade, earnings from foreign direct investment (FDI) surpassed other forms of aid and income. The USA has emerged as an important export partner, followed by other large Asian economies including Hong Kong. Over the recent years, OECD nations have gained precedence in exports.

TABLE 8

CAMBODIA'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %, 2014–18
USA	21.32
UK	9.47
Germany	8.98
Japan	8.21
Canada	6.5

Top 5 import partners	Partner share in %, 2014–18
PR China	36.79
Thailand	15.44
Vietnam	11.45
Other Asia, NES	5.67
Singapore	4.56

Source: WITS, 2018.

As a nation highly reliant on international trade, Cambodia remains highly susceptible to regional trade wars and volatile global markets. Furthermore, a rise of protectionism remains a threat to international trade. Additionally, the presence of export products such as textiles is profitable but may confine the growth trajectory. Thus, lack of diversification puts Cambodia at a significant risk. If it is unable to scale up on international trade in the coming years, it may lose out on substantial returns and fail to boost competition. Table 8 highlights Cambodia's leading export and import partners.

Industry, Innovation, and R&D

TABLE 9

BANGLADESH'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D, 2010–15.

Industry, innovation, and R&D	2007	2008	2009	2010	2011	2012	2013	2014	2016	2017	2018	Trends
High-technology exports as % of manufactured exports	0.05	0.09	0.21	0.15	0.11	0.26	1.21	0.51	1.86	1.74	1.40	
High-technology exports (in current USD million)	1.60	3.81	9.96	8.24	7.20	13.86	73.02	31.19	171.12	177.20	164.82	
Direct resident trademark applications	552	578	806	840	903	968	968	1,182	1,650	2,094	2,322	

Source: World Development Index, 2009–16.

A conducive environment for innovation and R&D is a challenging task for Cambodia with its recent liberation and high inequality. Innovation may take a backseat in the face of other pressing issues such as poverty, and disparity in quality of education. Thus, Cambodia lags behind in the indicators for industry, innovation, and R&D, as indicated by data in Table 9. The Cambodian government does realize the importance of technological advancement and the need for R&D and innovation in today's world. Giving equal prioritization to innovation and R&D, along with economic development, would enable promising results for productivity growth as well. Subsequently, better innovation may also lead to outcomes that provide for a better quality of life, thereby delivering social progress for the people of the nation.

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to Cambodia, that would hinder its growth:

- Emphasis must be put on diversifying the economy and not remaining completely reliant on some confined sectors such as agriculture. Although textiles and agriculture have been profitable in the past, they may not be enough to sustain growth levels or even increase gains in the long run.

- Investing in human capital is the need of the hour. It would boost productivity and also provide a better quality of life for citizens of Cambodia.

- Investments to achieve social progress in areas of education and health a required. Consequently, investing in vocational training and other skilling programs would prevent the youth from being stuck in low-end jobs.

- Reforms that ease the processes for establishing new businesses and removing red tapism would encourage companies, especially the small and medium enterprises.

- Threats to Cambodia's economic gains also stem from its violation of human rights. A government that guarantees human rights to its people is imperative to ensure the wellbeing of its people. Thus, immediate measures that promise wellbeing of the people and punish the violators of human rights are extremely crucial.

- Fostering innovation and creativity warrants a competitive economy. Initiatives that encourage innovations in businesses, organizations, and institutions must be undertaken.

- Incentivizing R&D across sectors in local institutions entails lucrative results for advancing a country. Furthermore, collaborations of academic institutions with organizations or even the government can induce healthy practices and productivity-boosting results.

Cambodia's Competitiveness

Reform efforts undertaken by Cambodia have gone a long way in providing overall economic gains to the country. Given its very recent history, Cambodia needs to tackle various challenges in all areas, i.e., social, economic, and political. A rising middle-class population also underpins the advancement made by Cambodia over the years as it aims to become a high-middle-income economy by the year 2030. Taking extensive efforts to diversify its economy and extensively promoting trade may help push Cambodia towards building a resilient economy that can strengthen its competitiveness.

Conclusion

Since its move to becoming a liberal state and allowing privatization to take place, Cambodia has boasted of swift economic developments that have made a significant impact on the lives of its citizens. The post-conflict reconstruction efforts have introduced new pathways to social progress and economic development. With continuous efforts, a steady transformation will enable Cambodia to become another Asian success story in its own right.

THE REPUBLIC OF CHINA

The Republic of China (ROC) has amassed major economic gains over the years. Development measures undertaken by the government in the early days focused on the agriculture sector, by investing in infrastructure, improving irrigation systems, and mechanizing farming. In the 1960s, focus on rural industrialization saw the advent of a manufacturing economy. By the 1970s, an export-oriented manufacturing economy had developed. The ROC slowly evolved into a highly competitive force in the world market with its domineering industrialization, sophisticated products and exports, and thriving innovation. Conflict arises in the political area, which then translates into social and economic issues. The ROC, therefore, is prone to coming across hostilities that may negatively impact international trade, investment, and the ability to raise capital. In an increasingly international community, it may reap the best results for the ROC. While it has been highly competitive and prosperous, being one of the most developed nations in the world, its geopolitical landscape puts the country under immense scrutiny.

Table 1 offers an overview of the ROC and highlights significant trends and a historical trajectory that has shaped its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN THE ROC.

Overview				
Population (2020)	23,713,696			
Employment–population ratio (2018)	57.0%			
Labor force participation rate (2018)	59.2%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	375,787	446,141	525,601	587,464
GDP per capita, current USD	16,550	19,241	22,311	24,760
Real GDP growth, y-on-y, %	5.42	10.63	0.81	2.63
Current account balance, % of GDP	3.97	8.26	13.92	12.25

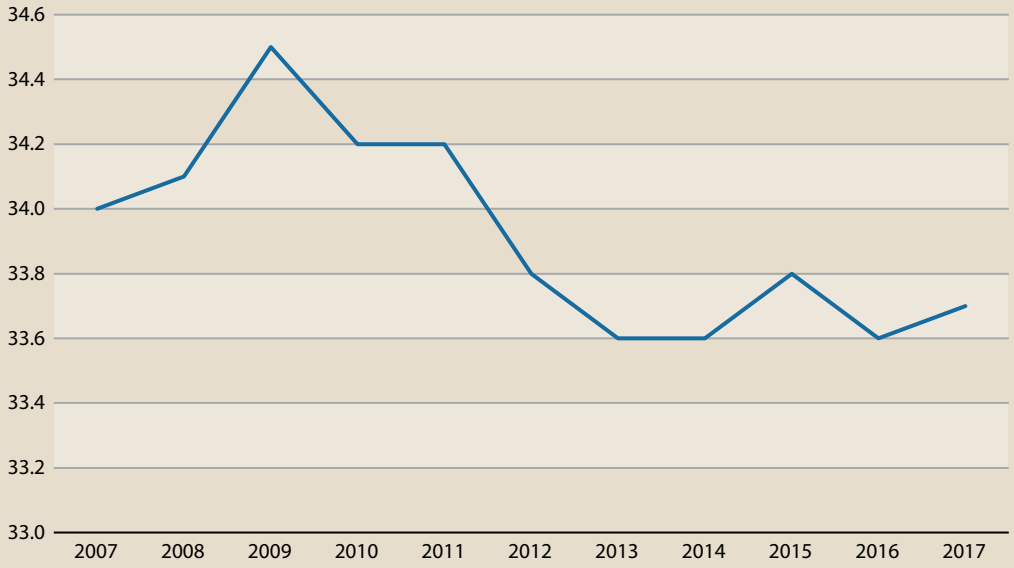
Sources: ILO and UN Department of Economic and Social affairs: Population Division; UNCTAD STAT (2018).

The ROC has built one of the most robust current account surpluses in the world. Massive foreign currency reserves also prove to be extremely beneficial for international trade. A high GDP per capita and one of the most massive surges in employment rates in the past four decades [1] also enunciate prosperity in the nation.

By the 1980s, the ROC had fundamentally reduced inequalities in the country, making progress towards economic development. Later on, the income gap began to widen slowly. Over the past three decades, income inequality may have seen slight fluctuations. Since the late 1990s, the top-tier income groups, i.e., 10%, 5%, 1%, 0.1%, and 0.01% have all witnessed increase in incomes

FIGURE 1

SHOWCASING THE ROC'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2007–16.



Source: UNU-WIDER.

[42]. Implications of rise in incomes of the top-tier groups include a simultaneous rise in disparity as well. Overall, the ROC still ranks superior on factors associated with development, social progress, wellbeing, and economic gains, as also reflected by the Gini coefficient in Figure 1. The findings of this report shed light on the immense progress of the ROC made so far that has led to a high standard of living, massive economic gains, and efficiency of productivity and labor. However, concerns arise over the future direction of the country's economy.

Table 2 offers an insight into the ROC's performance on various pillars to assess the country's overall level of competitiveness.

TABLE 2

SCORES INDICATING THE ROC'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**76.35**
Infrastructure	1.15
International shipments	0.98
Logistics competence	0.89
Tracking and tracing	0.93
Tracking timeliness	0.6
2. Labor and productivity	**73.05**
Per worker labor productivity	1.38

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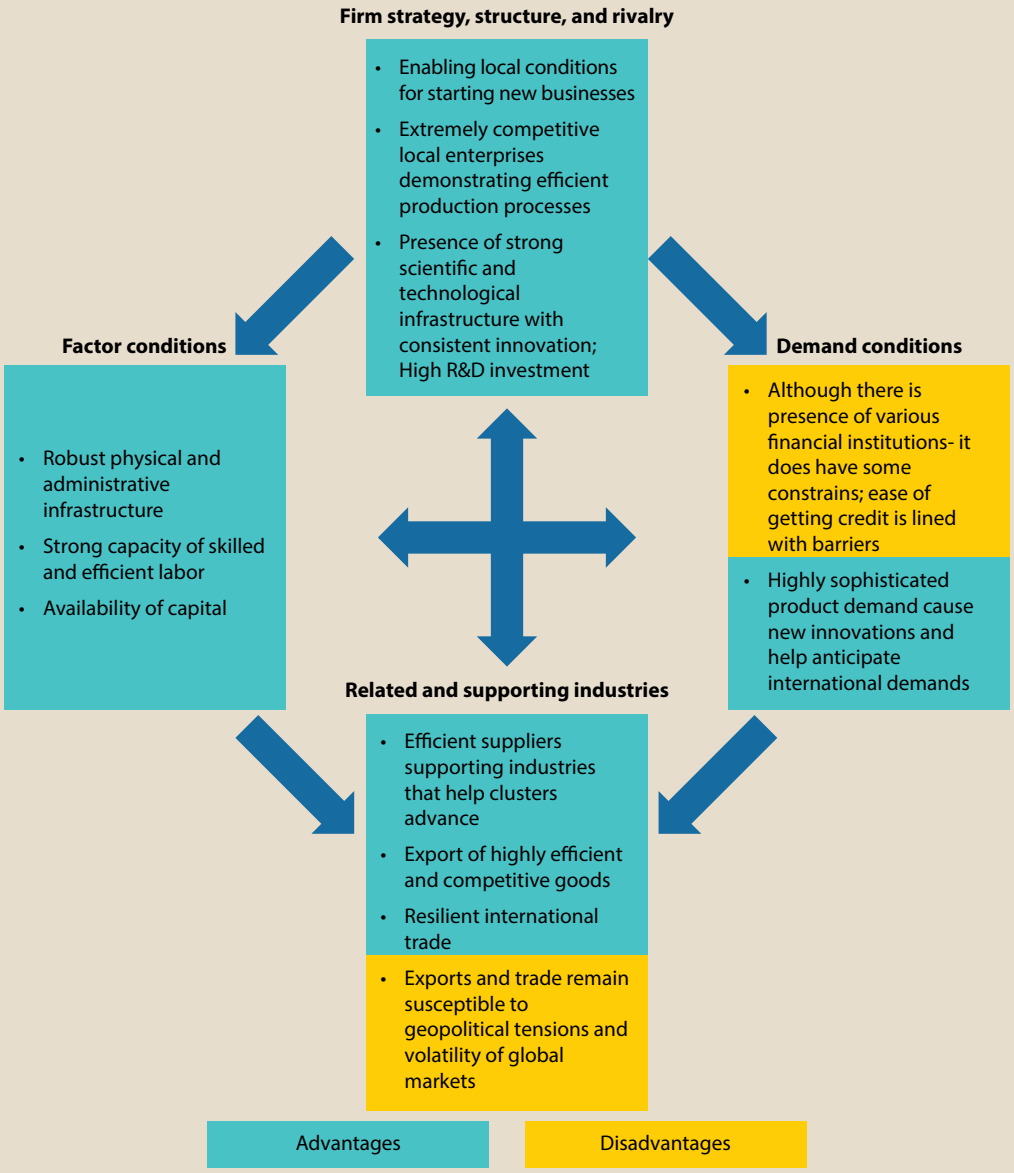
Pillar	Score
Per worker labor productivity growth	–0.36
Per hour labor productivity	1.40
Per hour labor productivity growth	–0.07
TFP growth	0.41
3. Financial access	**68.73**
No. of ATMs per 100,000 adults	0.69
No. of commercial bank branches per 100,000 adults	0.27
Account (% of those aged 15+)	0.94
Borrowed money in the past year (% of those aged 15+)	0.59
Outstanding deposits with commercial banks (% of GDP)	1.11
Outstanding loans with commercial banks (% of GDP)	1.16
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	–1.23
4. Trade	**79.49**
No. of tariff agreements	0.75
Duty-free imports (USD thousand) between 2014–18	1.49
Maximum rate (%) tariffs 2014–18	–0.05
Duty-free tariff lines share (%) 2014–18	1.17
HH Market Concentration Index	–0.31
Index of export market penetration	0.79
5. Starting a business	**87.84**
Starting a business	1.1
Registering property	1.24
Getting credit	–0.74
Paying taxes	0.88
6. Industry, innovation, and R&D	**67.32**
High-technology exports as % of manufactured exports	0.68
R&D expenditure as % of GDP	1.41
High-technology exports (current USD)	1.58
Patent applications of residents	1.17
Direct resident trademark applications	0.33
Total	**75.47**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the ROC, based on the Diamond model:

FIGURE 2

KEY OBSERVATIONS ON THE ROC'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



The attributes of the national diamond for the ROC highlight the factors that have contributed to its efficient and resilient economy. With robust infrastructure, efficient production processes, and competitive domestic enterprises, the country propelled itself towards consistent innovation that helped advance its economy. While international trade is vital for the country, it also remains susceptible to burgeoning trade wars that may impede the growth process. Special attention to providing a smoother process that enables ease of accessing credit may again go a long way in promoting productivity gains locally.

The following sections discuss the diamond parameters in detail.

Infrastructure

TABLE 3

SCORES INDICATING THE ROC'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	3.62	3.62	4.10	3.64	3.57	3.72	
International shipments	3.65	3.64	3.72	3.71	3.57	3.48	
Logistics competence	3.58	3.65	3.68	3.6	3.95	3.57	
Tracking and tracing	3.60	4.04	3.58	3.79	3.59	3.67	
Timeliness	4.18	3.95	3.77	4.02	4.25	3.72	

Source: Logistics Performance Index.

After the end of Japanese occupation of the ROC, the latter was still left with decent infrastructure. A well-established agricultural infrastructure supported its march to modern industrialization. Even in the wake of the disasters of the Second World War, the ROC dealt with various political issues and a looming civil war. However, it continued to embark on measures to develop its infrastructure, as indicated by the scores in Table 3. Investments in places with vast labor pools and cheaper living expenses; successful public–private partnerships; and well-built roads and railways have all helped transform the economy even further.

Labor and Productivity

TABLE 4

THE ROC'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	0.95	0.94	0.92	1.00	1.02	1.02	1.04	1.03	1.04	1.06	1.08	
Labor productivity (based on hours worked)	0.90	0.92	0.93	1.00	1.02	1.02	1.04	1.01	1.02	1.04	1.08	
Labor productivity (based on number of employments)	0.93	0.93	0.92	1.00	1.02	1.02	1.04	1.07	1.07	1.08	1.10	
Capital productivity	0.95	0.93	0.91	1.00	1.03	1.04	1.07	1.11	1.12	1.15	1.17	

Source: APO Productivity Database, 2019.
Note: Unit: Index (2010=1.0).

Per worker labor productivity of the ROC is one of the highest (see Table 4) among APO members. Only Singapore and Hong Kong precede it. By the year 2010, the country had improved its per worker labor productivity based on GDP at constant prices by ten times, thereby overtaking Japan [1]. Thus, the ROC has emerged as one of the productivity leaders in the region. This consistent rise towards becoming an efficient productivity center, coupled with a high level of exports and prioritization of R&D, has given the country tremendous competitive advantage in the world economy.

Trade

Exports have been one of the strong aspects for the ROC. Its net export share of GDP stood at 12.7% in 2017, second to Singapore at 24.4% [1]. The economy is heavily reliant on exports. The various export products include textiles, chemicals, ships, and metals. Even amidst great uncertainty, the ROC has managed to stay resilient and save its trade and economy from drastic changes.

The ROC shares strong trade relations with the USA as well. However, PR China also plays a vital role in trade for the country's economy. Therefore, rising global trade wars can have severe implications for a country like the ROC. It has high stakes in international trade, which makes it more vulnerable to global market volatility and geopolitical tensions. A report on trade barriers in the ROC also states the importance of lessening trade barriers through bilateral consultancy and dispute settlement by the WTO [43]. It refers to the strengthening of cooperation of multilateral trade cooperation through mutual agreements. Nevertheless, through bilateral trade agreements and proper negotiations, the ROC should be able to continue to excel in international trade with its highly competitive goods.

Starting a Business

TABLE 5

SCORES INDICATING THE ROC'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	86.8	88.5	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	
Registering property	80.2	80.2	80.2	80.2	80.2	80.2	83.9	83.9	83.9	83.9	
Getting credit	62.5	62.5	62.5	62.5	55.0	60.0	60.0	50.0	50.0	50.0	
Paying taxes	74.1	74.8	78.8	82.2	82.3	82.9	85.1	85.1	85.2	85.1	

Source: Doing Business, The World Bank, 2010–19.

Ease of starting a business offers another advantage to the economy of the ROC. It has consistently emerged as one of the top performers in the indicator for starting a business. For registering property and paying taxes, the ROC has shown a steady increase over the years (see Table 5). The only concerning factor stems from the indicator for getting credit. It underscores a stringent process of acquiring credit for new enterprises, which in the long run may discourage businesses. Presence of various small and medium enterprises also adds to a healthy business environment. In the Ease of Doing Business index for the year 2020, the ROC ranks 15th, out of around 190 countries.

Industry, Innovation, and R&D

R&D investments for the ROC stand on par with other innovation and R&D pioneers in Asia, i.e., the ROK and Japan, with over 13% of total investments in 2017 going towards R&D [1]. The encouragement provided by the government plays a huge role in a country's R&D practice. It was because of intensive innovation that the ROC is today one of the significant industrialization hubs in the modern world. Thus, the country's commitment to innovation and R&D has bolstered its competitive edge in the world economy.

Underlying Concern

The underlying concern for the ROC arises in the area of financial access, particularly in terms of acquiring credit.

Financial Access

Financial institutions in the ROC can in no way be deemed as inefficient or lacking. Financial resources remain available to the masses throughout the country. As a developed nation, with a history of inequality that is moderate, the people are certainly not starved for finances. However, in comparison with the country's performance on other attributes of the national diamond as well as other APO members, financial access may be improved. This improvement can be streamlined towards providing a smoother process for getting credit for new enterprises. Even in ease of doing business, getting credit remains a sore subject for enterprises. Offering a smoother process for acquiring credit may help not only the local citizens but also prevent new businesses from plummeting quickly.

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to the ROC, that would hinder its growth:

- Build on existing strengths with continuous improvements in innovation, sophisticated production process, and quality of life.
- Pursue advanced and diverse services related to areas of the ROC's expertise, i.e., technology and innovation.
- Address weakness in financial access by introducing a smoother process for acquiring credit, particularly for new enterprises, to further encourage a conducive business environment.
- Implement best-policy practices across sectors, so that particularly those that need improvement would deploy means to maintain a competitive state in the global markets.
- Be cautious of global trade wars and their resulting implications to prevent significant adverse consequences, as it has become crucial in today's world.

The ROC's Competitiveness

The ROC's competitiveness, compared with other countries in the global economy, can be deemed as highly competitive. It performs well in terms of its productivity, enabling massive economic

gains. Incoming threats from the political arena give rise to issues in social and economic spheres alike. More importantly, it deprives the ROC of the kind of recognition it deserves. Nevertheless, the country has held on and continued to prosper. This has led to the development of a highly sophisticated demand for products and beneficial factor conditions. Subsequently, the presence of strong clusters and supporting industries as well as a conducive business environment has played a significant role in furthering the country's competitive advantage.

Conclusion

The growth trajectory of the ROC has been on the rise, with figures that match its success. Rising political tensions cast a dark shadow of concern and may adversely affect the country. With precautionary measures in place and consistent productivity gains, the ROC can continue to embark upon its development process and be a crucial competitive player in the world economy.

FIJI

Fiji is an archipelago of 322 islands, with an Exclusive Economic Zone of 1.26 million sq km. Fiji is one of seven upper-middle-income countries in the Pacific. As drawn from Table 1, economic growth has averaged at 2% in real terms since independence [45].

The Fijian economy relies on agriculture, with sugar being the main export. Service sectors continue to grow strongly (largely driven by the tourism industry), along with construction, manufacturing, and retail activities. Tourism remains Fiji's main source of foreign exchange, with visitor numbers growing steadily each year and exceeding 840,500 in the 12 months to January 2018, which marked a new record [46]. Australia is Fiji's largest tourism market.

TABLE 1

MAJOR ECONOMIC TRENDS IN FIJI.

Overview				
Population (2019)	880,000			
Employment–population ratio (2018)	55.29%			
Labor force participation rate (2018)	57.70%			

Economic trends	2005	2010	2015	2018
GDP, current	2,980	3,140	4,362	5,120
GDP per capita, current USD	3,628	3,652	5,022	5,795
Real GDP growth, y-on-y, %	0.70	3.00	3.84	3.00
Current account balance, % of GDP	6.90	4.76	3.76	9.48

Sources: ILO and WDI databases; UNCTAD STAT (2018).

Evidently, GDP in nominal terms has risen steadily for Fiji in both aggregate and per capita terms. However, GDP growth in real terms has been erratic, hovering at the 3% mark. A silver lining, however, is the rise in the current account balance ratio as a percentage of the GDP. This signals an exports-led growth driven by agri exports and tourism. Whether this exports-led growth has led to Fijian people participating equitably in social and economic opportunities remains a matter of debate. For that, we look at the Gini index.

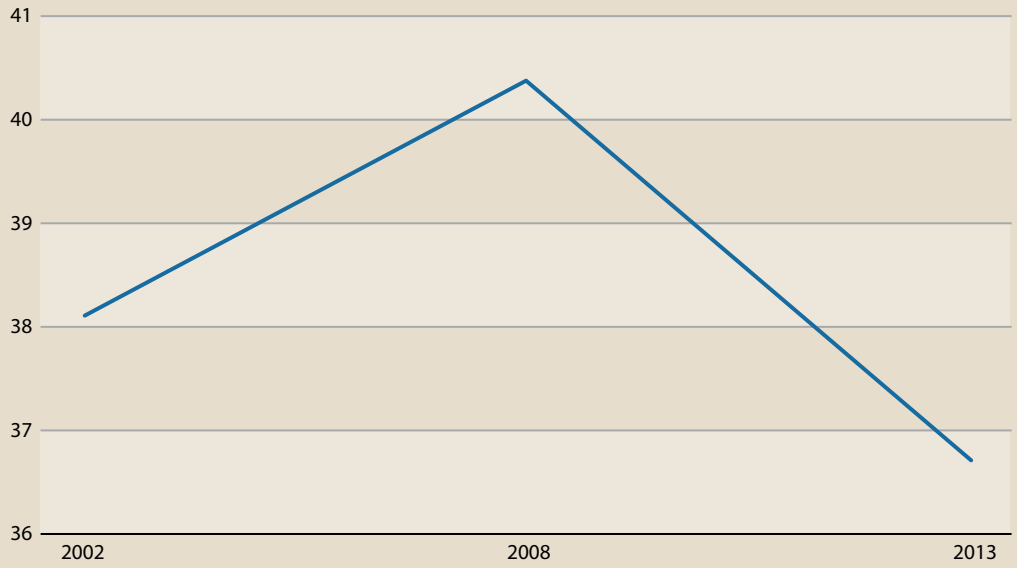
The Gini index, or Gini coefficient, is a measure of distribution of income across a population. It is often used as a gauge of economic inequality, measuring income distribution or, less commonly, wealth distribution among a population. The coefficient ranges from 0 (or 0%) to 1 (or 100%), with 0 representing perfect equality and 1 representing perfect inequality.

The equality in income distribution across segments in Fiji has shown a recovery post 2008, signaled by a drop in Gini coefficient (see Figure 1), a fall in income share held by the top 10%, and a rise in the income share held by the top 20%. This positive trend signifies that Fiji has been

able to successfully move on from the instabilities caused by the 2006 coup, the 2008 global financial crisis, and the collapse of its tourism sector. This, coupled with ten years of consecutive positive economic growth, points at a phenomenon known as the 'Bainimarama boom' in Fiji policy circles. The government has focused on doubling the size of Fiji's job market, crowding in private investment, and increasing public spending. All these procyclical measures, however, come at the cost of a bulging public debt [47]

FIGURE 1

SHOWCASING FIJI'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2002–12.



Source: Primary household survey data of Fiji, Knoema.

Table 2 offers an insight into Fiji's performance by various pillars to assess the prevailing level of competitiveness.

TABLE 2

SCORES INDICATING FIJI'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	
Infrastructure	–0.82
International shipments	–1.87
Logistics competence	–1.23
Tracking and tracing	–1.39
Tracking timeliness	–1.65
2. Labor and productivity	**30.60**
Per worker labor productivity	–0.59

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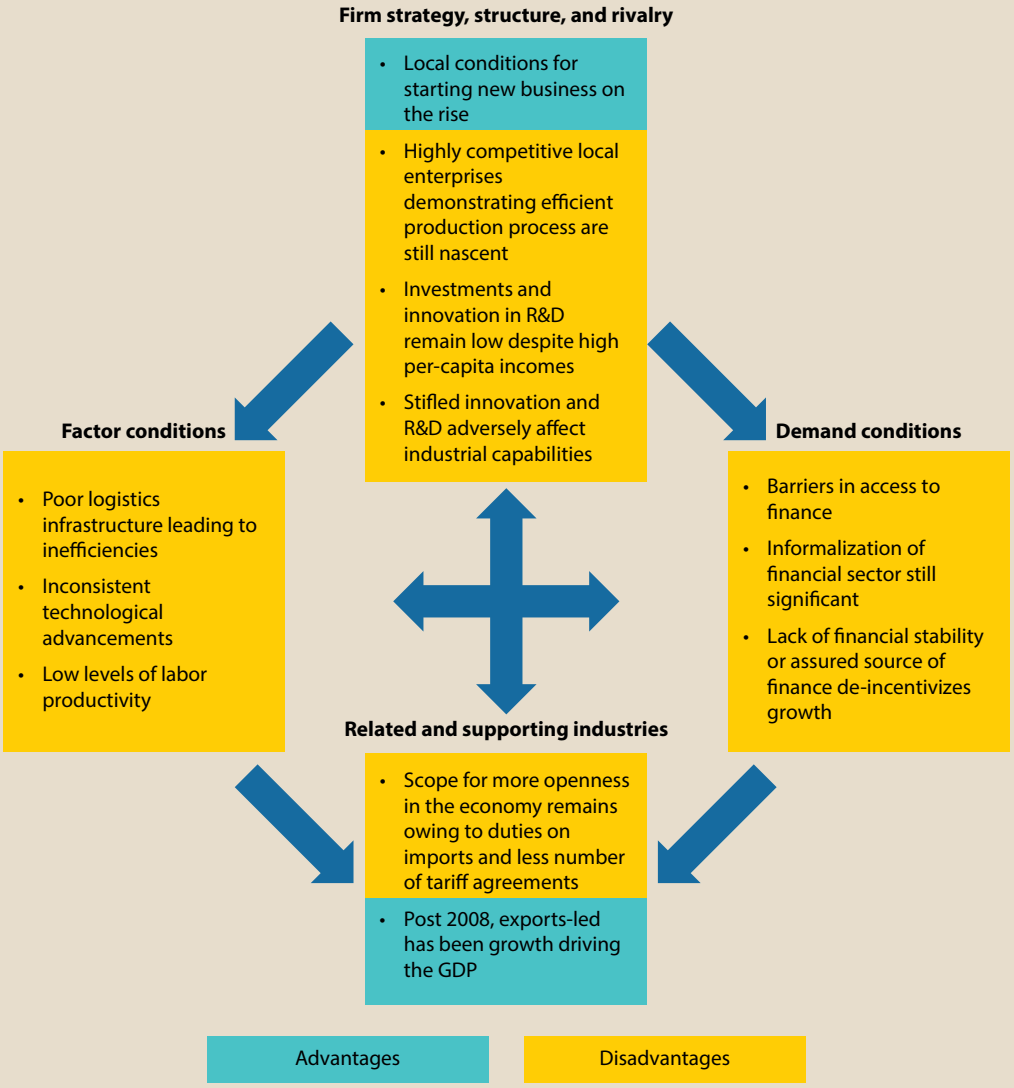
Pillar	Score
Per worker labor productivity growth	–0.48
Per hour labor productivity	–0.56
Per hour labor productivity growth	–0.42
TFP growth	–0.5
3. Financial access	**44.23**
No. of ATMs per 100,000 adults	–0.05
No. of commercial bank branches per 100,000 adults	–0.38
Account (% of those aged 15+)	0.47
Borrowed money in the past year (% of those aged 15+)	–0.23
Outstanding deposits with commercial banks (% of GDP)	–0.52
Outstanding loans with commercial banks (% of GDP)	–0.36
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	0.64
4. Trade	**33.27**
No. of tariff agreements	–0.91
Duty-free imports (USD thousand) between 2014–18	–0.8
Maximum rate (%) tariffs 2014–18	2.19
Duty-free tariff lines share (%) 2014–18	–1.12
HH Market Concentration index	0.58
Index of Export Market Penetration	–1.28
5. Starting a business	**45.23**
Starting a business	–0.48
Registering property	0.43
Getting credit	–2.25
Paying taxes	–0.05
6. Industry, innovation, and R&D	**10.92**
High-technology exports as % of manufactured exports	–0.89
R&D expenditure as % of GDP	–0.15
High-technology exports (current USD)	–0.77
Patent applications of residents	–0.35
Direct resident trademark applications	–0.10
Total	**27.38**

Key Observations

Porter's Diamond Framework attempts to identify the sources of international competitive advantages unique to a nation (see Figure 2). The model provides useful insights into possible linchpins and areas of concerns for Fiji. Low financial sophistication; low R&D spends despite

FIGURE 2

KEY OBSERVATIONS ON FIJI'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



high per-capita income; and mediocre logistics infrastructure, especially rural road access, remain the major pain points. Fiji scores low on market deepening as a result of stunted factor conditions and demand conditions. However, foreign exchange earnings brought in by the tourism industry and export of sugar and forest produce continue to be the drivers of baseline economic growth.

The following section discusses the four attributes of the diamond in detail.

Labor and Productivity

From 1970 to 2015, Fiji showed an upward improvement of 22% in per-worker labor productivity (see Table 3) when compared with countries such as Myanmar, Lao PDR, India, and Pakistan [48], which is a steady improvement. However, total factor productivity (TFP) has shown zero growth based on a recent estimate [1]. Growth in TFP refers to output growth not accounted for by the growth in inputs. The zero growth in TFP purportedly has many explanators, namely, the laid-back

TABLE 3

FIJI'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	0.98	0.98	0.96	1.00	1.03	1.04	1.09	1.13	1.12	1.08	1.09	
Labor productivity (based on hours worked)	1.00	1.00	0.98	1.00	1.03	1.02	1.06	1.10	1.09	1.06	1.09	
Labor productivity (based on number of employments)	1.02	1.02	0.98	1.00	1.02	1.02	1.06	1.11	1.13	1.12	1.15	
Capital productivity	0.97	0.97	0.96	1.00	1.04	1.05	1.10	1.12	1.15	1.13	1.13	

Source: ASource: APO Productivity Database, 2019.

Pacific work culture, low capital-to-labor ratios, lack of up-to-date technology, and high emigration rates among the limited skilled populace. All this ensures that productivity gains are not commensurate with the rates of increase in factors of production [49].

Trade

TABLE 4

FIJI'S PERFORMANCE ACROSS TRADE PARAMETERS, 2010–18.

Trade	2008	2009	2010	2011	2012	2013	2015	2017	2018	Trend
No. of tariff agreements	2	4	3	3	1	3	1	3	3	
Duty-free imports (in USD million)	182.97	109.22	168.64	192.78	202.88	207.19	154.40	277.64	277.05	
Maximum rate (%) tariffs	3,000	3,000	3,000	3,000	3,000	3,000	32	3,000	3,000	
Duty-free tariff lines share (%)	2.88	3.06	5.2	5.83	5.73	6.37	5.56	11.3	10.3	
HH Market concentration index	0.15	0.14	0.15	0.11	0.13	0.12	0.16	0.18	0.23	
Index of export market penetration	1.83	1.9	1.94	2.11	1.95	1.91	1.76	1.7	1.68	

Source: WITS, 2019.

In 2018, Fiji was the number 151 economy in the world in terms of GDP (current USD), number 153 in total exports, and number 149 in total imports. In 2018, Fiji exported USD951 million and imported USD2.88 billion, resulting in a negative trade balance of –USD1.93 billion. The most recent exports are led by water (USD162 million); non-fillet frozen fish (USD83.9 million); gold (USD54.7 million); processed fish (USD49.3 million); and fuel wood (USD47.6 million). The

most common destinations for exports from Fiji are the USA, Australia, Japan, and New Zealand. Fiji continues to export mainly primary products [50].

The most recent imports of Fiji are led by refined petroleum (USD612 million): cars (USD84.4 million); planes, helicopters, and/or spacecraft (USD74.9 million); delivery trucks (USD68.3 million); and broadcasting equipment (USD53 million). The most common import partners for Fiji are Singapore, PR China, Australia, New Zealand, and Japan [50]. Fiji's import basket consists of mostly industrial and processed capital goods, pointing to a low indigenous manufacturing capability.

As the data in Table 4 shows, Fiji has shown steady but gradual growth on its trade indicators. A fairly good export-to-GDP ratio percentage of 26.23%, considering its 'island nation' status, aligns with the framework data trends. However, its exports, which are mainly primary in nature, face difficulty in these times of deregulated global markets. The sugar industry, particularly, has suffered from quality concerns, management problems, labor relations issues, and non-renewal of land leases. The textile industry has similarly declined following the end of the quota system under the Agreement on Textiles and Clothing and the full integration of textiles into the WTO tariff regime, which removes any quotas on textiles to bring them under the purview of GATT [51]. Table 5 highlights Fiji's leading export and import partners.

TABLE 5

FIJI'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share (%)
USA	17.95
Australia	12.91
Fiji*	8.01
Japan	7.42
New Zealand	6.55

Top 5 import partners	Partner share (%)
Singapore	20.84
PR China	16.32
Australia	15.72
New Zealand	14.62
Japan	4.68

Source: WITS, 2019.
Note: * here refers to 'free zones' belonging to the geographical and economic territory of a country but not to its customs territory. For trade statistics, the transactions between the customs territory and the free zones are recorded. Free zones can be commercial free zones (duty-free shops) or industrial free zones.

Starting a Business

Fiji dropped from 101 earlier to 102 in the year 2020 in 'Ease of doing business' rankings. Although the World Bank report on 'Doing Business' [44] notes that Fiji has made starting a business less costly by reducing registry fees and the time required to start it, yet the ranking has dropped. This could be indicative that while Fiji is undertaking reforms, it is not doing so as fast as other countries are doing. Scores given in Table 6 are indicative of this. However, the Fiji government has taken various further steps and has set an ambitious target of reaching a rank of 50 by the year 2025. In this direction, it has approved online registration of companies and taxes; launch of personal properties register; biz FIJI Portal; and various business license reforms [52].

TABLE 6

SCORES INDICATING FIJI'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	75.6	75.8	74.2	67.8	68.0	68.0	68.2	73.1	73.3	73.4	
Registering property	79.3	79.3	79.3	76.3	74.1	74.1	71.9	71.9	71.9	71.9	
Getting credit	68.8	68.8	68.8	68.8	50.0	50.0	50.0	25.0	25.0	25.0	
Paying taxes	67.1	68.1	68.5	68.3	67.5	67.0	70.6	70.7	71.1	71.0	

Source: Doing Business, The World Bank, 2010–20.

Financial Access

TABLE 7

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN FIJI.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	25.92	27.19	33.09	36.56	37.03	42.32	46.04	47.92	53.19	52.65	54.28	
No. of commercial bank branches per 100,000 adults	11.61	11.27	11.14	10.94	10.60	11.28	12.62	12.80	12.40	12.15	11.88	
Outstanding deposits with commercial banks (% of GDP)	46.02	50.53	47.46	46.02	44.58	46.54	45.38	49.14	50.32	51.27	50.71	
Outstanding loans with commercial banks (% of GDP)	52.04	53.31	50.19	46.86	47.18	50.85	54.74	58.17	60.49	61.44	61.57	

Source: IMF, 2014–18.

Around 60% of Fijians have bank accounts, and another 4% use other formal financial services, including microfinance, credit unions, and insurance. These aspects are indirectly reflected in data presented in Table 7. Also, 9% of Fijians exclusively used informal financial services to save or borrow while another one-third (27%) may be classified as financially excluded [53].

As expected, formal inclusion is higher among urban Fijians, men, and those with higher incomes. Rural citizens face high barriers to financial inclusion such as long distances to nearest access points and long waiting times to open an account. Although, when compared with other Pacific Island countries such as Samoa and Solomon Islands, formal inclusion in Fiji is much higher; when compared with upper-middle-income countries which Fiji was also reclassified as in 2013, progress lags slightly behind [53]. Despite high-profile product launches and pushes from donors and other development partners, mobile money is yet to reach significant scale in Fiji. Similarly, rates of mobile and internet banking are low.

Underlying Concerns

Infrastructure

TABLE 8

SCORES INDICATING FIJI'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2010	2012	2014	2016	2018	Trend
Infrastructure	1.98	2.22	2.47	2.25	2.40	
International shipments	2.48	2.41	2.72	2.21	2.16	
Logistics competence	2.11	2.18	2.22	2.25	2.31	
Tracking and tracing	1.96	2.48	2.47	2.25	2.31	
Timeliness	2.82	3.12	2.97	2.6	2.54	

Source: Logistics Performance Index.

Even though Fiji has made progress in infrastructural capacity, there is still a long way to go. Fiji is rich in natural metal resources like gold and copper, but its logistical infrastructure limits its ability to process and export these resources. The stagnant trends across the infrastructural parameters as seen in Table 8, point at this. Rural industries rely on road access, e.g., from plantations to processing plants to export ports. However, Fiji being prone to disruptive natural events such as tropical cyclones and resultant flooding, combined with its topography, has restricted the 11,000-kilometer road network to spine or circumferential main roads with feeder roads, leaving few route alternatives. Remote rural and island communities in Fiji are thus, relatively poor, and isolated from economic opportunities and social services, particularly when rural access roads and rural jetties are in poor condition. Moreover, roads and rural maritime infrastructure are publicly funded, with few opportunities for private-sector investment, thereby leaving sustainable funding at risk during periods of national budget constraint [54].

Industry, Innovation, and R&D

TABLE 9

DATA INDICATING FIJI'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trends
High-technology exports as % of manufactured exports	3.50	4.81	3.60	3.90	2.12	2.24	2.15	1.71	2.40	3.37	
High-technology exports (in current USD million)	5.17	5.15	5.39	2.77	2.72	3.35	2.26	3.24	4.09	4.78	

Source: World Development Index, 2010–18.

R&D spending as a percentage of GDP has remained erratic over the nine-year period under study, as seen in Table 9. This ties into Fiji's export basket still relying heavily on primary products. Conflate this with the fact that data for patent and trademark applications in Fiji is absent, and it paints a grim picture of long-term sustainability of Fiji's economic policy.

Although Fiji is blessed with a resource pool of natural metals, a lack of industrial setups supplemented with cultural inertia limits Fiji to the idea of a 'resort country.' With the rest of the world moving toward more technology-intensive goods and non-primary products, Fiji must act in accordance and expedite its infrastructure and innovation capabilities.

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats that would hinder Fiji's growth:

- **Creating manufacturing capabilities:** Fiji's economy is susceptible to external shocks due to reliance on tourism for forex earnings and merchandize imports. Hence, there is a need to create indigenous manufacturing capabilities.

  This can be achieved through greater fiscal expansion and government expenditure. Diversifying into high-tech production and exports is also linked with investments in machinery, technology, and skilled labor.

- **Developing alternative financing institutions:** Specialized micro-finance institutions (MFIs), low capital local banks, postal savings banks, and financial cooperatives provide people with alternatives to get access to finances. Rural Fiji is particularly lagging in terms of financial inclusion. Also, there is still hesitancy in adoption of digital banking by Fijian people.

- **Improving access to finance:** Mobilizing private-sector capital flow, either directly through private-equity financing or through public-private partnerships (PPPs) would be a way of improving penetration rates of financial services.

- **Liberalizing service sector:** This can be done by scaling back the role of SOEs in the service sector, especially the telecom and transport sector. This would also give the Fiji government greater budgetary space to undertake R&D and manufacturing infrastructural initiatives.

- **Increasing R&D investments:** Increasing R&D investment as a percentage share of GDP is a need of the hour. Government expenditure on R&D must increase. Fiji's fiscal deficits are hardly 2% of its GDP [55]. Hence, a procyclical stance on R&D spending can be taken. Medium and large private enterprises can also be encouraged to spend a portion of their turnover in R&D.

- **Encouraging startups:** Policy focus must shift toward fostering an innovative and knowledge-based entrepreneurship-and-support ecosystem. Startups with more novel ideas and technologies must be stimulated with better access to finances.

- **Focus on domestic educational institutions:** Fiji needs to increase the proportion of science and technology workers. For this, it needs to create strong domestic institutions

for science, technology engineering, and mathematics (STEM) education to mitigate emigration of young Fijian students to Australia and New Zealand for higher education. This will solve the 'brain drain' problem.

- **Labor market reforms:** The rural labor market faces particularly tough challenges. The share of informal employment in rural areas in 2010–11, at 78.3%, was almost double the 38.6% share of urban areas. The earnings of rural workers are also less than half those of their urban counterparts. Not surprisingly, rural poverty rates are also significantly higher. Also, males accounted for almost two-thirds of the labor force in 2010–11. Labor force participation rate for males is also high at 81% compared with that of females at 47% [54]. Hence, social security measures and vocational training impartation are also required.

Fiji's Competitiveness

This report has identified many challenges and many possible policy solutions. However, not everything can be done at once. Priorities need to be selected.

Our understanding of Fiji's macroeconomic fundamentals leads us to believe that certain priorities lie well within its achievable competitive capabilities.

Improving the business environment; investing in urban resilience; and improving access to quality health and connective infrastructure while safeguarding fiscal sustainability are crucial to Fiji's competitiveness.

Conclusion

In order to warrant successful productivity gains and higher competitiveness levels, Fiji has to tailor its development strategy. A consistent investment policy, with suitable incentives for the private sector; a competitive and productive labor force; and a greater R&D spend with a focus on opening new institutions, coupled with a sound monetary policy to ensure the exports remain competitive, would be the need of the hour.

HONG KONG

Officially called the Hong Kong Special Administrative Region of the People's Republic of China (HKSAR), Hong Kong operates under a special doctrine of 'one country, two systems' since 1997, when the UK ceded it to PR China. Despite the identity crisis that envelopes it, Hong Kong has emerged as the 35th largest economy in the world with a GDP of USD362.9 billion as of 2018 [56]. Primarily a 'service economy,' with 90% of the GDP constituted by the services sector, Hong Kong is the freest economy of the world [57] characterized by low tax rates, free trade, and less government interference.

However, there are persisting obstacles. The tensions between Hong Kong and PR China [58] pose considerable challenges for businesses operating in the region, especially with regard to business development, talent retention, and leadership. Moreover, public anger about Hong Kong's obstacles to social mobility, extreme competition in school and work, and exorbitant housing prices contributes to an increasingly pessimistic view about the future. Amidst a backdrop of political uncertainty and almost no natural resources, Hong Kong, nonetheless, makes a perfect case study for the success of neo-liberal economics.

Table 1 provides an overview of Hong Kong and highlights significant trends on a historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN HONG KONG.

Overview				
Population (2019)	7,507,400			
Employment–population ratio (2018)	58.64%			
Labor force participation rate (2018)	41.26%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	181,569	228,639	309,386	362,931
GDP per capita, current USD	26,821	32,821	43,054	49,233
Real GDP growth, y-on-y, %	7.39	6.77	2.39	3.00
Current account balance, % of GDP	11.88	7.00	3.32	4.29

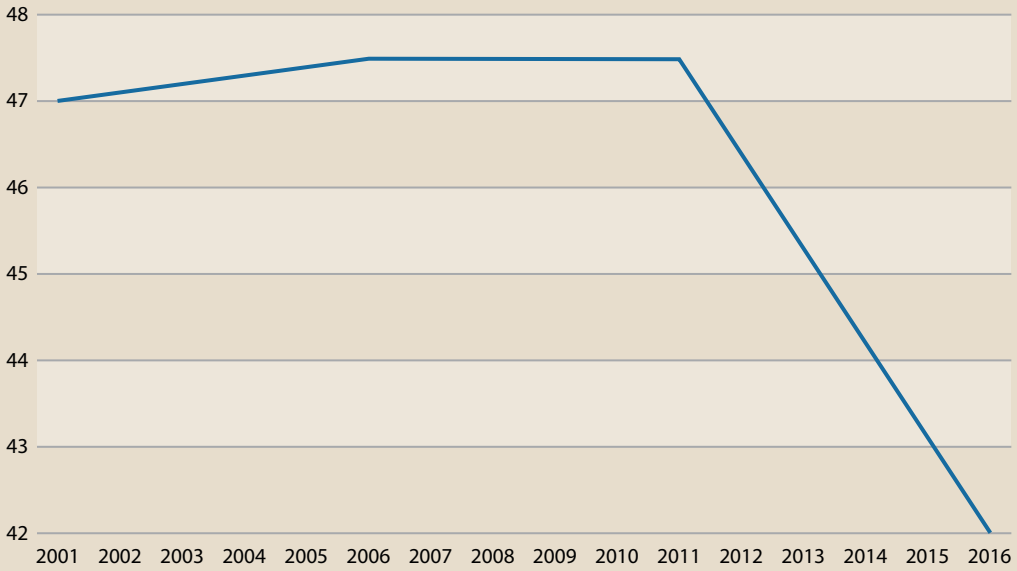
Sources: ILO and WDI databases; UNCTAD STAT (2018).

With a per capita income that has almost doubled in the last 13 years, it is important to see if this has percolated into reduced income inequality. For that we look at the Gini index over a 16-year period (see Figure 1).

Visibly, Gini coefficient dropped considerably between 2011 and 2016, reflecting that taxation and in-kind social benefits including education, housing, and medical played a significant role in

FIGURE 1

SHOWCASING HONG KONG'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2001–16.



Source: UNU-WIDER.

household income redistribution, combined with Hong Kong's positive growth trajectory. However, a recent Gini index figure of June 2017, reflects a higher value of 53.9 [59], suggesting that 'laissez faire' economics of Hong Kong has done little to reduce the gap (43.9 times) between the median incomes of the top 10% and bottom 10% of Hongkongers. No capital gains and dividend distribution taxes, coupled with measly investments in poverty relief and public spending as well as unaffordable housing for minorities run the risk of turning Hong Kong into a 'neo-liberal nightmare.'

Table 2 offers an insight into Hong Kong's performance by various pillars to assess its prevailing level of competitiveness.

TABLE 2

SCORES INDICATING HONG KONG'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**95.16**
Infrastructure	1.52
International shipments	1.61
Logistics competence	1.50
Tracking and tracing	1.37
Tracking timeliness	1.40
2. Labor and productivity	**88.27**
Per worker labor productivity	1.80

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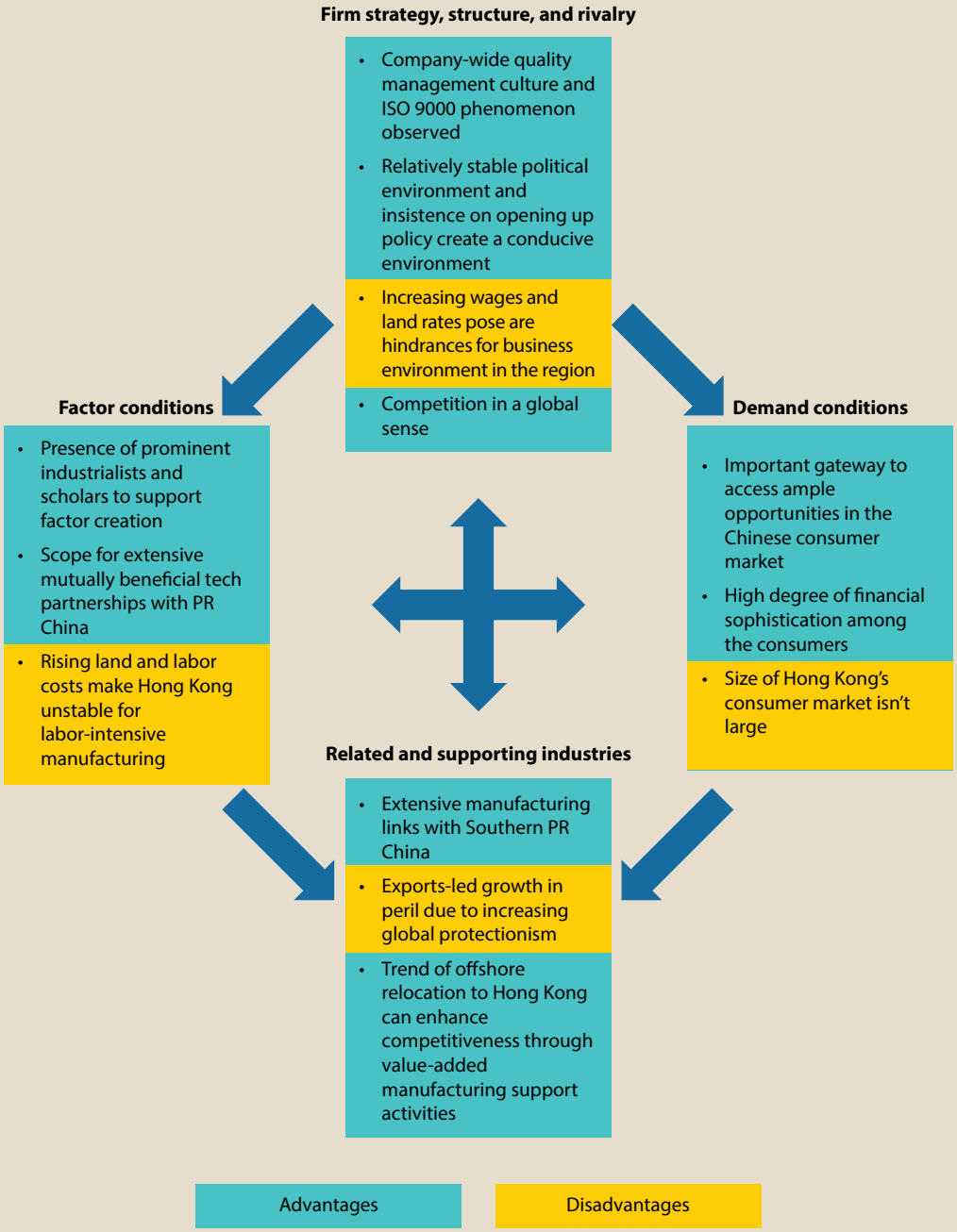
Pillar	Score
Per worker labor productivity growth	–0.13
Per hour labor productivity	1.75
Per hour labor productivity growth	0.08
TFP growth	1.17
3. Financial access	**100.00**
No. of ATMs per 100,000 adults	–0.14
No. of commercial bank branches per 100,000 adults	0.28
Account (% of those aged 15+)	0.99
Borrowed money in the past year (% of those aged 15+)	1.27
Outstanding deposits with commercial banks (% of GDP)	3.89
Outstanding loans with commercial banks (% of GDP)	3.67
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	–1.31
4. Trade	**67.17**
No. of tariff agreements	–1.14
Duty-free imports (USD thousand) between 2014–18	2.42
Maximum rate (%) tariffs 2014–18	–0.85
Duty-free tariff lines share (%) 2014–18	1.78
HH Market Concentration index	–0.37
Index of Export Market Penetration	0.63
5. Starting a business	**98.44**
Starting a business	0.41
Registering property	0.55
Getting credit	0.76
Paying taxes	1.98
6. Industry, innovation, and R&D	**36.28**
High-technology exports as % of manufactured exports	0.55
R&D expenditure as % of GDP	–0.12
High-technology exports (current USD)	1.68
Patent applications of residents	–0.41
Direct resident trademark applications	–0.61
Total score	**80.88**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the economy based on the Diamond model.

FIGURE 2

KEY OBSERVATIONS ON HONG KONG'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Hong Kong has consistently performed well on several indicators including factors related to labor productivity, logistics performance, and international trade. However, it needs to make major strides in other areas related to income inequality and R&D investment in order to make sustainable social and economic gains. Consequently, in improving on underlying weaknesses and dealing with inefficiencies, long-term prosperity can also be assured. The following section discusses the four attributes of the diamond in detail.

Infrastructure

TABLE 3

SCORES INDICATING HONG KONG'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2010–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	4.06	4.00	4.12	3.97	4.10	3.97	
International shipments	3.78	3.67	4.18	3.58	4.05	3.77	
Logistics competence	3.99	3.83	4.08	3.81	4.00	3.93	
Tracking and tracing	4.06	3.94	4.09	3.87	4.03	3.92	
Timeliness	4.33	4.04	4.28	4.06	4.29	4.14	

Source: Logistics Performance Index.

Regardless of certain inconsistencies, including decline in scores for timeliness, and tracking and tracing, Hong Kong continues to fare well in overall logistics performance (see Table 3). Advanced port and air cargo facilities, along with the Guangzhou–Shenzhen–Hong Kong Express Rail Link (connecting Hong Kong with PR China), has ensured Hong Kong's place as one of the largest trading entities in the world. This has offered a competitive advantage to Hong Kong in the international market. Successful operationalization of trading logistics has added to Hong Kong's productivity gains.

Labor and Productivity

TABLE 4

HONG KONG'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2010–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	0.98	0.99	0.96	1.00	1.02	1.02	1.03	1.06	1.06	1.08	1.11	
Labor productivity (based on hours worked)	0.94	0.97	0.96	1.00	1.04	1.05	1.06	1.12	1.12	1.15	1.20	
Labor productivity (based on number of employments)	0.95	0.95	0.94	1.00	1.02	1.02	1.03	1.05	1.07	1.09	1.12	
Capital productivity	1.00	1.00	0.95	1.00	1.03	1.02	1.03	1.04	1.06	1.08	1.11	

Source: APO Productivity Database, 2019.
Unit: Index (2010=1.0).

Hong Kong is a liberal, exports-led economy geared towards achieving high economic gains. This is also seen in the productivity indices as measured by the APO. There has been a steady growth

over the past few decades, with labor productivity growth averaging 5.2%, 2.2%, and 2.1% per annum during the periods 1986–95, 1996–2005, and 2006–15, respectively [60]. The relatively fast growth in labor productivity (as also reflected in Table 4) in the past three decades was related to the structural transformation of Hong Kong's economy, which gradually repositioned itself from a manufacturing hub to an international financial, trading, and business center, focusing more on higher value-added services under the lens of technological advancement. However, there has also been a manifestation of intra-sectoral upgrading. A report by The Government of the HKSAR [60] quantitatively decomposes labor productivity growth into economic restructuring and sectoral upgrading. Supply-side perspectives of skills upgrading are clear for all to see. Hence, continual improvement in productivity for Hong Kong is tied with investing heavily in human capital and technology while arresting population ageing.

Starting a Business

TABLE 5

SCORES INDICATING HONG KONG'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	95.5	95.4	96.3	96.3	96.5	96.4	98.1	98.2	98.1	98.1	
Registering property	73.5	75.4	75.5	75.8	67.5	67.5	70.6	70.6	73.5	73.6	
Getting credit	93.8	93.8	93.8	93.8	70.0	70.0	75.0	75.0	75.0	75.0	
Paying taxes	99.9	99.9	100	100	100	100	99.7	99.7	99.7	99.7	

Source: Doing Business, The World Bank, 2010–19.

Hong Kong is one of the best places to start a business. Hong Kong's performance on the ease-of-doing-business pillar further improved to rank third globally among 190 economies, moving up one place from last year, according to the World Bank's Doing Business 2020 Report. This is well reflected in the scores given in Table 5. International trade links, pro-business policies, and a robust infrastructure create a conducive environment for startups. The enabling environment for entrepreneurs further advances the domestic economy and provides a competitive advantage to Hong Kong internationally. However, there are particularly two areas where Hong Kong needs to address certain challenges, namely, resolving insolvency and registering property, according to the EODB 2020 report.

Financial Access

According to the Global Financial Centres Index [61] for 2019, Hong Kong has overtaken Singapore to become the world's third-most-important financial sector after New York and London. Hong Kong has an active financial inclusion program, with the Hong Kong Monetary Authority (HKMA) [62] reporting good progress in making financial services available to residents in housing estates and other under-served areas. HKMA in 2018, announced that it will issue licenses for fully online banks, with no branches. Moreover, the fact that plastic money (37% market share) is the most common way to pay for online purchases followed by e-wallets (30% market share),

TABLE 6

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN HONG KONG.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	42.82	44.16	46.88	49.62	48.91	50.15	49.76	49.41	50.65	50.43	51.80	
No. of commercial bank branches per 100,000 adults	23.80	23.52	23.84	23.83	23.27	22.82	22.56	22.17	21.46	21.04	21.19	
Outstanding deposits with commercial banks (% of GDP)	352.95	383.17	385.28	391.21	406.27	427.99	444.19	446.97	469.34	477.35	468.86	
Outstanding loans with commercial banks (% of GDP)	187.25	193.50	234.76	259.53	270.19	298.57	318.35	311.06	319.36	347.46	339.14	

Source: IMF, 2008–18.

points at a high degree of financial sophistication among Hongkongers [63]. Thus, Hong Kong checks the box on one of the most critical elements that ensures security, mitigates risks, and provides an incentive for growth, innovation, and investment in business and other assets. The scores in Table 6 duly reflect Hong Kong's strengths in the area of financial access.

Trade

Hong Kong, with its strategic location, coupled with an advanced service industry and sophisticated financial system, has made a mark for itself in international trade. [64]. Hong Kong has also benefitted from being an entry point to PR China, in the wake of the economic reforms undertaken by the latter.

Table 7 highlights the scores on various trade parameters for Hong Kong.

TABLE 7

DATA INDICATING HONG KONG'S TRADING OUTLOOK.

Trade	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of tariff agreements	1	2	2	1	1	1	1	1	1	1	1	
Duty-free imports (in USD billion)	392.78	352.06	441.18	510.67	553.27	553.27	600.39	547.55	546.92	577.06	611.25	
Maximum rate (%) tariffs	0	0	0	0	0	0	0	0	0	0	0	
Duty-free tariff lines share (%)	100	100	100	100	100	100	100	100	100	100	100	
HH Market concentration index	0.05	0.06	0.06	0.06	0.07	0.07	0.05	0.05	0.07	0.06	0.08	
Index of export market penetration	18.52	18.10	18.74	18.99	18.79	18.48	18.34	18.06	17.89	17.82	16.52	

Source: WITS, 2008–2016.

TABLE 8

HONG KONG'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share (%)
China	55.23
USA	8.06
India	3.15
Japan	2.91
Thailand	2.36

Top 5 import partners	Partner share (%)
PR China	44.79
ROC	6.90
Singapore	6.44
ROK	5.67
Japan	5.56

Source: WITS, 2018.

However, Hong Kong's role as a 'middleman' for PR China's external trade has declined somewhat in the past decade. This is probably a natural development as the northern and inner regions of PR China increasingly benefit from the economic reforms and transformation from a highly closed economy to an open market.

Nevertheless, a nascent trend of Hong Kong's external trade is the rapid increase in its offshore trade. This shows that in the face of intensified competition in export production, Hong Kong is endeavoring to seize the business opportunities offered by the strong growth in PR China's direct trade with the rest of the world. Table 8 highlights Hong Kong's leading export and import partners.

Underlying Concern

Innovation, Industry, and R&D

According to the World Economic Forum's 2015–16 Global Competitiveness Report [65], Hong Kong ranks seventh in overall competitiveness. However, it did not perform well in terms of innovation and availability of knowledge workers. Hong Kong's universities have made great strides in academic achievement over the past decade. However, there are insufficient incentives for academics to translate academic output into impact on the economy and the society in the form of product innovation and commercialization. Thus, cross-disciplinary and cross-institutional collaborations remain dismally low. Also, migration of its manufacturing industry to PR China has resulted in a small industrial sector in Hong Kong. The industrial sector is a critical driver of applied research in many countries. Another thing worth noting is the conspicuous absence of 'unicorns' in the technology-intensive services such as e-commerce. Presumably, the relatively small domestic market limits their development. The Hong Kong government, as a follower of laissez-faire and fiscal prudence doctrines, has failed to develop a holistic and long-term approach to innovation and technology, as also reflected by the scores in Table 9. It, thus, needs to accelerate its spending and generate significant gains in productivity levels.

TABLE 9

DATA INDICATING HONG KONG'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trends
High-technology exports as % of manufactured exports	21.62	24.40	33.80	36.81	20.81	18.50	13.91	11.41	12.32	13.50	61.56	64.65	
Research and development expenditure as % of GDP	0.75	0.72	0.77	0.75	0.72	0.73	0.73	0.74	0.76	0.79	0.80	0.86	
High-technology exports (in current USD)	2.65	2.35	2.00	2.53	1.22	0.96	0.68	0.54	0.45	0.47	293.61	330.09	
Patent applications of residents	160	173	149	133	181	171	226	192	239	233	324	314	
Direct resident trademark applications	7,902	8,081	9,454	10,902	11,703	13,204	13,596	15,173	14,376	13,336	14,509	14,953	

Source: World Development Index, 2011–18.

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to Hong Kong that would hinder its growth:

- **Tackle income inequality:** Hong Kong will need to undertake initiatives to help reduce inequality and simultaneously enhance social development for people in areas such as health and education.

- **Fund startups:** Financing startups at an early stage through means such as angel investment and venture capital funds need to be accelerated.

- **Improve competitiveness:** Apart from Singapore, Hong Kong faces stiff competition in the region from Shenzhen and Busan. However, Hong Kong should focus on its competitive advantage in medical care to attract business from abroad. A 2019 report by ING Bank NV [66] states that Hong Kong is missing an opportunity here, and investment in this area will also help address the needs of an aging population. Investments in areas such as building hospitals and training doctors take years and should be addressed as soon as possible.

- **Tackle housing inflation:** The city's HK$1.17 trillion (USD149 billion) fiscal reserve to buy land and build government-owned public housing, hospitals, industrial buildings, and offices is a way that issues pertaining to housing are curbed. [67]. It would also go a long way in addressing rising issues of inequality in the economy.

Hong Kong's Competitiveness

Hong Kong fares well on most parameters like infrastructure, logistics competency, international trade performance, labor productivity, and financial access. However, there are certain obstacles that impede its long-term growth. The public resentment around rising inequality and high property inflation rates, combined with political uncertainty regarding the PR China's equation with Hong Kong, pose considerable challenges for businesses operating in the region. Additionally, scope for greater public spending in R&D and triple helix collaborations remains moderately unexplored.

Conclusion

Entangled in an escalating rivalry between PR China and the USA and losing its preferential status under USA laws amidst an environment of domestic political tension and a global trend of increasing protectionism, Hong Kong surely has its work cut out. While much of the uncertainty is attributable to factors outside its control, it would behoove Hong Kong to ramp up its spending on poverty relief and innovation through massive fiscal reserves.

INDIA

India, with a population of over 1.3 billion people, and with remarkable diversity in matters of language, religion, and caste, has been through many challenges, both economic and social in nature. Notwithstanding these challenges, the nation's economic rise over the past decades has been significant. India rode the third wave of development and economic growth with PR China, Vietnam, and other countries after the first two waves saw the rise of countries such as Japan, Indonesia, Malaysia, and Thailand [68]. Various polices have been adopted to improve social conditions, while reforms have been undertaken to boost the economy. A prominent reform has been the Goods and Services Tax that replaced multiple indirect taxes, thus allowing India to form a single market, which helps raise the competition and scale the economy [69].

Table 1 offers an overview of India and highlights significant trends and a historical trajectory that has shaped its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN INDIA.

Overview				
Population (2019)	1,366,417,754			
Employment–population ratio (2018)	45.4%			
Labor force participation rate (2018)	48.0%			

Economic trends	2005	2010	2015	2018
GDP, current	823,612	1,669,620	2,145,537	2,745,282
GDP per capita, current USD	718	1,353	1,638	2,030
Real GDP growth, y-on-y, %	7.92	8.50	8.15	7.41
Current account balance, % of GDP	–1.25	–3.27	–1.05	–2.39

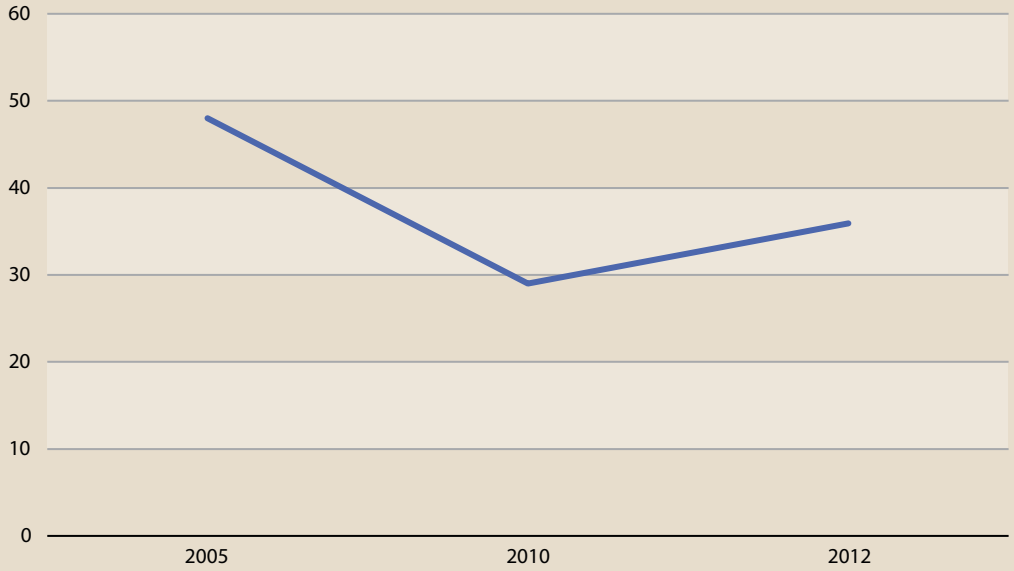
Sources: ILO and WDI databases; UNCTAD STAT (2018).

Significant levels of growth were witnessed after the opening of the economy in the 1990s. Rapid expansion in the South Asian region led to the rise of the South Asian economy (including Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka), with India contributing 82% to this growth in 2017, as per APO data released in 2019 [1].

The standard of living has grown vastly over the years. However, so has the disparity between the rich and the poor. This challenge is both social and economic in nature. According to an Oxfam report [68, 70], the Gini wealth coefficient has gone up from 81.2% in 2008 to 85.4% in 2018 (see Figure 1). Wealth of top 1% of the population rose by 39% whereas that of the bottom 50% increased by 3%. The disparity has been constantly on the rise, with some groups inadvertently suffering more, particularly the minorities and vulnerable sections of the population. Absolute poverty has declined over the years, but major discrepancies between sections of the population persist widely.

FIGURE 1

SHOWCASING INDIA'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2005–12.



Source: UNO-WIIDER.

Findings of this report highlight major issues with regard to financial matters and technological advancement. India does, however, perform consistently well across some pillars, which further enhances its productivity and economic gains.

Table 2 offers an insight into India's performance on various pillars to assess its prevailing level of competitiveness.

TABLE 2

SCORES INDICATING INDIA'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**52.83**
Infrastructure	–0.05
International shipments	0.40
Logistics competence	0.15
Tracking and tracing	0.33
Tracking timeliness	0.18
2. Labor and productivity	**60.48**
Per worker labor productivity	–0.70
Per worker labor productivity growth	1.24
Per hour labor productivity	–0.73
Per hour labor productivity growth	0.71

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Pillar	Score
TFP growth	0.67
3. Financial access	**27.35**
No. of ATMs per 100,000 adults	–0.96
No. of commercial bank branches per 100,000 adults	–0.19
Account (% of those aged 15+)	0.44
Borrowed money in the past year (% of those aged 15+)	–0.91
Outstanding deposits with commercial banks (% of GDP)	–0.43
Outstanding loans with commercial banks (% of GDP)	–0.59
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	–0.56
4. Trade	**60.36**
No. of tariff agreements	1.27
Duty-free imports (USD thousand) between 2014-18	0.52
Maximum rate (%) tariffs 2014-18	–0.70
Duty-free tariff lines share (%) 2014-18	–0.88
HH Market Concentration index	–0.50
Index of export market penetration	1.99
5. Starting a business	**62.04**
Starting a business	0.12
Registering property	–1.32
Getting credit	1.05
Paying taxes	–0.30
6. Industry, innovation, and R&D	**40.73**
High-technology exports as % of manufactured exports	–0.58
R&D expenditure as % of GDP	–0.37
High-technology exports (current USD)	0
Patent applications of residents	–0.16
Direct resident trademark applications	3.2
Total score	**50.63**

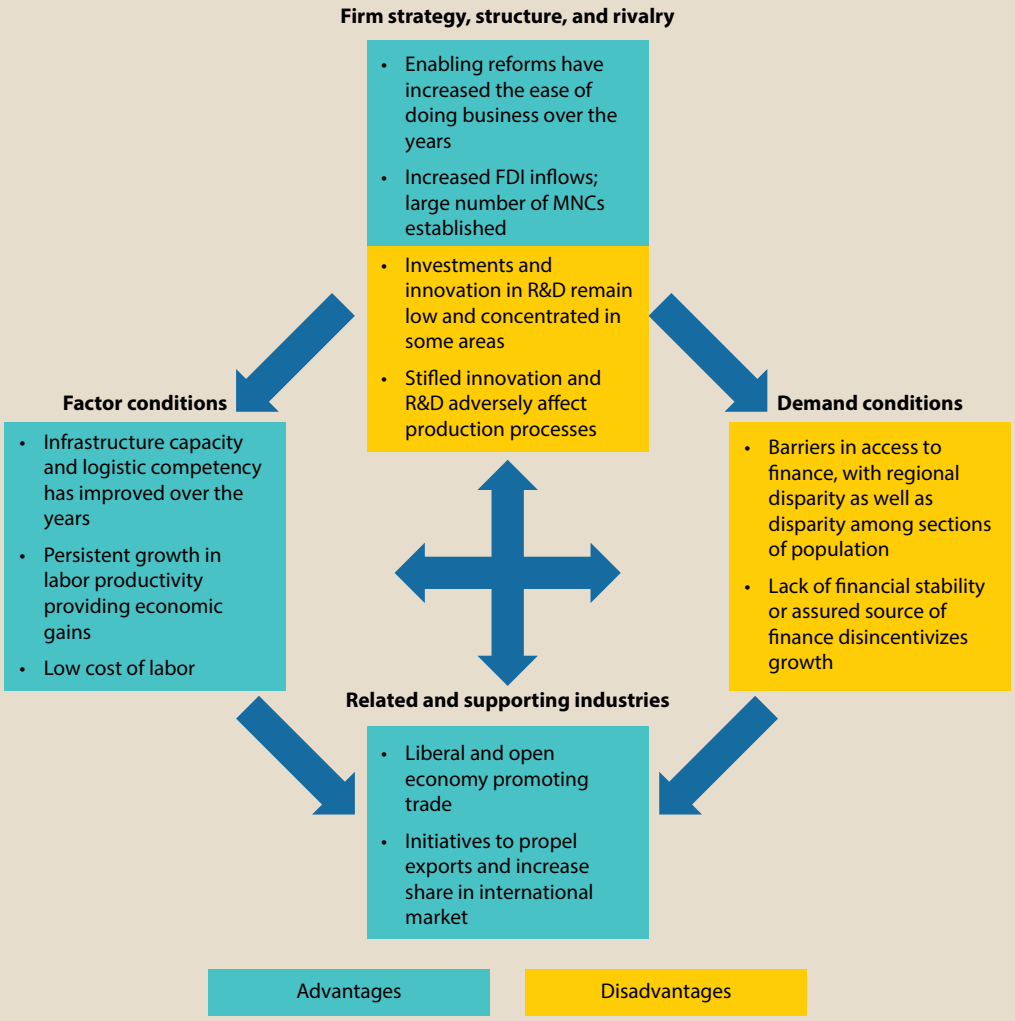
Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for India, based on the Diamond model.

Improvements can be seen in areas of infrastructure, trade, ease of doing business, and labor and productivity. Consistent improvements in these areas will help provide better competitive advantage to India. Similarly, issues pertaining to financial access, innovation, and R&D must be looked into and tackled effectively to ensure integrated growth and prosperity. The following section elaborates on India's performance across various attributes of the national diamond.

FIGURE 2

KEY OBSERVATIONS ON INDIA'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Infrastructure

TABLE 3

SCORES INDICATING INDIA'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	2.90	2.91	2.87	2.88	3.34	2.91	
International shipments	3.08	3.13	2.98	3.20	3.36	3.21	
Logistics competence	3.27	3.16	3.14	3.03	3.39	3.13	
Tracking and tracing	3.03	3.14	3.09	3.11	3.52	3.32	
Timeliness	3.47	3.61	3.58	3.51	3.74	3.50	

Source: Logistics Performance Index.

India's infrastructure and logistics competency does need more improvements, though it has made significant leaps over the years (see Table 3). Being a country that falls in the lower-middle-income category, India ranked 44th in the Logistics Performance Index report [71] in 2018. Evidently, emerging economies are seeing the importance and scope of logistics and infrastructure in contributing towards development and increasing standard of living. Even so, a persistent issue is the regional divide, wherein pockets of development can be witnessed in some states and areas, while other areas still fall behind and require special attention to catch up to the rest of the nation. Thus, richer states ultimately turn out to be better endowed with strong infrastructure, logistics, and connectivity, when compared with their peers. Poorer states such as Odisha have started to implement policies and reforms to advance their infrastructural capacities, and therefore, require more time and effort to level up.

Labor and Productivity

TABLE 4

INDIA'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	0.95	0.93	0.95	1.00	0.98	0.98	1.01	1.01	1.04	1.07	1.10	
Labor productivity (based on hours worked)	0.83	0.85	0.91	1.00	1.01	1.06	1.14	1.21	1.30	1.40	1.48	
Labor productivity (based on number of employments)	0.82	0.85	0.91	1.00	1.02	1.06	1.14	1.21	1.31	1.40	1.49	
Capital productivity	1.06	1.00	0.99	1.00	0.94	0.90	0.88	0.85	0.84	0.83	0.81	

Source: APO Productivity Database, 2019.
Unit: Index (2010=1.0).

India has sustained rapid growth so far. It even surpassed Japan as the second-largest economy in Asia in 2009. The National Productivity Council (NPC) of India, established in 1958, promotes a productivity culture in India. It is a constituent of the APO. For Asia30 countries, the growth rate was 5.3% per year on an average during 2015–17 and India accounted for 22% of the regional growth. Also, Asia24 countries grew 5.0% per year on average during the period 2015–17. One of the main drivers for this resurgence in productivity was India, along with Vietnam and Thailand. India also contributed to the rise of TFP growth in Asia24, with a tripling of TFP growth from 0.8% to 2.5% [1]. By these counts, it can be understood that India has consistently been improving upon its productivity gains and processes, thereby establishing a crucial foundation for a competitive economy. This is validated by data presented in Table 4.

Trade

Expansion of exports has positive repercussions on a country's economy. Ever since liberalization, India has continued its efforts in expansion and facilitation of exports, as seen from data presented

TABLE 5

DATA INDICATING INDIA'S TRADING OUTLOOK.

Trade	2008	2009	2010	2011	2012	2013	2015	2016	2017	Trend
No. of tariff agreements	18	18	13	1	1	1	2	23	22	
Duty-free imports (in USD billion)	42.42	85.94	57.42	54.45	177.08	175.97	111.43	118.81	161.39	
Maximum rate (%) tariffs	150	150	150	150	150	209.3	150	150	150	
Duty-free tariff lines share (%)	8.10	5.74	8.20	4.94	4.10	4.12	6.64	15.02	17.36	
HH Market concentration index	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.50	
Index of export market penetration	25.79	25.78	27.08	26.91	27.46	28.23	28.12	28.62	29.53	

Source: WITS, 2008–17.

in Table 5. Its trade policy is driven by domestic supply considerations while also looking to fulfill short-term objectives including containing fluctuations in commodity pricing [72]. Such conditions require constant revision of policies, which makes trade regimes difficult to predict easily while creating additional costs. Being a strong advocate of multilateral trading system, India has been part of some regional trading agreements. Foreign Trade Policy (FTP) objectives are introduced every five years and can be revised multiple times periodically by taking internal and external matters into account.

TABLE 6

INDIA'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %, 2014–18
USA	16.02
UAE	8.55
PR China	5.08
Hong Kong	4.07
Singapore	3.24

Top 5 import partners	Partner share in %, 2014–18
PR China	14.63
USA	6.30
Saudi Arabia	5.56
UAE	5.20
Iraq	4.60

Source: WITS, 2018.

The FTP for the period 2015–20 was aimed at making India an essential part of international trade and raising global exports to 3.5% by 2020 [72].

Measures have been introduced to attract more FDI inflows in the country. The number of sectors in which FDI is permitted has been increased whereas sectoral restrictions have been decreased [72]. Additionally, the introduction of schemes such as Make in India, Digital India, and Skill India would help invite FDI, advance domestic skills, and accelerate adaption to new technologies. Table 6 highlights India's leading export and import partners.

Starting a Business

TABLE 7

SCORES INDICATING INDIA'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2014	2015	2016	2017	2018	2019	Trend
Starting a business	81	73.9	72.2	71.7	61.8	59.1	
Registering property	54.1	54.0	47.9	46.1	45.6	47.7	
Getting credit	80	75	65	65	65	65	
Paying taxes	53.8	53.9	65.4	65.2	44.7	41.5	

Source: Doing Business, The World Bank, 2014–19.

India is not placed in the top tier when it comes to ease of doing business. Nonetheless, it has improved greatly over the years, despite some dips (see Table 7). Reforms that have taken place in areas of starting a business, e.g., dealing with construction permits and trading across borders, have made it easier to do business in the country. With a large population, India has also been producing a significant number of entrepreneurs [73]. Policy reforms by the government have also helped and are crucial to making this process easier. With low labor costs, new businesses and MNCs also find it advantageous to set up firms in India.

Underlying Concerns

The data asserts India's rise as an essential economic power in the Asian region and the world economy. However, it also reveals areas of significant concern when it comes to financial access; and industry, innovation, and R&D spending. These factors play a major role in determining its competitiveness.

Financial Access

Structural reforms in India have led to rapid growth in India. While India is rapidly expanding in providing access to finance and financial institutions for its people, the regional divide acts as a major obstacle. Especially with online banking and digital advancements taking place across the world, certain areas may remain in the periphery and fail to catch up. There is also vast income disparity. Therefore, the divide is not only regional, but also digital. An IMF report [74] on major fiscal issues in India also brings to light financial risks in that nonperforming loans in public banks still remain high. There is an asset–liability mismatch as nonbanking financial companies are partly financed by banks. Moreover, getting credit becomes difficult when there is persistence of insolvency or corruption. Issues also arise due to the large informal organization operating in India. Table 8 highlights India's scores on various parameters of the financial access pillar.

TABLE 8

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN INDIA.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	4.27	5.29	7.24	8.82	10.95	12.82	17.73	19.63	21.15	21.98	21.64	
No. of commercial bank branches per 100,000 adults	9.28	9.57	10.00	10.47	11.14	11.80	12.82	13.52	14.21	14.51	14.50	
Outstanding deposits with commercial banks (% of GDP)	58.94	61.60	59.74	61.69	61.12	62.43	63.81	64.79	62.49	62.77	60.01	
Outstanding loans with commercial banks (% of GDP)	43.83	44.73	43.82	46.65	48.30	49.19	50.39	49.95	48.97	46.32	46.01	

Source: IMF, 20014–18.

Industry, Innovation, and R&D

TABLE 9

DATA INDICATING INDIA'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trends
High-technology exports as % of manufactured exports	9.6	7.7	7.8	7.4	8.7	9.1	8.0	7.6	7.4	9	
High-technology exports (in current USD billion)	11.35	10.78	14.55	13.93	17.97	18.34	14.62	14.30	15.16	20.27	
Patent applications of residents	7,262	8,853	8,841	9,553	10,669	12,040	12,579	13,199	14,961	16,289	
Direct resident trademark applications	134,403	172,120	176,386	1,760,440	183,172	200,140	250,585	264,662	242,482	297,750	

Source: World Development Index, 2009–16.

India has made great leaps in technology, IT, and innovation; and its IT software clusters are world renowned. Initiatives have been taken to propagate novel inventions and enterprises. However, there are challenges related to cohesive technological developments, and there is insufficient planning towards R&D and innovation. Various administrative bottlenecks also prohibit development of India's R&D sectors. Another point of concern is the lack of investment and understanding of the importance for social science research, which plays a vital role in developing any society. Table 9 highlights India's scores on various parameters of industry, innovation, and R&D.

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to India, that would hinder its growth:

- **Bridge regional divide:** Policy focus must shift towards decreasing regional divide urgently. Initiatives that help propel growth in regions in the periphery and for sections of the population that are more vulnerable must be undertaken. For instance, initiatives to promote financial literacy among vulnerable groups and backward regions can be undertaken.

- **Improve access to finance:** Developing alternative financing institutions such as specialized micro-finance institutions (MFIs), low-capital local banks, postal savings banks, and financial cooperatives provides people with a substitute to get access to finances. It is equally crucial to ensure that there are no unnecessary administrative roadblocks to having access to such institutions and getting credit.

- **Increase research funding:** Government must increase funding of basic research. Basic research does not seek to develop a new product or solve an immediate issue. It informs researchers, building upon their knowledge base. However, lack of any quick economic returns prevents firms from investing in basic research. The government, therefore, must provide its support at a very incremental stage of R&D.

- **Encourage R&D:** R&D initiatives (across all sectors) in small organizations, neighborhoods, schools, and universities must be encouraged.

- **Fund innovations with social impact:** Technological policies should be driven for ensuring innovations that yield a high social return and not just propagate private benefits for researchers. The government must ensure that there is no significant gap between private and social returns. The dangers of this happening are high in precommercial research. The government, in funding these kinds of research, must identify those technologies that offer substantial social benefits with the help of experts, scientists, engineers, and economists, among others.

- **Spread investments uniformly:** Any form of funding must not be limited to specific sectors only. It leads to growth in some industries like science and technology and severe underinvestment in other areas such as health. Investments, therefore, must be encouraged in various areas and not just in specific sectors for achieving extensive and far-reaching results.

India's Competitiveness

India has been rapidly improving its productivity processes and making economic gains. With advancements and constant improvements made in areas of infrastructure, trade, ease of doing business, and productivity, it has taker significant leaps towards economic expansion. These include the factor conditions, and related and supporting industries as points of key strengths. On the other hand, demand conditions, and firm strategy and rivalry need to address concerns. By tackling certain issues pertaining to financial access and developing strengths in R&D and innovation, India can tap into its full potential and gain complete competitive advantage as a nation.

Conclusion

India has already embarked upon an economic expansion journey and undertaken various measures across all pillars to address different challenges. If tackled effectively, the returns on the initiatives could provide long-term gains to the country, which would inadvertently raise the standard of living for all sections of the population and increase the nation's prosperity.

INDONESIA

Indonesia is one of the largest economies in Southeast Asia. The country has been credited with having large-scale potential to become a completely self-sufficient country in the 21st century, due to a series of five-year plans ranging from 1969 to 1998. The Indonesian government made accelerated efforts to develop the country's economic infrastructure in agriculture, irrigation, transportation, and communications. Benefits from foreign aid, and increased rate of foreign direct investment (FDI) in 1990s, along with deregulation, played a significant role in further enhancing developmental efforts in Indonesia [75]. In fact, The World Bank has recently categorized Indonesia as a country with upper-middle-income status due to the country's successful economic advances. Nevertheless, the country still has to address various challenges and improve its productivity and competitiveness.

Table 1 provides an overview of the Indonesian economy over the past decades.

TABLE 1

MAJOR ECONOMIC TRENDS IN INDONESIA.

Overview				
Population (2019)	267,663,435			
Employment–population ratio (2018)	64.47%			
Labor force participation rate (2018)	69.20%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	304,372	755,094	860,854	1,041,772
GDP per capita, current USD	1,345	3,122	3,332	3,892
Real GDP growth, y-on-y, %	5.69	6.22	4.88	5.20
Current account balance, % of GDP	0.09	0.68	–2.04	–2.98

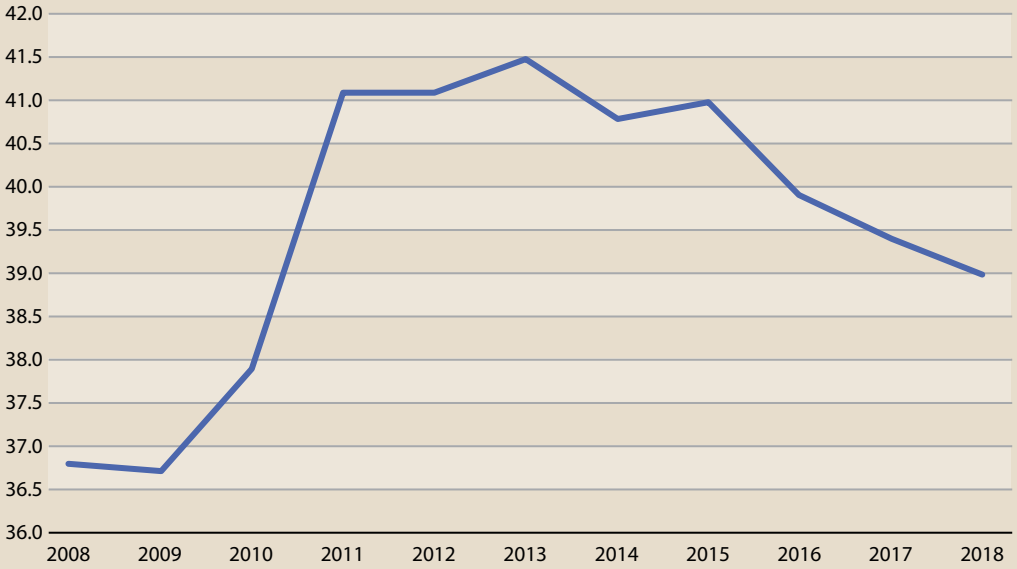
Sources: ILO and WDI databases; UNCTAD STAT (2018).

The flippant nature of Indonesia's development strategy gets reflected in one of the primary welfare indicators of modern economic policy making, the Gini coefficient.

Indonesia's Gini coefficient, an indicator of income inequality in a country, rose from 0.3675 in 2008 to 0.41 in 2015. Indonesia has one of the highest wealth concentrations in the world. The richest 10% of Indonesians own an estimated 77% of the country's wealth. Further, half of the country's assets are owned by the richest 1% [76]. The reasons behind this are mainly inequality of opportunities and labor-market dichotomies due to high growth rate, among such other factors. However, the sharp drop in Gini coefficient post 2015 shows a positive trend (see Figure 1). This has been brought about by infrastructure projects that are labor intensive; providing support for labor-intensive industries; and even increase in minimum wages and various social programs in education and health. However, further serious actions are required by the government to bridge the gap between the rich and the rest.

FIGURE 1

SHOWCASING INDONESIA'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2008–18.



Source: The World Bank.

Table 2 offers an insight into Indonesia's performance by various pillars to assess its prevailing level of competitiveness.

TABLE 2

SCORES INDICATING INDONESIA'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**54.51**
Infrastructure	–0.09
International shipments	0.45
Logistics competence	0.10
Tracking and tracing	0.30
Tracking timeliness	0.51
2. Labor and productivity	**17.99**
Per worker labor productivity	–0.49
Per worker labor productivity growth	–0.38
Per hour labor productivity	–0.48
Per hour labor productivity growth	–0.67
TFP growth	–2.10
3. Financial access	**39.43**
No. of ATMs per 100,000 adults	–0.05

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Pillar	Score
No. of commercial bank branches per 100,000 adults	–0.08
Account (% of those aged 15+)	–0.67
Borrowed money in the past year (% of those aged 15+)	0.22
Outstanding deposits with commercial banks (% of GDP)	–0.66
Outstanding loans with commercial banks (% of GDP)	–0.74
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	0.75
4. Trade	**31.45**
No. of tariff agreements	–0.34
Duty-free imports (USD thousand) between 2014–18	–0.18
Maximum rate (%) tariffs 2014–18	–0.53
Duty-free tariff lines share (%) 2014–18	–0.26
HH Market Concentration index	–0.44
Index of export market penetration	0.18
5. Starting a business	**69.48**
Starting a business	0.1
Registering property	–0.43
Getting credit	0.46
Paying taxes	0.28
6. Industry, innovation, and R&D	**10.1**
High-technology exports as % of manufactured exports	–0.63
R&D expenditure as % of GDP	–0.63
High-technology exports (current USD)	–0.67
Patent applications of residents	–0.39
Direct resident trademark applications	–0.04
Total score	**37.16**

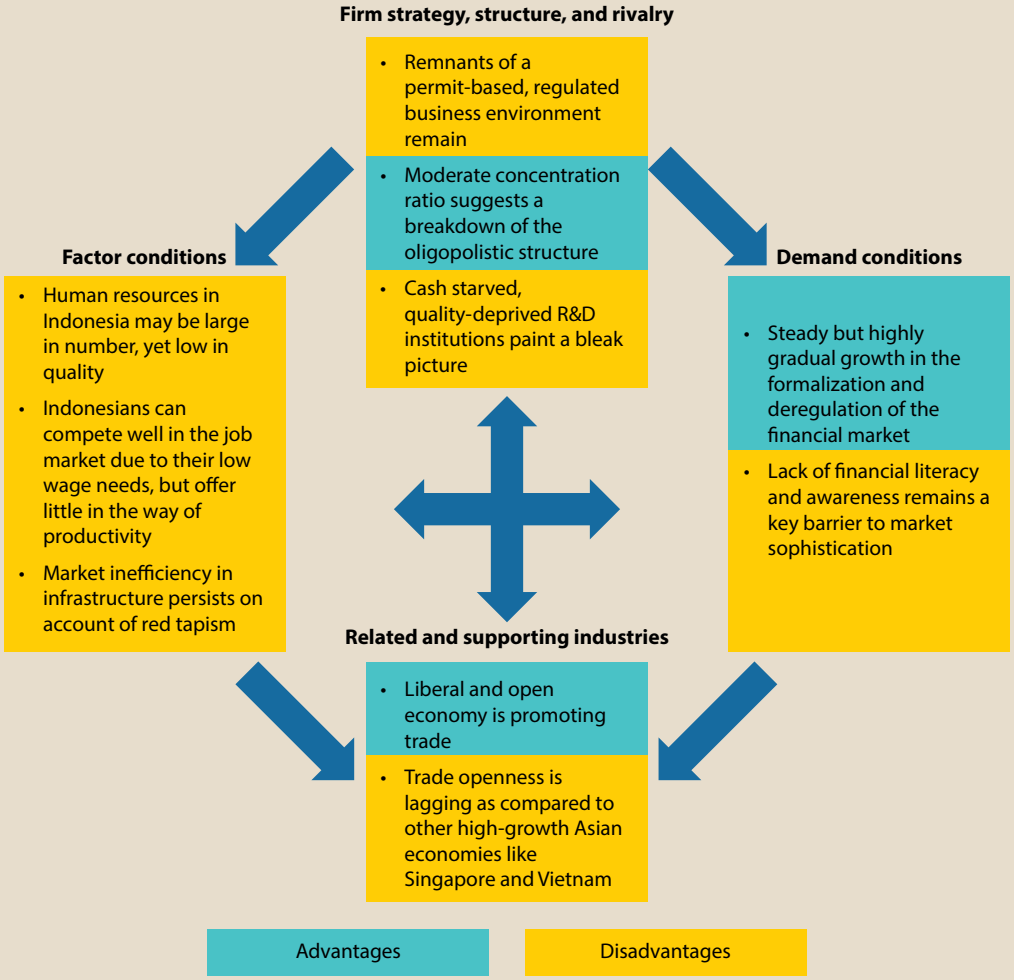
Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country, based on the Diamond model.

Porter's national advantage matrix comes handy in assessing where Indonesia has made strides in the right direction and where the policy response has been lukewarm. Although unemployment is not a major issue of contention in Indonesia, the framework points out that the quality of human resource is a major point of discord. Market sophistication and an enabling ecosystem for new ventures remains limited due to low R&D spends and remnants of a permit system. Consequently, in improving upon underlying weaknesses and dealing with inefficiencies, long-term prosperity can also be assured. The following section discusses the four attributes of the national diamond in detail.

FIGURE 2

KEY OBSERVATIONS ON INDONESIA'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Infrastructure

TABLE 3

SCORES INDICATING INDONESIA'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2010–18.

Infrastructure	2010	2012	2014	2016	2018	Trend
Infrastructure	2.54	2.54	2.92	2.65	2.9	
International shipments	2.82	2.97	2.87	2.9	3.23	
Logistics competence	2.47	2.85	3.21	3.00	3.10	
Tracking and tracing	2.77	3.12	3.11	3.19	3.30	
Timeliness	2.46	3.61	3.53	3.46	3.67	

Source: Logistics Performance Index.

The LPI, which analyzes 160 countries, ranks Indonesia as the third-best performer among the lower-middle-income group countries, after Vietnam and India. This is reflected in the data provided in Table 3. Logistics performance is strongly associated with trade and other critical aspects such as supply-chain reliability and timely shipment delivery. However, Indonesian companies have long complained about what they see as a highly fragmented regulatory environment as each service component of the logistics system requires permits from different institutions and is subject to different laws and regulations.

For example, the port handling process of cargo at Jakarta's Tanjung Priok Port involves more than 12 institutions and service providers, not to mention land transportation. They are administered and overseen by different government ministries [77]. Hence, a need remains to cut the bureaucratic red tape further when it comes to infrastructural ecosystem.

Labor and Productivity

TABLE 4

INDONESIA'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	1.01	1.01	1.00	1.00	0.99	0.99	0.97	0.97	0.94	0.91	0.90	
Labor productivity (based on hours worked)	0.92	0.95	0.97	1.00	1.06	1.11	1.16	1.21	1.26	1.28	1.30	
Labor productivity (based on number of employments)	0.92	0.95	0.97	1.00	1.05	1.10	1.14	1.18	1.23	1.24	1.27	
Capital productivity	1.00	1.00	0.99	1.00	1.00	1.00	0.99	0.97	0.94	0.91	0.88	

Source: APO Productivity Database, 2019.
Unit: Index (2010=1.0).

Since 2012, Indonesia has witnessed a wane in its resource-boom growth story. This has been reflected in the stagnation of Indonesia's productivity numbers as well (see Table 4). Contrary to that, recent trends in labor productivity seem quite encouraging, with data showing an average rise of 4.3% a year in real terms between 2010 and 2015. However, digging a little deeper, it becomes apparent that recent increases in labor productivity are more related to slow job growth than efficiency gains [78].

Moreover, a recent survey in 2020 by the Japan External Trade Organization [79] informs that Indonesia's manufacturing productivity is lower than other ASEAN countries. One of the main reasons why Indonesia's industry lags is its dependence on commodities as that hampers the manufacturing sector's development. Due to free trade agreements, many industrial products are exported to Indonesia, so the private sector chooses to invest in the resources sector and not the

manufacturing sector and avoids competition with Chinese products [80]. The report also highlights the country's lack of human resources, especially engineers. All this points at the need for a concrete, goal-oriented labor-and-industrial policy.

Financial Access

TABLE 5

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN INDONESIA.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	13.11	14.12	13.04	16.45	35.73	42.02	49.21	52.97	54.34	55.14	54.38	
No. of commercial bank branches per 100,000 adults	6.58	7.64	8.11	14.71	16.87	17.64	17.83	17.64	17.26	16.75	16.14	
Outstanding deposits with commercial banks (% of GDP)	35.43	35.19	34.07	35.56	37.43	38.38	38.93	38.29	39.00	38.93	37.95	
Outstanding loans with commercial banks (% of GDP)	26.42	25.65	25.73	28.09	31.43	34.49	34.76	35.21	35.30	34.87	35.69	

Source: IMF, 2014–19.

The country has continued on a very gradual but steady path towards deepening financial inclusion, as indicated by data in Table 5. Thirty-four percent of Indonesian adults had access to some form of full-service financial account in 2016, up from 31% in 2015 [81]. However, the central bank data also indicates that large gaps remain in Indonesians' engagement with formal financial service providers. Almost three in four Indonesians do not hold a registered financial account and are likely using cash in their day-to-day lives. Sixty-three percent of Indonesian adults who had savings, did it at home. They rely on families and friends and turn to informal providers to borrow. Low financial literacy remains the key problem and would prove to be a hindrance in customer adoption of digital banking and financial products unless immediate awareness programs are enacted. The 2016 national literacy and financial inclusion poll [82] pegs 'the ability to fully comprehend the financial services being selected' for Indonesians at a meagre 29.7%.

Trade

Indonesia is fairly open to foreign trade, which represents 43% of its GDP compared with a value of 23.39% for India [83]. The main exports are mineral fuels (23.3%); animal and vegetable fats and oils (11.3%); electrical machinery (4.9%); vehicles (4.2%); and rubber (3.5%). Indonesia mostly imports mineral fuels and oil (16.7%); machinery and computers (14.4%); electronic apparatus (11.4%); and iron and steel (5.4%). Indonesia's scores on various trade parameters are given in Table 6.

TABLE 6

DATA INDICATING INDONESIA'S TRADING OUTLOOK.

Trade	2008	2009	2010	2011	2012	2013	2016	2017	2018	Trend
No. of tariff agreements	1	8	5	5	5	5	8	8	8	
Duty-free imports (in USD billion)	62.20	56.04	81.48	105.48	120.13	121.11	84.59	97.28	118.83	
Maximum rate (%) tariffs	150	150	607.15	393.83	629.8	517.91	150	150	321.82	
Duty-free tariff lines share (%)	27.69	40.93	34.74	34.07	34.55	33.99	33.45	38.81	37.02	
HH Market concentration index	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.07	
Index of export market penetration	13.6	13.12	13.59	13.56	13.7	14.09	13.86	14.07	13.05	

Source: WITS, 2008–17.

TABLE 7

INDONESIA'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %
PR China	15.1
Japan	10.8
USA	10.2
India	7.6
Singapore	7.2

Top 5 import partners	Partner share in %
PR China	24.13
Singapore	11.36
Japan	9.53
Thailand	5.80
USA	5.41

Source: WITS, 2018.

However, in the post-COVID world, declining commodity prices, prolonged sluggish growth in the global economy, and tough competition with other low-cost producers are likely to add pressure on Indonesia to introduce interventionist policies. So, it becomes imperative for Indonesia to diversify its export basket to non-commodities and invisibles apart from ripping the band-aid off its domestic economically nonviable business entities. Table 7 highlights Indonesia's leading export and import partners.

Starting a Business

Ease of doing business is a crucial area for all countries, but it is particularly essential for low-income countries to enable local productivity and invite investments. Without a favorable business-

enabling environment, countries also fail to attract FDI inflows that can play a key role in providing economic gains. It is therefore crucial to streamline procedures to make it easy for new businesses to start.

TABLE 8

SCORES INDICATING INDONESIA'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2014	2015	2016	2017	2018	2019	Trend
Starting a business	59.1	64.1	65.7	74.6	76.1	79.4	
Registering property	60.9	60.7	53.2	55.7	59.8	60.1	
Getting credit	50	50	55	60	65	70	
Paying taxes	58.5	59.2	67.5	67.7	68.5	68.4	

Source: Doing Business, The World Bank, 2014–19.

Indonesia does not provide the most conducive environment to enable a thriving business ecosystem, as indicated by data in Table 8. This is also reflected by the World Bank's Doing Business Index. The country ranked 72nd in the 2018 Index, due to critical challenges in obtaining permits and licenses. While the government had undertaken a rigid employment and minimum wage regulation to prevent concentration of income, there is still room for improvement [84]. Even in the Ease of Doing Business Index for 2020, Indonesia's performance slipped to the 73rd rank, with decreased scores on the parameter for registering a property. Nevertheless, Indonesia has shown improvements across other measures including getting electricity, getting construction permits, paying taxes, and enforcing contracts.

Underlying Concern

Industry, Innovation, and R&D

TABLE 9

DATA INDICATING INDONESIA'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2010	2011	2013	2014	2015	2016	2017	2018	Trends
High-technology exports as % of manufactured exports	12.03	10.61	9.54	9.24	8.87	7.94	8.20	8.02	
High-technology exports (in current USD billion)	7.07	7.29	6.52	6.60	5.90	5.42	5.97	6.39	
Patent applications of residents	508	533	663	702	1,058	1,101	2,271	1,407	

Source: World Development Index, 2010–18.

Indonesia's performance on the industry, innovation, and R&D pillar has been lukewarm as the data in Table 9 shows. Naturally, it remains far behind compared with its developed Asian counterparts such as Japan and Singapore.

According to the World Bank data available on the aspect [83] from 2013, Indonesia has allocated only around 0.08% of its GDP to research and development, compared with Singapore's 2.19% and Malaysia's 1.26%. The 2017 Global Innovation Index [28] reflected that Indonesia ranked 105th among 127 countries in terms of R&D spending. The same report shows that the countries with the most advanced research capabilities are the ones that get the maximum support from the private sector. Thus, it is no surprise that in Indonesia, private-sector support makes up only around 20% of total funding, given a lack of business incentives, policies, and industry awareness about the importance of research. The crux of the problem is that there is concentration and overlapping of research with only three or four agencies and that too without any coordination. Conflate that with funding shortage, and the picture does not look good for Indonesia. However, a silver lining is that the administration has raised R&D spending to 0.2% or around IDR24.9 trillion (USD1.7 billion), which is the highest in the country's history. Also encouraging is the country's renewed interest in stem cell research and applied therapy which have been neglected in R&D studies by other countries in the region [85]

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to Indonesia that would hinder its growth:

- **Step up startup funding:** Financing at an early stage of startups, through options such as angel investments and venture capital funds, needs to be accelerated. A targeted government program to create an ecosystem for startups would be a step in the right direction.

- **Enable better access to finance:** Developing alternative financing institutions such as specialized micro-finance institutions (MFIs), low capital local banks, postal savings banks, and financial cooperatives, along with extensive financial literacy programs to increase the financial depth and inclusion in the country.

- **Improve logistics infrastructure:** Indonesia needs to strengthen logistical and communications infrastructure, allowing for easier connection between regions so as to expand trade. It should also encourage economic specialization and promote internal competition. Additionally, it is important to reduce internal administrative and policy barriers to encourage interprovincial trade and investment. This would combat the economic divide problem that Indonesia faces.

- **Rationalize labor-related policies:** Increase labor market flexibility by allowing hourly pay, decreasing severance pay, liberalizing flexible-hours work, and lowering minimum wages as well as making it easier to hire and fire workers.

- **Develop high-value industries:** Promote new innovations and developments for high-value industries such as petroleum and natural gas and textiles and apparel so as to ascertain a competitive advantage and sustain it in the long run.

- **Grow exports strategically:** Develop insights to undertake strategic steps that tap into present resources. This should be done so as to accrue the maximum benefit and allow for export expansion and diversification even with rising tariff barriers.

- **Increase collaboration with multiple stakeholders:** A forum for collaboration between the private sector, trade associations, government, educational, and research institutions is needed. This shall bring together firms of all sizes, including SMEs. Consequently, government funding must also be increased to encourage greater participation and remove any issues due to cash crunch.

- **Take policy-level initiatives:** Cohesive policy initiative can strengthen R&D and innovation in the country.

Indonesia's Competitiveness

Indonesia has made considerable and consistent efforts in its attempt to achieve both social and economic developments. Its labor and productivity performance has been decent even though it could be due to the favorable base effects. It has shown steadiness in terms of the reach of financial access to its citizens. However, setting up of businesses still remains an arduous task. Infrastructural capacity needs to be improved further. Diversification in terms of trading activities need to be revisited while investments in innovation and R&D need to be beefed up. These things will play a pivotal role in Indonesia remaining internationally relevant and competitive.

Conclusion

In order to warrant successful economic gains, Indonesia needs to address the pressing issues of rigid labor market regulations, over-reliance on commodity exports, and weak innovation strategy to achieve its ambition of becoming self-sufficient by the end of 21st century.

ISLAMIC REPUBLIC OF IRAN

Islamic Republic of Iran (IR Iran), one of the Middle East's most advanced economies before 1979, has been plagued with mismanagement, international sanctions, and pervasive graft. It has the world's second-largest reserves of natural gas and fourth-largest reserves of crude oil [86]. Although the 2015 nuclear agreement briefly allowed IR Iran to expand oil exports, attract greater foreign investment, and increase trade, the reimposition of the USA sanctions after the latter withdrew from the agreement in May 2018 put IR Iran's economy into great uncertainty again.

Table 1 offers an overview of IR Iran and highlights significant trends that have affected the country's economy in the 21st century.

TABLE 1

MAJOR ECONOMIC TRENDS IN IR IRAN.

Overview				
Population (2019)	82,913,906			
Employment–population ratio (2018)	39.54%			
Labor force participation rate (2018)	44.95%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	226,452	491,099	393,436	497,949
GDP per capita, current USD	3,246	6,658	5,012	6,087
Real GDP growth, y-on-y, %	3.19	5.80	–1.32	–0.26
Current account balance, % of GDP	6.80	5.61	0.31	3.91

Sources: ILO and WDI databases; UNCTAD STAT (2018).

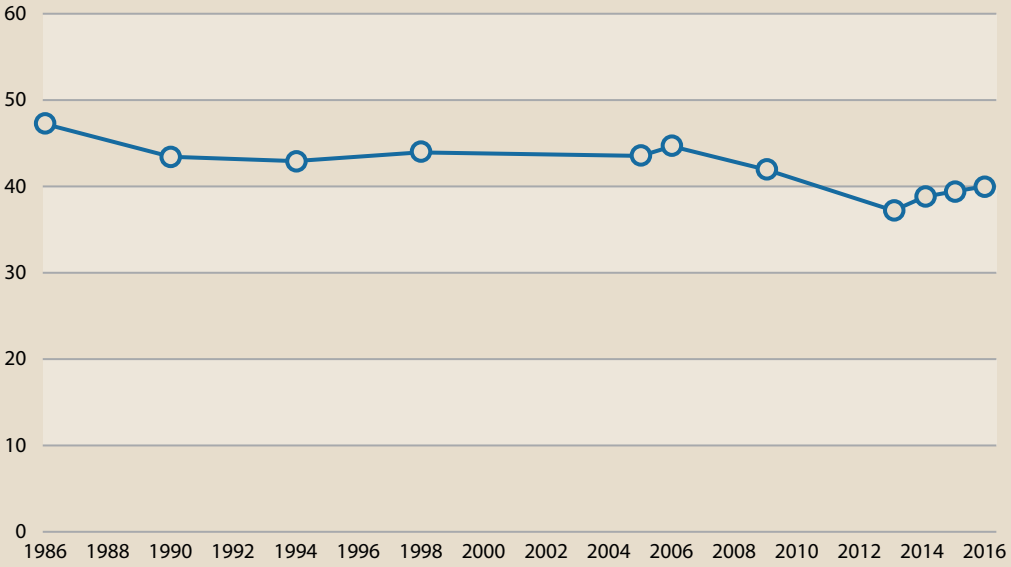
As the data suggests, the recessionary trends in IR Iran's economy in the last decade are there to see in the form of real GDP degrowth. In the same time period, rial's value has halved against the USA dollar and brent crude exports have reduced dramatically. However, the recovery in IR Iran's current account balance points at the concealment of oil trading by IR Iran and its customers. All in all, the questions remain burning on whether the country can weather this economic storm.

Amidst the economic gloom that surrounds it, the numbers and trends on IR Iran's wealth distribution are not encouraging either. It has registered a Gini coefficient of around 0.4 in recent years, despite improvements to 0.35 it made in late 2000s (see Figure 1). One amusing fact is that IR Iran's Gini coefficient is nearly equal to that of the USA, i.e., its arch nemesis. However, in IR Iran's case, the bulging wealth divide is a consequence of ineffective public spending and taxation system. Factors such as high levels of tax evasion, lack of a progressive taxation system, and universal grant of monthly cash subsidies have made the Iranian society more unequal [87]. A striking feature is the 14-fold difference in the expenditures of the first and 10th deciles in IR Iran,

which indicates that the quality of life for the households belonging to the top decile is 14 times better than that of the lowest decile. By comparison, the ratio is less than seven for comparable economies of the EU.

FIGURE 1

SHOWCASING IR IRAN'S INCOME INEQUALITY THOUGH GINI COEFFICIENT, 1986–2016.



Source: World Bank Development Research Group

Table 2 offers an insight into IR Iran's performance on various pillars to assess the prevailing level of its competitiveness.

TABLE 2

SCORES INDICATING IR IRAN'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**33.75**
Infrastructure	–0.26
International shipments	–0.57
Logistics competence	–0.33
Tracking and tracing	–0.60
Tracking timeliness	–0.09
2. Labor and productivity	**50.15**
Per worker labor productivity	0.77
Per worker labor productivity growth	–1.11
Per hour labor productivity	0.56
Per hour labor productivity growth	–1.09

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Pillar	Score
TFP growth	0.76
3. Financial access	**76.60**
No. of ATMs per 100,000 adults	0.90
No. of commercial bank branches per 100,000 adults	0.97
Account (% of those aged 15+)	0.95
Borrowed money in the past year (% of those aged 15+)	1.43
Outstanding deposits with commercial banks (% of GDP)	–0.14
Outstanding loans with commercial banks (% of GDP)	–0.51
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	1.24
4. Trade	**40.81**
No. of tariff agreements	0.03
Duty-free imports (USD thousand) between 2014–18	–0.38
Maximum rate (%) tariffs 2014–18	0.74
Duty-free tariff lines share (%) 2014–18	0.13
HH Market Concentration index	–0.05
Index of export market penetration	–0.97
5. Starting a business	**44.94**
Starting a business	–0.92
Registering property	0.15
Getting credit	–0.74
Paying taxes	–0.87
6. Industry, innovation, and R&D	**15.97**
High-technology exports as % of manufactured exports	–0.97
R&D expenditure as % of GDP	–0.20
High-technology exports (current USD)	–0.77
Patent applications of residents	–0.23
Direct resident trademark applications	0.58
Total	**43.70**

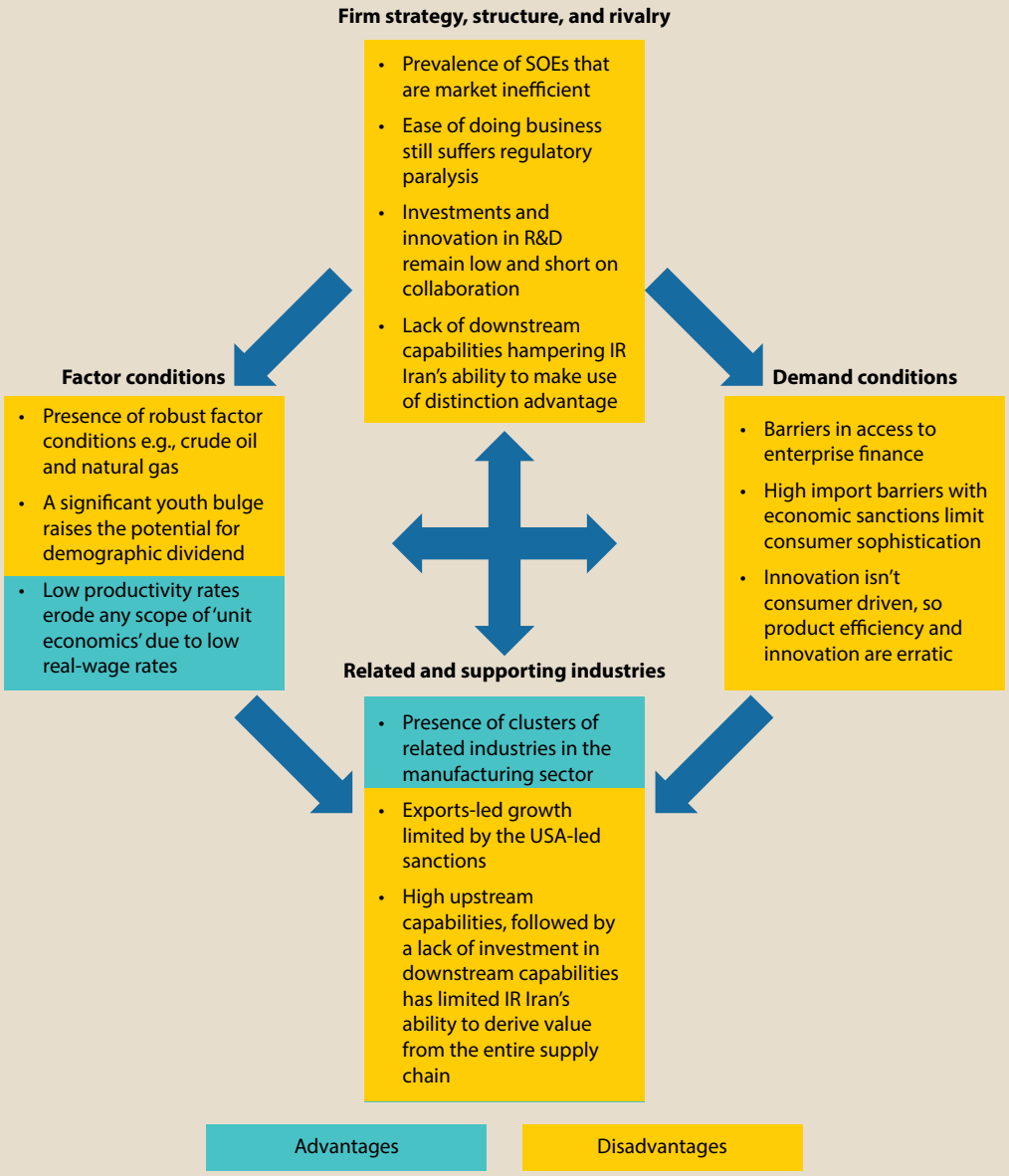
Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

IR Iran's traditional competitive advantage in oil and natural gas has been hampered in the wake of the economic sanctions and weak oil prices. With a significant young bulge in its workforce, and presence of clusters of related industries, a tilt toward manufacturing capabilities appears to be a

FIGURE 2

KEY OBSERVATIONS ON IR IRAN'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



prudent move. The Diamond model also points at the demand- and firm-level conditions suffering on account of low economic openness and innovation. Consequently, in improving underlying weaknesses and dealing with inefficiencies, long-term prosperity can also be assured.

The following section discusses the four attributes of the national diamond in detail.

Infrastructure

The tag of 'world's largest state sponsor of terrorism,' coupled with a phalanx of trade rules and regulations, not to mention the USA trade sanctions, makes investment in logistics and supply

TABLE 3

SCORES INDICATING IR IRAN'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2010–18.

Infrastructure	2007	2010	2012	2016	2018	Trend
Infrastructure	2.44	2.36	2.42	2.67	2.77	
International shipments	2.59	2.44	2.49	2.67	2.76	
Logistics competence	2.69	2.65	2.66	2.67	2.84	
Tracking and tracing	2.00	2.50	2.49	2.44	2.77	
Timeliness	2.80	3.26	2.66	2.81	3.36	

Source: Logistics Performance Index.

chain challenging for any business. Scores given in Table 3 are amply indicative of IR Iran's weakness on the infrastructure pillar. Although the Chabahar port of IR Iran is playing a significant role in attracting foreign direct investment (FDI) for infrastructural development to access Central Asia for exploring trade opportunities with landlocked countries, the picture looks bleak when compared with countries like Pakistan. A logistically afflicted country in its own right, Pakistan ranks higher than IR Iran on parameters like customs clearing, infrastructure quality, shipment competence, tracking, and timeliness [88]. Limited market competition among logistics players, imprecise sectoral planning, insufficient funding, and obsolete fleet further accentuate the issues for IR Iran's logistics sector [89]. All these have limited the country's productivity gains.

Labor and Productivity

TABLE 4

IRAN'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2012–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	1.01	0.98	0.97	1.00	1.00	0.91	0.88	0.89	0.87	0.97	0.99	
Labor productivity (based on hours worked)	0.84	0.88	0.92	1.00	1.05	0.97	0.96	0.99	0.94	1.04	1.05	
Labor productivity (based on number of employments)	0.88	0.91	0.92	1.00	1.04	0.95	0.93	0.96	0.94	1.02	1.03	
Capital productivity	1.03	0.99	0.98	1.00	1.00	0.90	0.88	0.88	0.87	0.97	1.00	

Source: APO Productivity Database, 2019.
Unit: Index (2010=1.0).

Productivity, either at the firm level or the input level, is linked with a nation's competitiveness. Higher productivity drives down per unit costs for firms, thus allowing them to set lower prices and become more competitive on the global stage. Thus, by implication, countries with greater productivity rates, do well in terms of their export values, while keeping other factors constant.

However, an opposite analogy can also be drawn. Countries with greater trade openness also do well in terms of their productivity numbers as openness exposes their businesses to foreign competition and keeps them on their toes with regard to innovation and efficiency. Which of these is the cause and which one is the effect is debatable. However, with regard to IR Iran, Valadkhani [90] notes that it has been found that an increase of around 10% in trade openness, ceteris paribus, can boost productivity by 2.9% in the short run and 4.1% in the long run.

Given that IR Iran's import taxes and non-tax barriers are very high, there is a great opportunity to increase labor productivity through various microeconomic reforms aimed at removing the existing trade barriers that are mostly unnecessary and unjustifiable. If we look at supply-side issues, actual average annual hours worked per person in IR Iran were 800 in 2018. For Japan, ROK, PR China, Turkey, Germany, Pakistan, and Afghanistan, the average comparable hours stood at 2,420, 1,900, 1,420, 1,330, 1,700, 1,100, and 950, respectively. A reduction in real wages due to the double-digit inflation rate is also quoted for the drop in labor productivity. Hence, monetary policy reforms aimed at inflation-targeting using interest rates, while opening up the economy further, would bode well for IR Iran's productivity. For labor productivity data, see Table 4.

Starting a Business

TABLE 5

SCORES INDICATING IR IRAN'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	71.4	70.9	70.9	67.3	67.3	67.5	67.6	67.8	67.8	67.8	
Registering property	66.1	66.1	65.9	65.9	65.9	65.9	64.9	64.7	64.8	69.0	
Getting credit	56.3	56.3	56.3	62.5	45.0	45.0	45.0	45.0	50.0	50.0	
Paying taxes	65.6	66.8	66.8	66.8	67.8	67.8	53.8	53.5	53.5	59.5	

Source: Doing Business, The World Bank, 2010–19.

IR Iran, with its geographical advantage of being connected with 15 countries via land and water borders, repeatedly fares poorly in the World Bank's 'ease of doing business' rankings. Its geographical advantage, together with its competitive endowments in natural gas and crude oil, should imply that IR Iran's landscape mushrooms with ancillary industries and business. However, as the World Bank notes, IR Iran's main issue remains the lack of political will for reform, coupled with strife corruption and red-tapism. The country ranks low on contract enforcements, protection of minority investors, credit access, and other registration compliance (see Table 5). Given a strong dynamic based on suspicions of Western influence, combined with each policy being subjected to review by a supreme leader, prospects of changes conducive to pro-business environment, e.g., more competition to reduce consumer prices, sharing of international best practices, technology transfer, and public–private partnerships, remain bleak.

Financial Access

Financial access, besides promoting inclusive development, helps to improve a nation's competitiveness in terms of its demand conditions, firm strategy, and rivalry conditions. It improves

TABLE 6

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN IR IRAN.

Access to finance	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
No. of ATMs per 100,000 adults	18.27	23.48	30.58	36.27	46.19	51.69	57.18	67.57	72.67	77.52	88.65	
No. of commercial bank branches per 100,000 adults	28.90	28.55	26.32	29.60	29.68	29.37	32.31	31.33	31.65	28.59	31.09	
Outstanding deposits with commercial banks (% of GDP)	34.95	37.29	37.48	37.25	39.20	38.14	47.53	58.80	66.93	71.50	86.69	
Outstanding loans with commercial banks (% of GDP)	30.73	32.83	30.21	30.11	31.82	27.42	32.37	38.47	39.50	43.07	51.40	

Source: IMF, 2007–18.

a populace's consumption preferences through financial sophistication and also allows enterprises to scale up and innovate production capabilities through easy credit access. Financial access in terms of bank account penetration remains high in IR Iran at 73.7%, compared with 41% in developing economies [91], as also indicated by the scores in Table 6. However, at a provincial level, the inclusion varies widely. For instance, the share of adults with a term-investment savings account varies from 6.4% in Kurdistan to 46.6% in South Khorasan. Notably, IR Iran also lacks 'gazelles' or companies that can attain quick profits and increase revenue by up to 20% annually for more than four years, starting at USD1 million. This aligns well with the frequent concerns among Iranian SMEs of institutional credit being inadequate.

Trade

TABLE 7

DATA INDICATING IR IRAN'S TRADING OUTLOOK.

Trade	2010	2011	2013	2014	2016	2017	Trend
HH Market concentration index	0.09	0.11	0.21	0.22	0.14	0.13	
Index of export market penetration	3.86	3.64	3.79	3.71	3.82	4.09	

Source: WITS, 2010–17.

Trade liberalization is believed to enhance economic growth and development through specialization and technological advances [92]. Throughout 1965–78, IR Iran was one of the fastest growing countries in the world, relying on oil export revenue for financing its diversified industries and services. However, the Islamic Revolution of 1979 and the destructive Iran–Iraq war of 1979–87 changed the positive economic trend, with IR Iran choosing an inward-looking strategy. The government got the duty to control imports and exports. However, the resultant import-substitution strategy, while successful with GDP growth during 1989–2003 being more than 5%, has been reliant on the cash flows that IR Iran gets from its oil exports [93]. IR Iran's scores on various trade parameters are given in Table 7.

TABLE 8

IR IRAN'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %
ROC	42.35
Unspecified	14.07
PR China	8.56
UAE	6.33
Iraq	6.07

Top 5 import partners	Partner share in %
PR China	25.41
UAE	15.85
ROK	7.13
Turkey	6.17
Germany	5.95

Source: WITS, 2018.

In present times, when global cues on crude oil remain bleak, and IR Iran still reels under USA sanctions, the 'wait and watch' approach need to change in the private sector. An effort toward creating downstream capabilities and geopolitical alliances with the likes of PR China, Turkey, Pakistan, etc. should bode well for IR Iran's trade competitiveness for not only its oil exports but other primary, low-tech products as well. Table 8 highlights IR Iran's leading export and import partners.

Underlying Concern

The underlying concern for IR Iran particularly arises from the area of industry, innovation, and R&D practices.

Industry, Innovation, and R&D

TABLE 9

DATA INDICATING IRAN'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2008	2009	2010	2012	2013	2017	Trend
Research and development expenditure as % of GDP	0.65	0.27	0.26	0.32	0.25	0.83	
Patent applications of residents	15,403	12,184	11,108	10,622	11,305	15,264	
Direct resident trademark applications	30,711	23,465	25,388	24,879	31,732	97,236	

Source: World Development Index, 2008–17.

IR Iran is still largely a natural resource-based economy. Diversification is an imperative, not only because natural resources are exhaustible but also because export success in world markets increasingly demands knowledge-intensive production and innovation-based competition. Moreover, the continuous threat of economic sanctions that IR Iran faces on its crude oil exports further necessitates our point. Keeping in mind the distrust for private enterprises in IR Iran,

short-term solution would be to create a national innovation system that can not only import and adapt technologies, but also improve upon them, innovate new technologies, and diffuse them across the economy. Table 9 provides IR Iran's scores on various parameters of industry, innovation, and R&D.

Currently, the main actors in the Iranian national innovation system are the government ministries, the research institutes/universities, and the enterprises. The uniqueness of the system is that almost all the research institutes/universities and an overwhelming majority of the enterprises are state-owned. Other actors such as the business associations, business support organizations and consumer groups are very weak and play almost no role in the system. As a result, user–producer linkages are weak and innovation activities in IR Iran are not demand-driven. Hence, constituting an innovation council comprising of technocrats, businessmen, educationists, etc., who can recommend potential areas of scope for innovation based on market sentiment would be a good idea, if IR Iran cannot move toward liberalization in the short term.

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to IR Iran that would hinder its growth:

- **Structural reform to foster innovation:** Removing barriers to competition and foreign investment, reducing the hold of monopolies and special interests, cutting red tape, and increasing investment in education and research, as has been done by countries like India, has allowed technology transfers and enhance access to foreign markets for them. IR Iran would be wise to follow suit.

- **Encourage startups:** Financing at an early stage of startups, e.g., through angel investments and venture capital funds, needs to be accelerated. Policy focus must shift towards fostering an innovative and knowledge-based entrepreneurship and support ecosystem. Startups with more novel ideas and technologies must be stimulated with better access to finances.

- **Labor market reforms:** IR Iran, where unemployment remains high, and demographic pressures will continue to bring large numbers of new entrants to the labor market in the coming years, it is important that some measures, e.g., tax cuts aimed at low-wage workers and training programs, happen to make the best use of a 'demographic dividend.'

- **Transition to a non-oil program:** In the wake of weak global cues on oil amidst the pandemic, and the USA's sanctions on IR Iran's oil exports, a short-term statist focus on construction, mining, manufacturing, or textiles sectors, while making use of rial's devaluation, would build Iranian resilience for the long haul.

IR Iran's Competitiveness

Natural endowments present in IR Iran have indeed helped it achieve economic gains till now. Despite located at a geographically advantageous location, the inefficient logistics sector limits the country's potential to be a transshipment hub. Innovation system is low on collaboration and new ideas; labor productivity suffers on account of low real wages; ease of doing business is dismal;

and financial access meets just the hygiene criteria. Greater trade openness, while building capabilities in downstream and non-oil business, seems to be the panacea for IR Iran's competitiveness woes.

Conclusion

Iran is at crossroads where it has to deliberate on its geopolitical associations, which will dictate the future course of its economy and competitiveness. It can either pander to the USA's vision of IR Iran and continue warily with its oil fueled growth story; or it can diversify its interests into non-oil businesses like mentioned before, while forging new geopolitical and trade alliances with the likes of PR China, Turkey, Malaysia, and Pakistan. In any case, the right move would be toward neo-liberalism while navigating the choppy waters of religious fundamentalism as the inefficiency and excesses of SOEs are there for all to see.

JAPAN

Japan is distinctly placed in the world economy and has emerged as one of the most productive and highly competitive nations in the world. It has achieved massive and sustained economic growth and development through several decades, which was quite unparalleled across Asian economies until the past few decades. In fact, Japan sustained and survived various economic shocks and natural disasters exceptionally well [94]. Post-World War 2, Japan's economy recovered, and it emerged as one of the most successful nations, with an exports-led growth including high-technology exports and investments in innovation and R&D. These aspects further accelerated productivity and enhanced Japan's international competitiveness. Since 2012, Japan has embarked on an expansion that appears to be the longest ever since its post-War reforms. Output growth has increased from 0.5% annually during 1997–2012 to 1.3% recently. Consequently, deflation has been replaced with low yet still positive inflation, boosting growth to 1.7% [95].

Table 1 offers an overview of Japan and highlights significant trends on a historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN JAPAN.

Overview				
Population (2019)	126,264,931			
Employment–population ratio (2018)	60.65%			
Labor force participation rate (2018)	62.10%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	4,755,410	5,700,098	4,394,978	4,983,568
GDP per capita, current USD	37,057	44,344	34,340	39,178
Real GDP growth, y-on-y, %	1.66	4.19	1.35	0.79
Current account balance, % of GDP	3.58	3.80	3.11	3.51

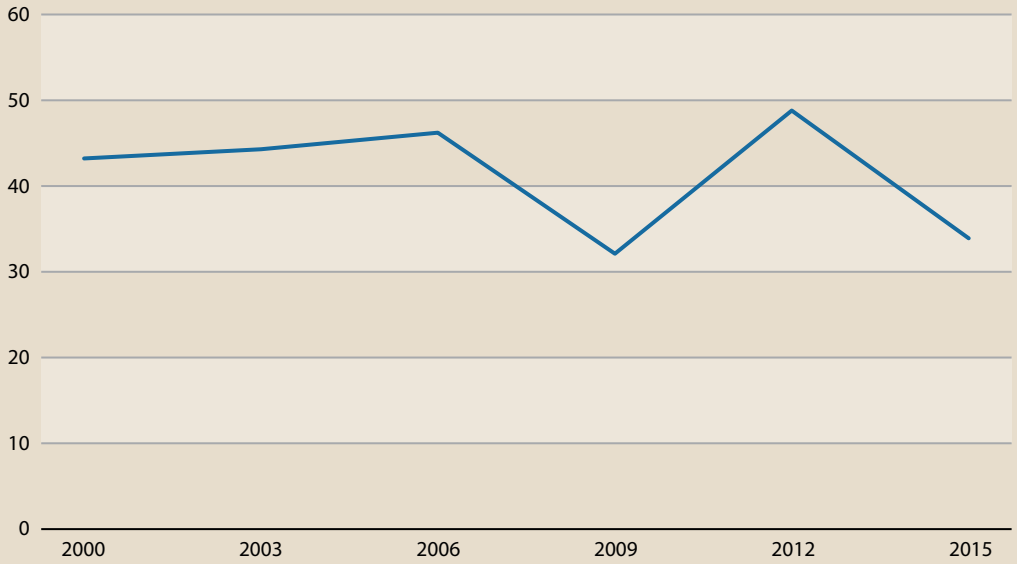
Sources: ILO and WDI databases; UNCTAD STAT (2018).

The OECD economic survey [95] of 2019 brings to light certain issues that plague Japan. With persistent growth witnessed historically, Japan now faces long-term challenges that include slower pace of growth, fiscal sustainability issues, unemployment, disparity in terms of gender, and a rapidly ageing population.

A 2017 report by the Asian Development Bank [96] on persistent inequalities present in Japan (see Figure 1 for Gini coefficient scores) had revealed some key insights. Some of the major reasons for inequality include marital status, number of education years, and wage system. Wage system is also determined on the basis of seniority rather than productivity. Additionally, gender wage gap

FIGURE 1

SHOWCASING JAPAN'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2000–15.



Source: World Bank Development Research Group.

continues to be a significant deterrent to achieving equality. Such factors prevent any sharp decline in disparity from taking place.

Findings of the report had divulged such obstacles that pose long-term challenges for Japan to tackle in order to fight factors leading to stagnation, which eventually harms productivity and the ability to compete in international markets. Table 2 provides an insight into the findings of this report and Japan's productivity and competitiveness performance across various pillars including infrastructure, labor and productivity, trade, starting a business and industry, innovation, and R&D.

TABLE 2

SCORES INDICATING JAPAN'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**100**
Infrastructure	1.94
International shipments	1.23
Logistics competence	1.77
Tracking and tracing	1.59
Tracking timeliness	1.61
2. Labor and productivity	**42.45**
Per worker labor productivity	0.87
Per worker labor productivity growth	–1.13

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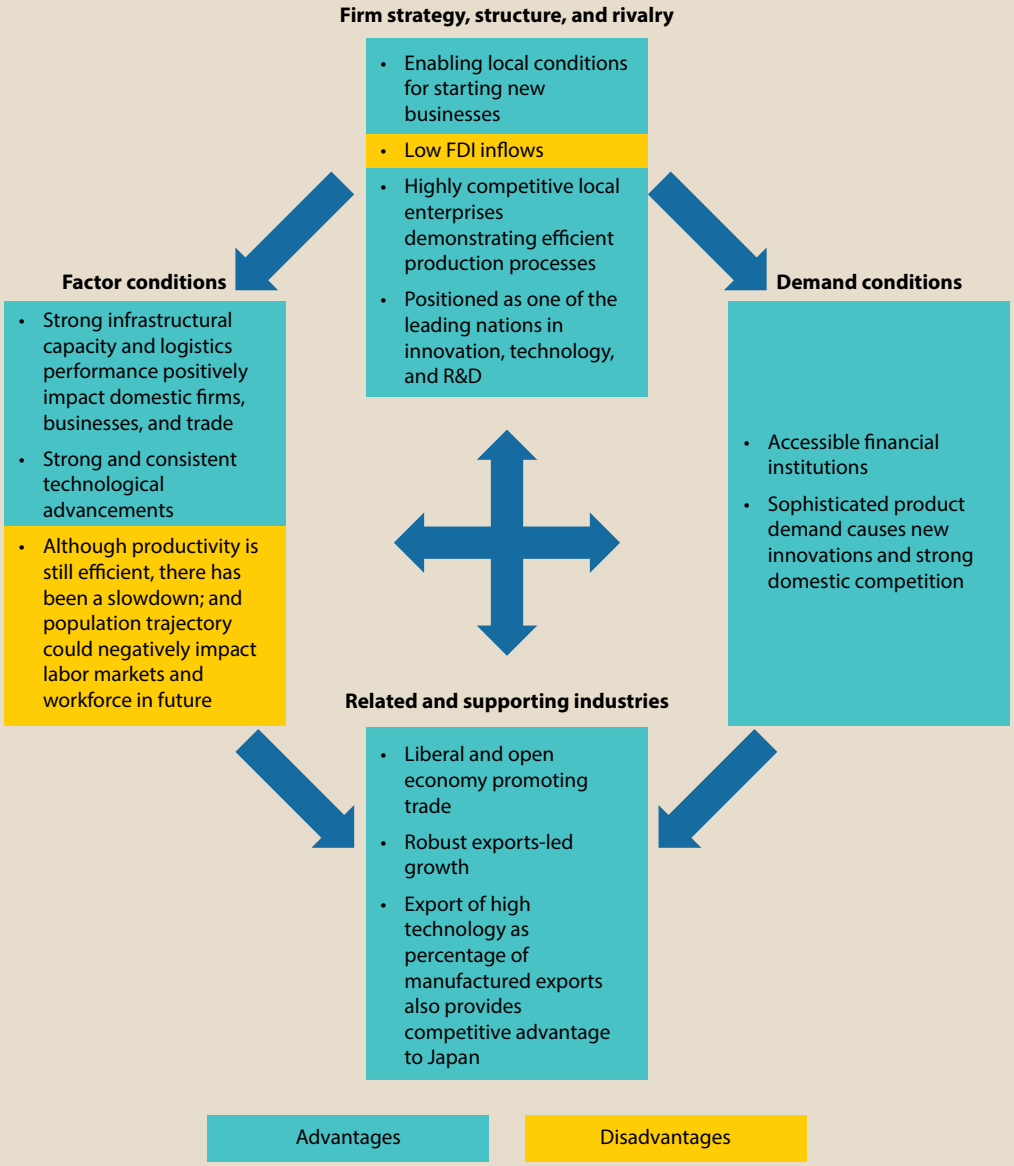
Pillar	Score
Per hour labor productivity	1.20
Per hour labor productivity growth	–1.30
TFP growth	–0.73
3. Financial access	**73.81**
No. of ATMs per 100,000 adults	1.98
No. of commercial bank branches per 100,000 adults	1.17
Account (% of those aged 15+)	1.09
Borrowed money in the past year (% of those aged 15+)	0.37
Outstanding deposits with commercial banks (% of GDP)	0.49
Outstanding loans with commercial banks (% of GDP)	0.21
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	–0.96
4. Trade	**100**
No. of tariff agreements	0.92
Duty-free imports (USD thousand) between 2014–18	2.24
Maximum rate (%) tariffs 2014–18	1.49
Duty-free tariff lines share (%) 2014–18	0.36
HH Market Concentration index	–0.31
Index of export market penetration	1.44
5. Starting a business	**78.35**
Starting a business	0.47
Registering property	0.69
Getting credit	–0.44
Paying taxes	0.69
6. Industry, innovation, and R&D	**82.34**
High-technology exports as % of manufactured exports	–0.16
R&D expenditure as % of GDP	1.81
High-technology exports (current USD)	1.00
Patent applications of residents	3.43
Direct resident trademark applications	1.17
Total score	**79.49**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for Japan based on the Diamond model:

FIGURE 2

KEY OBSERVATIONS ON JAPAN'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Japan has consistently performed well across all indicators. It has a robust infrastructure network, trading outlook, and business-enabling environment, and is considered as one of world's most technologically advanced nation with utmost innovations and R&Ds taking place. Nevertheless, it does face long-term challenges that hinder sustainability, thereby hindering productivity and competitiveness. The following section discusses the findings of the Diamond model in detail.

Infrastructure

Japan's infrastructural capacity and logistics performance constitute one of the key strengths for the country (see Table 3). This further enunciates the factor conditions present and necessary to drive

the country's competitiveness, both for local markets as well as international markets. The Logistics Performance Index report [71] also asserts Japan's dominance in the supply-chain industry and further improvements made to increase its efficiency in logistics performance since 2012.

TABLE 3

SCORES INDICATING JAPAN'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	4.11	4.19	4.11	4.16	4.10	4.25	
International shipments	3.77	3.55	3.61	3.52	3.69	3.59	
Logistics competence	4.12	4.00	3.97	3.93	3.99	4.09	
Tracking and tracing	4.08	4.13	4.03	3.95	4.03	4.05	
Timeliness	4.34	4.26	4.21	4.24	4.21	4.25	

Source: Logistics Performance Index.

Financial Access

In Japan, access to financial institutions is not a major issue (see Table 4). However, there is a need to improve upon areas of investments and getting credit. A 2017 IMF report [97] asserts that sectoral concentration leading to reduced competition negatively impacts firms and sector-level investment. Consequently, fiscal challenges emerge due to a rapidly ageing population. This entails negative labor supply particularly for women and elderly. The need to increase social spending in a debt-ridden economy remains a challenge that needs to be addressed. The population size may decrease, while the age group of above 75 years may nearly double from 13.8% to 25.7%. This age group calls for increased spending in health and long-term care [98].

TABLE 4

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN JAPAN.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	125.45	132.81	130.93	128.58	127.91	128.32	127.52	127.65	127.77	127.66	127.38	
No. of commercial bank branches per 100,000 adults	33.85	33.81	33.82	33.90	33.95	33.91	33.90	34.14	34.10	34.00	34.01	
Outstanding deposits with commercial banks (% of GDP)	111.80	122.21	122.30	128.12	130.30	133.31	134.07	134.63	137.90	143.80	147.51	
Outstanding loans with commercial banks (% of GDP)	84.14	93.43	87.78	90.07	90.85	92.86	95.14	95.46	96.50	98.92	101.17	

Source: IMF, 2014–18.

Trade

TABLE 5

DATA INDICATING JAPAN'S TRADING OUTLOOK.

Trade	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
No. of tariff agreements	13	16	18	16	21	19	17	20	18	19	
Duty-free imports (in USD billion)	598	420	541	665	696	665	656	484	471	514	
Maximum rate (%) tariffs	3,000	3,000	3,000	3,000	3,000	50	3,000	2,922	2,631	2,939	
Duty-free tariff lines share (%)	50.42	51.19	52.56	53.31	53.28	55.15	55.4	54.34	55.29	55.19	
HH Market concentration index	0.07	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	
Index of export market penetration	26.45	25.47	25.72	25.21	24.73	24.99	24.85	24.83	24.93	24.85	

Source: WITS, 2008–17.

Despite certain inconsistencies over the past decades, Japan performs exceptionally well with regard to its trading outcomes (see Table 5). Subsequently, the findings of the WITS report indicate that Japan is leading in this area. There is indeed a positive correlation relation between exports, imports, gross fixed capital formation, and gross domestic product. A study on the impact of these factors on economic growth in Japan between 1970–2015 also demonstrated the same through empirical findings. The results revealed that exports and domestic investment are the primary reasons for Japan's economic growth [9]. Moreover, trade plays an important role in assuring domestic competition and presence of related and supporting industries to boost productivity. Although Japan's share of exports does not remain as high as it used to, and the trends Table 5 show a decline in liberal trading outlook, Japan still manages to hold its ground among most countries in the Asian region.

TABLE 6

JAPAN'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %
PR China	19.51
USA	19.05
ROK	7.11
Other Asia, NES	5.74
Hong Kong	4.70

Top 5 import partners	Partner share in %
PR China	23.20
USA	11.17
Australia	6.11
Saudi Arabia	4.51
ROK	4.29

Source: WITS, 2018.

Japan also boasts of heavy machinery exports due to its huge industrial capacity. With an open economy, which itself enables growth, competitiveness also creates opportunities and access to global markets. Ultimately, all this creates shared prosperity, helping Japan become one of the biggest economies globally.

With constant rise of various developing economies such as PR China, Thailand, and India, Japan's position in the world economy has seen a decline, even though it continues to perform well and remain at par with several developed western nations. Table 6 highlights Japan's leading export and import partners.

Starting a Business

TABLE 7

SCORES INDICATING JAPAN'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2014	2015	2016	2017	2018	2019	Trend
Starting a business	86.1	86.1	86.1	86.1	86.1	86	
Registering property	72.5	72.4	75.6	75.3	75.3	75.3	
Getting credit	55	55	55	55	55	55	
Paying taxes	71.7	73.0	81.6	81.4	80.8	78.2	

Source: Doing Business, The World Bank, 2010–19.

Japan can be characterized by an enabling business environment. However, FDI inflows have been low at 0.9%, which further points at the need for lowering entry barriers to encourage more foreign investments [1]. Getting credit is another area that can be improved upon, as indicated by the corresponding scores in Table 7. Paying taxes has considerably improved, given the reduction in corporate taxes over the past few years. Strong connectivity and infrastructure also allow for ease of doing business.

Industry, Innovation, and R&D

Given the onset of the digital age, the importance of innovation, technology, data, and IT cannot be emphasized enough. Japan has emerged as a prominent powerhouse in this area (see Table 8). It is leading Asia in IT capital contributing to economic growth. Given that manufacturing contributes about 79% towards productivity growth in Japan [1], the capacity for innovation is particularly crucial to enable its competitive advantage as a nation. Japan has also successfully implemented innovative methods and mechanisms to advance its SME sector through concepts like 'gamification' [27]. By encouraging small innovations in SMEs, the country also encourages integral values and foundations for long-term sustainable growth and development. Such a practice is especially crucial for ascertaining prosperity of the people.

TABLE 8

DATA INDICATING JAPAN'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trends
High-technology exports as % of manufactured exports	18.9	20.6	19.2	18.4	18.3	17.8	17.8	18.1	17.3	17.6	17.3	
High-technology exports (in current USD billion)	13.07	10.44	13.02	13.35	12.98	11.16	10.76	98.54	99.29	10.64	11.10	
Patent applications of residents	330,110	295,315	290,081	287,580	287,013	271,731	265,959	258,839	260,244	260,292	253,630	
Direct resident trademark applications	95,671	90,473	92,162	84,674	95,547	92,505	100,044	117,956	133,335	154,777	145,269	

Source: World Development Index, 2008–18.

Underlying Concern

Data shows Japan to be performing well on most of the pillars and indicators. It performs extremely well in terms of infrastructure, logistics competency, trade, innovation, industry, and R&D expenditure. Japan encapsulates a rather enabling business environment and provides great demand conditions with access to finance. The issues brought to light here pertain to long-term challenges in labor and productivity. The following section elaborates on the matter in detail.

Labor and Productivity

TABLE 9

JAPAN'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	1.01	1.00	0.96	1.00	1.01	1.01	1.04	1.04	1.05	1.05	1.05	
Labor productivity (based on hours worked)	0.97	0.97	0.96	1.00	1.01	1.01	1.04	1.04	1.05	1.05	1.05	
Labor productivity (based on number of employments)	1.00	0.99	0.95	1.00	1.01	1.01	1.03	1.03	1.03	1.03	1.04	
Capital productivity	1.03	1.01	0.95	1.00	1.01	1.03	1.05	1.05	1.06	1.06	1.08	

Source: APO Productivity Database 2019.
Unit: Index (2010=1.0).

Japan has consistently performed well in terms of productivity (see Table 9) and was only recently surpassed by PR China as the biggest Asian economy. The Japan Productivity Center (JPC),

established in 1955, is one-of-its-kind organization in Japan committed to socioeconomic development of the country. However, though throughout its history Japan has exhibited strong productivity gains, in the past few decades, other economies, primarily the Asian tigers, Singapore, Hong Kong, and ROC have managed to surpass Japan [1].

The issues with labor and productivity do not concern efficiency but the modest pace and slowdown of growth that occurs in the long run. A sharp rise in the ageing population calls for higher social expectancy. Children born in the year 2007 can live up to the age of 107 years. Such factors can have far reaching consequences for the labor market. Elderly population is expected to rise from 50% of the working-age population in the year 2015 to 79% of the working population by 2050 [99].

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to Japan that would hinder its growth:

- **Review social policies:** Social policies must be revisited from time to time so as to not only increase efficiency and maintain healthcare solutions and other benefits but also to prevent adverse impact on the labor market

- **Further improve workplace environment:** Measures to ensure a conducive work environment in the long run for employees must be undertaken. This also includes reducing disparity at workplace and taking initiative to combat gender inequality.

- **Enable monetary easing:** Policies undertaken for monetary easing must be continued to reap long-term benefits and maintain faith of the people.

- **Lower entry barriers for FDI:** Given the low inflow of FDI, barriers to entry in the market must be scaled down. This will positively impact trade and create better domestic conditions for new businesses.

Japan's Competitiveness

Prominent factor conditions, strong infrastructure, and conducive domestic conditions, along with sophisticated production capabilities and consumers, strong trade outlook, an enabling business environment, and access to finance contribute to the competitive advantage that Japan enjoys in the global market. Additionally, a strong penchant for R&D, technology, and innovation has proved to be vital in inculcating economic gains and development in the country. Although Japan has often maintained a superior performance in terms of productivity gains, it has attained a pace of moderate growth. Long-term challenges pertaining to sustainable output and growth need to be tackled effectively for the nation to continue to enjoy its competitive advantage and prosperity.

Conclusion

Given that Japan has maintained growth and performance across various pillars, it is undeniable that it will continue to hold onto its position as one of the biggest economies around the world. Nevertheless, it still has to face challenges and tackle them effectively in areas of labor, finance, and overall social development to fight any deterioration or stagnation that may arise.

THE REPUBLIC OF KOREA

Despite its colonial origins and war-torn state, the Republic of Korea (ROK) was able to make one of the quickest significant economic advancements in the world towards the end of the 20th century. The Korean economy experienced steady growth and industrialization, eventually becoming an export-oriented economy. The country exhibits a unique stance wherein structural changes and influences on the business class play a crucial role. Unlike the norm of import-substitution in state subsidies and protection for businesses and the ability of the state to discipline capital have played an essential role in being successful across the world, particularly in export markets of advanced countries [13].

Table 1 offers an overview of the ROK and highlights significant trends on a historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN THE ROK.

Overview				
Population (2019)	51,709,098			
Employment–population ratio (2018)	61.2%			
Labor force participation rate (2018)	63.6%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	898,137	1,094,499	1,382,764	1,619,928
GDP per capita, current USD	18442	22,091	27,207	31,657
Real GDP growth, y-on-y, %	3.92	6.50	2.79	2.70
Current account balance, % of GDP	1.36	2.55	7.60	4.72

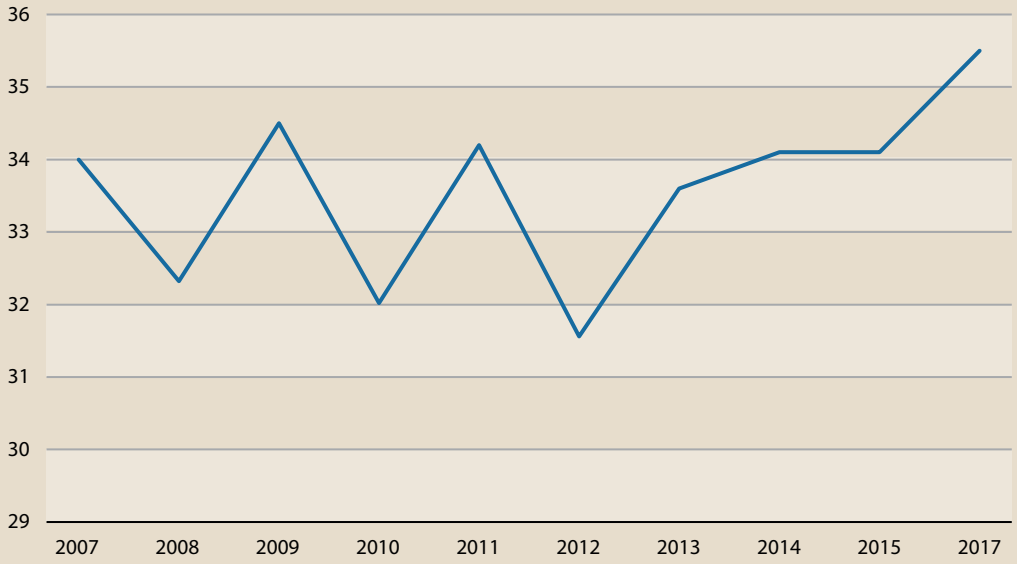
Sources: ILO and WDI databases; UNCTAD STAT (2018).

Propelled by strong state support, the ROK has made remarkable difference in its economy, thereby increasing the standard of living of its people to a great extent, as also reflected by the Gini coefficient in Figure 1. Notwithstanding the devastation left behind after years of war and poverty, the focus on areas such as infrastructure and strengthening of the education system have led to massive economic returns over the years.

Reforms that took place post Asian Economic Crisis promoted a neo-liberal approach. The transition to an advanced, technology-driven state with an exports-led focus deepened income inequality in the country. Studies reveal a concentration of income in the top-tier groups. In the early stages of industrialization, people from all income groups saw an increase in their incomes. The bottom 90% saw the same level of income growth as that was seen by the top 10%. However, in the later years, average wage earners saw a modest increase in income, whereas the income of

FIGURE 1

SHOWCASING THE ROK'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2007–17.



Source: UNU-WIDER.

0.1% of the top 10% saw a rapid rise in their income level [100]. This polarization has revealed that the bottom 10% population of the wage distribution received no increase in their income for the past two decades [101].

The findings of this report showcase the ROK in a favorable light, given its steady growth level in the past decades, which have contributed immensely to its growth.

Table 2 offers an insight into the ROK's performance on various pillars to assess the overall level of its competitiveness.

TABLE 2

SCORES INDICATING THE ROK'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**77.97**
Infrastructure	1.16
International shipments	0.66
Logistics competence	0.92
Tracking and tracing	1.07
Tracking timeliness	0.98
2. Labor and productivity	**57.66**
Per worker labor productivity	0.56

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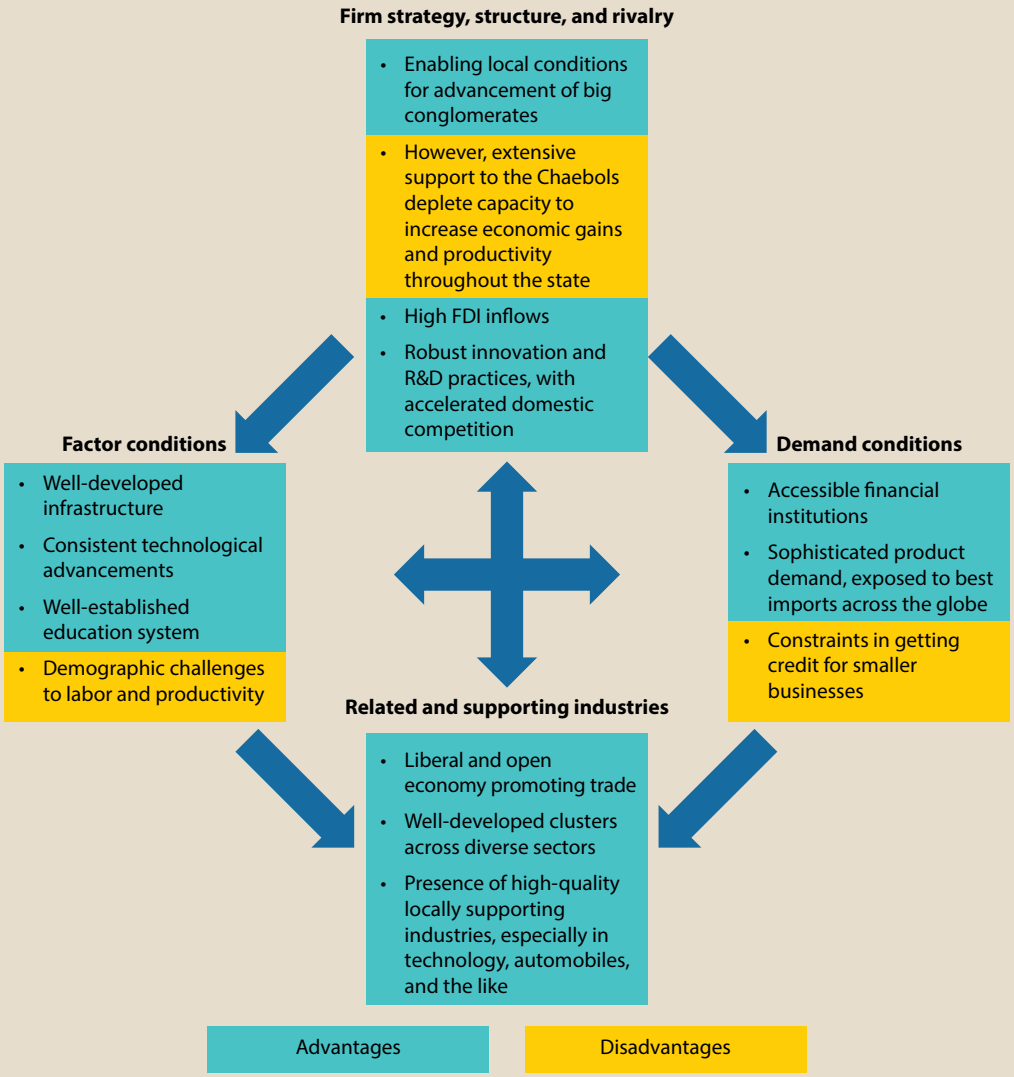
Pillar	Score
Per worker labor productivity growth	–0.57
Per hour labor productivity	0.54
Per hour labor productivity growth	0.07
TFP growth	0.22
3. Financial access	**74.93**
No. of ATMs per 100,000 adults	0.69
No. of commercial bank branches per 100,000 adults	0.27
Account (% of those aged 15+)	0.97
Borrowed money in the past year (% of those aged 15+)	1.83
Outstanding deposits with commercial banks (% of GDP)	–0.23
Outstanding loans with commercial banks (% of GDP)	0.05
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	0.97
4. Trade	**81.84**
No. of tariff agreements	1.83
Duty-free imports (USD thousand) between 2014–18	0.43
Maximum rate (%) tariffs 2014–18	0.04
Duty-free tariff lines share (%) 2014–18	0.76
HH Market Concentration index	0.009
Index of export market penetration	1.02
5. Starting a business	**92.6**
Starting a business	1.02
Registering property	0.74
Getting credit	0.15
Paying taxes	1.10
6. Industry, innovation, and R&D	**100**
High-technology exports as % of manufactured exports	0.78
R&D expenditure as % of GDP	2.99
High-technology exports (current USD)	2.14
Patent applications of residents	2.05
Direct resident trademark applications	1.52
Total	**80.83**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

FIGURE 2

KEY OBSERVATIONS ON THE ROK'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



The ROK has enabling factor conditions with well-developed infrastructure and skilled labor supply. With sophisticated demand conditions, strong focus on innovation and R&D, and attributes of related and supporting industries further strengthening the economy, the ROK has great competitive advantage. The underlying issues persist mainly in the areas of inequality, both social and economic, in that the major corporations occupy the larger share in the economy and smaller enterprises suffer. Further, constrains due to possible demographic challenges as well as issues of gender disparity impede growth levels considerably.

Infrastructure

The ROK has shown immense growth due to its recent industrialization and technological expansion. Strong reforms and structural changes have played a significant role in achieving this. Strong infrastructural capacity, as indicated by data in Table 3, gives way to intense domestic competition

TABLE 3

SCORES INDICATING THE ROK'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	3.44	3.62	3.74	3.79	3.79	3.73	
International shipments	3.44	3.47	3.67	3.44	3.58	3.33	
Logistics competence	3.63	3.64	3.65	3.66	3.69	3.59	
Tracking and tracing	3.56	3.83	3.68	3.69	3.78	3.75	
Timeliness	3.86	3.97	4.02	4.00	4.03	3.92	

Source: Logistics Performance Index.

and helps facilitate trade. Additionally, robust telecommunication infrastructure also provides immense value to enhance competitiveness. The development of infrastructure in the ROK has been facilitated not just by the government but also through successful public–private partnerships, which many other countries such as Thailand have not been able to capitalize on effectively.

Financial Access

Financial access is another area in which the ROK has demonstrated a degree of innovation and technological advancement. The system appears to be efficient and inclusive, as shown by the scores given in Table 4. As with many other changes, the ROK's approach towards a modern and inclusive financial design also took place after the Asian Financial Crisis. A modern retail payment market was introduced with a 20% deduction of annual credit card payments from taxable income;

TABLE 4

DATA INDICATING THE REACH OF FINANCIAL INSTITUTIONS IN THE ROK.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
No. of ATMs per 100,000 adults	241.80	247.09	265.38	281.23	288.45	288.59	280.81	275.88	271.40	272.04	
No. of commercial bank branches per 100,000 adults	18.70	18.19	18.18	18.22	18.31	18.02	17.20	16.75	16.23	15.41	
Outstanding deposits with commercial banks (% of GDP)	61.13	65.23	69.07	71.12	71.89	70.63	72.71	74.40	75.59	75.45	
Outstanding loans with commercial banks (% of GDP)	83.03	82.79	78.02	79.78	79.84	80.78	84.12	86.11	86.74	86.94	

Source: IMF, 2008–17.

and merchants and other businesses were encouraged to take up credit cards. Fintech companies were also encouraged and facilitated at a rapid scale. Such reforms, along with exceptional telecommunication infrastructure, 5G networks, and data services provided a conducive environment for digital and mobile payment services [101]. Consequently, a shift can be witnessed wherein the economy has shifted from a bank-centered payment system to various easy digital payment services, often driven by the thriving smartphone industry in the country.

Trade

The ROK's trading outlook has been one of the significant advantages contributing to its success in the world economy. It was the pronounced approach towards an exports-led growth that helped

TABLE 5

DATA INDICATING THE ROK'S TRADING OUTLOOK.

Trade	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of tariff agreements	6	6	6	5	6	6	26	28	6	27	27	
Duty-free imports (in USD billion)	132.49	98.70	129.73	155.31	141.25	141.47	215.43	242.67	116.45	232.45	234.34	
Maximum rate (%) tariffs	887.4	887.4	887.4	887.4	887.4	887.4	887.4	887.4	887.4	887.4	887.4	
Duty-free tariff lines share (%)	19.67	20.34	20.50	20.53	21.03	21.13	59.96	64.82	19.88	68.35	68.57	
HH Market concentration index	0.09	0.10	0.11	0.11	0.11	0.12	0.12	0.13	0.12	0.11	0.14	
Index of export market penetration	20.91	20.81	21.82	21.47	21.58	22.23	21.95	21.64	21.84	21.89	19.65	

Source: WITS, 2008–18.

TABLE 6

THE ROK'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %
PR China	26.81
USA	12.08
Vietnam	8.04
Hong Kong	7.60
Japan	5.05

Top 5 import partners	Partner share in %
PR China	19.90
USA	11.04
Japan	10.20
Saudi Arabia	4.92
Germany	3.90

Source: WITS, 2018.

create structural changes and achieve higher growth levels, as seen in Table 5. Exports-led industrial growth led the ROK to become one of the largest producers of automobiles, semiconductors, telecommunications, and even petroleum products. Such factors helped the ROK to free itself from reliance on foreign aid and enabled it to embrace the path to self-sufficiency.

From 1960s onwards, exports began to rise, prompting the government to give utmost priority to exports in its policy framework. Thus, exports-led industrialization (ELI) or export-oriented industrialization (EOI) became an unprecedented strategy taken by the ROK at the time, unlike other underdeveloped countries. Exports grew at staggering rates, providing increased economic gains and competitive advantage to the ROK in the global market. Table 6 highlights the ROK's leading export and import partners.

Starting a Business

TABLE 7

SCORES INDICATING THE ROK'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	93.4	93.4	93.4	91.9	91.9	91.9	91.9	88.7	84.5	84.5	
Registering property	71.0	70.7	70.7	70.7	70.7	70.7	76.3	76.3	76.3	76.2	
Getting credit	75	75	75	75	65	65	65	65	65	65	
Paying taxes	85.1	85.0	83.7	81.6	81.1	80.1	86.9	86.9	86.9	86.9	

Source: Doing Business, The World Bank, 2010–19.

Although the ROK has seen a decline in specific indicators regarding doing business, such as starting a business and getting credit (see Table 7), it remains one of the top-performing nations across Asia. A critical issue is to avoid economic polarization and widening social cleavages. Widening of such gaps would only deplete productivity gains in the long run. This pertains to taking particular considerations of not just the big conglomerates but also other smaller businesses and providing them with incentives to succeed.

Industry, Innovation, and R&D

Innovation, R&D, and technology play a crucial role in ensuring a competitive advantage for a nation. Having started its development process far behind leading western countries and highly successful Asian economies such as Japan, the ROK has made astonishing economic leaps due to its commitment to innovation and R&D (see Table 8). Major conglomerates, i.e., the chaebols as well as the private sector at large, have invested heavily in innovation and R&D. A robust telecommunications sector and manufacturing- and exports-led approach have further contributed to the country's economy. Nevertheless, with extensive digitalization, the issue of rising inequality and poverty persists. The ROK seeks to promote growth driven by innovation, which provides the required environment for sustained growth and competitiveness.

TABLE 8

DATA INDICATING THE ROK'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trends
High-technology exports as % of manufactured exports	30.30	32.03	32.04	28.14	28.20	29.80	30.03	31.21	30.52	32.52	36.35	
High-technology exports (in current USD)	3.12	3.29	3.47	3.74	4.03	4.15	4.29	4.22	4.23	4.55	4.81	
Research and development expenditure as % of GDP	110.80	103.50	132.08	133.47	130.69	143.48	149.06	147.12	135.91	166.68	192.79	
Patent applications of residents	127,114	127,316	131,805	138,034	148,136	159,978	164,073	167,275	163,424	159,084	162,561	
Direct resident trademark applications	107,488	108,170	106,896	112,578	120,341	135,233	138,046	160,026	157,113	155,665	170,541	

Source: World Development Index, 2008–18.

Underlying Concern

The data at a glance showcase underlying issues related to labor and productivity. They pertain to issues arising out of inequalities and demographic challenges, coupled with volatility of the global markets, which need to be addressed.

Labor and Productivity

TABLE 9

THE ROK'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	0.97	0.98	0.96	1.00	1.01	1.00	1.02	1.01	1.01	1.02	1.04	
Labor productivity (based on hours worked)	0.88	0.92	0.94	1.00	1.04	1.03	1.09	1.08	1.09	1.13	1.18	
Labor productivity (based on number of employments)	0.92	0.94	0.95	1.00	1.01	1.02	1.04	1.05	1.06	1.08	1.10	
Capital productivity	1.01	0.99	0.97	1.00	1.00	0.99	0.99	0.99	0.98	0.98	0.98	

Source: APO Productivity Database 2019.
Unit: Index (2010=1.0).

The ROK visibly fares well in labor and productivity, as evident from Table 9. Significant economic and social changes have impacted the economy vastly. For instance, manufacturing is a substantial sector for the ROK and has positively impacted its growth process. During 2010–17, manufacturing has led to a growth of 55% in the ROK [1]. However, even with this large a manufacturing share, TFP growth in the country remains stagnant. While previously, manufacturing was capable of providing employment to a large chunk of the population, it has failed to do so since the 1990s. To drive competitiveness, along with sustained productivity, a more holistic approach needs to be undertaken wherein labor mismatch must be avoided and smaller enterprises encouraged. Another area of concern is the changing demographic pattern. With the population size reducing, and single families and share of the ageing population increasing, the ROK needs to devise strategies that counter these issues in the foreseeable future.

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to the ROK, that would hinder its growth:

- **Promote small and mid-size enterprises:** To avoid polarization of the economy by the top income groups and big conglomerates, the policy framework must be devised to incentivize smaller and medium-sized enterprises.

- **Address social-inequality issues:** Initiatives that encompass the goal to reduce social inequalities are equally crucial. Ultimately, social expenditure provides economic returns that accelerate productivity.

- **Manage demographic changes:** Demographic changes due to an ageing population, rising single-family population, and the like have a lasting impact on the state. Public funding must be directed towards supporting the ageing population with necessary accommodation or healthcare solutions.

- **Push gender equality:** Gender disparity harms the progress extensively. The state must bring more women into the workforce, wherein labor laws, including fair wages and paid maternity leave, are strictly imposed.

- **Address unemployment issues:** Addressing challenges to unemployment includes providing required vocational training for the right roles in the labor market.

- **Ensure equitable development:** With large-scale technological expansion and innovation, the state becomes vulnerable to various challenges. It is essential to safeguard against the negative impacts of such expansions and ensure that developments take place across all sectors and groups of the population.

The ROK's Competitiveness

The ROK has systematically placed itself as one of the most competitive states across the Asian region. This milestone is commendable due to the progress the nation has made after the colonial rule that was in place till the 1940s, abject poverty, and a land that was ravaged by war. Strong factor conditions and demand conditions have helped the ROK tremendously. The technological

transformation has placed the country as one of the most successful economies at the global level. Although productivity has been a strong point, the ROK needs to maintain a cautious approach that will corroborate growth levels and not let it fall into stagnation. Identifying and preparing for possible issues in the world economy with due diligence will help the ROK to continue its fast-paced growth levels without a flatlining.

Conclusion

The ROK has taken a prominent spot in the world economy over the past few decades. The strategic policies and approach undertook to help achieve this has indeed contributed to the ROK's productivity growth as reflected by the diamond of national competitiveness. The ROK's advantages on each of the four attributes in the diamond have played a vital role in giving it the competitive edge and becoming successful in the world economy.

LAO PDR

Lao PDR has experienced significant economic progress by transitioning from a centrally planned economy to a market-oriented economy. This has been one of the driving forces behind making the economy more competitive. The country has registered an average annual growth rate of nearly 7% in the last decade [102]. As of 2018, Lao PDR exhibited an economic growth of 6.3% [103]. The services and the industry sectors remain the main drivers of this growth. The industry sector accounts for 32% of the GDP, while the service sector contributes around 42% to the GDP. However, there is a sizable population that primarily relies on natural resources for their economic activities. Almost 70% of the population depends on waterways and forests not only for income generation, but also for nutrition. In fact, they are the largest provider of employment for people in the country. Considering that the country is prone to natural disasters, this could spell disaster for the vulnerable population and give rise to macroeconomic instability [104, 105]. The 2018 floods affected the agricultural sector so adversely that the economic growth of 6.3% from 2018 slowed down to 4.8% in 2019.

Table 1 sheds light on the demographic and economic trends that have impacted the productivity of Lao PDR:

TABLE 1

MAJOR ECONOMIC TRENDS IN LAO PDR.

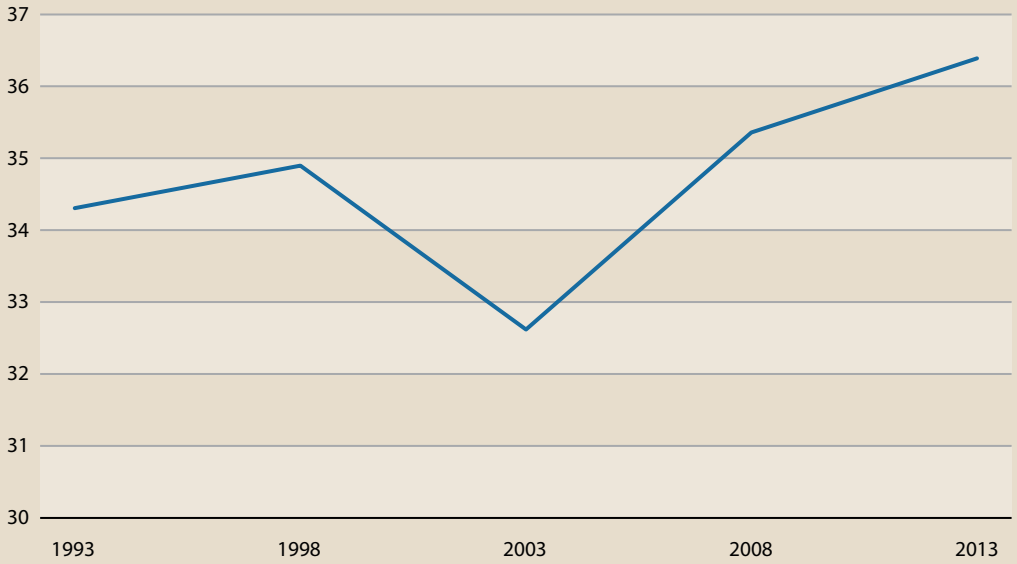
Overview				
Population (2019)	7,169,455			
Employment–population ratio (2018)	78%			
Labor force participation rate (2018)	78.4%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	2,946	7,313	14,390	18,179
GDP per capita, current USD	512	1,170	2,135	2,574
Real GDP growth, y-on-y, %	6.77	8.13	7.27	6.70
Current account balance, % of GDP	–5.90	0.40	–15.76	–7.87

Sources: ILO and WDI databases; UNCTAD STAT (2018).

The World Bank and the APO recognize Lao PDR as one of the fastest growing economies in the world, and the trends seem to suggest that the country has made significant progress in the recent years. However, the current account figures leave much to be desired in terms of economic gains. One of the pertinent reasons for this is that exports form a relatively small share of GDP. As of 2017, it comprised only 21.1% of the share of GDP. There are other prevailing concerns surrounding the expansion of the economy as well. While there has been significant growth, it has been largely unequal with disproportionate reduction in poverty levels, and rising inequality, as indicated by Gini coefficient in Figure 1. This could dampen the country's efforts to graduate from the status of being among the least developed countries in the world.

FIGURE 1

SHOWCASING LAO PDR'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 1993–2013.



Source: UNU-WIDER, 1993–2013

Table 2 offers an insight into Lao PDR's performance across the pillars to assess the prevailing level of competitiveness.

TABLE 2

SCORES INDICATING LAO PDR'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**22.81**
Infrastructure	–0.75
International shipments	–0.65
Logistics competence	–0.65
Tracking and tracing	–0.36
Tracking timeliness	–1.07
2. Labor and productivity	**48.34**
Per worker labor productivity	–0.82
Per worker labor productivity growth	0.79
Per hour labor productivity	–0.86
Per hour labor productivity growth	0.38
TFP growth	0.17
3. Financial access	**9.38**

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Pillar	Score
No. of ATMs per 100,000 adults	–0.84
No. of commercial bank branches per 100,000 adults	–0.98
Account (% of those aged 15+)	–1.37
Borrowed money in the past year (% of those aged 15+)	–0.90
Outstanding deposits with commercial banks (% of GDP)	–0.54
Outstanding loans with commercial banks (% of GDP)	–0.59
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	–0.85
4. Trade	**29.79**
No. of tariff agreements	–0.56
Duty-free imports (USD thousand) between 2014–18	–0.79
Maximum rate (%) tariffs 2014–18	–0.81
Duty-free tariff lines share (%) 2014–18	0.73
HH Market concentration index	0.90
Index of export market penetration	–1.21
5. Starting a business	**41.40**
Starting a business	–1.31
Registering property	–0.07
Getting credit	–0.14
Paying taxes	–1.25
6. Industry, innovation, and R&D	**13.14**
High-technology exports as % of manufactured exports	0.64
R&D expenditure as % of GDP	–0.61
High-technology exports (current USD)	–0.76
Patent applications of residents	–0.41
Direct resident trademark applications	–0.81
Total	**27.48**

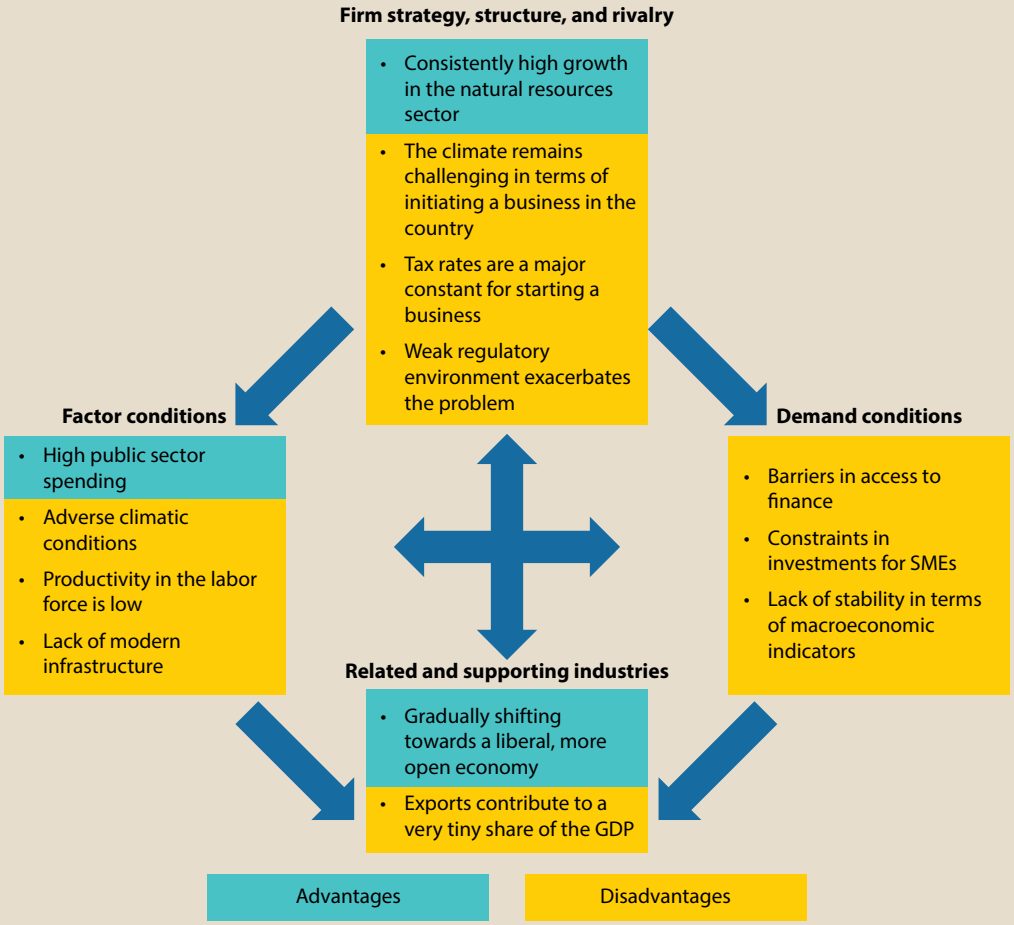
Key Observations

Based on the data in Table 2, Figure 2 displays areas of strength and weaknesses of the country grounded on the Diamond model.

Considering that Lao PDR is a middle-income economy, there remains scope for improvement in terms of enhancing its productivity and competitiveness. For a land-locked country, it has made significant progress, but there is much left to be done to build a sustainable and competitive economy. In order to attain this, the private sector will have to play a critical role in terms of diversification and generating more jobs. Lao PDR has prioritized increasing private sector-led

FIGURE 2

KEY OBSERVATIONS ON LAO PDR'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



growth in its 8th National Socio-Economic Development Plan (2016–20). An increase in participation from private companies is only possible when there is a favorable business ecosystem, which is currently lagging in the country. Apart from improving the business environment, the country has to make major strides in terms of boosting its infrastructure, promoting export-oriented growth, and enhancing the R&D sector to increase its competitiveness.

The next section discusses the four attributes of the Diamond model in detail.

Infrastructure

Infrastructural connectivity and its strengthening are crucial for Lao PDR, given its proneness to natural disasters and adverse climatic conditions. Furthermore, considering that the country is landlocked, there is a relatively high cost of accessing the international gateways that are important for developing an export base for manufacturing and local firms to integrate into the global value chains. The fact that it is a landlocked country increases its international trade costs by up to 50%. The country's transportation and logistics costs are among the highest in the region, as indicated by the scores in Table 3. This situation is exacerbated by Lao PDR's limited domestic transport and

TABLE 3

SCORES INDICATING LAO PDR'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	2.00	1.95	2.40	2.21	2.21	2.44	
International shipments	2.40	2.70	2.40	2.50	2.08	2.72	
Logistics competence	2.29	2.14	2.49	2.31	2.13	2.65	
Tracking and tracing	1.89	2.45	2.49	2.20	1.95	2.91	
Timeliness	2.13	3.23	2.82	2.65	2.13	2.84	

Source: Logistics Performance Index.

logistics infrastructure and capacity. The persistently high cost of transportation and logistics poses a significant threat to the country's export competitiveness [106]. Despite the challenges, the country has made progress on most of the parameters, thereby displaying an increasing commitment to attain a competitive advantage in the international market. Overall, the government agencies are taking steps, such as facilitating public-private dialogue, to streamline processes and procedures and to bring in concrete reforms for further improving the situation.

Labor and Productivity

TABLE 4

LAO PDR'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2005–15.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	0.93	0.95	0.97	1.00	1.03	1.04	1.06	1.08	1.11	1.12	1.14	
Labor productivity (based on hours worked)	0.86	0.90	0.95	1.00	1.05	1.11	1.18	1.25	1.32	1.39	1.46	
Labor productivity (based on number of employments)	0.85	0.90	0.94	1.00	1.06	1.12	1.18	1.26	1.33	1.40	1.48	
Capital productivity	0.97	0.98	0.99	1.00	1.01	0.99	0.97	0.97	0.97	0.95	0.94	

Source: APO Productivity Database 2017.
Unit: Index (2010=1.0).

A challenging investment and business ecosystem exacerbates the challenges surrounding labor productivity (see scores in Table 4). The median labor productivity (value added per worker) in Lao PDR hovers at around USD4,600, which is significantly less than any other ASEAN country. This is because it has been found that there has been no significant variation in productivity between 2009 and 2016 [107]. Furthermore, the highest performing firms in the region lag far behind the most productive firms elsewhere in the region. This poses a threat to the competitiveness of the firms in the

country. Wages are also not cost-competitive in the sense that they are low but comparatively high in terms of worker production levels. This suggests the use of old technologies, low human capital, poor management practices, and weak investment climate. Furthermore, there is a dearth of educated workers, which hinders proper functioning of businesses. Significant improvements in terms of labor productivity can boost the productivity of the economy to a great extent.

Trade

TABLE 5

DATA INDICATING LAO PDR'S TRADING OUTLOOK.

Trade	2014	2015	2016	Trend
No. of tariff agreements	7	7	6	
Duty-free imports (in USD billion)	2.09	2.50	2.59	
Maximum rate (%) tariffs	40	40	40	
Duty-free tariff lines share (%)	35.95	60.18	67.60	
HH Market concentration index	0.26	0.26	0.28	
Index of export market penetration	2.13	2.08	2.25	

Source: WITS, 2010–16.

Lao PDR is relatively new in terms of opening up its economy. The country joined World Trade Organization in 2013. Its economy is primarily characterized by agriculture. Jobs in agriculture continue to dominate the employment market, but agricultural products account for only a small share of Lao PDR's exports. Even though the country is staggeringly progressing towards a service-sector-led growth, most of the workers move into low-skilled jobs owing to low educational outcomes. This further adversely impacts investments as well as acts as an obstacle for development of high-value manufacturing. There are other persistent challenges such as lack of modern services in accounting,

TABLE 6

LAO PDR'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %, 2014–18
PR China	36.12
Thailand	31.29
Vietnam	17.22
India	2.80
Japan	1.85

Top 5 import partners	Partner share in %, 2014–18
Thailand	61.88
PR China	18.24
Vietnam	10.06
Japan	2.16
ROK	1.96

Source: WITS, 2018.

finance, or information and communication technologies (ICT), which act as a hindrance in strengthening the service sector. Therefore, what we observe is that a low-skilled labor force and infrastructural hindrances plague the trade sector (see Table 5). Skilled workforce and a strong manufacturing base seem to be pertinent solutions to increase trade competitiveness of the country.

The country has increasingly integrated itself with other Asian economies but was not able to make its presence felt in the global landscape as of 2018.

The economy of Lao PDR is heavily reliant on imports, which explains its relatively high negative current account balance. All its importing countries are restricted to the ASEAN countries only, thereby displaying a lack of diversification in terms of both export and import markets. This has dampened trade competitiveness of the country. The country is abundant in natural resources but is yet to tap into its full potential. It is heavily reliant on mining and hydropower. However, the ray of hope is that there are also some industries that are gaining traction, e.g., tourism, garments, wood and wood products, and agribusiness. Diversification remains a major challenge, and unless there is a deeper trade integration, it will not boost the trade competitiveness. Again, it will not be plausible without boosting the local firms and general business ecosystem of the country. Table 6 highlights the leading export and import partners of Lao PDR.

Starting a Business

TABLE 7

SCORES INDICATING LAO PDR'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	62.0	62.1	65.9	65.0	64.7	64.9	60.5	60.6	60.9	60.9	
Registering property	61.1	68.1	68.2	63.8	63.8	63.9	56.6	61.6	64.9	64.9	
Getting credit	18.8	18.8	18.8	18.8	10.0	30.0	60.0	60.0	60.0	60.0	
Paying taxes	64.2	64.2	64.2	64.2	66.5	66.1	54.2	54.2	54.2	54.2	

Source: Doing Business, The World Bank, 2010–19.

A World Bank Survey on Enterprises in 2016 [107] found out that businesses were increasingly constrained by inadequately educated workers and a less-than-ideal economic infrastructure. Lao PDR ranked 154 out of 190 in the World Bank Group's 2019 Ease of Doing Business Index [108], reflecting an inherently complex and opaque business environment with barriers to regional trade and integration that limit its attractiveness as an investment destination. Investors complain about the high costs of doing business and the absence of a transparent, dynamic, and streamlined business environment. Overall, the economy remains inward-oriented (only 2.9% of firms export directly), and local firms invest and innovate little. Furthermore, corruption and high tax rates contribute to the persistent challenges in the business environment. To foster the business ecosystem and increase Lao PDR's competitiveness, it will be necessary to deepen reforms to improve the business environment and raise productivity of local firms. This requires simplifying regulations

and making the firms and trade environment more transparent and competitive by easing entry norms. Table 7 provides trade scores for Lao PDR on various parameters.

Underlying Concerns

For Lao PDR to improve upon its existing conditions, it must further develop its financial access and innovation performance.

Financial Access

TABLE 8

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN LAO PDR.

Access to finance	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	4.84	8.71	10.85	12.90	17.85	19.75	22.97	23.95	25.74	25.74	
No. of commercial bank branches per 100,000 adults	2.35	2.54	2.55	2.70	2.73	2.88	2.90	3.00	3.09	3.17	
Outstanding deposits with commercial banks (% of GDP)	24.54	29.37	31.87	36.37	37.60	43.07	46.15	47.18	48.34	48.33	
Outstanding loans with commercial banks (% of GDP)	17.99	21.69	27.20	31.33	37.74	37.73	41.19	46.21	47.56	45.30	

Source: IMF, 2014–18.

The reach and number of financial services has improved over the years (see Table 8). However, access to financial services in the country could be described as intermittent, with considerable disparities between urban and rural areas as only a few commercial banks operate outside of urban centers. This is particularly noticeable in rural areas. As a consequence, many families and individuals have no chance to deposit savings securely, to take out a loan when necessary or desirable, or to transact payments. The country has now initiated a program under Access to Finance for the Poor (AFP) which works towards expanding the provision of financial services to rural population through village banks. Similarly, access to finance has acted a major barrier to the firms entering the market. This is especially critical for the development of a large and competitive base of small and medium enterprises (SMEs). It is estimated that the SMEs in the country account for more than 98% of the total registered firms and create jobs for 81% of the private-sector labor force [109]

The majority of them should not be struggling to gain access to finance, otherwise it would reduce the competitiveness of the firms.

Industry, innovation, and R&D

TABLE 9

DATA INDICATING LAO PDR'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2010	2011	2012	2013	2014	2015	2016	Trend
High-technology exports as % of manufactured exports	6.8	8.2	8.7	9.8	24.9	35.2	33.6	
High-technology exports (in current USD billion)	0.019	0.021	0.012	0.045	0.154	0.298	0.275	
Direct resident trademark applications	109	148	174	112	163	182	197	

Source: World Development Index, 2009–16.

Availability of data is a major hindrance in this case. Technological advancement is a massive barrier that the country has to overcome so that it becomes more competitive in the region (see Table 9). Even in the service sector, which contributes 42% to the GDP, modern technologies are limited. Considering that the country started deepening its integration with the world only as of 2013, and still does not have a defined public–private partnership model in place, there is a need to foster a culture of innovation and develop robust R&D units. This would enhance the productivity of its firms.

Recommendations

The following steps can be adopted by Lao PDR to sustain its recent economic growth and improve its competitiveness in the region:

- **Develop the manufacturing sector:** The country is heavily reliant on natural resources, which could spell disaster in the long run, considering its vulnerability to adverse climatic conditions. This is even more crucial because of the country's dependency on agriculture. There is a need to create a high manufacturing base within the country, without which its growth will not be sustainable. The transition from agriculture to services sector will not be sustainable in the long run, without developing a strong manufacturing base. Otherwise, there will not be any diversification in terms of employment opportunities.

- **Improve quality of education and skills:** In order to build a strong manufacturing base, it is of utmost importance that the country urgently upgrades the education and skills of its young population. One of the biggest hindrances that businesses have mentioned in the 2016 World Bank Survey is that the education levels among workers are inadequate, and hence productivity is significantly low. The firms in Lao PDR will not be able to be competitive until the country can solve the current mismatch between labor market needs and young people's education and skills.

- **Increase agricultural productivity:** The agricultural sector, which accounts for around 70% of the employment, is characterized by low productivity. Unless this hindrance is

tackled, Lao PDR will not be able to fully develop its potential. Lao PDR's economy needs to become much more competitive and diversified. This would also give boost to its export ecosystem, which is still not fully developed yet.

- **Promote public–private partnership:** Corrupt practices prevent businesses from entering the market. Moreover, there is no proper policy on public–private partnership yet, which hinders upgradation of infrastructure as well as fostering a culture of innovation. Hence, modifications in the governance structure and legal reforms are urgent needs for the economy to become competitive.

Lao PDR's Competitiveness

Lao PDR is abundantly endowed with natural resources, which has contributed to a persistently high economic growth at least in the last one decade. The country moved from a low-income economy to a lower-middle-income country. Sectors such as hydropower and mining forestry and services were the main contributors to this growth. Therefore, the natural resources sector has a high ratio of capital to labor. However, the country is prone to natural disasters and sectors such as agriculture are heavily impacted by them. Hence, the country needs to diversify its economy in order to be competitive and highly productive. This is still largely lacking. Hence, its performance across all the pillars of the Diamond model leaves much to be desired. The competitiveness of Lao PDR's economy is still a work in progress. The country needs to foster a robust industrial and manufacturing ecosystem, support R&D infrastructure, build a culture of innovation, upgrade the education system, and create an enabling environment for trade support.

Conclusion

The high economic growth rate suggests that Lao PDR is committed towards enhancing the competitiveness within the country despite the hindrance of being a landlocked nation. Its recent integration with the WTO spells good for the trade ecosystem within the country. A diversified economy is the need of the hour for Lao PDR, to ensure that there is inclusive development, which will also result in a highly competitive and productive economy.

MALAYSIA

Malaysia is another Southeast Asian economy that has made consistent efforts towards socioeconomic development over the past decades. Malaysia's GDP is mainly contributed by sectors including agriculture, automotive, tourism, and oil and gas, though agriculture occupies a relatively small share. Some of its leading export products include chemicals, electronics, petroleum, and palm oil. Furthermore, its strategic location between countries with expanding markets, e.g., Thailand and Singapore, attracts foreign investments as well. Economic growth in Malaysia has been possible due to the social and economic restructuring backed by the government. This restructuring, often known as the New Economic Model (NEP), along with increasing privatization of public-sector goods, has helped boost growth and productivity in the country.

Table 1 offers an overview of Malaysia and highlights significant trends and the historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN MALAYSIA.

Overview				
Population (2019)	31,949,777			
Employment–population ratio (2018)	66.4%			
Labor force participation rate (2018)	68.6%			

Economic trends	2005	2010	2015	2018
GDP, current	143,534	255,018	296,636	354,268
GDP per capita, current USD	5,587	9,041	9,799	11,237
Real GDP growth, y-on-y, %	5.33	7.42	5.09	4.70
Current account balance, % of GDP	13.92	10.06	3.06	2.14

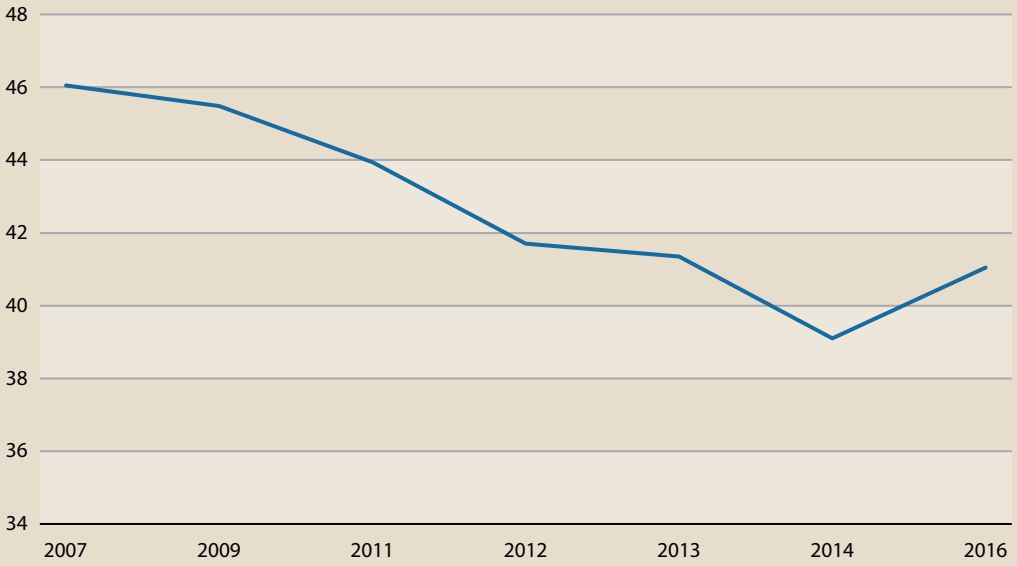
Sources: ILO and WDI databases; UNCTAD STAT (2018).

Reforms under the NEP aimed to restructure the Malaysian state through economic and governmental transformation. The vigorous efforts have paid off in the long run as Malaysia appears to be well on its way towards becoming a high-income economy, although it has not achieved the goal as of yet.

Malaysia has transformed from a low-income economy in the 1950s to pave the path towards becoming a high-income economy soon. In terms of income disparity alone, the Gini data paints a favorable picture for Malaysia (see Figure 1). The formulation of NEP was sought to strengthen the unity among the citizens from various races. With initiatives to reduce poverty, provide employment, and provisions for affirmative action, Malaysia was able to make massive socioeconomic progress. The results asserted fall in poverty levels from 50% in 1970 to less than 1% in 2014. In terms of the Gini coefficient, income gap also shrunk from 0.53 in the 1970s to 0.446 in 1989 and 0.410 in 2014 [110]. This does not negate the section of the population still in the periphery not partaking

FIGURE 1

SHOWCASING MALAYSIA'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2007–16.



Source: UNU-WIDER.

in the economic gains. However, it does highlight the significant strides made to attain financial gains and development for the entire country.

The findings of this report showcase Malaysia in a rather favorable light. Overall, it performs well on the national diamond attributes across all four pillars. Improvements in the area of financial inclusivity would further propel growth levels in Malaysia.

Table 2 offers an insight into Malaysia's performance on various pillars to assess the overall level of its competitiveness.

TABLE 2

SCORES INDICATING MALAYSIA'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**56.68**
Infrastructure	–0.83
International shipments	–1.00
Logistics competence	–0.94
Tracking and tracing	–0.56
Tracking timeliness	–0.92
2. Labor and productivity	**54.14**
Per worker labor productivity	–0.91

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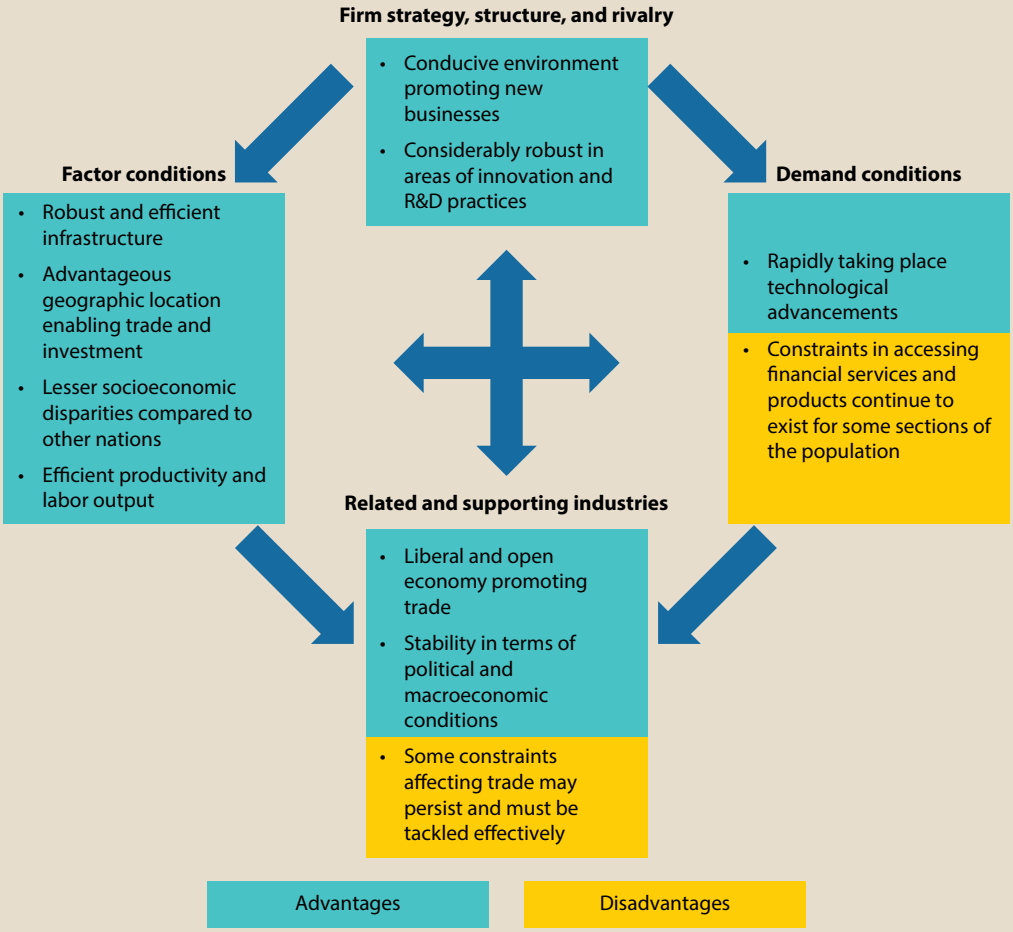
Pillar	Score
Per worker labor productivity growth	0.72
Per hour labor productivity	–0.97
Per hour labor productivity growth	1.06
TFP growth	–0.58
3. Financial access	**37.89**
No. of ATMs per 100,000 adults	–1.31
No. of commercial bank branches per 100,000 adults	–0.58
Account (% of those aged 15+)	–0.62
Borrowed money in the past year (% of those aged 15+)	–1.41
Outstanding deposits with commercial banks (% of GDP)	–0.55
Outstanding loans with commercial banks (% of GDP)	–0.62
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	–0.36
4. Trade	**41.50**
No. of tariff agreements	–0.68
Duty-free imports (USD thousand) between 2014-18	–0.78
Maximum rate (%) tariffs 2014-18	–0.82
Duty-free tariff lines share (%) 2014-18	–1.22
HH Market Concentration index	–0.43
Index of export market penetration	–0.71
5. Starting a business	**85.63**
Starting a business	–2.66
Registering property	–2.66
Getting credit	–1.04
Paying taxes	–1.13
6. Industry, innovation, and R&D	**39.87**
High-technology exports as % of manufactured exports	–1.01
R&D expenditure as % of GDP	–0.61
High-technology exports (current USD)	–0.76
Patent applications of residents	–0.41
Direct resident trademark applications	–0.70
Total	**52.62**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

FIGURE 2

KEY OBSERVATIONS ON MALAYSIA'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



The attributes of national diamond for Malaysia shed light on a rather favorable performance. In terms of factor conditions, Malaysia appears to be in an advantageous position. Subsequently, presence of strong clusters, supporting industries, and lucrative business environment have helped tremendously with economic and social developments. In comparison with other Asian success stories such as ROK, Malaysia still needs to make improvements in certain areas such as financial inclusion, innovation, and the like to prevent itself from lagging behind other developed countries and to sustain growth.

Infrastructure

The government champions infrastructure development in Malaysia. The five-year economic plans reflect the priority given to the development of infrastructure in the state (see Table 3). While Malaysia's infrastructure development is not as advanced as economies like Hong Kong and Singapore, it still qualifies as one of the top ten best-performing countries. A driving force behind Malaysia's booming infrastructure can be attributed to the successful public–private partnerships (PPP). Presence of PPP has allowed the government to invest and develop infrastructure without

TABLE 3

SCORES INDICATING MALAYSIA'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	3.33	3.50	3.43	3.56	3.45	3.15	
International shipments	3.36	3.50	3.40	3.64	3.48	3.35	
Logistics competence	3.40	3.34	3.45	3.47	3.34	3.30	
Tracking and tracing	3.51	3.32	3.54	3.58	3.46	3.15	
Timeliness	3.95	3.86	3.86	3.92	3.65	3.46	

Source: Logistics Performance Index.

being financially burdened. The National Transformation Plan (NTP) was launched in 2010 to help implement NEP. One of the primary aims of the NTP was to develop the infrastructure in Malaysia.

Labor and Productivity

TABLE 4

MALAYSIA'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	1.00	1.02	0.95	1.00	1.00	1.01	1.01	1.01	1.02	1.02	1.03	
Labor productivity (based on hours worked)	0.97	1.02	0.98	1.00	1.02	1.04	1.04	1.08	1.12	1.15	1.19	
Labor productivity (based on number of employments)	0.99	1.02	0.99	1.00	1.01	1.03	1.02	1.05	1.09	1.13	1.17	
Capital productivity	0.99	0.99	0.94	1.00	1.00	1.00	0.99	0.99	0.99	0.98	0.99	

Source: APO Productivity Database 2019.
Unit: Index (2010=1.0).

Malaysia struggled with its industrial upgradation, unlike countries like the Philippines, which is poised to become an industrial agglomeration with USD3,010 in per capita GDP using the exchange rate in 2017. Nevertheless, Malaysia reached USD9,820 in per capita GDP using the exchange rate in 2017, due to its consistent growth efforts. A 2016 World Bank report [111] states that despite externalities affecting growth levels in Malaysia over the years, the economy has shown resilience and made efforts for improvements. Macroeconomic management, monetary policy, and credit growth have all helped streamline consolidated development for Malaysia, as also reflected by the scores given in Table 4. However, externalities pertaining to global financial markets pose a threat to the country's growth trajectory.

Trade

TABLE 5

DATA INDICATING MALAYSIA'S TRADING OUTLOOK.

Trade	2008	2009	2010	2011	2012	2013	2014	2016	Trend
No. of tariff agreements	4	6	2	1	1	1	14	1	
Duty-free imports (in USD billion)	108.64	89.64	125.11	118.55	117.49	122.65	172.80	106.48	
Maximum rate (%) tariffs	1625.94	2565.32	1497.87	1470.81	1508.68	1515.06	90.00	1328.69	
Duty-free tariff lines share (%)	66.36	66.86	71.16	64.82	65.23	63.81	76.21	64.12	
HH Market concentration index	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	
Index of export market penetration	13.86	13.33	13.92	14.12	14.21	14.28	14.18	14.28	

Source: WITS, 2008–16.

With resilient economy and market liberalization, trade has boosted economic gains in various countries. However, it appears that Malaysia has failed to tap into such a growth trajectory (see Table 5). The uncertainties stem from global market volatilities to a large extent. There is an immediate need to reinforce efforts that promote trade in the country. Restrictions on trade, lack of efforts to advance and adapt to rapidly changing technologies, and limited local investments are significant obstacles that can hinder productivity and competition in the country and must be prevented.

TABLE 6

MALAYSIA'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %, 2014–18
Singapore	13.94
PR China	13.91
USA	9.11
Hong Kong	7.47
Japan	6.92

Top 5 import partners	Partner share in %, 2014–18
PR China	19.93
Singapore	11.72
USA	7.40
Other Asia, NES	7.24
Japan	7.24

Source: WITS, 2018.

Small and medium enterprises play a crucial role in every economy. In 2015, SMEs accounted for 35.9% of the GDP and only 17.8% of exports in Malaysia [112]. It is critical to address challenges faced by SMEs that prohibit their products from entering the world economy. Trade also boosts

TFP growth. Presence of physical and institutional infrastructure acts as a catalyst in ensuring trade openness and higher growth levels. Consequently, trade is a crucial attribute for any country to be able to compete in global markets effectively. It strengthens both domestic and international competition. Table 6 highlights Malaysia's top export and import partners.

Starting a Business

TABLE 7

SCORES INDICATING MALAYSIA'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	79.6	81	87.9	87.8	88.7	89.3	89.3	80	80.1	82.8	
Registering property	50.2	65.5	65.5	70.8	71.3	71.2	76.3	76.3	75.1	79.5	
Getting credit	100	100	100	100	70	70	70	75	75	75	
Paying taxes	86.6	86.4	86.4	86.1	84.0	83.9	73.5	73.34	76.1	76.1	

Source: Doing Business, The World Bank, 2010–19.

Existing conditions provide a thriving environment for businesses to grow in Malaysia. Both big enterprises and small and medium ones have found a conducive ecosystem in the Malaysian economy. In the Ease of Doing Business index [44] for the year 2020, Malaysia held a rank of 12. As an emerging economy, Malaysia has fostered the business environment very well throughout the years, thereby enabling domestic competition and sophisticated demand conditions as well (see Table 7). Starting a business is an important indicator to determine not only productivity levels but also in sustaining long-term competition and growth.

Industry, Innovation, and R&D

TABLE 8

DATA INDICATING MALAYSIA'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2009	2010	2011	2012	2014	2015	2016	Trends
High-technology exports as % of manufactured exports	50.86	49.28	47.21	47.48	49.13	48.20	48.87	
Research and development expenditure as % of GDP	1.01	1.04	1.03	1.09	1.26	1.30	1.44	
High-technology exports (in current USD billion)	55.66	65.68	66.51	66.50	70.97	64.47	63.22	
Patent applications of residents	1,234	1,231	1,076	1,114	1,353	1,272	1,109	
Direct resident trademark applications	12,810	13,099	13,001	14,044	15,400	15,940	18,527	

Source: World Development Index, 2009–16.

Innovation and prioritization of R&D are both crucial areas that fortify competition. Malaysia has made swift technological advancements over the years (see Table 8). Transformation of the Malaysian economy has been possible due to the efforts made in innovation over the past decades. Malaysia is one of the better faring economies in the Asian region as well as among the middle-income nations. However, to ensure sustained growth and fulfil its aspiration of becoming a high-income economy, Malaysia needs to accelerate its efforts even more significantly, when compared with other neighboring nations such as the ROK and Japan. It is through massive leaps in innovation that countries can attain competitive advantage and increase production processes and quality alike.

Underlying Concern

Data at a glance suggest underlying concerns primarily in the area of achieving financial inclusivity. Attributes related to innovation, R&D, and trade can also be improved.

Financial Access

A 2017 World Bank report on financial inclusion in Malaysia [111] relays the efforts made by the government in making Malaysia one of the most financially inclusive middle-income countries in the world. By 2015, 92% of Malaysia's adult population had an active deposit account at a financial institution, and the digital banking system was widely encouraged. Majority of the people have had access to either conventional or Islamic financial services. Savings have also been promoted, with 70% of the adults in the labor force having mutual-fund accounts, thereby also propelling the local stock market. However, a section of the population remains on the periphery without proper access to financial products and services. To achieve complete financial inclusiveness and drive productivity, the government must ensure last-mile delivery of financial services to specific sections of the population. Table 9 provides scores for Malaysia on various parameters of financial access.

TABLE 9

DATA INDICATING THE REACH OF FINANCIAL INSTITUTIONS IN MALAYSIA.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	41.42	51.85	53.54	53.60	53.29	54.68	52.39	51.27	48.96	47.55	46.60	
No. of commercial bank branches per 100,000 adults	11.28	11.13	10.92	11.25	11.15	10.97	10.81	10.69	10.44	10.23	10.24	
Outstanding deposits with commercial banks (% of GDP)	97.81	114.29	106.24	110.60	112.12	110.19	107.09	105.89	101.05	95.94	96.44	
Outstanding loans with commercial banks (% of GDP)	88.69	103.69	101.03	103.01	107.08	112.16	112.90	116.04	115.01	108.96	108.89	

Source: IMF, 2008–18.

Recommendations

The following steps can be taken to address prevailing weaknesses and underlying threats to Malaysia that would hinder its growth:

- **Promote trade:** Initiatives to promote trade and remove constraints are crucial in building a thoroughly competitive state.

- **Increase access to financial services:** Certain sections of the population remain with limited or no access to proper financial services. This is a major constraint, especially in comparison with other economies.

- **Broadbase public–private partnerships:** Devising long-term plans that monitor privatization and public–private partnerships so as to avoid polarization of any one sector in the economy. Effective coordination among public–private partnerships promotes a competitive economy while also ensuring higher productivity.

- **Augment innovation and R&D investments:** In terms of innovation and R&D, while Malaysia performs well in the area, it must scale up in order to catch up to other neighboring countries such as the ROK and Japan and become a high-income economy.

Malaysia's Competitiveness

As part of Malaysia's efforts to become a high-income economy, the reforms undertaken to transform the economy and governance have all played a vital role in advancing the state. The NEP policy, with a focus on transforming the economy through technological advancement, export promotion, and export promotion in competitive manufactures such as electrical devices has made significant contributions to Malaysia's growth levels. Thus, lucrative factor conditions, sophisticated demand, presence of strong clusters, and conducive business environment have all fortified Malaysia's competitive advantage in the world economy.

Conclusion

Malaysia has overcome various challenges related to disparities, ethnic tensions, and even political instability. The efforts made in both social and economic sectors through the NEP in Malaysia display commendable success. The success can be attributed to efficient governance, which has led successful economic and social policies that have promoted development across the nation.

MONGOLIA

A unique country of extreme features, Mongolia has transformed its economy and tripled its GDP per capita since 1991. Primary school enrollments are at 97%, along with impressive declines in maternal and child mortality, with 45 per 100,000 live births in 2017 and 16 per 1,000 live births in 2018, respectively [113]. With vast agricultural, livestock, and mineral resources, and an increasingly educated population, Mongolia showcases a promising future, provided the development processes continue.

Despite boasting of the highest GDP growth in the world in 2011 at over 17%] [114], Mongolia faces problems akin to any former communist state transitioning to a free market economy. Economic growth is volatile, with the country having undergone three recessions in the last 25 years, resulting in six IMF programs to support the economy. Furthermore, the country has had a twin balance-sheet problem since 2016, owing to poor fiscal management and unsustainable balance-of-payment deficits. Much of it has to do with its mining-dependent exports and PR China-dependent trade profile. Add to this the adverse impact of climate change resulting from natural disasters, mining, and low-productivity farming and Mongolia has a potpourri of structural challenges on its hands.

Table 1 offers an overview of Mongolia and highlights significant trends and the historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN MONGOLIA.

Overview				
Population (2019)	3,225,167			
Employment–population ratio (2018)	56.10%			
Labor force participation rate (2018)	53.42%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	2,926	7,189	11,750	12,642
GDP per capita, current USD	1,158	2,643	3,919	3,988
Real GDP growth, y-on-y, %	7.25	6.37	2.38	6.71
Current account balance, % of GDP	2.99	–12.32	–8.07	–15.05

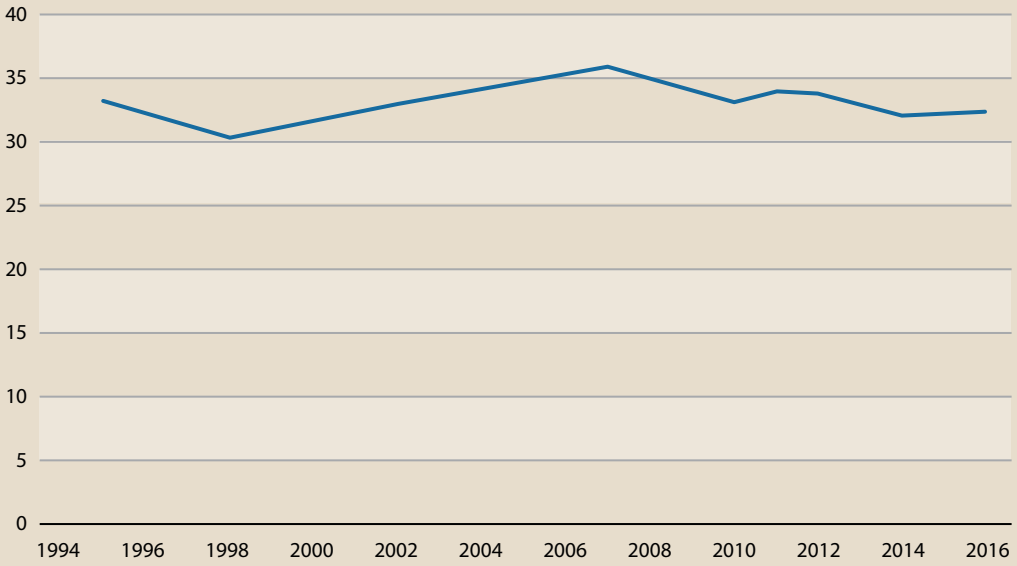
Sources: ILO and WDI databases; UNCTAD STAT (2018).

The interesting thing to observe is whether the tripling of the per capita incomes triggered by the mining boom has translated into reduced income inequality. For that we look at the Gini coefficient over a 23-year period (see Figure 1).

On an average basis, it is perceptible that the Gini coefficient hovers around the 32.5 mark. So, while poverty has reduced in absolute terms by 11%, the drop in income inequality across Mongolia

FIGURE 1

SHOWCASING MONGOLIA'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2007–16.



Source: UNU-WIDER.

has been quite stagnant. Thus, it is clear that some are benefiting more than others from Mongolia's mineral wealth. Poverty is higher in the rural areas at 35.5%, compared with the urban areas at 23.2%. Herders in the countryside struggle to survive as their traditional livelihood dissolves and there being few job opportunities for young generations [115]. Urbanization and urban–rural migration are high, with the capital city home to 60% of the population. However, many of the migrants settle in the outskirts of the districts, in large unplanned settlements that lack access to basic services such as water, sanitation, heating, schools, and kindergartens. Moreover, given the lack of qualified skills training, these new residents are faced with fewer opportunities in the formal job sector, including the mining sector, and often find themselves unemployed or forced to work in informal jobs where wages are low. Add to this a high inflation averaging 7.3% in 2019, and it comes as no surprise as to why the economic boom has not resulted into an equitable income distribution across the populace [115].

Table 2 offers an insight into Mongolia's performance on various pillars to assess its prevailing level of competitiveness.

TABLE 2

SCORES INDICATING MONGOLIA'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**4.84**
Infrastructure	–1.26
International shipments	–1.15
Logistics competence	–1.40

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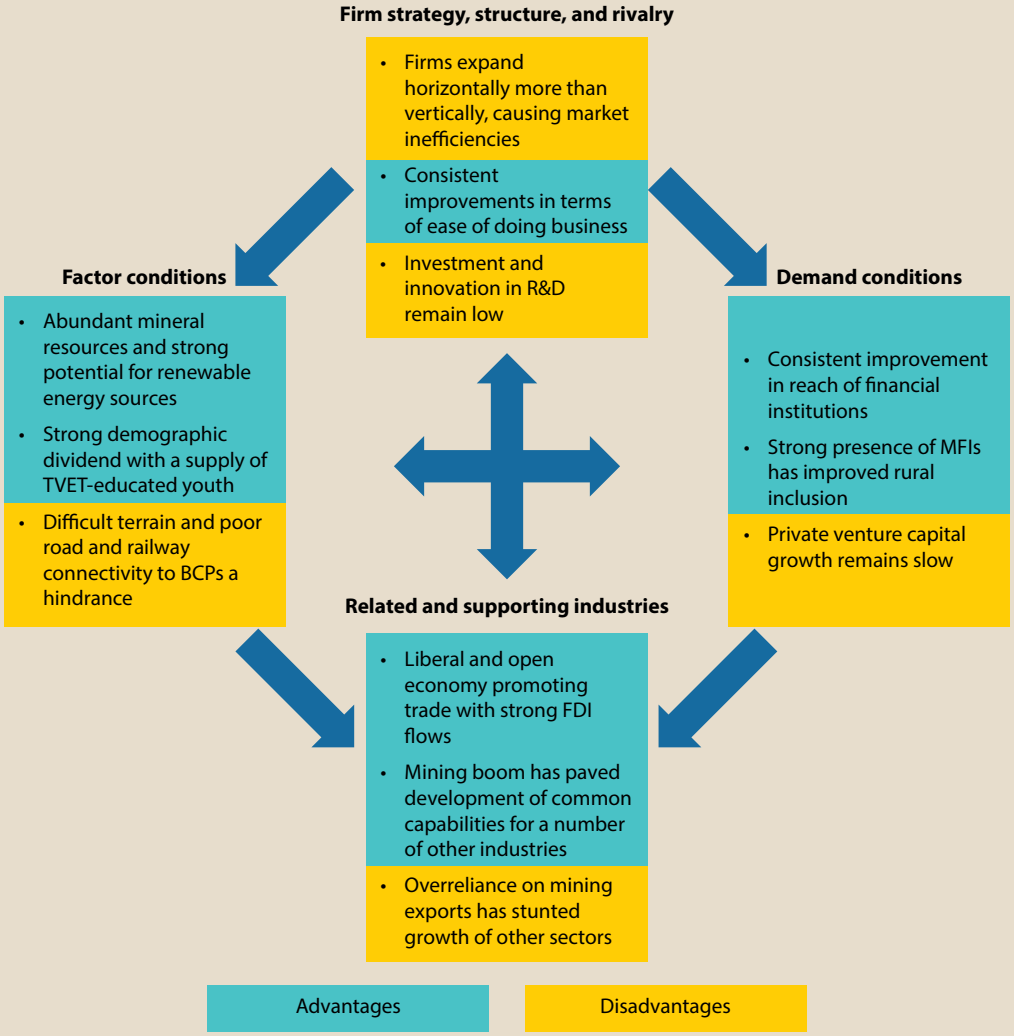
Pillar	Score
Tracking and tracing	–1.75
Tracking timeliness	–0.66
2. Labor and productivity	**13.54**
Per worker labor productivity	–0.43
Per worker labor productivity growth	–2.35
Per hour labor productivity	–0.37
Per hour labor productivity growth	–2.19
TFP growth	0.66
3. Financial access	**78.65**
No. of ATMs per 100,000 adults	1.41
No. of commercial bank branches per 100,000 adults	3.64
Account (% of those aged 15+)	0.91
Borrowed money in the past year (% of those aged 15+)	–0.17
Outstanding deposits with commercial banks (% of GDP)	–0.47
Outstanding loans with commercial banks (% of GDP)	–0.48
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	0.34
4. Trade	**33.12**
No. of tariff agreements	–1.02
Duty-free imports (USD thousand) between 2014–18	–0.81
Maximum rate (%) tariffs 2014–180	–0.81
Duty-free tariff lines share (%) 2014–18	–1.32
HH Market concentration index	3.84
Index of export market penetration	–1.25
5. Starting a business	**88.39**
Starting a business	0.52
Registering property	0.59
Getting credit	1.06
Paying taxes	0.39
6. Industry, innovation, and R&D	**15.90**
High-technology exports as % of manufactured exports	–0.05
R&D expenditure as % of GDP	–0.62
High-technology exports (current USD)	–0.51
Patent applications of residents	–0.38
Direct resident trademark applications	–0.04
Total	**39.07**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

FIGURE 2

KEY OBSERVATIONS ON MONGOLIA'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Mongolia has undertaken several measures that enable development both in social and economic spheres on the back of a mining boom. This has perhaps led to its considerable growth in inward FDI traction and reach of its financial institutions. However, as the aforementioned Diamond model points out, Mongolia needs to make vast changes in its approach to trade, logistical infrastructure, and investment in innovation and R&D. The following section discusses the four attributes of the Diamond model in detail.

Labor and Productivity

Although total factor productivity (TFP), which is taken as a proxy for efficiency in an economy, has been on the rise since Mongolia made the transition to a free market economy, it still faces

TABLE 3

MONGOLIA'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	0.98	0.99	0.97	1.00	1.06	1.08	1.09	1.13	1.13	1.13	1.15	
Labor productivity (based on hours worked)	0.89	0.95	0.96	1.00	1.17	1.30	1.38	1.48	1.47	1.49	1.45	
Labor productivity (based on number of employments)	0.88	0.94	0.96	1.00	1.17	1.29	1.38	1.48	1.47	1.49	1.45	
Capital productivity	1.03	1.05	0.98	1.00	1.06	1.06	1.07	1.10	1.11	1.13	1.18	

Source: APO Productivity Database 2019.
Unit: Index (2010=1.0).

labor productivity challenges (see Table 3). A prevalent labor market outcome in Mongolia is the existence of low-productivity jobs. In addition, labor productivity is low in Mongolia, and the level of informality is high. Moreover, hiring firms in the urban areas bemoan the mismatch that exists between the job requirements and the actual skillsets of the workforce.

Educational attainment appears to be a significant barrier. This is most prevalent among youth working in animal husbandry or other agricultural sectors. Access to education is a problem in rural areas. Vocational education graduates also face unique job challenges. The ILS-RAND Mongolian Youth Survey found that TVET graduates have a high variance in salary and employment, meaning that while some do well, most do not. So, if Mongolia is facing such challenges, despite spending 4.09% of GDP on an average on education in the period 1998–2017, there need to be efforts focused at labor market's needs assessment and rural education access [116].

Trade

TABLE 4

DATA INDICATING MONGOLIA'S TRADING OUTLOOK.

Trade	2013	2015	2017	2018	Trend
No. of tariff agreements	1	1	2	2	
Duty-free imports (in USD million)	72.93	73.36	142.25	225.91	
Maximum rate (%) tariffs	25	25	40	40	
Duty-free tariff lines share (%)	1.37	1.80	4.24	4.30	
HH Market concentration index	0.70	0.70	0.71	0.74	
Index of export market penetration	1.69	1.78	1.87	1.93	

Source: WITS, 2013–18.

Mongolia is a relatively open economy when it comes to trade. Table 4 provides scores on various related parameters. Exports of goods and services as a percentage of GDP is 58.66%, which is much above the overall Asian average of 10.6% of the region's total economic output in terms of GDP [116]. However, Mongolia remains an undiversified exporter, dependent on mineral commodities for 70% of its export earnings, of which 90% accrues to a single trade partner, PR China.

TABLE 5

MONGOLIA'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %
PR China	92.78
UK	2.47
Russian Federation	1.23
Italy	0.77
Singapore	0.43

Top 5 import partners	Partner share in %
PR China	33.51
Russian Federation	29.11
Japan	9.55
ROK	4.47
USA	3.60

Source: WITS, 2018.

This harms Mongolia in a two-fold manner. One, it becomes highly vulnerable to the economic situation of its main market, PR China. Two, it faces a common paradox called the 'resource curse' wherein countries with an abundance of natural resources tend to have less economic growth than other less fortunate nations because they become economically prone to any vagaries in the market for that resource. This is especially true now, when globally, a fall in the commodity prices is being witnessed due to the pandemic. As a result, Mongolian economy was expected to contract by 1.9% in the year 2020 [117]. Hence, going forward, Mongolia ought to sign free trade agreements with more nations and diversify its exports to include green energy, a potential area that Mongolia continues to ignore. Table 5: highlights Mongolia's leading export and import partners.

Starting a Business

TABLE 6

SCORES INDICATING MONGOLIA'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	82.4	82.2	82.9	85.5	87.1	87.1	86.6	86.6	86.6	86.7	
Registering property	82.6	82.5	82.7	82.7	82.7	82.8	74.5	74.1	74.1	74.1	
Getting credit	56.3	56.3	62.3	68.8	55.0	55.0	60.0	60.0	80.0	80.0	
Paying taxes	71.5	71.5	71.5	71.5	71.5	73.8	75.3	84.4	77.3	77.3	

Source: Doing Business, The World Bank, 2010–19.

Being a landlocked arid country has its own set of economic problems, especially in trade, which Mongolia has sought to quell through focused efforts towards creating a conducive business environment. Besides, being blessed with a large mineral base and located between two economic powerhouses, Russia and PR China, Mongolia has been successful at attracting greenfield foreign direct investment (FDI). Singapore is the only Asian country that has a higher FDI percentage as a ratio of its GDP [118]. This has a lot to do with Mongolia's investment law passed in 2013, which does not discriminate legally between a foreign and local investor and offers benefits like fast registry, tax stabilization guarantees, and many other flexible benefits for investors (see scores in Table 6). Moreover, no government approval is required for brownfield transactions in Mongolia. Mongolia also allows the use of fixed-term contracts for permanent tasks with no limit on their renewal, which allows many budding enterprises to circumvent the choppy waters of labor activism.

However, the multiplier effect of these measures is yet to percolate to non-mining sectors that suffer from labor supply dearth, partly due to the real-wage differentials exacerbated by a high inflation rate [119].

Industry, Innovation, and R&D

TABLE 7

DATA INDICATING MONGOLIA'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2014	2015	2016	2017	2018	Trends
High-technology exports as % of manufactured exports	19.62	4.16	16.49	3.47	4.96	
Research and development expenditure as % of GDP	0.22	0.15	0.18	0.13	0.10	
High-technology exports (in current USD million)	33.80	3.15	35.52	3.78	6.76	
Patent applications of residents	139	109	112	124	82	
Direct resident trademark applications	1,026	1,197	1,138	1,351	1,431	

Source: World Development Index, 2013–18.

As a small nation trapped between two giants, Mongolia has been looking for its comparative economic advantage. Mining contributed over 20% of the GDP in 2015. The recent commodity price drops have pushed the nation to look into options for diversifying the economy, and thus, an innovation-driven ecosystem can assuage competitiveness fears. R&D, for instance, is not limited to being a measure for innovation; it also helps assimilate knowledge and gain competitive advantage. Though Mongolia has a sound IP protection law, its implementation leaves a lot to long for. As a result, many startups distrust the system and not prioritize innovation. Any corporate-driven innovation is induced mainly by large corporations, who also prefer to branch horizontally rather than vertically, in view of the various regulations that come to the fore with vertical integration. Thus, innovation gets limited to being process-oriented rather than being cutting-edge. Many of these companies do not even have a dedicated R&D division. Table 7 provides Mongolia's scores on various related parameters.

Any endogenous growth model would note how innovation and knowledge dissemination at universities are among the key drivers of long-term development. Unfortunately, Mongolian universities tend to be more teaching-focused, with heavily theoretical and outdated curricula. However, a silver lining is the presence of private organizations that have launched programs to educate people on entrepreneurship, innovation, and the like.

Financial Access

A nation's companies gain competitive advantage if the citizens are more sophisticated and demanding buyers of products and services. Sophisticated, demanding buyers provide a window into advanced customer needs and pressure companies into meeting high standards, prodding them to improve, innovate, and upgrade to more advanced segments.

Greater financial access leads to greater disposable incomes, which in turn forms the basis for financial sophistication among domestic buyers. This ties into more sophisticated spending habits and expectations. The result is a greater incentive for stakeholders to innovate in products, services, and processes [16].

Despite the several economic crises of 1990s and relatively low financial sophistication, the financial system has been growing strongly with sound fundamentals (see Table 8). The banking sector is vibrant and diversified, with a total outstanding loan portfolio of USD2.38 billion in 2018, which was an increase of 35% over the previous year. The capital adequacy ratio was 14% and 24% since 1999, which is 1.8 to 3 times higher than the international standard of 8% set by the Basel Committee [120]. A strong role has been played by microfinance institutions (MFIs), which have shown tremendous growth in the last 10 years. XacBank, a key MFI, has 47% rural clientele [121], which bodes well for financial inclusivity. In spite of sound financial risk management practices in place, what remains to be seen is whether Mongolian financial system can withstand high inflation and low prices for its mining exports in the post-Covid setting.

TABLE 8

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN MONGOLIA.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	9.87	14.97	18.49	31.46	44.71	49.69	58.36	72.43	87.96	93.11	106.88	
No. of commercial bank branches per 100,000 adults	57.23	54.30	54.61	65.69	68.21	70.68	71.23	70.13	69.83	69.92	69.17	
Outstanding deposits with commercial banks (% of GDP)	29.53	39.30	43.66	44.36	39.63	40.68	39.56	37.39	46.86	50.08	55.74	
Outstanding loans with commercial banks (% of GDP)	39.17	35.74	31.87	41.39	41.59	55.89	55.97	50.40	51.53	48.42	53.11	

Source: IMF, 2010–18.

Underlying Concern

Building a robust infrastructure lays the foundation for a strong competitive nation. Mongolia must improve upon its infrastructural capacity to harness elevated growth potential.

Infrastructure

TABLE 9

SCORES INDICATING MONGOLIA'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2010–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	1.92	1.94	2.22	2.29	2.05	2.10	
International shipments	2.50	2.46	2.13	2.62	2.37	2.49	
Logistics competence	1.80	2.24	1.88	2.33	2.31	2.21	
Tracking and tracing	2.00	2.42	2.29	2.13	2.47	2.10	
Timeliness	2.25	2.55	2.99	2.51	3.40	3.06	

Source: Logistics Performance Index.

Logistics continues to be a concern area for Mongolia as the data trend suggests (see Table 9). Logistics costs account for about 30% of the prices of goods in Mongolia, which is significantly higher when compared with other countries. Its major trade partner PR China boasts of a logistics cost as low as 16–18% of the cost of goods sold. Most of Mongolia's imports are containerized; and transporting these containers involves long lead times. Multiple freight terminals are served by a single railway station in Ulaanbaatar. On the exports front too, things are not great either. Of all border crossing points (BCPs), only three have rail connectivity. At the remaining BCPs, the road connectivity is also inadequate. Poor storage and distribution facilities, along with variation of railway gauges in Mongolia, compared with those used in PR China, compound the inefficiency of the entire Mongolian logistics chain [122].

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to Mongolia that would hinder its growth:

- **Channelize youth development:** Mongolia has a high rate of youth 'not in employment, education, or training' (NEET), which also affects its per capita productivity numbers adversely. Despite having a robust TVET framework, the enrollments remain low. Consolidation of TVET institutions and aligning them with labor market needs after careful assessment, combined with identification and career counselling of NEET youth, can solve this problem in the long term.

- **Expand exports base:** Diversify product export space to grow non-mineral products too. Clothing and accessories, specialized industry machinery, paper and paperboard products, and plastic products are certain sectors that Mongolia could focus more on as they share proximity with the current capabilities. A strong export impetus could be given to these through free economic zones, export finance, and insurance systems.

- **Leverage green-energy potential:** Mongolia has abundant solar and wind power resources along with some hydropower opportunities. Currently, the generation capacity is below 20%. A national renewable energy center to assess, research, and strengthen the capabilities would be a good first step besides adequate government funding and infrastructural assistance. This would help Mongolia to be more energy efficient and tone down its reliance on mineral resources.

- **Increase R&D spend:** R&D spending remains critically low. In order to induce a positive spillover that extends to the private sector, the government must extensively ramp up its funding of basic and pre-commercial R&D. Installing state-of-the-art labs in central universities, strengthening IP law, and entering into knowledge sharing agreements with PR China could be a way forward.

- **Early funding of startups:** Financing at an early stage of startups, such as angel investment and venture capital (VC) funds needs to be accelerated by the government. Mongolian startups suffer due to lack of private VCs. A way to ameliorate that is through a 'crowding in' effect brought about by increased government investment funds in the form of MSME fund schemes and tax holidays. Policy focus must shift towards fostering an innovative and knowledge-based entrepreneurship and support ecosystem. Startups with more novel ideas and technologies must be stimulated with better access to finances.

Mongolia's Competitiveness

Mineral endowments present in Mongolia have indeed helped it achieve economic gains. However, the country has been able to sustain these economic gains with a fair bit of fortune with regard to global commodity prices, dependency on PR China, and wanton disregard for the environment. This threatens the ethos of its development strategy.

By virtue of being a landlocked country with a highly arid and dry terrain, Mongolia suffers on account of high logistics costs with few well-connected BCPs. Despite being liberal with its FDI reforms and attracting significant greenfield investments, Mongolia lacks in providing conducive environments for an intellectually driven startup ecosystem. Lack of diversified industrial clusters and linkages between them furthers hinders this. Financial access numbers indicate strong growth, but also signal the need to expand the scope toward greater digitization. High number of NEET youths compounds the low productivity problem while a low R&D spend limits the space and means to absorb them. Thus, Mongolia needs to ask itself what else it should focus on besides mining.

With sustained reforms, Mongolia has made strides in developing the country. However, it is yet to confront some of the major underlying and emerging issues on both social and economic fronts. Infrastructure, labor, and innovation particularly display low scores and therefore require more intensified efforts to achieve better outcomes.

NEPAL

Nepal is among the least developed countries in the world, with around one-quarter of its population living below the poverty line. Agriculture is the mainstay of the economy, providing a livelihood for almost two-thirds of the population but accounting for less than one-third of the GDP [123]. Industrial activity mainly stems from the processing of agricultural products, including pulses, jute, sugarcane, tobacco, and grains. The massive earthquakes that struck Nepal in early 2015, damaged or destroyed infrastructure and homes and set back economic development. Political gridlocks and lack of capacity have hindered post-earthquake recovery. Additional challenges to Nepal's growth include its landlocked geographic location, inconsistent electricity supply, and underdeveloped transportation infrastructure.

The economic disruptions caused by the pandemic are expected to contract Nepal's GDP by 9.5% in FY2021 [124]. The way forward, at least in the short-term appears to be to rely on (1) remittances, which amount to as much as 30% of the GDP; and (2) the budgeted surplus, which stands at 15.4% of the total in the first half of FY2020, to ramp up capex and ease the demand-side pitfalls.

Table 1 offers an overview of Nepal and highlights significant trends and the historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN NEPAL.

Overview				
Population (2019)	28,087,871			
Employment–population ratio (2018)	68.0%			
Labor force participation rate (2018)	76.20%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	8,259	16,281	20,801	27,276
GDP per capita, current USD	321	603	770	971
Real GDP growth, y-on-y, %	3.48	4.82	3.32	6.77
Current account balance, % of GDP	1.85	–0.78	11.76	–

Sources: ILO and WDI databases; UNCTAD STAT (2018).

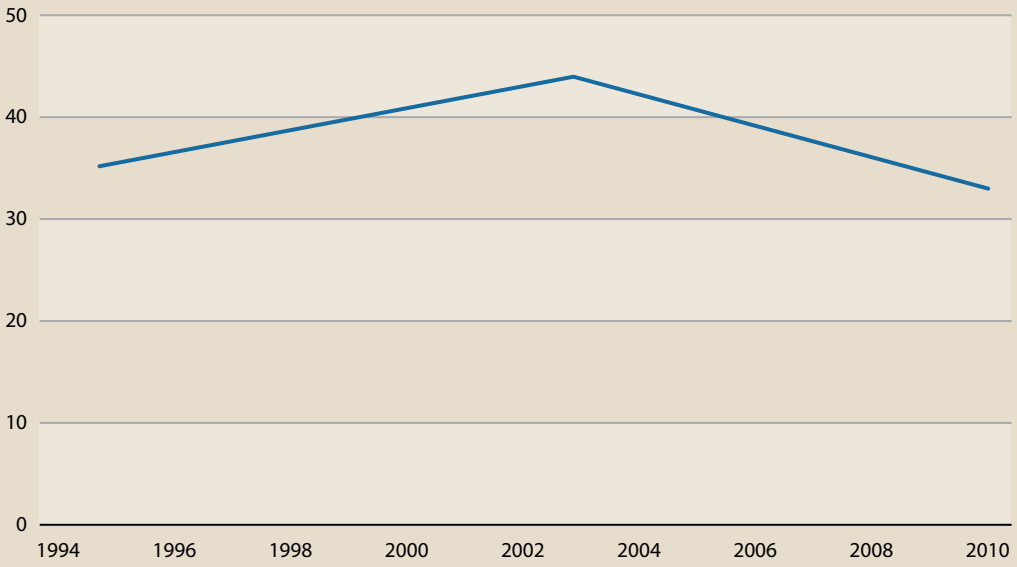
Nepal has made successful strides in reducing poverty from 25.2% in 2011 to 21.6% in 2015. However, these numbers belie the harsh reality that huge disparities and inequalities persist between regions and social groups. An underdeveloped trade and industry, low agricultural productivity, and lack of access to affordable credit are among the key contributing factors [125] that this report delves further into with the help of Porter's Diamond Framework.

A closer look at Gini coefficient tells that Nepal's fight against income disparity has been an uneven one (see Figure 1). After the World Bank increased its development assistance to USD369 million

in 2003 [126], the Gini coefficient witnessed a downward trend till 2010, post which the data is not available. Knoema Corporation, a New York-based data technology company, reports Nepal's Gini coefficient to be 39.50 in 2018, indicating the stickiness in the country's wide income disparities. At the heart of a primarily agrarian Nepal's inequality is unequal distribution of land. Nearly half of Nepal's farmer families own less than 0.5 hectares of land. Only 3% own more than 3 hectares of land. There are nearly 300,000 landless families. Rising real estate value and the land price bubble in urban areas have fueled inequality further as the already rich have cashed in big time through property speculation and investment in prime real estate. Further, collusion between businesses, bureaucracy, and politicians have created a hydra-headed monster that means any attempt to distribute wealth and opportunity is fiercely resisted [127].

FIGURE 1

SHOWCASING NEPAL'S INCOME INEQUALITY THOUGH GINI COEFFICIENT, 1994–2010.



Source: The World Bank.

Table 2 offers an insight into Nepal's performance on various pillars to assess the prevailing level of its competitiveness.

TABLE 2

SCORES INDICATING NEPAL'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**13.40**
Infrastructure	–1.13
International shipments	–1.43
Logistics competence	–0.97
Tracking and tracing	–0.81
Tracking timeliness	–0.58

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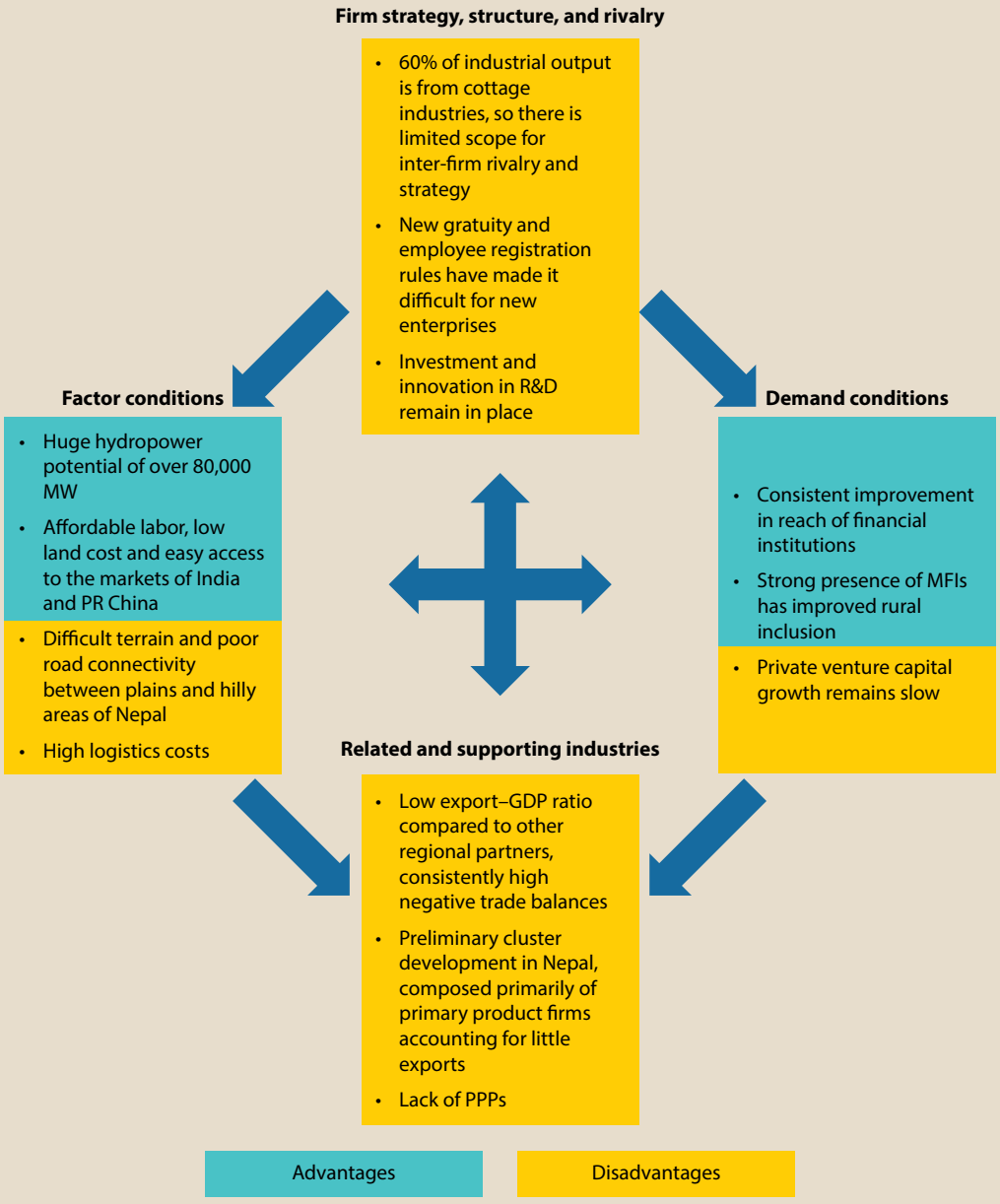
Pillar	Score
2. Labor and productivity	**34.77**
Per worker labor productivity	–0.97
Per worker labor productivity growth	0.17
Per hour labor productivity	–0.97
Per hour labor productivity growth	–0.15
TFP growth	–0.10
3. Financial access	**47.44**
No. of ATMs per 100,000 adults	–1.17
No. of commercial bank branches per 100,000 adults	–0.12
Account (% of those aged 15+)	–0.79
Borrowed money in the past year (% of those aged 15+)	1.24
Outstanding deposits with commercial banks (% of GDP)	–0.19
Outstanding loans with commercial banks (% of GDP)	–0.23
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	1.35
4. Trade	**14.50**
No. of tariff agreements	–0.91
Duty-free imports (USD thousand) between 2014–18	–0.80
Maximum rate (%) tariffs 2014–18	–0.59
Duty-free tariff lines share (%) 2014–18	–1.22
HH Market Concentration index	1.09
Index of export market penetration	–1.04
5. Starting a business	**56.78**
Starting a business	0.14
Registering property	–0.17
Getting credit	0.76
Paying taxes	–1.76
6. Industry, innovation, and R&D	**1.04**
High-technology exports as % of manufactured exports	–0.97
R&D expenditure as % of GDP	–0.64
High-technology exports (current USD)	–0.77
Patent applications of residents	–0.41
Direct resident trademark applications	–0.76
Total	**27.99**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

FIGURE 2

KEY OBSERVATIONS ON NEPAL'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Through Porter's Diamond Model, we get an idea of the national business environment of Nepal. By virtue of its mountainous, landlocked terrain prone to natural disasters, Nepal offers little in the way of factor conditions. Its massive hydropower potential remains underutilized. Low per-capita income and large income disparities result in low sophistication of consumer demand, which has constrained the development of the domestic market. Cluster development in Nepal is very preliminary. Most of the clusters of Nepal are small-sized and none of them is competitive in the world market. FDI slumps and low export–GDP ratios, coupled with prevalence of cottage industries, limit any scope of inter-firm rivalry, competition, and innovation. The following section discusses the four attributes of the diamond in detail.

Infrastructure

TABLE 3

SCORES INDICATING NEPAL'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2010–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	1.77	1.8	1.87	2.26	2.27	2.19	
International shipments	2.09	2.21	1.86	2.64	2.5	2.36	
Logistics competence	2.08	2.07	2.12	2.5	2.13	2.46	
Tracking and tracing	2.33	2.06	1.95	2.72	2.47	2.65	
Timeliness	2.75	2.74	2.21	3.06	2.93	3.1	

Source: Logistics Performance Index.

Nepal's infrastructure performance reveals major constraints in its factor conditions, as indicated by scores in Table 3. Logistics performance indicates a network of services that enhance the physical movement of goods and services impacting trade and businesses alike. Compared with India and Bangladesh, the cost of logistics is remarkably high in Nepal, being 15% higher than in India as a percent of GDP. This is because substantial cost is involved in transit transportation to the seaports in India and PR China. Frequent landslides and congestion in some sections of road corridors; and frequent strikes and roadblocks, which are byproducts of excessive unionism, further decrease the competitiveness of Nepal's exports. Although Nepal has bilateral agreements related to trade logistics with India, Bangladesh, and PR China, and is also a member of South Asian Free Trade Area (SAFTA), Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), and WTO, on-ground realities of road transport syndicates and cartels continue to mar its logistical infrastructure [128].

Labor and Productivity

TABLE 4

NEPAL'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2010–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	0.98	0.98	1.00	1.00	1.01	1.02	1.04	1.03	0.99	1.03	1.04	
Labor productivity (based on hours worked)	0.91	0.93	0.97	1.00	1.03	1.05	1.08	1.09	1.07	1.12	1.16	
Labor productivity (based on number of employments)	0.90	0.93	0.97	1.00	1.04	1.05	1.09	1.09	1.07	1.12	1.16	
Capital productivity	1.03	1.02	1.01	1.00	1.00	0.99	1.00	0.97	0.91	0.92	0.91	

Source: APO Productivity Database 2019.
Unit: Index (2010=1.0).

Nepal's labor productivity growth is low compared with regional economies like Bhutan and Bangladesh, as indicated by the scores in Table 4. Although labor productivity growth has happened in the past decades on the back of liberalization reforms in the 1990s, productivity gains within sectors contribute more to aggregate labor productivity growth rather than having a structural effect, i.e., changes due to movements of labor between sectors with different levels of output per capita. This is due to the lack of domestic employment opportunities, which is reflected in a large-scale migration of workers each year from Nepal. Unfortunately for Nepal, in direct productivity growth effect and structural effect, services sector and other non-tradable sectors like construction and housing also witnessed outbound migrations to an extent. This bears bad news because this has led to a lack of productivity gains for the industrial sector. Also, the services sector in Nepal is mostly informal in nature with severe lack of productive capacities at the firm level (low level of capital and information technology). Addressing these is a challenge that Nepal must take up if the country wants to realize its goal of graduating from a least-developed-country status by 2022 [129].

Financial Access

TABLE 5

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN NEPAL.

Access to finance	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	7.35	7.60	8.52	9.30	9.56	10.34	10.97	14.28	
No. of commercial bank branches per 100,000 adults	7.35	8.54	8.62	8.88	9.45	10.28	12.14	15.47	
Outstanding deposits with commercial banks (% of GDP)	50.30	59.31	60.23	61.31	68.68	78.32	79.21	82.19	
Outstanding loans with commercial banks (% of GDP)	38.63	45.77	44.67	45.92	51.79	61.80	65.69	70.24	

Source: IMF, 2011–18.

With regard to financial access as the data suggests, Nepal has shown consistent improvement over time (see Table 5). Thanks to the financial literacy campaigns launched by the Nepal Rastra Bank and the financial services provided by MFIs and savings and credit cooperatives, around 61% people [130] have at least a deposit account in Nepal. Financial development allows economic growth to take place. This has given the government the policy space to transfer social security allowances directly into people's accounts, thus, sidestepping the traditional nexus of bureaucracy and corruption. However, Afram and Pero [131] arrive at the conclusion that certain supply-side constraints like high collateral requirements and improper financial products are resulting in a suboptimal equilibrium of supply for financial services demanded by MSMEs. With an increased financial development in terms of financial access, investments, and the like, firms will be able to address such issues better. Consequently, firms will be able to do better in production processes, thereby entailing better economic returns.

Starting a Business

TABLE 6

SCORES INDICATING NEPAL'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	76.8	77.7	79.3	79.9	82.7	83	83.5	83.8	81.8	82.1	
Registering property	80.2	80.3	79.7	79.9	80.1	80.1	64.8	64.8	64.8	64.7	
Getting credit	50	50	50	50	30	30	30	30	50	50	
Paying taxes	64.9	65.3	66	66	66.3	66.3	58.1	57.9	57.9	52.7	

Source: Doing Business, The World Bank, 2010–19.

Ease of doing business is a crucial area for all countries, but it is particularly essential for low-income countries to enable local productivity and invite investments. Without a favorable business-enabling environment, countries also fail to attract FDI inflows, which can play a key role in providing economic gains. It is therefore crucial to streamline procedures to make it easy for new businesses to start. In the latest rankings, Nepal has jumped to an all-time high of 94 out of 190 economies in the World Bank's Ease of Doing Business (EODB) rankings, on the back of improved credit information availability, easier cross-border trade, and enforcement of contracts, as reflected by the scores in Table 6. However, Nepal has also recently mandated an in-person follow-up for employee registration apart from new gratuity rules for employer contribution. Such changes, though beneficial for an employee's social security, are expected to make the processes of starting business and paying taxes more tedious. So, if Nepal wishes to leapfrog in the EODB rankings and arrest the recent FDI slump, it has to make the investment climate more conducive [132].

Underlying Concerns

Trade

TABLE 7

DATA INDICATING NEPAL'S TRADING OUTLOOK.

Trade	2009	2010	2011	2012	2013	2014	2015	2016	Trend
No. of tariff agreements	3	3	3	3	3	3	3	3	
Duty-free imports (in USD billion)	0.203	0.364	0.306	0.306	0.233	0.784	0.327	0.496	
Maximum rate (%) tariffs	6.06	5.46	5.78	5.76	6.64	6.38	6.25	7.29	
Duty-free tariff lines share (%)	222.96	218.29	260.37	233.92	190.09	173.51	184.83	259.30	
HH Market concentration index	0.40	0.42	0.39	0.26	0.31	0.39	0.37	0.31	
Index of export market penetration	3.38	3.47	3.55	3.56	3.67	3.67	3.12	3.54	

Source: WITS, 2009–16.

It is well established that trade causes growth. Another report from Organisation for Economic Co-operation and Development (OECD) [134] observes, "Trade can play a powerful role in contributing to productivity, growth, incomes, and jobs. The evidence is incontrovertible that openness to trade raises national incomes. Trade can also contribute to new and better jobs and improve overall working conditions. It is essential for the transfer of knowledge, technology, and skills and thus for development."

Thus, trade facilitation has attracted the attention of policymakers worldwide. However, Nepal's policymakers still seem to be mulling over this fact. Exports of goods and services as a percentage of GDP stand at 8.93%, much lower than Bhutan's and Bangladesh's percentages of 30.82% and 23.44%, respectively [133]. This is reflected in the related scores in Table 7. Even though tariff barriers remain minimal, nontariff trade costs like transport costs remain high. Estimates show that nontariff trade costs for Nepal are equivalent to applying 325% ad valorem tariff in case of manufacturing exports, 523% in case of agricultural products, and 391% overall [135].

TABLE 8

NEPAL'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %
India	56.72
USA	11.15
Turkey	6.42
Germany	3.93
UK	3.42

Top 5 import partners	Partner share in %
India	64.95
PR China	12.63
Unspecified	2.06
UAE	1.74
France	1.55

Source: WITS, 2018.

In line with the trends in labor and productivity that saw a declining share in productivity and employment for manufacturing, a declining merchandise export–GDP ratio seems obvious. Although remittances have helped balance Nepal's current account, that hardly seems a feasible policy in the long run. The appreciation in the real effective exchange rate and the loss of export competitiveness resulting from large inflows, which is a phenomenon referred to as the 'Dutch Disease,' hardly appear to be a distant possibility in Nepal's case. Table 8 highlights Nepal's leading export and import partners.

Industry, Innovation, and R&D

In the light of the coronavirus pandemic, while most countries have been flattening their R&D curves, Nepal took the bold decision of increasing its R&D spend to 0.45% from 0.3% of the GDP in its recent budget. However, this cannot hide the fact that in the last 40 years or so, R&D efforts have failed to make any impact, attributable to poor commitments and resources [136]. There is no concerned body of the government to demarcate a policy among the basic, applied, and developmental research; so, university graduates may not be confident about R&D in their fields and cannot carry out further research easily. Further, triple-helix collaborations involving

TABLE 9

DATA INDICATING NEPAL'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2011	2012	2013	2014	2015	2016	2017	Trends
High-technology exports as % of manufactured exports	0.42	0.14	0.32	0.72	0.64	0.82	1.18	
High-technology exports (in current USD million)	2.78	0.82	1.91	4.40	2.85	4.24	5.99	
Patent applications of residents	8	4	18	10	11	11	20	
Direct resident trademark applications	2,204	2,471	2,845	2,942	2,464	3,215	4,005	

Source: World Development Index, 2010–17.

universities, industry, and government appear to be inadequate. Collaborations can be formalized through research projects, contracts, equity partnerships, and patent licensing. However, Nepal first needs to set up a dedicated and independent department run by the Board of Trustees comprising highly acclaimed scholar entrepreneurs and investors who will drive an R&D agenda and advise both federal and state governments independently. Table 9 provides scores for Nepal on various parameters of technology, innovation, and R&D.

Recommendations

The following steps can be taken to address prevailing weaknesses and underlying threats to Nepal that would hinder its growth:

- **Arresting the FDI slump:** There is a need to make investing in Nepal easier and more attractive for foreign investors. Promotion and discharge of its only IT park, expediting the establishment of SEZs, and importing technologies to update the outdated technological base of the industrial sector would signal strong intents to the investors.

- **Improve business environment:** Ensuring flexible procedures for new businesses to allow for a more business friendly environment.

- **Revitalizing existing sources of growth:** Reforms in agriculture, which account for one-third of the GDP and two-thirds of the labor force, are key to further poverty alleviation, productivity improvement and releasing labor for new sources of growth. These include development, dissemination, extension efforts to ensure that farmers can use technology appropriately, and reforms in the government fertilizer subsidy program, among others.

- **Building new sources of growth:** Nepal has huge potential for hydropower development. A rough estimate pegs the potential at more than 80,000 MW. However, the installed hydro capacity as of 2018 was less than 1,000 MW [137]. Unleashing large investments in hydropower would be a game changer for Nepal. It would not only lead to massive new investments and improved productivity, but also potentially lift wages significantly and help to partially reverse migration and increase competitiveness in downstream industries.

- **Facilitate PPP in infrastructure:** In order to expand its infrastructural capabilities, Nepal should explore PPPs in areas such as transport, roadways, and housing. The appropriate policy measure would include a draft PPP law detailing screening processes, fiscal commitment, contingent liability framework, etc.

- **Cohesive policy initiative to strengthen R&D and innovation in the country:** A uniform policy that explores and puts into effect linkages relating to triple helix collaborations between institutions, industry, and government is a good step forward.

Nepal's Competitiveness

Unfavorable starting conditions like geographical constraints, political instability, propensity for natural disasters, and high rates of outmigration meant that Nepal's path to global competitiveness was never going to be easy. As pointed earlier, the current development path of relying on remittances is not aiding Nepal's escape from the low-growth trap.

Nepal has fared decently in terms of the reach of financial access to its citizens. Conversely, paying taxes is not an easy process, neither is starting of businesses. Infrastructural capacity needs to be improved further. Strategic outlook in terms of trading activities need to be revisited along with the investments in innovation and R&D. These play a pivotal role in not only improving productivity processes but also making a country more globally competitive.

Conclusion

Nepal is a low-income country. Hence, resources are scarce and public investment has high opportunity costs due to competing priorities. As a result, Nepal will have to be selective and strategic in addressing growth constraints. A common theme that emerges in Nepal's case is that long-term sustainable and inclusive development and poverty reduction depend on Nepal structurally transforming its economy by increasing productive capacity. An effective industrial policy should be a topmost priority. Thus, it is prudent that Nepal exhibits pragmatism in its development strategy rather than becoming a victim of political dogma.

PAKISTAN

Pakistan is a low-income, heavily populated country. Internal political instability, phases of military dictatorship, and inefficient, corrupt governmental rule have taken a toll as much as the costly confrontations with neighboring India ever since its formation in 1947. With each regime change came a different economic experiment, resulting in the current lack of resilience in the Pakistani economy. Before 1970s, Pakistan's private sector was booming, and companies were making profit and creating jobs too. Then, during the regime of Zulfiqar Ali Bhutto, Pakistani companies were nationalized. This caused capital flight and Pakistan went through a serious period of high unemployment and poverty rates. Then, in the regime of General Zia Ul Haq, a semi-Islamic financial system was introduced, which also could not deliver due to the economic sanctions imposed on Pakistan by the global financial powers. Subsequent governments started a race of borrowing money from international institutions like the IMF and the World Bank, the result of which was a bludgeoning trade and balance-of-payments deficit that the current government faces. With a 39-month extended fund facility (EFF) arrangement with the IMF in 2019, the current government wishes to correct the excesses of past economic mismanagement in the short-to-medium term.

Pakistan has a massive potential to grow by virtue of its rich natural resources and a growing service sector but needs a stronger political will and better governance to get out of its current rut. Table 1 offers an overview of Pakistan and highlights significant trends on a historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN PAKISTAN.

Overview	
Population (2019)	216,565,318
Employment–population ratio (2018)	50.30%
Labor force participation rate (2018)	41.67%

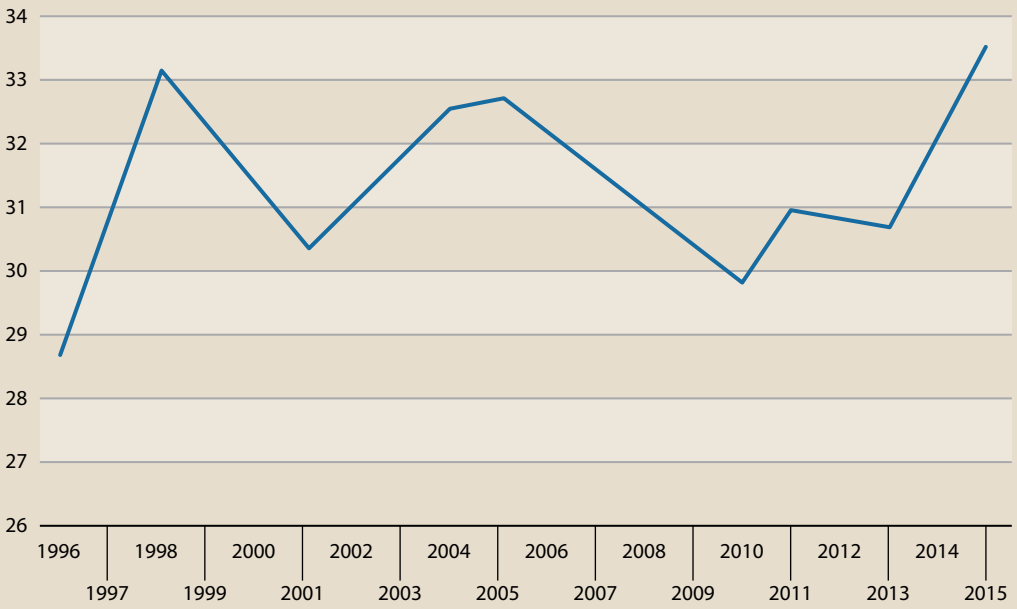
Economic trends	2005	2010	2015	2018
GDP, current	117,708	174,508	267,035	281,386
GDP per capita, current USD	734	973	1,339	1,326
Real GDP growth, y-on-y, %	7.67	1.61	4.73	5.20
Current account balance, % of GDP	–3.06	–0.78	–1.04	–6.82

Sources: ILO and WDI databases; UNCTAD STAT (2018).

A glance at the output per capita in Table 1 reveals stickiness in its growth despite a real growth in the economy. A relentless increase in population pulls back any quantifiable gains in this regard. The increase in Gini coefficient, moreover, brings to light the concentration of income in only a certain section of the population in Pakistan (see Figure 1).

FIGURE 1

SHOWCASING PAKISTAN'S INCOME INEQUALITY THOUGH GINI COEFFICIENT, 1996–2015.



Source: The World Bank.

The last five years for which data is available suggest a rising trend in persistence of income inequalities. As a renowned Economist, and Pakistan's former Finance Minister remarks, "The main factor behind the rising gap between the rich and the poor is the state capture by the elites. The powerful groups are the feudal lords, the military establishment, urban property owners, real estate developers, large domestic traders, shareholders of large corporations, etc. The vested interests have obtained wide-ranging tax exemptions and concessions, privileged access to public resources, service and bank credits, and minimal control by regulatory agencies. For a low-income country like Pakistan, rising income inequality can have disastrous effects on the socioeconomic fabric" [138]. These persisting inequalities need to be curbed by Pakistan to achieve any significant developmental outcomes.

Oxfam's CRI index [139] for 2017 shows that some African countries, through spending on education, health, and social protection, have controlled inequality. The Pakistani government could take a leaf out of their books and increase spending on education, health, and social protection while ensuring equal labor wages for both men and women. The government should revamp and reform the taxation system to bring a progressive and just tax system.

Table 2 offers an insight into Pakistan's performance on various pillars to assess the prevailing level of its competitiveness.

TABLE 2

SCORES INDICATING PAKISTAN'S PERFORMANCE AS PER THE DIAMOND MODEL.

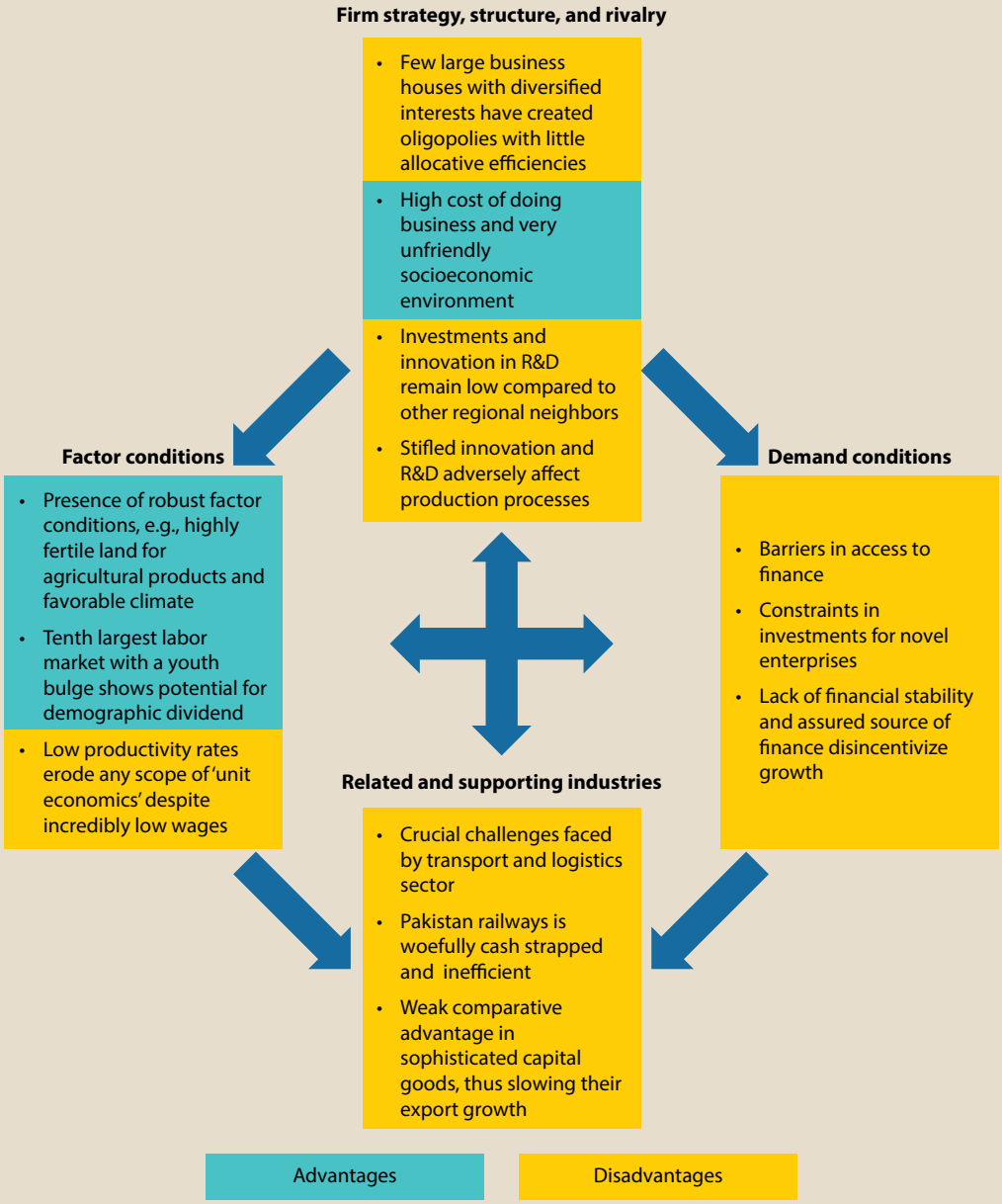
Pillar	Score
1. Infrastructure	**8.95**
Infrastructure	–1.11
International shipments	–0.85
Logistics competence	–0.76
Tracking and tracing	–1.46
Tracking timeliness	–1.42
2. Labor and productivity	**46.06**
Per worker labor productivity	–0.71
Per worker labor productivity growth	–0.09
Per hour labor productivity	–0.70
Per hour labor productivity growth	0.17
TFP growth	0.71
3. Financial access	
No. of ATMs per 100,000 adults	–1.27
No. of commercial bank branches per 100,000 adults	–0.49
Account (% of those aged 15+)	–1.66
Borrowed money in the past year (% of those aged 15+)	–1.36
Outstanding deposits with commercial banks (% of GDP)	–0.70
Outstanding loans with commercial banks (% of GDP)	–0.95
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	–1.23
4. Trade	**21.72**
No. of tariff agreements	–0.34
Duty-free imports (USD thousand) between 2014–18	–0.78
Maximum rate (%) tariffs 2014–18	0.84
Duty-free tariff lines share (%) 2014–18	–1.36
HH Market Concentration index	–0.57
Index of export market penetration	–0.45
5. Starting a business	**40.15**
Starting a business	0.72
Registering property	–1.25
Getting credit	–1.05
Paying taxes	–1.35
6. Industry, innovation, and R&D	**3.73**
High-technology exports as % of manufactured exports	–0.92
R&D expenditure as % of GDP	–0.71
High-technology exports (current USD)	–0.76
Patent applications of residents	–0.41
Direct resident trademark applications	–0.40
Total	**20.10**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

FIGURE 2

KEY OBSERVATIONS ON PAKISTAN'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



In the diamond framework, four attributes are taken into consideration: factor conditions; demand conditions; related and supporting industries; and firm strategy, structure, and rivalry. These determinants create the national environment in which companies are born and learn how to compete. With factors conditions like highly fertile land, high raw material yields, and low productivity growth rates, combined with low inter-sector mobility, Pakistan's revealed comparative

advantage lies in exporting textile products. The fact that textile features among the top 20 fastest moving exports in the world, makes the perfect case for Pakistan to expand competencies in textiles in tune with the Heckscher–Ohlin model. Pakistan's textile cluster in Kasur provide the necessary forward and backward linkages. However, all this must be propped up with necessary improvements in financial access, and logistics and innovation, which remain dismal for Pakistan.

Infrastructure

TABLE 3

SCORES INDICATING PAKISTAN'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	2.37	2.08	2.69	2.67	2.70	2.20	
International shipments	2.72	2.91	2.86	3.08	2.93	2.63	
Logistics competence	2.71	2.28	2.77	2.79	2.82	2.59	
Tracking and tracing	2.57	2.64	2.61	2.73	2.91	2.27	
Timeliness	2.93	3.08	3.14	2.79	3.48	2.66	

Source: Logistics Performance Index.

Pakistan's infrastructural performance (see Table 3) reveals major constraints in its factor conditions. Logistics performance points at a network of services that enhance the physical movement of goods and services impacting trade and businesses alike. One major factor hindering the sector in Pakistan is that logistics and transport remains fragmented and unregulated. This has been made more difficult due to a complete lack of government strategy for developing the sector and its constituent parts in the value chain [140]. This means, in real terms, that despite the large gross domestic capital investment that has been absorbed by country's roads network, logistics has not seen commensurate returns.

Pakistan's performance on the infrastructure component of the Logistics Performance Index is likely to improve, particularly in the wake of China–Pakistan Economic Corridor (CPEC)-related development of roads, railways, and the Gwadar port. In addition, CPEC is also expected to boost the prospects of the shipping industry. However, Pakistan will keep missing out any 'multiplier benefits' of this infrastructural spend and investment unless adequate regulation and reforms happens in trucking and other transport industries.

Labor and Productivity

Rapid globalization, driven in part by the unprecedented pace of technological change, especially in information and communications technologies (ICTs) has allowed India and PR China to achieve exceptionally high rates of economic growth. Pakistan, which was among the 10 fastest-growing economies in the world between 1960 and 1990, has not been able to match its neighbors [141]. The underexplored factor remains labor productivity (see Table 4). Pakistan's labor productivity was estimated at USD15,430 in 2018, according to data from the International Labor Organization

TABLE 4

PAKISTAN'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2008–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	1.02	1.00	1.00	1.00	1.00	1.01	1.04	1.09	1.12	1.15	1.18	
Labor productivity (based on hours worked)	1.02	1.01	1.01	1.00	1.00	1.00	1.04	1.10	1.15	1.20	1.26	
Labor productivity (based on number of employments)	1.02	1.01	1.00	1.00	0.99	0.99	1.02	1.07	1.10	1.13	1.16	
Capital productivity	1.01	1.00	1.00	1.00	1.02	1.05	1.09	1.13	1.16	1.20	1.23	

Source: APO Productivity Database 2019.
Unit: Index (2010=1.0).

(ILO), having grown at an average of 1.5% per year since the year 2000. India's labor productivity is 20% higher, at USD18,565 while PR China's is USD29,499.

The underlying causes for low productivity are not difficult to identify. One of the primary causes is the swift fall in investment (private, public, and foreign), which dropped from 25% of GDP in the 1980s to less than 15% in recent years, is partially due to security concerns. The lack of a shift from low-productivity agriculture to higher-productivity industry and services, along with the poor quality of workforce, further compound the aggregate productivity problem. For Pakistan to be able to address the issues of cycle of 'diminishing returns' from its labor input, it needs more than a one-time stimulus for its capital investment and technology.

Starting a Business

TABLE 5

SCORES INDICATING PAKISTAN'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2014	2015	2016	2017	2018	2019	Trend
Starting a business	75.4	75.6	75.7	75.8	76.6	81.9	
Registering property	43.4	43.4	36.8	38.3	39.3	42.8	
Getting credit	25	25	25	45	45	45	
Paying taxes	59.3	59.2	47.0	46.6	46.4	47.0	

Source: Doing Business, The World Bank, 2014–19.

Ease of doing business is a crucial area for all countries, but it is particularly essential for low-income countries to enable local productivity and invite investments. Without a favorable business-enabling environment, countries also fail to attract FDI inflows that can play a key role in delivering

economic gains. "The enactment of six regulatory reforms has landed Pakistan among the world's top 10 business climate improvers," as noted by the World Bank Group's Ease of Doing Business Index of 2020 [44]. With intense improvements in business regulation, Pakistan ranked 108th in the global ease of Doing Business rankings for the year, which was a considerable improvement from 136th rank in the previous year, as also reflected in Table 5.

Pakistan has streamlined the processes to start a business considerably. The country has made starting a business easier by expanding the functionalities of the online one-stop shop. This has halved the number of procedures required to set up a business. Additionally, the Labor Department registration fee has been abolished. However, wide inequalities exist in the enactment and implementation of reforms (federal governments of Punjab and Sindh remain the front-runners in implementation). This is likely to widen the prevailing provincial inequalities in Pakistan in terms of distribution of economic gains.

Industry, Innovation, and R&D

TABLE 6

DATA INDICATING PAKISTAN'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2011	2013	2015	2017	Trends
High-technology exports as % of manufactured exports	1.84	1.91	1.61	2.18	
Research and development expenditure as % of GDP	0.33	0.29	0.25	0.24	
High-technology exports (in current USD billion)	0.33	0.35	0.27	0.36	
Patent applications of residents	92	151	209	193	
Direct resident trademark applications	14,003	15,708	23,544	30,632	

Source: World Development Index, 2011–17.

Pakistan's performance on the industry, innovation, and R&D pillar has been prone to inconsistencies (see Table 6). According to UNESCO, the gross domestic expenditure on R&D in Pakistan stood at 0.39% in 2013. The highest this number has reached was 0.63% in 2007. Another issue stems from Pakistani firms being inhibited from investing in developing R&D on account of perceived corruption. As a result, any triple-helix collaborations involving the university, industry, and government sectors in innovation and R&D have been tepid. As a future development strategy, there lies merit in boosting public–private partnership, instead of solely relying on market forces for financing and developing R&D. A study by Observer Research Foundation [142] in 2019, on the role of public–private partnerships in innovation in least-developed countries in Africa, makes the case for PPPs in building expertise for innovation. The takeaway is that Pakistan need not follow the 'incremental innovation' strategy followed by other Asian developing countries. Product-level innovation can easily be fostered by grants to Pakistani universities, or funding of incubators. This could possibly lead to positive externalities for Pakistan's productivity equations.

Trade

Pakistan's trading outlook leaves much to be desired (see Table 7). Its competitive advantage in exports lies in low labor costs in textiles. Given its low technology penetration, high labor intensity,

TABLE 7

DATA INDICATING PAKISTAN'S TRADING OUTLOOK.

Trade	2008	2009	2010	2011	2012	2013	2014	2015	2016	2018	Trend
No. of tariff agreements	7	1	1	8	8	1	8	8	8	8	
Duty-free imports (in USD billion)	11.35	7.69	8.73	12.13	11.94	10.74	2.81	3.48	4.59	4.70	
Maximum rate (%) tariffs	520.36	659.79	100	614.04	573.24	846.00	818.11	830.74	1,815.98	1,669.88	
Duty-free tariff lines share (%)	6.60	6.80	6.91	9.46	9.97	7.12	3.24	3.30	3.11	3.06	
HH Market concentration index	0.05	0.06	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.05	
Index of export market penetration	7.40	7.42	7.59	7.68	7.86	8.19	8.11	7.92	8.27	8.15	

Source: WITS, 2009–16.

and taking the market dynamics of top 20 products in consideration, Pakistan has the scope of enhancing its share in textiles and clothing (including leather), and primary commodities.

TABLE 8

PAKISTAN'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %
USA	16.06
PR China	7.69
UK	7.32
Afghanistan	5.70
Germany	5.55

Top 5 import partners	Partner share in %
PR China	24.18
UAE	14.41
Saudi Arabia	5.39
USA	4.90
Indonesia	4.16

Source: WITS, 2018.

However, a recent policy note from the commerce ministry outlines development as "Industrialization through import substitution, coupled with export growth through diversification," which reeks of

the old fallacy of mercantilism. The government has continued to provide direct support for textiles in the form of concessionary loans, subsidies, or tariffs. As a result of this protection, most of the textile firms have not been able to grow. On the other hand, the government has also failed to fulfil their minimum demand for a reliable and competitive energy infrastructure. Thus, if Pakistan wishes to make the most of its trade–productivity nexus, it must push for greater trade volumes, while playing a supportive role for select firms focusing on export leadership. It has to follow the policy of not picking the winners but shunning the losers if it wishes to emulate the Asian tigers' growth story. Table 8 highlights Pakistan's top export and import partners.

Underlying Concern

One of the major constraints for Pakistan's productivity arises in terms of its financial access (see Table 9).

Financial Access

Greater financial inclusion is linked with more inclusive economic growth by way of making SMEs and households more resilient to unforeseen economic shocks. Besides, it is good for a nation's competitiveness as financial deepening and widening have spillover effects in the form of greater purchasing power among the populace, which in turn induces firms to innovate in terms of products and processes. Pakistan remains among the largest unbanked nations in the world. 2017 Global Findex [143] revealed that only 21% of adults were having accounts in Pakistan. Most observers have pointed at the public mistrust of banks and other formal institutions as a reason for Pakistan's slower-than-expected progress. The Gallup World Poll for 2017 [144] offers some support for this idea, showing that more than one-third of adults in Pakistan do not trust financial institutions. Unfortunately, building trust is a long-term challenge. A supply-side reform in this regard would be to improve financial services providers' capacity and ambition to reach large scales, so that the resultant benefits of 'scale economics' can take care of any solvency issues for these institutions. Another way could be taking a leaf out of Nepal's book and making bank accounts critical to receipt of social security transfers.

TABLE 9

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN PAKISTAN.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	3.39	3.90	4.28	4.72	5.29	6.29	7.27	8.45	9.45	10.00	10.45	
No. of commercial bank branches per 100,000 adults	8.33	8.37	8.38	8.53	8.75	9.05	9.31	9.65	9.95	10.18	10.28	
Outstanding deposits with commercial banks (% of GDP)	32.06	29.57	30.08	27.98	29.89	30.75	30.39	30.11	32.38	30.97	34.60	
Outstanding loans with commercial banks (% of GDP)	28.32	22.57	20.54	17.05	17.06	16.41	16.12	15.96	17.09	17.80	21.16	

Source: IMF, 2010–19.

Recommendations

The following steps can be taken to address prevailing weaknesses and underlying threats to Pakistan that would hinder its growth:

- **Reintroduce the wealth tax:** Wealth taxes, such as the minimum assets tax, can be levied. Its revenue impact could be 0.5% of the GDP [143]. This move would be primarily aimed at reducing the rising income inequalities in Pakistan as highlighted by the rising Gini coefficients. This can also help capture the assets of feudal landowning families who are into agriculture and have assets abroad.

- **Massify digital payments and transactions:** Change all government-to-citizen payments from cash to digital payments and bank transfers, e.g., for Benazir Income Support Program [145] to expand access to financial services. Moreover, roll out incentives for the private sector to use electronic payments instead of cash when paying for invoices and salaries.

- **Take measures to raise trust for financial institutions:** Improve financial education and literacy outreach, particularly among people who have little experience with the formal financial sector and digital payments to bridge the trust deficit that exists for banks and other financial institutions.

- **Increase collaboration between institutions, industry, and government:** Consequently, government funding must also be increased to encourage greater participation and remove any issues due to cash crunch.

- **Fillip for R&D and innovation:** Cohesive policy initiative to strengthen R&D and innovation in the country.

- **Reforms the railways:** An effective and efficient railway supersedes all other modes of logistics, especially in intranational trade. However, compared with India and PR China, railway is a 'deadweight loss' to the Pakistani economy. So, reforms leading to restructuring and partial privatization are a must to test the choppy waters.

Pakistan's Competitiveness

Irrespective of the narrative in Pakistan, the facts point at Pakistan being its own biggest enemy. Decades of policy juggles and paralyses have brought the nation to a critical juncture from a development standpoint. Its labor and productivity performances dwarf in comparison with its neighbors, while reach of financial access to its citizens remains dismal. Strategic outlook in terms of trading activities needs to be revisited in terms of building greater competency in the textiles sector along with investments in logistics and R&D. These play a pivotal role in not only improving productivity processes but also fortifying the ability of a nation to compete internationally in a successful manner.

Conclusion

Weak public finances, including large fiscal deficits and a high government debt–GDP ratio, a challenging external position characterized by large external debt repayments against low foreign-

exchange reserves, and low governance indicator scores in the middle of a pandemic, make Pakistan's economy a ticking time bomb.

Prima facie, the economic problems mirror those faced by India in the late 80s. The solution thus, remains the same, i.e., reduce protectionism, privatize inefficient state-owned enterprise, implement austerity measures to rein in deficits, and open up more to allow greater trade volumes and FDIs.

THE PHILIPPINES

The Philippines, along with its successes and failures, is often overlooked. Nevertheless, it has quintessentially taken the approach taken by many developed countries, i.e., embracing modernization, promoting technology, engaging in international trade, and swiftly scaling up economic gains to increase people's standard of living. Additionally, complex geographic makeup and diverse social background affect productivity widely in the Philippines. However, the country has made substantial progress towards becoming a major economy in the global market.

Table 1 offers an overview of the Philippines and highlights significant trends and the historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN THE PHILIPPINES.

Overview				
Population (2019)	108,116,615			
Employment–population ratio (2018)	58.1%			
Labor force participation rate (2018)	59.40%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	103,072	199,591	292,774	330,841
GDP per capita, current USD	1,194	2,124	2,867	3,102
Real GDP growth, y-on-y, %	4.78	7.63	6.07	6.20
Current account balance, % of GDP	1.93	3.60	2.48	–2.38

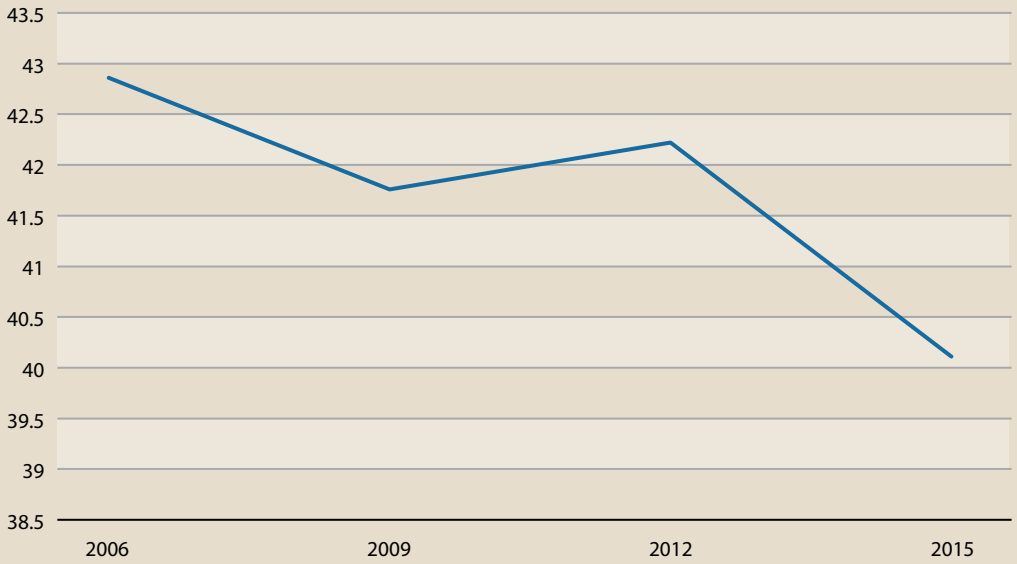
Sources: ILO and WDI databases; UNCTAD STAT (2018).

As a developing country, with a high population density and a dependent population of 34% in 2017 [1], social and economic inequalities plague the nation. In addition to demographic challenges, the geographical location of Philippines also makes it vulnerable to natural disasters that can wreak havoc on the lives of the people and the economy alike.

Inequalities entrenched in income disparity coexist with social and regional disparities as well. With an influx of population in urban cities, income disparity has increased and is specifically high in education. Significant issues also emerge concerning sociopolitical instability. A study based on data from World Development Indicators [146]] revealed that Philippines' Gini coefficient of 0.043 in 2009 (see Figure 1) shed light on various vulnerabilities, including economic shocks related to employment, price, reproductive and health issues, and natural disasters. Wealth inequality is persistent in the Philippines due to a myriad of reasons. Policy outlook needs to make deliberate efforts to reduce poverty and income disparity, and consequently deal with the social issues that underscore such widespread disparity across the country. It is also vital to ensure that the initiatives reduce inequality without neglecting the areas lying in the periphery.

FIGURE 1

SHOWCASING THE PHILIPPINES' INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2006–15.



Source: UNU-WIDER

The findings of this report also highlight the effects of inequalities in the country's development. Attributes across the national diamond for the Philippines are also affected by these inequalities.

Table 2 offers an insight into the Philippines' performance on various pillars to assess the overall level of its competitiveness.

TABLE 2

SCORES INDICATING THE PHILIPPINES' PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**38.78**
International shipments	0.57
Logistics competence	–0.43
Tracking and tracing	–0.10
Tracking timeliness	–0.80
2. Labor and productivity	**69.83**
Per worker labor productivity	–0.62
Per worker labor productivity growth	2.05
Per hour labor productivity	–0.66
Per hour labor productivity growth	1.25

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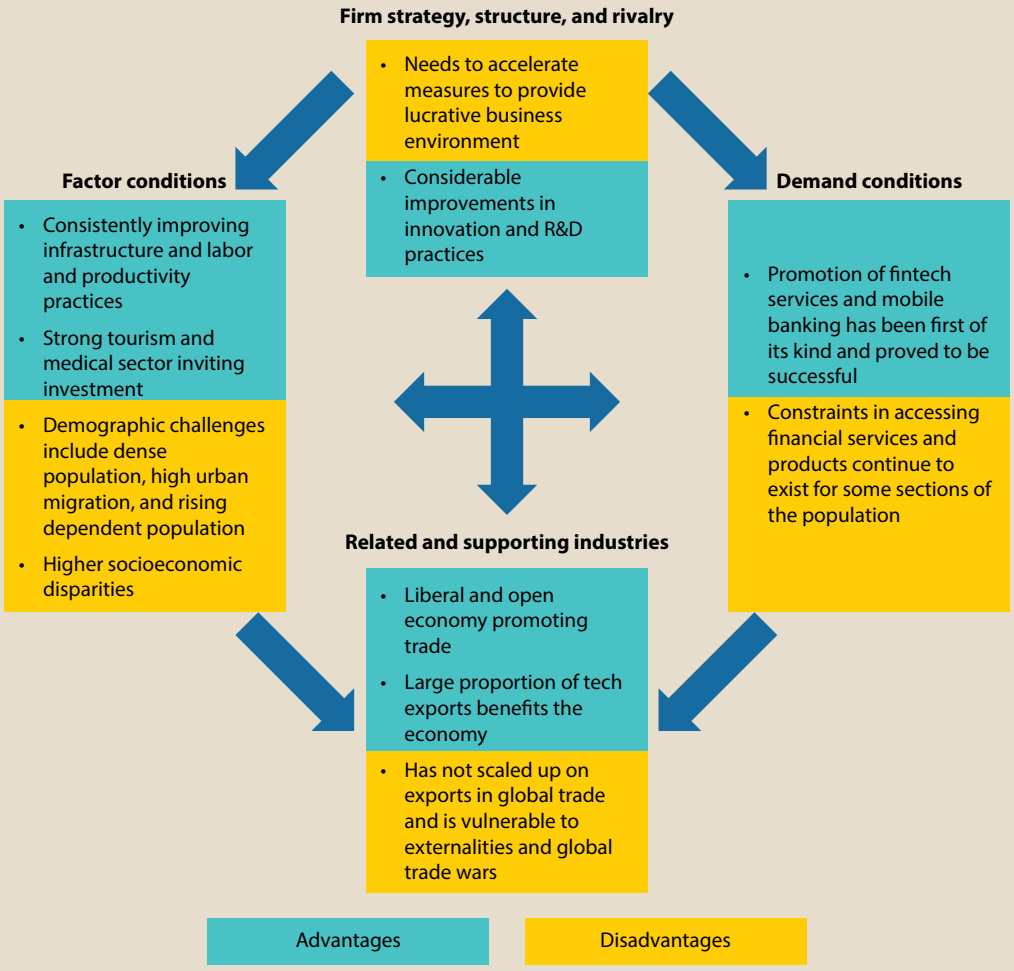
Pillar	Score
TFP growth	0.33
3. Financial access	**32.1**
No. of ATMs per 100,000 adults	–0.76
No. of commercial bank branches per 100,000 adults	–0.57
Account (% of those aged 15+)	–1.18
Borrowed money in the past year (% of those aged 15+)	0.56
Outstanding deposits with commercial banks (% of GDP)	–0.53
Outstanding loans with commercial banks (% of GDP)	–0.75
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	0.82
4. Trade	**23.81**
No. of tariff agreements	–0.33
Duty-free imports (USD thousand) between 2014–18	–0.56
Maximum rate (%) tariffs 2014–18	–0.78
Duty-free tariff lines share (%) 2014–18	–0.07
HH Market Concentration index	–0.24
Index of export market penetration	–0.41
5. Starting a business	**43.48**
Starting a business	–0.65
Registering property	–0.60
Getting credit	–1.34
Paying taxes	0.05
6. Industry, innovation, and R&D	**28.99**
High-technology exports as % of manufactured exports	2.02
R&D expenditure as % of GDP	–0.71
High-technology exports (current USD)	–0.25
Patent applications of residents	–0.40
Direct resident trademark applications	–0.52
Total	**39.50**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

FIGURE 2

KEY OBSERVATIONS ON THE PHILIPPINES' SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



The Philippines has made consistent improvements since its independence from the Japanese occupation in 1946. Overall factor conditions and demand conditions reflect the efforts made by the government in ensuring economic gains for the nation. A liberal market approach has proved lucrative in innovation and R&D practices and international trade. However, attributes affecting ease of doing business, scaling up exports, and providing inclusive financial growth for the country need to be revisited. The following section discusses the attributes of the diamond in detail.

Infrastructure

Infrastructural capacity of the Philippines has improved over the years (see Table 3). However, constraints in terms of funding persist. Investments in strengthening infrastructure had been low in the past. In order to drive infrastructure development further, the Philippines needs investment from the private sector. This will elevate the capacity for building infrastructure and ease the fiscal pressure on the government alone. Strengthening infrastructure and logistics facilitates trade and domestic competition. It improves factor conditions and drives demand conditions in the long run.

TABLE 3

SCORES INDICATING PAKISTAN'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	2.26	2.57	2.80	2.60	2.55	2.73	
International shipments	2.77	3.40	2.97	3.33	3.01	3.29	
Logistics competence	2.65	2.95	3.14	2.93	2.70	2.78	
Tracking and tracing	2.65	3.29	3.30	3.00	2.86	3.06	
Timeliness	3.14	3.83	3.30	3.07	3.35	2.98	

Source: Logistics Performance Index.

Labor and Productivity

TABLE 4

THE PHILIPPINES' PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	0.98	0.99	0.97	1.00	1.00	1.03	1.06	1.08	1.10	1.09	1.11	
Labor productivity (based on hours worked)	0.96	0.98	0.96	1.00	1.00	1.06	1.11	1.16	1.23	1.23	1.33	
Labor productivity (based on number of employments)	0.95	0.97	0.95	1.00	1.00	1.06	1.12	1.17	1.24	1.25	1.36	
Capital productivity	0.97	0.98	0.96	1.00	0.99	1.02	1.05	1.06	1.07	1.06	1.05	

Source: APO Productivity Database 2019.
Unit: Index (2010=1.0).

Labor and productivity have seen consistent growth in the Philippines (see Table 4). Measures undertaken to accelerate productivity has revealed favorable results for the economy. The Philippines is well on its way to forming industrial conglomerations with a GDP per capita of USD3,010 (using the exchange rate in 2017) [1]. Even with a relatively lower per capita GDP, the Philippines was one of the countries with higher consumption ratio than that the USA in 2017. The advances made in productivity in the Philippines has positioned the country as an economy that must be brought to the forefront in the world market.

Industry, Innovation, and R&D

Innovation accelerates production processes and quality of goods, thereby driving forth the standard of living in a country. As per the 2017 Global Innovation Index report, Philippines ranked 73rd out

TABLE 5

DATA INDICATING THE PHILIPPINES' PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trends
Patent applications of residents	225	216	172	170	186	162	220	334	375	327	323	529	
Direct resident trademark applications	8,676	8,882	8,874	8,855	10,572	11,679	12,269	14,490	14,809	15,761	18,584	21,625	

Source: World Development Index, 2008–18.

of 127 countries, which is a measure of the overall climate of innovation in the economy, as reflected by the scores in Table 5. Among ASEAN countries, the Philippines was ranked 73rd preceded by Singapore (rank 7); Malaysia (rank 37); Vietnam (rank 47); and Thailand (rank 51). However, Philippines trudged ahead of other Asian countries including Indonesia (rank 87) and Cambodia (rank 101) [147]. Evidently, as a developing nation it will take some time for the Philippines to catch up to other developed western countries. However, it has made efforts that have yielded promising overall results for the economy.

Underlying Concerns

The underlying concerns for the Philippines mainly stem from issues pertaining to absolute financial access, tapping into the country's potential to attain massive gains from exports, and lack of a cohesive plan for ensuring a lucrative business environment.

Financial Access

Financial inclusion is vital for a country's development, especially for a developing economy looking to attain inclusive growth for its people. The Philippines has also recognized this need and has initiated measures to provide access to financial services to its citizens. Mobile banking has been promoted extensively along with provisions for microfinance services. However, barriers to financial inclusivity still exist, as reflected by the scores in Table 6. Financial institutions do not reach all sections of the population, though Filipino population recognizes the importance of financial institutions.

TABLE 6

DATA INDICATING THE REACH OF FINANCIAL INSTITUTIONS IN THE PHILIPPINES.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	13.17	14.01	15.11	16.80	18.85	21.93	23.18	25.04	27.04	28.14	28.90	
No. of commercial bank branches per 100,000 adults	7.57	7.49	7.55	7.66	7.93	8.24	8.62	8.76	8.84	8.99	9.02	
Outstanding deposits with commercial banks (% of GDP)	38.56	41.60	41.09	38.89	38.17	45.01	45.89	47.21	51.00	51.75	50.03	
Outstanding loans with commercial banks (% of GDP)	16.53	16.32	16.64	19.83	20.95	22.52	24.91	27.21	29.88	33.16	34.44	

Source: IMF, 2008–18.

Nevertheless, even with digital banking making a name for itself in the country, a Better Than Cash Alliance report in 2015 found that merely 1% of the 2.5 billion retail payments per month were done electronically. In terms of access, a 2015 National Baseline Survey on Financial Inclusion revealed that 71.2% of its respondents preferred the nearest pawn shops as access points for financial products and services. Payment centers and ATMs followed pawn shops as preferred access points for financial products, while banks ranked sixth in the survey [148].

Trade

TABLE 7

DATA INDICATING THE PHILIPPINES' TRADING OUTLOOK.

Trade	2008	2009	2010	2011	2012	2013	2015	2016	2017	2018	Trend
No. of tariff agreements	2	2	2	8	8	8	8	8	8	8	
Duty-free imports (in USD billion)	23.24	23.19	23.48	66.67	69.40	69.81	71.42	49.87	72.51	44.96	
Maximum rate (%) tariffs	65	65	65	65	65	65	65	65	65	65	
Duty-free tariff lines share (%)	19.15	19.04	19.00	33.83	35.04	35.14	35.67	20.02	37.55	42.86	
HH Market concentration index	0.11	0.10	0.10	0.10	0.11	0.10	0.11	0.10	0.10	0.10	
Index of export market penetration	8.13	7.88	7.97	8.28	8.42	8.43	8.31	8.63	8.75	8.46	

Source: WITS, 2008–18.

Global trade tensions impact the Philippines heavily, as reflected by the scores in Table 7. Both PR China and the USA are important trade partners for the Philippines. The USA is the biggest export partner, while PR China is the fourth-largest market. Thus, rising tensions between these nations can have negative consequences for other countries caught in the middle. The USA is the primary market for exports from the Philippines accounting for 15.3% of total exports, whereas exports for PR China account for 12.89% of the total.

Exports to PR China are limited to commodities with only a small share affected by Chinese tariffs imposed on USA producers. Consequently, one-fourth of the Philippine exports to the USA were included in the USA tariffs on Chinese producers. Producers from Vietnam and Mexico accounted for one-third and two-thirds of the share, respectively [149]. What differentiates the Philippines markedly from other nations caught in the trade war is that while it has not immensely benefitted from it, it has not been worse off either.

TABLE 8

THE PHILIPPINES' TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %, 2014–18
USA	15.63
Hong Kong	14.16
Japan	14.04
PR China	12.89
Singapore	6.27

Top 5 import partners	Partner share in %, 2014–18
PR China	19.63
ROK	10.00
Japan	9.91
USA	7.21
Thailand	6.91

Source: WITS, 2018.

While efforts have consistently been made to increase trade capacity and exports by the government, they have not been able to provide a competitive advantage to the Philippines. Exports need to be scaled up further and diversified as well. The concentration of goods compared with other countries can impede the potential for economic gains. Although the Philippines offers a comparative advantage with its exports from high technology, its performance lags in comparison with the export performances of Vietnam and Mexico. The Philippines has also failed to scale up its exports in high technology. Table 8 highlights the Philippines' top export and import partners.

Starting a Business

TABLE 9

SCORES INDICATING THE PHILIPPINES' PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	62.6	63.8	66	66.1	66.2	67.2	67.6	67.6	64.2	69.3	
Registering property	62.7	62.7	62.7	62.7	62.7	62.8	56.7	56.7	56.7	57.6	
Getting credit	25	25	25	60	35	35	35	40	40	40	
Paying taxes	57.9	59.6	59.3	59.3	66.5	66.5	62.7	66.2	69.7	72.2	

Source: Doing Business, The World Bank, 2010–19.

The Philippines' score for starting a business in the Ease of Doing Business Index [44] of 2020 was 171. Its overall rank for ease of doing business was 95. However, despite the leap in ranking from 124 to 95 out of 190 economies, the score remained low compared with other ASEAN countries.

Providing a conducive environment for growth of businesses is imperative to sustaining a productive and competitive state. Barriers in the creation of new enterprises limit the entry and creation of new firms. This, in turn, impedes productivity and growth considerably. Regulations that manifest as barriers to the formation and development of new firms disincentivize their creation. Subsequently, studies suggest a regional disparity concerning such regulations. Data from the Philippines Cities and Municipalities Competitiveness Index asserts that the average number of days to process a business renewal permit (between the years 2011 and 2015) could take up to half a day or one month based on the city or the municipality [150]. Table 9 provides scores for the Philippines on various parameters of starting a business.

Recommendations

The following steps can be taken to address prevailing weaknesses and underlying threats to the Philippines, that would hinder its growth:

- **Policy focus on reducing rising inequalities is crucial:** Equally crucial is the consistent evaluation and monitoring of measures taken by the government.

- **To expedite economic progress, social issues must be given a priority:** Issues pertaining to educational inequality, reproductive health, and the like eventually not only raise the quality of people's lives but also provide sustainable economic returns in the long run.

- **Take initiatives to remove barriers to financial products and services:** Typically, it is the poor residents of less developed geographic locations or the less educated populace that have limited or no access to financial services.

- **Ease procedures for starting business to encourage new ventures:** It is important to lower barriers to entry of new firms. An institutional, legal framework promotes efficiency and discourages uncertainty.

- **Scale up and diversify exports:** This will enable the Philippines to take advantage of international trade on a higher level and not remain stagnant. Diversification of exports would lead to greater economic gains for the country.

- **Proactively prepare for natural disasters:** Being susceptible to natural disasters and other externalities calls for cautious measures to be undertaken that reflect a well-prepared state and lower the negative impact of anticipated events. This also includes measures to fight effects of climate change.

The Philippines' Competitiveness

Even with stark inequalities in the society, the Philippines has made major strides in overcoming hurdles and making a name for itself in the world economy. These inequalities underpin the obstacles in establishing inclusive financial access, entry of new businesses, and scaling up exports. Paying special attention to these attributes will help the Philippines in building its competitiveness. The current status of the country suggests it has the potential to become another successful Asian economy. Vigorous governmental measures can give rise to a sustainable growth pattern.

Conclusion

The Philippines must indeed confront various challenges to build a competitive economy in the long run. Nevertheless, the achievements made so far in terms of rapid modernization, international trade, production, and labor have enabled the economy to take considerable leaps. By extension, they have led to improving the quality of life. Thus, addressing existing challenges and being cautious of externalities would provide considerable gains for the Philippines.

SINGAPORE

With its reliable infrastructure, robust technological network, and stable and efficient governing practices, Singapore promises a stable and secure future. The country is considered to be one of the driving forces of growth for the entire Asian continent. Menon [151], in an overview of Singapore's economy, describes the country's thriving economy at length. Singapore has distinctly carved out a place for itself with world-class financial and service sectors, consistent high rankings in reports such as ease of doing business, and per capita GDP levels comparable with several developed western countries. These allow Singapore to achieve high productivity levels that provide a competitive advantage.

Table 1 offers an overview of Singapore and highlights significant trends on a historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN SINGAPORE.

Overview				
Population (2019)	5,703,569			
Employment–population ratio (2018)	65.1%			
Labor force participation rate (2018)	67.7%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	127,418	236,420	304,092	347,304
GDP per capita, current USD	29,870	46,075	54,378	60,322
Real GDP growth, y-on-y, %	7.49	15.24	2.24	3.20
Current account balance, % of GDP	23.33	23.26	17.44	18.74

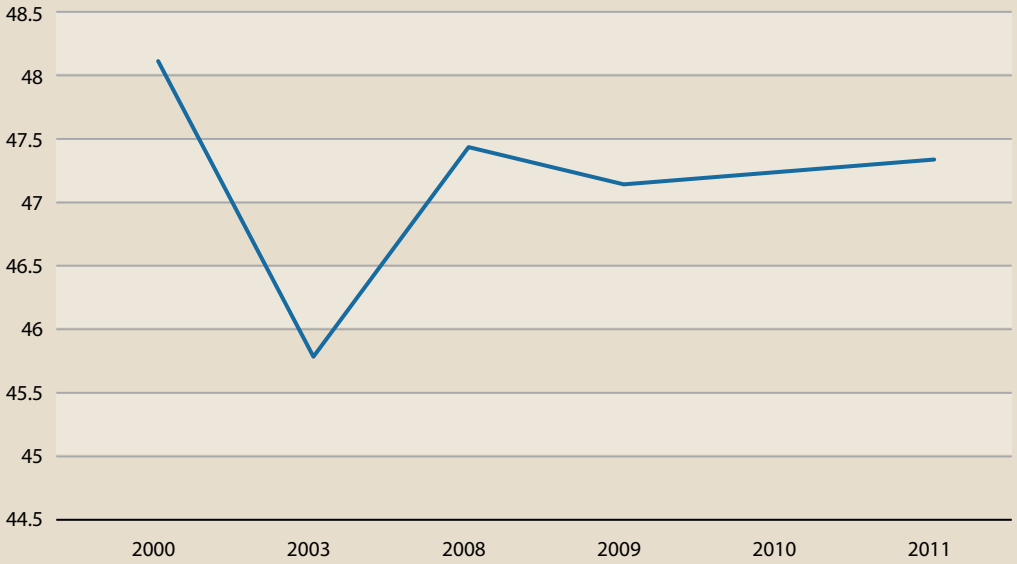
Sources: ILO and WDI databases; UNCTAD STAT (2018).

Singapore has showcased consistent growth in the past decade. An intense focus on improving production processes has led to higher productivity gains. Among the Asian tigers leading productivity, Singapore, along with PR China and Hong Kong, has surpassed Japan [1]. Singapore also managed to beat the USA with its per capita GDP being 55% higher than that of the USA in 2016 [152]. Government data also shows an increase in average household income across all income groups for resident employed households in Singapore.

The government data on household income trends suggests [153] that between 2014 and 2019, resident employed households across all income groups saw an increase in average household income from work per household member. The households in the first to ninetieth percentiles experienced real growth of 3.9% to 4.5% per annum. whereas households in the top 10% income group experienced real growth of 2.5% per annum. The report on Key Household Income Trends also demonstrates that resident employed households across all income groups experienced real

FIGURE 1

SHOWCASING SINGAPORE'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2000–11.



Source: UNU-WIDER.

growth in average household income from work per household member in 2019. Households belonging to first to ninetieth percentile income groups witnessed real growth of 3.5–5.6% higher than that of the top 10% income group, which witnessed a growth of 0.4%. Rising income growth demonstrates an increasing standard of living, generating prosperity for the citizens, as reflected by the Gini coefficients in Figure 1.

However, as the findings of this report have revealed, Singapore continues to harbor obstacles that prevent it from reaching its utmost potential and achieving more productivity gains. Table 2 provides an insight into the findings of this report and Singapore's productivity and competitiveness across various pillars including infrastructure; labor and productivity; trade; starting a business; and industry, innovation, and R&D.

TABLE 2

SCORES INDICATING PAKISTAN'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**99.31**
Infrastructure	1.65
International shipments	1.20
Logistics competence	1.78
Tracking and tracing	1.63
Tracking timeliness	1.74

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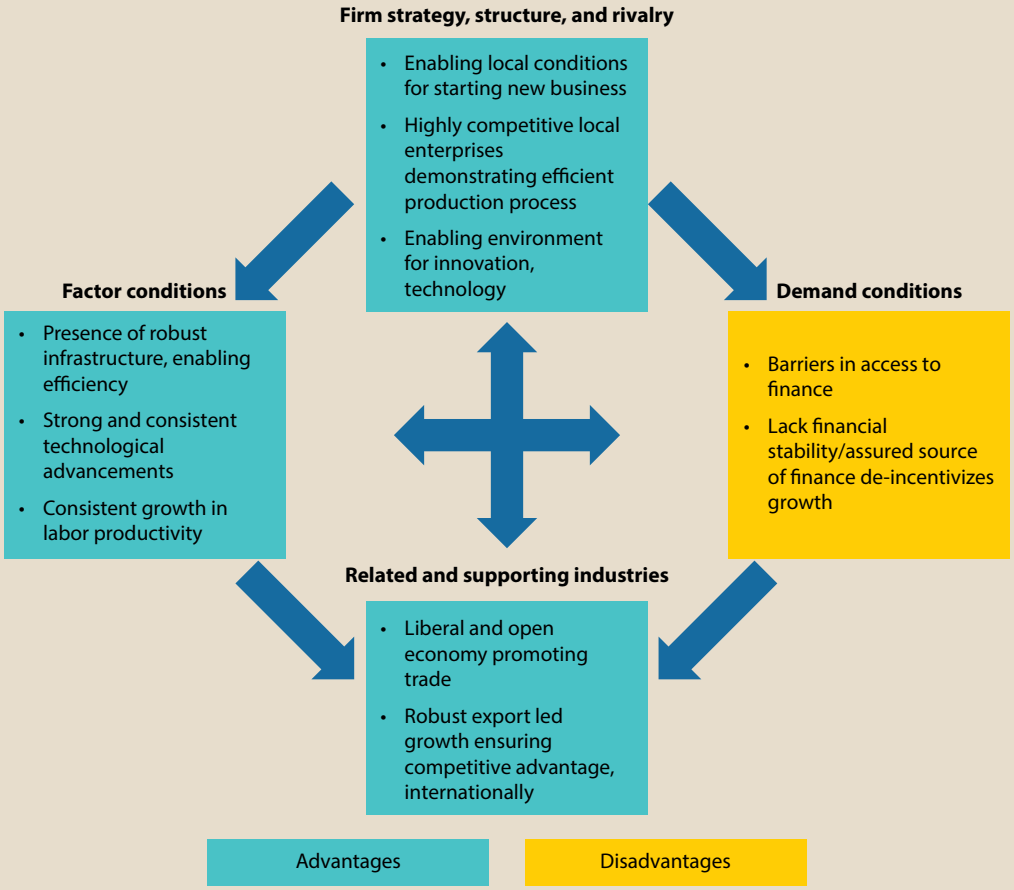
Pillar	Score
2. Labor and productivity	**100**
Per worker labor productivity	2.46
Per worker labor productivity growth	0.51
Per hour labor productivity	2.23
Per hour labor productivity growth	0.71
TFP growth	0.20
3. Financial access	**46.85**
No. of ATMs per 100,000 adults	0.23
No. of commercial bank branches per 100,000 adults	–0.63
Account (% of those aged 15+)	1.08
Borrowed money in the past year (% of those aged 15+)	–0.18
Outstanding deposits with commercial banks (% of GDP)	0.28
Outstanding loans with commercial banks (% of GDP)	0.73
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	–1.52
4. Trade	**83.93**
No. of tariff agreements	1.38
Duty-free imports (USD thousand) between 2014–18	0.90
Maximum rate (%) tariffs 2014–18	0.63
Duty-free tariff lines share (%) 2014–18	1.77
HH Market Concentration index	–0.43
Index of export market penetration	–0.08
5. Starting a business	**100**
Starting a business	0.48
Registering property	1.23
Getting credit	0.75
Paying taxes	1.48
6. Industry, innovation, and R&D	**50.66**
High-technology exports as % of manufactured exports	1.55
R&D expenditure as % of GDP	0.97
High-technology exports (current USD)	1.58
Patent applications of residents	–0.38
Direct resident trademark applications	–0.73
Total	**80.12**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

FIGURE 2

KEY OBSERVATIONS ON SINGAPORE'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Singapore has consistently performed well on several indicators, including factors related to endowments, logistics performance, and international trade. However, it needs to make significant strides in areas related to financial access and R&D investments in order to fortify its position in the global economy. Consequently, in improving upon underlying weaknesses and dealing with inefficiencies, long-term prosperity can also be assured. The next section discusses the four attributes of the diamond in detail.

Infrastructure

Regardless of certain inconsistencies, and decline in scores for international shipments, Singapore continues to fare well in overall logistics performance (see Table 3). Presence of robust infrastructure promises quality and reliability, thus further advancing the local economy. This, in turn, offers a competitive advantage to countries in the international market. Successful operationalization of quality production process and trading logistics help further Singapore's productivity gains.

TABLE 3

SCORES INDICATING SINGAPORE'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	4.27	4.22	4.15	4.28	4.20	4.06	
International shipments	4.04	3.86	3.99	3.70	3.96	3.58	
Logistics competence	4.21	4.12	4.07	3.97	4.09	4.10	
Tracking and tracing	4.25	4.15	4.07	3.90	4.05	4.08	
Timeliness	4.53	4.23	4.39	4.25	4.40	4.32	

Source: Logistics Performance Index.

Labor and Productivity

TABLE 4

SINGAPORE'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	1.00	0.95	0.93	1.00	1.00	1.00	1.00	1.01	1.00	1.00	1.02	
Labor productivity (based on hours worked)	0.99	0.93	0.93	1.00	1.03	1.03	1.06	1.08	1.09	1.11	1.17	
Labor productivity (based on number of employments)	0.99	0.93	0.91	1.00	1.03	1.03	1.06	1.08	1.08	1.09	1.14	
Capital productivity	0.97	0.94	0.90	1.00	1.00	1.00	1.00	1.00	0.99	0.98	0.98	

Source: APO Productivity Database 2019.
Unit: Index (2010=1.0).

Singapore continues to showcase a rather liberal, exports-led economy geared for achieving high economic gains. This is also reflected by the scores given in Table 4 as well as in the productivity indices measured by the APO. There has been a steady growth over the past few decades, which has been indicated several times in the APO Productivity Databook reports as well. The Singapore Productivity Centre (SGPC), acting as a business advisory and consultancy, has evidently been able to help around a thousand enterprises to improve their productivity. It has also trained 120 productivity consultants and organized 30 overseas study missions [154].

Trade

Apart from enhanced productivity levels, trade is also known to play a vital role in providing competitive advantage. Singapore has one of world's most open economies. This can be seen in

TABLE 5

DATA INDICATING SINGAPORE'S TRADING OUTLOOK.

Trade	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
No. of tariff agreements	13	13	13	1	14	16	17	18	18	18	
Duty-free imports (USD billion)	310.59	238.51	302.29	361.34	372.84	367.00	367.00	292.19	278.32	324.67	
Maximum rate (%) tariffs	413.87	412.80	417.75	433.58	453.94	452.55	444.48	447.86	442.11	455.08	
Duty-free tariff lines share (%)	99.91	99.82	99.91	99.86	99.92	99.90	99.90	99.92	99.91	99.93	
HH Market Concentration index	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	
Index of export market penetration	13.81	13.15	13.65	13.98	13.94	13.79	13.31	13.21	13.09	13.55	

Source: WITS, 2008–17.

Singapore's role as a trading port and an oil-and-gas hub along with its critical role in the regional supply chain leading to an increase in trade of intermediate goods. Trade is thus considered to be one of the significant strengths that Singapore exhibits, as also reflected by the scores in Table 5. Therefore, based on the results of this report, it also appears to perform well on the trading front.

TABLE 6

SINGAPORE'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %, 2014–18
PR China	12.24
Hong Kong	11.82
Malaysia	10.90
Indonesia	8.00
USA	7.74

Top 5 import partners	Partner share in %, 2014–18
PR China	13.40
Malaysia	11.55
USA	11.36
Other Asia, NES	8.48
Japan	5.98

Source: WITS, 2018.

Since the 2000s, economic growth for countries such as Singapore, PR China, and Hong Kong have been driven by the strength of their net exports [155]. Net export share in GDP remained large for Singapore at 24.4% in 2017 [1]. Table 6 highlights Singapore's top export and import partners.

Singapore's economy is inherently export oriented. Almost 70% of all industries producing 67% of Singapore's total output have been export oriented. Outputs and exports have been highly dependent on imports. Most industries have large import input share. For instance, petroleum products are highly import-intensive in Singapore [156]. The country has been able to tap into its domestic resources with utmost efficiency to achieve competitive advantage in international trade. Agglomeration of industries producing intermediate goods showcases intense competition and reduction in prices. Firms thus end up producing quality products and are forced to innovate and upgrade their production services continually. Economic advantages induced by trade play a crucial role in ensuring international competitiveness. An enabling local environment that provides sophisticated goods and production process under a well-established infrastructure contribute to the regional growth of the economy, which further allows for economic gains in the international markets as well.

Starting a Business

TABLE 7

SCORES INDICATING SINGAPORE'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	98.2	
Registering property	77.0	77.0	77.0	76.9	79.2	79.2	81.9	83.2	83.2	83.1	
Getting credit	81.3	87.5	87.5	87.5	93.8	75.0	75.0	75.0	75.0	75.0	
Paying taxes	96.5	96.5	96.5	96.6	96.6.	96.6	96.6	91.5	91.6	91.6	

Source: Doing Business, The World Bank, 2010–19.

Singapore has emerged as one of the best places to start a business (see Table 7 for scores). International trade links, policies that promote businesses, and a robust infrastructure create a conducive environment for entrepreneurs. The enabling environment for entrepreneurs further advances the domestic economy, which also provides a competitive advantage to the country internationally. Thus, ease of doing business offers a competitive advantage for Singapore's economy.

Industry, Innovation, and R&D

Innovation, R&D, and technology play a crucial role in ensuring the growth of a nation. R&D, for instance, is not limited to being a measure for innovation; it also helps assimilate knowledge and gain competitive advantage. While Singapore is known for its technological advancement (see scores in Table 8), it can attain its utmost potential by diving deeper into innovation and R&D-led developments to help improve efficiency and productivity.

Innovations help sustain long term economic gains. With manufacturing (including electronics and precision engineering) being one of the most vital sectors in Singapore, further R&D investments

TABLE 8

DATA INDICATING SINGAPORE'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2008	2009	2010	2011	2012	2013	2014	2015	2016	Trends
High-technology exports as % of manufactured exports	52.72	50.91	52.34	47.73	48.44	50.41	50.79	52.42	52.44	
Research and development expenditure as % of GDP	2.60	2.14	1.98	2.12	1.96	1.97	2.14	2.26	2.17	
High-technology exports (in current USD billion)	124	100	132	132	137	144	146	139	136	
Patent applications of residents	793	750	895	1,056	1,081	1,143	1,303	1,469	1,601	
Direct resident trademark applications	4,203	4,108	4,334	4,242	4,608	4,804	5,641	5,393	5,861	

Source: World Development Index, 2009–16.

can boost long-term gains for the industries. The government has leveraged R&D spending in the past to advance its economic growth and increase efficiency. However, it needs to accelerate its spending and generate significant gains in productivity levels.

Underlying Concern

The data show Singapore to be performing well on most of the pillars and indicators. However, they also reveal points of significant concern when it comes to financial access, especially in getting credit. Both these attributes play a significant role in determining competitiveness.

Financial Access

TABLE 9

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN SINGAPORE.

Acces to Finance	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	57.50	58.05	55.81	63.10	64.59	
No. of commercial bank branches per 100,000 adults	9.01	8.95	8.68	8.22	8.33	
Outstanding deposits with commercial banks (% of GDP)	137.95	132.25	135.78	129.96	127.81	
Outstanding loans with commercial banks (% of GDP)	152.20	141.64	140.49	139.51	135.76	

Source: IMF, 2014–18.

Financial access is an area of concern for Singapore. It is also one of the most critical elements that ensure security, mitigate risks, and provide incentives for growth, innovation, and investment in business and other assets. Enterprises must be in a position to capitalize the economic opportunities that come their way. Although Singapore boasts of a sophisticated banking system, it still appears to encompass inherent problems that prevent financial access to its people. Without cash flow, businesses suffer. A 2017 study the National University of Singapore's business and entrepreneurship center [157] highlights the fact that Singapore does not have enough companies that can achieve fast and profitable growth. Notably, Singapore lacks 'gazelles' or companies that can attain quick profits and increase revenues by up to 20% annually for more than four years, starting at USD1 million. In fact, 56.8% of startups appear to be struggling and can be referred to as 'zombies' that are providing little employment and growth. Table 9 provides scores for Singapore on various parameters of financial access.

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to Singapore that would hinder its growth:

- **Finance startups:** Financing at an early stage of startups through measures such as angel investments and venture capital funds need to be accelerated.

- **Invest in ideas, not just companies:** Funding needs to be directed towards firms that generate novel ideas. Investments considered to be 'safe' often end up with little returns or even become stagnant. Moreover, low-risk investments are not always scalable.

- **Create different financing options:** Developing alternative financing institutions such as specialized microfinance institutions (MFIs), low-capital local banks, postal savings banks, and financial cooperatives supplies people with alternatives to get access to finances.

- **Encourage private-sector funding for R&D:** Funding of research must be shared by private players as well. Increase in R&D investment as a percentage share of GDP cannot happen at a rapid pace if the private sector does not pull its weight. Medium and large enterprises must be encouraged to spend a portion of their turnover on R&D.

- **Create policy-level thrust for innovation:** Policy focus must shift towards fostering an innovative and knowledge-based entrepreneurship and support ecosystem. Startups with more novel ideas and technologies must be stimulated with better access to finances.

Singapore's Competitiveness

Endowments present in Singapore have indeed helped the country achieve economic gains. Moreover, it has been able to sustain economic gains through constant efforts in retaining productivity. The government has continuously performed well on various indices across the world, including the Ease of Doing Business Index and the APO Productivity Databook over the past years.

While Singapore fares well concerning most of the pillars with its robust infrastructure, logistics competency, competitive international trade, and consistent productivity growth, it does encompass obstacles that impede its long-term growth. By securing financial access for citizens and local

businesses, Singapore can help its domestic firms reach new heights and maximize their productivity gains. Financial stability improves operations of firms, which in turn allow for sophisticated products and services that meet demands efficiently.

Conclusion

By continually improving upon the present attributes that provide added advantage to Singapore's economy, and simultaneously addressing corresponding issues that prevent growth, Singapore will be able to sustain long-term success. With constant efforts in the areas of making access to finance easier and improving upon the approaches to getting credit and other fiscal attributes, the country can ensure cohesive development, which in turn can warrant a competitive environment and prosperous society.

SRI LANKA

Sri Lanka is an upper-middle-income country with an estimated GDP per capita of USD4,168 in 2018 and a total population of 21.7 million people. Following 30 years of civil war that ended in 2009, the economy grew at an average of 5.41% [158] during the period 2010–18. This reflected a peace dividend and a determined policy thrust towards reconstruction and growth, though growth has slowed down in the last few years [159].

The country is transitioning from a predominantly rural-based economy towards a more urbanized economy that is oriented around manufacturing and services. Table 1 offers an overview of Sri Lanka and highlights significant trends on a historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN SRI LANKA.

Overview				
Population (2019)	21,670,000			
Employment–population ratio (2018)	49.49%			
Labor force participation rate (2018)	51.9%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	27,932	56,726	80,604	88,484
GDP per capita, current USD	1,429	2,800	3,855	4,168
Real GDP growth, y-on-y, %	6.24	8.02	5.01	3.20
Current account balance, % of GDP	–2.33	–1.90	–2.34	–3.18

Sources: ILO and WDI databases; UNCTAD STAT (2018).

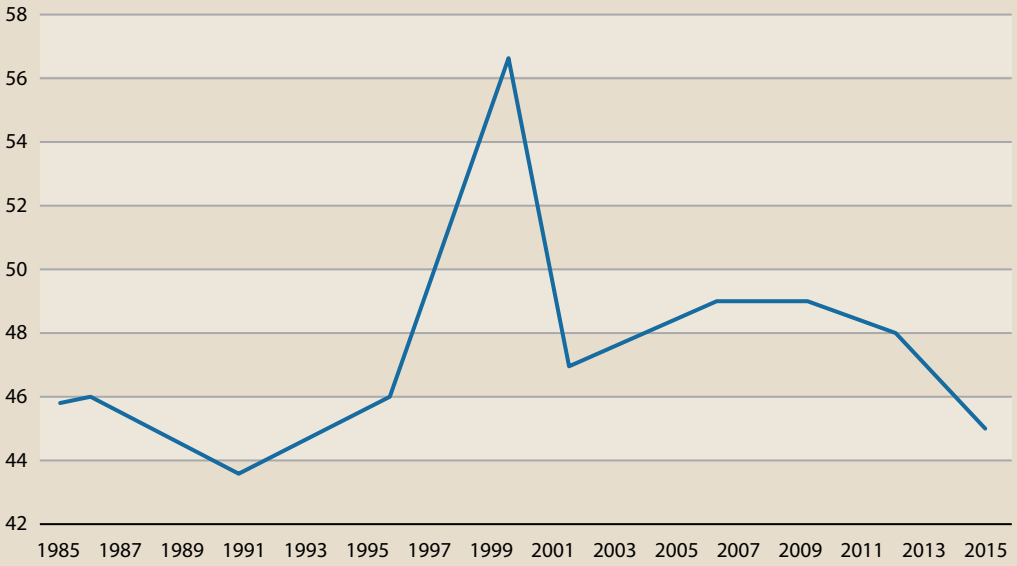
Evidently, as data suggests, the post-conflict (post 2009) high-growth momentum has decelerated. A volatile global environment and Sri Lanka's structurally weak competitiveness continue to weaken growth and external sector performance. Low employment and labor force participation numbers indicate nascence of industrial, manufacturing, and other allied sectors. These are studied in more detail through the Porter Diamond Framework. To see if Sri Lanka is able to balance the tag of an upper-middle-income economy while allowing its citizens to participate more equitably in social and economic opportunities awaits a closer look. For that, we consider the share in national income held by various deciles of the population and the Gini coefficient (see Figure 1).

A look at the income distribution numbers over a 31-year period for Sri Lanka suggests a rising trend in the share of household income held by top 10% of the population. An opposite declining trend holds true for the bottom 10% and the third 20% of the population which becomes even more prominent as the post-conflict growth story of Sri Lanka fizzles out. A rise in Gini coefficient value from 33 in 1985 to 39.8 in 2016 corroborates these findings (see Figure 1).

The reasons for the income inequality are numerous. Inadequacy of opportunities in predominantly rural districts, which boils down to poor connectivity between rural and urban areas; inadequate attention given to the agricultural sector, which is prone to frequent natural disasters and employs 27% of the workforce; and low female participation in the labor force become a recipe for rising economic divide [160].

FIGURE 1

SHOWCASING SRI LANKA'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 1985–2016.



Source: UNU-WIDER.

Table 2 offers an insight into Sri Lanka's performance on various pillars to assess its prevailing level of competitiveness.

TABLE 2

SCORES INDICATING PAKISTAN'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**15.74**
Infrastructure	–0.68
International shipments	–1.11
Logistics competence	–1.04
Tracking and tracing	–0.57
Tracking timeliness	–1.17
2. Labor and productivity	**2.46**
Per worker labor productivity	–0.36

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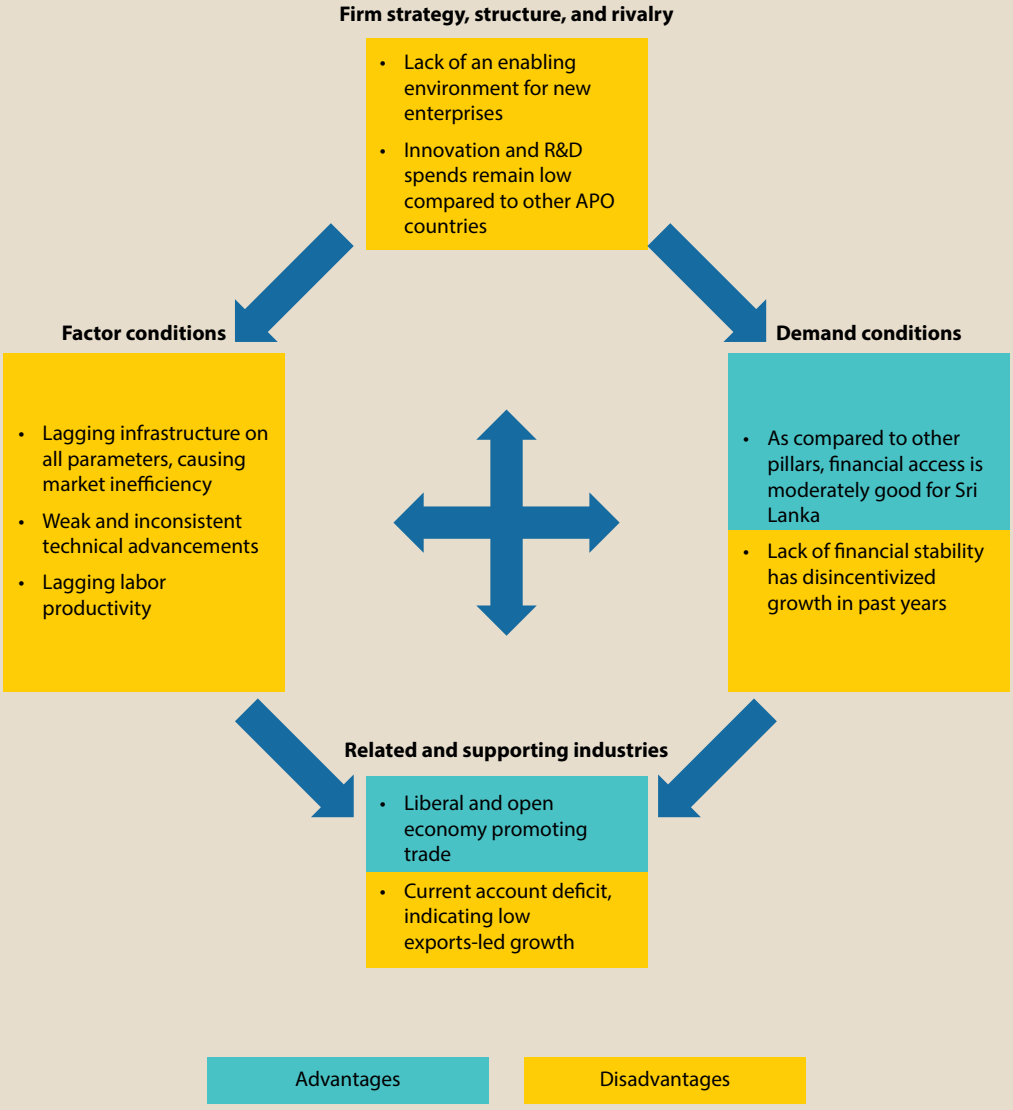
Pillar	Score
Per worker labor productivity growth	–1.39
Per hour labor productivity	–0.30
Per hour labor productivity growth	–1.40
TFP growth	–2.94
3. Financial access	**45.01**
No. of ATMs per 100,000 adults	0.62
No. of commercial bank branches per 100,000 adults	–0.10
Account (% of those aged 15+)	0.34
Borrowed money in the past year (% of those aged 15+)	–1.55
Outstanding deposits with commercial banks (% of GDP)	–0.15
Outstanding loans with commercial banks (% of GDP)	–0.12
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	1.08
4. Trade	**51.59**
No. of tariff agreements	–0.15
Duty-free imports (USD thousand) between 2014–18	–0.72
Maximum rate (%) tariffs 2014–18	2.21
Duty-free tariff lines share (%) 2014–18	0.39
HH Market Concentration index	–0.30
Index of export market penetration	–0.64
5. Starting a business	**42.92**
Starting a business	0.63
Registering property	–1.02
Getting credit	–1.39
Paying taxes	–0.83
6. Industry, innovation, and R&D	**0.97**
High-technology exports as % of manufactured exports	–0.98
R&D expenditure as % of GDP	–0.80
High-technology exports (current USD)	–0.51
Patent applications of residents	–0.32
Direct resident trademark applications	–0.37
Total	**25.88**

Key Observations

Simply put, the Diamond framework is a way to figure out which industries of a country could thrive in the global marketplace. Thus, the focus is simply on the industries where Sri Lanka perceptibly enjoys competitive advantage compared with other nations and how they can be leveraged to make the nation 'competitive' in the world market. For that, we look at four pillars. Factor conditions and demand conditions are the two pillars where Sri Lanka's performance has been fair enough. Its natural beauty, small size, and convenient location in the Indian Ocean are possibly key competitive advantages that could be utilized by the tourism and shipping industries. However, these competitive advantages need to be honed by making strides in other aspects such as trade openness, R&D spend, and business environment (see Figure 2). Consequently, in improving upon underlying weaknesses and dealing with inefficiencies, long-term prosperity can also be assured. The following section discusses the four attributes of the diamond in detail.

FIGURE 2

KEY OBSERVATIONS ON SRI LANKA'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Infrastructure

TABLE 3

SCORES INDICATING SRI LANKA'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2018	Trend
Infrastructure	2.13	1.88	2.50	2.23	2.49	
International shipments	2.31	2.48	3.00	2.56	2.51	
Logistics competence	2.45	2.09	2.80	2.91	2.42	
Tracking and tracing	2.58	2.23	2.65	2.76	2.79	
Timeliness	2.69	2.98	2.90	3.12	2.79	

Source: Logistics Performance Index.

Sri Lanka's performance across most infrastructural parameters appears dismal (see Table 3). The trend over a 10-year period suggests stagnation or even decline in some infrastructural capability indices. Sri Lanka's favorable topographical setting would help the nation in becoming a regional hub, though it still must address the challenges and build its infrastructural capacity. Other ports in the region such as Dubai, Singapore, and those in India provide for a stiff competition to Sri Lanka, while Sri Lanka's Hambantota port is yet to be utilized properly [161]. Such a scenario calls for a need to develop a policy solution in tandem with development initiatives that address logistical issues and build infrastructural capacity of the country.

Trade

Sri Lanka is open to trade, which accounts for 53% of the GDP. Nonetheless, its share of GDP has declined almost continuously since early 2000s after peaking at 88.6% in 2000 [162]. The country

TABLE 4

DATA INDICATING SRI LANKA'S TRADE OUTLOOK.

Trade	2008	2009	2010	2011	2012	2014	2015	2017	Trend
No. of tariff agreements	10	19	10	10	10	10	10	10	
Duty-free imports (in USD billion)	4.28	3.54	6.43	10.52	9.72	10.36	10.13	12.97	
Maximum rate (%) tariffs	514.61	524.21	565.53	578.03	536.16	1,642.84	125.00	3,000.00	
Duty-free tariff lines share (%)	12.55	15.58	44.38	43.96	44.92	49.74	50.75	54.02	
HH Market concentration index	0.10	0.09	0.08	0.07	0.08	0.08	0.10	0.09	
Index of export market penetration	5.29	5.14	5.17	5.15	5.39	5.82	5.75	6.00	

Source: WITS, 2008–17.

mainly exports articles such as tea, clothing, retreaded or used pneumatic tires of rubber, and petroleum oils. Its main imports include petroleum oils, gold, clothing, and motor cars. Table 4 provides scores for Sri Lanka on various parameters of the trade pillar. Sri Lanka's main trade partners are the USA (24.9%); the UK (8.88%); India (6.7%); Germany (4.67%); and Italy (4.53%); importing mostly from India (21.1%); PR China (19.7%); UAE (7.3%); Singapore (6.06%); and Japan (4.87%) [162] .

TABLE 5

SRI LANKA'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %
USA	24.87
UK	8.88
India	6.72
Germany	4.66
Italy	4.53

Top 5 import partners	Partner share in %, 2014–18
India	19.63
PR China	10.00
UAE	9.91
Singapore	7.21
Japan	6.91

Source: WITS, 2018.

Sri Lanka has placed exports growth high on its development agenda. As such, the government has signed several bilateral and multilateral trade agreements, especially at the regional level. PR China and Sri Lanka are also in the process of negotiating a free trade agreement.

Sri Lankan exports have traditionally been less competitive than those of other countries in the region, such as Bangladesh and Vietnam, due to higher minimum-wage rates. Also, to blame are supply-side and market-access constraints. International competitiveness of Sri Lanka's small- and medium-sized enterprises (SMEs) is a key critical concern and thus, it has sought EU's trade-related technical assistance as part of EU's Regional Multi-Annual Indicative Program for Asia. Table 5 highlights Sri Lanka's top export and import partners.

Starting a Business

As also indicated by the scores in Table 6, Sri Lanka has witnessed a recent spike in reform activity, which reflects in its scores on the Ease of Doing Business Index. Sri Lanka improved its ranking to 100 in 2019 from 111 in 2018 among 190 economies. It aims to improve its ranking to 70 by 2020 [163]. The reforms have mainly been in areas such as starting a business, dealing with construction permits, registering property, getting credit, protecting minority investors, trading across borders, enforcing contracts, and resolving insolvency.

TABLE 6

SCORES INDICATING SRI LANKA'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	72.1	74.6	75.8	82.3	82.3	83.0	85.0	87.5	87.7	87.9	
Registering property	58.0	58.0	58.0	61.4	58.4	58.5	45.9	45.9	45.9	51.9	
Getting credit	56.3	56.3	56.3	62.5	40.0	40.0	40.0	40.0	40.0	40.0	
Paying taxes	40.1	22.4	22.4	42.6	45.6	54.8	53.5	53.7	53.9	59.8	

Source: Doing Business, The World Bank, 2010–19.

Financial Access

National Financial Inclusion Survey 2018–19, Sri Lanka [164] provides some insights on Sri Lanka's financial institutions:

- Sri Lankan men and women have similar levels of account ownership.
- Disparity can be seen in the greater use by women of informal channels for saving, such as community banks (24% of women compared with 14% of men) as well as other unregulated sectors such as microfinance institutions (11% of women compared with 8% of men).
- Utilization of banking services is notably modest with a higher number of dormant accounts as well as poor key financial indicators including 1.2% of insurance penetration, 0.1% usage of mobile banking, 1.6% usage of internet to pay bills, and 2.8% usage of credit cards.

Evidently, Sri Lanka needs to recognize that financial access is not the same as financial inclusion (Table 7 provides scores for Sri Lanka on various parameters of financial access). In order to achieve financial sophistication, it needs to combat the trust deficit, address awareness problems

TABLE 7

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN SRI LANKA.

Access to finance	2014	2015	2016	2017	2018	2018	2018	2018	2018	Trend
No. of ATMs per 100,000 adults	57.50	58.05	55.81	63.10	64.59	64.59	64.59	64.59	64.59	
No. of commercial bank branches per 100,000 adults	9.01	8.95	8.68	8.22	8.33	8.33	8.33	8.33	8.33	
Outstanding deposits with commercial banks (% of GDP)	137.95	132.25	135.78	129.96	127.81	127.81	127.81	127.81	127.81	
Outstanding loans with commercial banks (% of GDP)	152.20	141.64	140.49	139.51	135.76	135.76	135.76	135.76	135.76	

Source: IMF, 2007–15.

that persist among common retail users; and streamline the regulations relating to loan limits, collaterals, etc. Only after the reliance on informal financial channels transitions to a demand for formal financial products can the government move ahead with digital financial products. Financial technology cannot be the sole panacea to financial inclusion problems, especially in rural Sri Lanka, where financial literacy rate is much below the national average of 35%, as per the Institute of Policy Studies of Sri Lanka in 2016 [165].

Underlying Concerns

A major concern for Sri Lanka's growth stems from its performance on the pillars of labor and productivity, and innovation (see Table 8).

Labor and Productivity

TABLE 8

SRI LANKA'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	0.96	0.97	0.97	1.00	1.02	1.06	1.05	1.05	1.05	1.04	1.01	
Labor productivity (based on hours worked)	0.87	0.92	0.97	1.00	1.06	1.16	1.26	1.31	1.35	1.39	1.39	
Labor productivity (based on number of employments)	0.86	0.90	0.94	1.00	1.13	1.27	1.28	1.35	1.39	1.43	1.42	
Capital productivity	1.01	1.00	0.98	1.00	1.01	1.03	0.99	0.96	0.95	0.93	0.91	

Source: APO Productivity Database 2019.

As Sri Lanka moves towards a more urban, manufacturing-based economy, its labor productivity growth has been modest at best as per the data in Table 8. A reason often cited for the low productivity growth is deteriorating labor relations. The total number of workers involved in strikes increased by 38.5% to 20,652 in 2016; while total number of man days lost due to strikes increased by 21% to 85,637 days in the plantation sector and by 61% to 18,690 days in other sectors [166]. Moreover, Sri Lanka faces a declining incremental return on its capital inputs, which is a common phenomenon when a country transitions to an upper-middle-income status. Further, productivity has to be through fostering competition and export orientation [167].

Industry, Innovation, and R&D

Innovation, R&D, and technology play a crucial role in ensuring competitive advantage for a nation. R&D, for instance, is not limited to being a measure of innovation; it also helps assimilate knowledge and gain competitive advantage. A point of underlying weakness for Sri Lanka also stems from an underinvestment in innovation and R&D. Sri Lanka's R&D expenditure is 0.11% of its total GDP. It ranks 110 among 119 countries based on the R&D expenditure as a percentage of GDP.

TABLE 9

DATA INDICATING SRI LANKA'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2008	2010	2013	2015	Trends
High-technology exports as % of manufactured exports	1.88	1.13	1.04	0.89	
Research and development expenditure as % of GDP	0.11	0.14	0.10	0.11	
High-technology exports (in current USD billion)	0.10	0.06	0.07	0.06	
Patent applications of residents	201	225	328	218	
Direct resident trademark applications	2,895	3,942	5,481	5,983	

Source: World Development Index, 2008–17.

For countries to achieve higher relative productivity growth, their optimum R&D investments should be higher. The Sri Lankan situation of R&D seems to be at an incredibly low level (see Table 9). If it is to emulate the Singapore model of becoming a premier global hub port and international maritime center, it will have to invest in maritime ancillary services and maritime R&D. A 'maritime cluster fund' to support manpower and business development efforts, and to drive productivity improvements would be a good initial step.

Recommendations

The following steps can be taken to address prevailing weaknesses and underlying threats to Sri Lanka that would hinder its growth:

- **Increase manufacturing exports:** This can be achieved through greater fiscal consolidation and currency stabilization. Diversifying to high-tech exports is also linked to investments in machinery, technology, and skilled labor.

- **Develop alternative financing institutions:** Specialized microfinance institutions (MFIs), low-capital local banks, postal savings banks, and financial cooperatives provide people alternatives to get access to finance.

- **Liberalize service sector and harmonize logistics:** This can be done by scaling back the role of SOEs in the service sector. Logistics needs to be harmonized to have greater synergy between a city and a port development. A recommendation would be to invite third-party logistics firms.

- **Improve access to finance:** Mobilizing private-sector capital flow, either directly from private equity financing or through PPPs, would be a way of improving penetration rate of financial services.

- **Encourage private sector to invest in R&D:** Funding of research must be shared by private players as well. Increase in R&D investment as a percentage share of GDP cannot happen at a rapid pace if the private sector does not pull its weight. Medium and large enterprises must be encouraged to spend a portion of their turnover on R&D.

- **Create policy-level thrust for innovation:** Policy focus must shift towards fostering an innovative and knowledge-based entrepreneurship and support ecosystem. Startups with more novel ideas and technologies must be stimulated with better access to finance.

- **Move towards a knowledge-based economy:** Sri Lanka needs to increase the share of science and technology workers. The proportion of such workers remains low because the private sector is restricted from participating in the provisioning of tertiary education. The government could look into policies and procedures to mitigate the adverse effects of the restriction.

- **Increase role of women in labor force:** The largest possible source of additional labor to counter the slow growth of the labor force would be increasing its female participation. One way is to create policies that encourage employers to hire workers on a part-time and flexible basis. Another way is to promote nontraditional roles for women, which can help break barriers in gendered economic spheres.

Sri Lanka's Competitiveness

Certain general sets of policy reforms come to the fore for the objective of accelerated development in Sri Lanka, keeping in view its current competitive strengths and opportunities.

Significant macroeconomic reform is needed. There is a strong case for renewing the emphasis on trade and commercial policy liberalization.

Sri Lanka can achieve macroeconomic and trade reform without compromising its historic strengths in education and health.

Reforms will be more effective if they are accompanied by greater investments in infrastructure, combined with a regulatory environment that encourages public and private investment and ensures that the increased investment addresses both efficiency and equity objectives.

Conclusion

Sri Lanka needs to be realistic and consistent with identifying and working on its competitive advantages. Industries such as automobiles and electronics have paved the way for economic success for Japan and the ROK. However, these may not provide similar results for Sri Lanka since it does not have the same competitive advantage as those East Asian economies [168]. Sri Lanka has competitive advantages unique to itself, especially given its location in the Indian ocean. Further developments in logistics, labor, and innovation would considerably enhance Sri Lanka's competitiveness.

THAILAND

Thailand has made extensive efforts in trying to achieve economic growth and social progress. Such efforts have been supported by the policy outlook that seeks to enable sustained growth. From being a predominantly agricultural country, Thailand's economy has made a massive shift towards an industrialized, manufacturing state. In fact, employment in the agriculture sector dropped from 77% to 32% between 1970 and 2017 [1]. Thailand has steadily made an impact via initiatives that have fostered social development through efficient healthcare and pension systems as well.

Table 1 offers an overview of Thailand and highlights significant trends on a historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN THAILAND.

Overview				
Population (2019)	69,625,582			
Employment–population ratio (2018)	66.5%			
Labor force participation rate (2018)	67%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	189,318	341,105	401,399	504,882
GDP per capita, current USD	2,894	5,076	5,842	7,272
Real GDP growth, y-on-y, %	4.19	7.51	3.02	4.1
Current account balance, % of GDP	–4.04	3.37	8.00	6.96

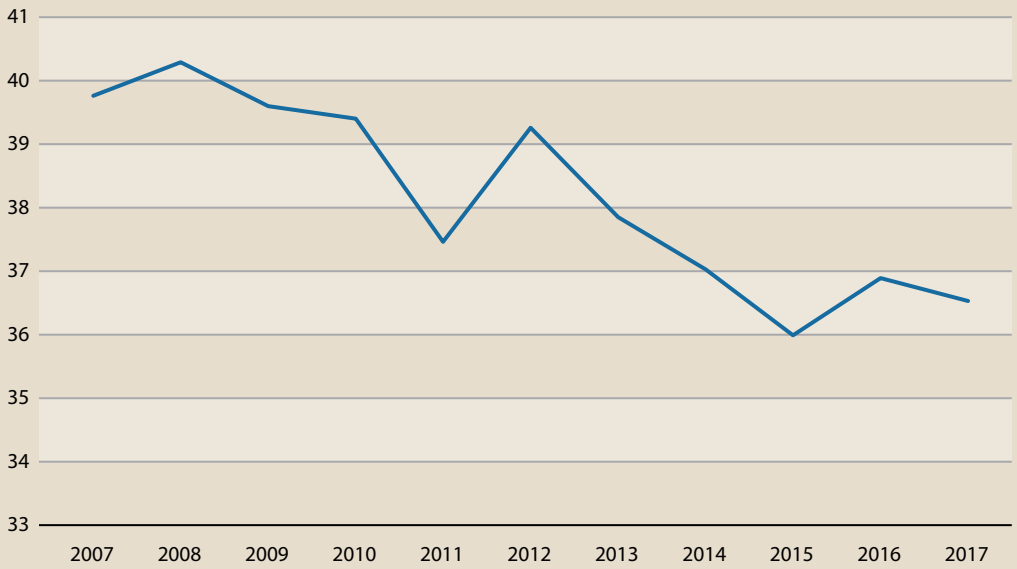
Sources: ILO and WDI databases; UNCTAD STAT (2018).

Thailand's economy has taken great leaps towards economic and social development. This is reflected in the steady growth it has exhibited over the years. The country's policy outlook seeks to establish Thailand as one of the higher-income nations in the world. Therefore, initiatives highlight ambitious objectives across sectors, both social and economic, to be able to compete effectively at a global level.

Although Thailand's socioeconomic developments have been unable to eradicate inequalities in the country, it has made tremendous leaps in reducing the inequalities over the past decades, aiming to become one of the higher-income countries. However, as with most states, it has failed to erode disparities in the society. The Global Wealth Report by Credit Suisse [169] scored Thailand at 90.2 on the Gini Index. The higher the Gini coefficient, the greater the inequality, as top-tier income groups receive the majority of the total income of the population. Thailand became the country with the widest income inequalities among ASEAN countries and one of the four worst performers on a world chart after Ukraine (95.5); Kazakhstan (95.2); and Egypt (90.9). Thus, 91.7% of adults belong to the under USD10,000 group; 7.5% belong to the group with income between USD10,000

FIGURE 1

SHOWCASING THAILAND'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2007–17.



Source: UNU-WIDER.

and USD100,00; 0.7% belong to the group having income between USD100,000 and USD1 million; and only 0.1% belong to the group having income over USD1 million. Thailand has also undertaken various measures to reduce inequalities. It has primarily reduced its poverty rates over the past decades and provided healthcare to the population.

Table 2 offers an insight into Thailand's performance on various pillars to assess the prevailing level of its competitiveness.

TABLE 2

SCORES INDICATING PAKISTAN'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**67.43**
Infrastructure	0.28
International shipments	0.94
Logistics competence	0.62
Tracking and tracing	0.59
Tracking timeliness	0.77
2. Labor and productivity	**69.04**
Per worker labor productivity	–0.37

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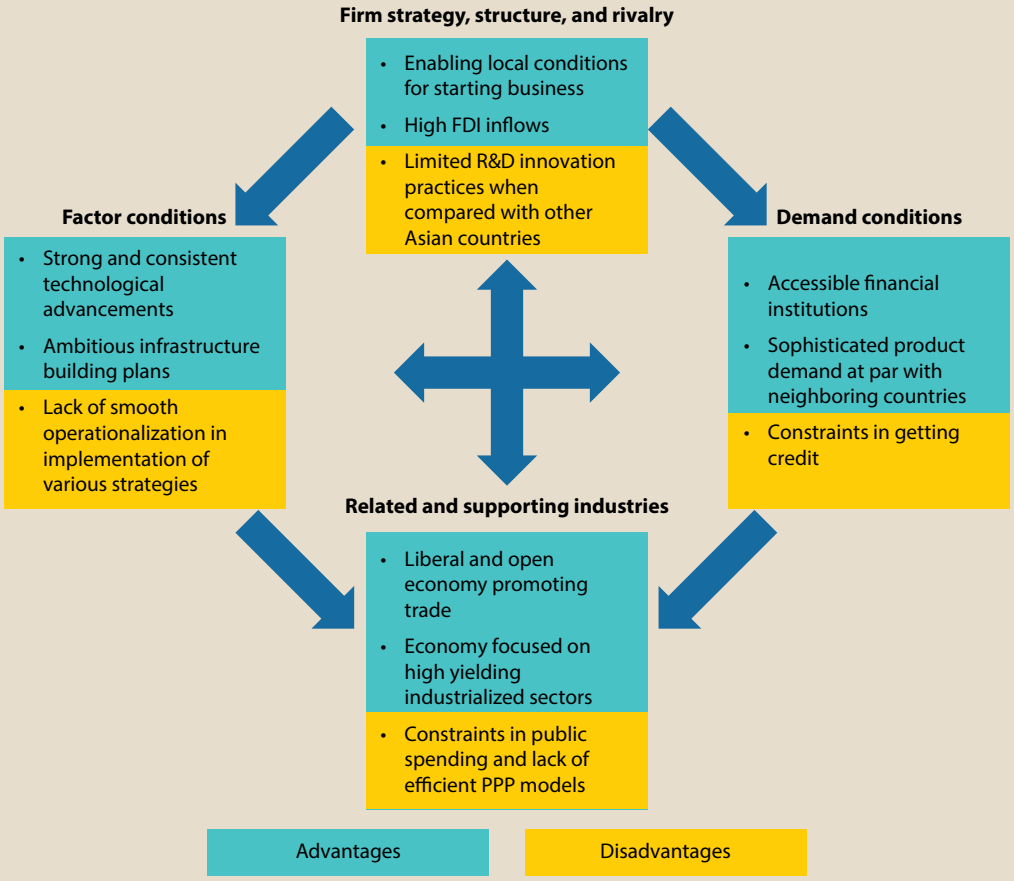
Pillar	Score
Per worker labor productivity growth	0.60
Per hour labor productivity	–0.39
Per hour labor productivity growth	2.01
TFP growth	0.41
3. Financial access	**55.61**
No. of ATMs per 100,000 adults	1.64
No. of commercial bank branches per 100,000 adults	–0.38
Account (% of those aged 15+)	0.50
Borrowed money in the past year (% of those aged 15+)	–0.44
Outstanding deposits with commercial banks (% of GDP)	–0.28
Outstanding loans with commercial banks (% of GDP)	–0.21
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	0.60
4. Trade	**45.59**
No. of tariff agreements	0.35
Duty-free imports (USD thousand) between 2014–18	0.01
Maximum rate (%) tariffs 2014–18	–0.52
Duty-free tariff lines share (%) 2014–18	0.07
HH Market Concentration index	–0.50
Index of export market penetration	0.62
5. Starting a business	**84.19**
Starting a business	0.95
Registering property	0.25
Getting credit	0.45
Paying taxes	0.41
6. Industry, innovation, and R&D	**21.75**
High-technology exports as % of manufactured exports	0.13
R&D expenditure as % of GDP	–0.03
High-technology exports (current USD)	–0.09
Patent applications of residents	–0.39
Direct resident trademark applications	–0.43
Total	**57.27**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

FIGURE 2

KEY OBSERVATIONS ON THAILAND'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Thailand has vastly improved upon its factor conditions with investments in infrastructure, ICT. It still needs to address critical challenges in terms of R&D and innovation practices, tapping into it is potential for trade and exports in the most optimal manner. The structural shift in Thailand's economy from agriculture to manufacturing has demonstrated great success in the state. The following section discusses the diamond in detail.

Infrastructure

Over the past decades, Thailand has made investments to improve its infrastructural capacity, as reflected by the scores in Table 3. State-owned enterprises financed infrastructure development heavily in the 1990s and 2000s. Later on, private enterprises also invested in infrastructure [170]. There have been deliberate measures to improve both physical infrastructure and ICT effectively. Infrastructure and logistical competencies heavily influence trade, whereas ICT development is driven by R&D and innovation. Both these areas underpin the need for more significant effort in

TABLE 3

SCORES INDICATING THAILAND'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	3.16	3.16	3.08	3.40	3.12	3.14	
International shipments	3.24	3.27	3.21	3.30	3.37	3.46	
Logistics competence	3.31	3.16	2.98	3.29	3.14	3.41	
Tracking and tracing	3.25	3.41	3.18	3.45	3.20	3.47	
Timeliness	3.91	3.73	3.63	3.96	3.56	3.81	

Source: Logistics Performance Index.

improving the state of infrastructure to drive international trade and innovation in the country, both of which play a crucial role in advancing the competitiveness of the country. Thailand has prioritized infrastructure development immensely with a myriad of plans and projects. However, there is a need to ensure timely implementation for an efficient and smooth process.

Labor and Productivity

TABLE 4

THAILAND'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2007–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	1.02	0.99	0.96	1.00	0.98	1.02	1.03	0.99	1.01	1.02	1.04	
Labor productivity (based on hours worked)	0.97	0.96	0.94	1.00	0.99	1.08	1.13	1.18	1.27	1.31	1.45	
Labor productivity (based on number of employments)	0.96	0.96	0.94	1.00	0.99	1.06	1.09	1.13	1.18	1.23	1.29	
Capital productivity	1.01	0.99	0.95	1.00	0.97	1.00	0.99	0.97	0.98	0.99	1.00	

Source: APO Productivity Database 2019.
Unit: Index (2010=1.0).

Productivity resurgence is significantly seen in Thailand, though TFP growth has stagnated (see Table 4). Although employment declined in the agriculture sector, the growth of output and employment was well balanced in the manufacturing sector. Even in the short term, the country delivers a positive fiscal outlook. Banking on long-term productivity gains will assure optimal results in improving output and standard of living alike. As with several other Asian countries, Thailand's ageing population is another threat to sustainable growth targets. A 2018 OECD report [171] states that Thailand's population is ageing at a higher rate than other Asian economies. It

affects the competitive advantage in labor-intensive manufacturing that the country has retained over the years. However, labor reallocation from low-productivity agricultural sector to manufacturing sector that provides a much higher return, accompanied by structural changes, has proved to be somewhat profitable.

Financial Access

TABLE 5

DATA INDICATING THE REACH OF FINANCIAL INSTITUTIONS IN THAILAND.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	65.35	73.36	81.89	87.31	94.79	102.35	110.10	112.54	112.88	117.04	115.25	
No. of commercial bank branches per 100,000 adults	10.31	10.80	11.00	11.34	11.68	12.09	12.52	12.53	12.35	11.86	11.70	
Outstanding deposits with commercial banks (% of GDP)	64.37	64.31	60.49	61.94	71.38	74.05	75.43	76.18	74.85	73.44	73.30	
Outstanding loans with commercial banks (% of GDP)	63.18	61.43	59.79	65.36	68.12	72.36	73.29	74.37	72.54	71.24	71.75	

Source: IMF, 2008–18.

Financial access has improved to a great extent in Thailand (see Table 5). Despite various vulnerabilities in terms of rising household debt, nonperforming loans and MSMEs, Thailand does not showcase overtly negative long-term results. However, the government must revisit its outlook and devise a strategy that accelerates public investing, incentivizes MSMEs, and ensures strong public–private partnerships successfully. Increased and monitored private contribution acts as a catalyst in advancing the country, while also relieving stress on public spending by the state. Furthermore, by developing an efficient finance infrastructure, the tax system can accelerate revenue gains. Improved fiscal measures would help strengthen Thailand's economy and its position in the world market.

Starting a Business

The overall business environment in Thailand appears to be lucrative to new businesses, as indicated by the scores in Table 6. The shift from an agricultural economy towards an industrialized one has seen an onset of new businesses and budding entrepreneurs.

Procedures for starting a business or registering property are not overly complicated or time-consuming. Getting credit remains an area of concern. However, Thailand ranks reasonably well in the Ease of Doing Business Index. This too positively impacts the competitiveness of Thailand, particularly across the Asian–Pacific region.

TABLE 6

SCORES INDICATING THAILAND'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	77.7	78.9	80.9	82.7	82.7	82.7	82.7	84.7	92.0	92.3	
Registering property	80.6	74.5	70.5	70.5	70.9	70.9	67.4	67.6	69.3	69.5	
Getting credit	62.5	62.5	62.5	62.5	45.0	45.0	45.0	50.0	70.0	70.0	
Paying taxes	74.4	74.4	74.3	74.2	77.7	78.9	69.6	68.7	76.7	77.7	

Source: Doing Business, The World Bank, 2010–19.

Underlying Concerns

Two areas of primary concern impeding Thailand's competitiveness stem from its trade outlook and innovation and R&D in which the country can perform exceptionally well with some considerations.

Trade

TABLE 7

DATA INDICATING THAILAND'S TRADING OUTLOOK.

Trade	2008	2009	2010	2013	2014	2015	Trend
No. of tariff agreements	2	2	2	1	11	14	
Duty-free imports (in USD billion)	0.077	0.053	0.071	0.105	0.163	0.155	
Maximum rate (%) tariffs	353.96	345.01	337.32	307.23	310.3	321.16	
Duty-free tariff lines share (%)	15.81	15.71	16.18	14.52	38.6	47.25	
HH Market concentration index	0.6	0.6	0.6	0.06	0.06	0.06	
Index of export market penetration	18.36	17.72	18.68	18.56	18.48	18.32	

Source: WITS, 2008–15.

Thailand is seen as an exports-led economy, as also reflected by the scores in Table 7. Trade and foreign investment have contributed significantly towards boosting the economy. Foreign trade accounted for 123% of the GDP in 2017, which was double the OECD average, thus highlighting its significance in the global value chain (GVC). Even with increasing exports, industrial production growth has remained modest, whereas domestic demand remains sluggish with low levels of private investments [172]. A report from the Bank of Thailand asserted that a lack of structural reforms could slow export growth in dollar value terms to 2–3% per annum, post 2018. This signifies a reduction from an average of 10% in the past decade [166, 167], though exports of lucrative products such as electronics provide favorable results to the country's economy.

TABLE 8

THAILAND'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %, 2014–18
PR China	11.95
USA	11.14
Japan	9.88
Vietnam	5.13
Hong Kong	4.96

Top 5 import partners	Partner share in %, 2014–18
PR China	20.05
Japan	14.15
USA	6.10
Malaysia	5.36
UAE	4.29

Source: WITS, 2018.

Since trade encompasses a significant aspect of the Thai economy, it is also exposed to various vulnerabilities due to several geopolitical factors. A looming threat of protectionism in trade across countries hinders foreign trade to a large extent, mainly due to the high dependence on exports in the state. Additionally, a financial crisis, coupled with political tension and the possibility of a natural disaster, can cripple the economy. The government needs to be cautious with its approach towards trade to avoid any setbacks. Table 8 highlights Thailand's leading export and import partners.

Industry, Innovation, and R&D

Expansion of IT capital is also happening significantly in Thailand [1]. Nevertheless, investments and growth of R&D practices remain dismal compared with other countries. Low innovation often

TABLE 9

DATA INDICATING THAILAND'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2007	2008	2009	2011	2013	2014	2015	2016	2017	Trends
High-technology exports as % of manufactured exports	27.81	26.29	27.46	22.55	21.98	22.49	23.77	24.06	24.66	
Research and development expenditure as % of GDP	0.20	0.20	0.23	0.36	0.44	0.48	0.62	0.78	1.00	
High-technology exports (in current USD billion)	32.49	33.51	30.09	36.17	37.09	38.52	38.88	39.08	43.99	
Patent applications of residents	945	902	1,025	927	1,572	1,006	1,029	1,098	979	
Direct resident trademark applications	20,140	21,950	24,734	23,457	27,881	27,517	33,347	33,252	26,511	

Source: World Development Index, 2007–17.

translates into low productivity growth. This amounts to lack of spillover effects, technology transfer, and potential to achieve significant monetary gains. Thailand does recognize the importance of innovation and R&D, as seen in its focus on driving ICT and manufacturing in the country. It needs to increase the intensity of its R&D and innovation practices and reap the resulting benefits. In a world of rapidly changing economy and innovation complexities, advancing R&D practices is very crucial for a nation to compete in the world economy. Table 9 provides scores for Thailand on various parameters of technology, innovation, and R&D.

Recommendations

The following steps can be taken to address prevailing weaknesses and underlying threats to Thailand that would hinder its growth:

- Make implementations time-bound: Plans and measures undertaken by the government must establish systemic implementation with a strict timeline to increase efficiency and avoid hindrance from possible vulnerabilities in the economy and geopolitical area.

- Augment investments in R&D: R&D investment must be strengthened and focused on improving cluster development across sectors.

- Foster innovation: Thailand falls behind various other countries of its caliber in fostering innovation. The government must prioritize measures that facilitate innovation across sectors.

- Promote government–academia collaboration: Facilitating R&D collaboration between government and academic institutions goes a long way in encouraging innovative practices that ultimately optimize production processes. It thereby improves domestic competition and quality of life.

- Use digitalization to solve socioeconomic problems: While promoting digitalization across the country, special attention must be paid to prevailing socioeconomic issues that hinder a smooth transition and may end up remaining in the periphery.

- Provision for early-stage financing for SMEs: Financing and incentivizing SMEs at an early stage and providing them with ample support is crucial for a cohesive growth trajectory of the country.

- Develop infrastructure across sectors: To boost trade and attain smooth trading procedures, infrastructure must be developed further throughout all sectors to avoid disparities.

- Step up startup funding: Financing at an early stage of startups such as angel investment and venture capital funds need to be accelerated.

- Finance ideas, not just companies: Funding needs to be directed towards firms that generate novel ideas. Investments considered to be ‘safe’ often end up with little returns or even become stagnant. Moreover, low-risk investments are not always scalable.

- Encourage private sector to invest in R&D: Funding of research must be shared by private players as well. Increase in R&D investment as a percentage share of GDP cannot happen

at a rapid pace if the private sector does not pull its weight. Medium and large enterprises must be encouraged to spend a portion of their turnover on R&D.

- Lay thrust on a knowledge-based economy: Policy focus must shift towards fostering an innovative and knowledge-based entrepreneurship and support ecosystem. Startups with more novel ideas and technologies must be stimulated with better access to finances.

Thailand's Competitiveness

Thailand's infrastructure has developed to a large extent over the past decades. It has shifted the economy to a high-yielding manufacturing state from an agricultural state. This shift has been brought about by swift governance measures that have effectively improved the living standards to a large extent. By addressing challenges in trade and innovation, Thailand can achieve a competitive advantage and prevent its growth levels from declining or becoming stagnant, thereby attaining a long-term competitive advantage.

Conclusion

Propelled by deliberate, extensive efforts that provide economic gains and aim to address social inequalities, Thailand is poised to ensure sustained growth. The state has already withstood several issues including economic crisis, natural disasters, and geopolitical challenges. The consistency to achieve economic gains that would put Thailand in the higher-income-economy category would further build resilience, as long as inclusivity is also taken into consideration.

TURKEY

Turkey's economic story has been incredible since the course of its foundation in 1923. Largely a free-market economy driven by its industry, and increasingly by its service sectors [176], Turkey has, however, of late shown signs of underlying imbalances, especially considering the 2018 currency-and-debt crisis. Over time, Turkey has been running huge current and fiscal deficits. The aftereffects of this economic overheating, coupled with a declining Lira due to poor investor sentiment (in the backdrop of political instability), precipitated an alarming stagflation-like situation in 2018. Thus, poor fiscal management bodes bad news for Turkey's competitive place in the world, despite having strong competitive endowments. A level-headed and credible policy response is the need of the hour.

Table 1 offers an overview of Turkey and highlights significant trends on a historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN TURKEY.

Overview				
Population (2019)	83,429,615			
Employment–population ratio (2018)	45.68%			
Labor force participation rate (2018)	58.15%			
Economic trends	**2005**	**2010**	**2015**	**2018**
GDP, current	501,423	771,877	859,794	766,757
GDP per capita, current USD	7,384	10,672	10,949	9,312
Real GDP growth, y-on-y, %	9.01	8.49	6.09	2.60
Current account balance, % of GDP	–4.18	–5.78	–3.74	–3.55

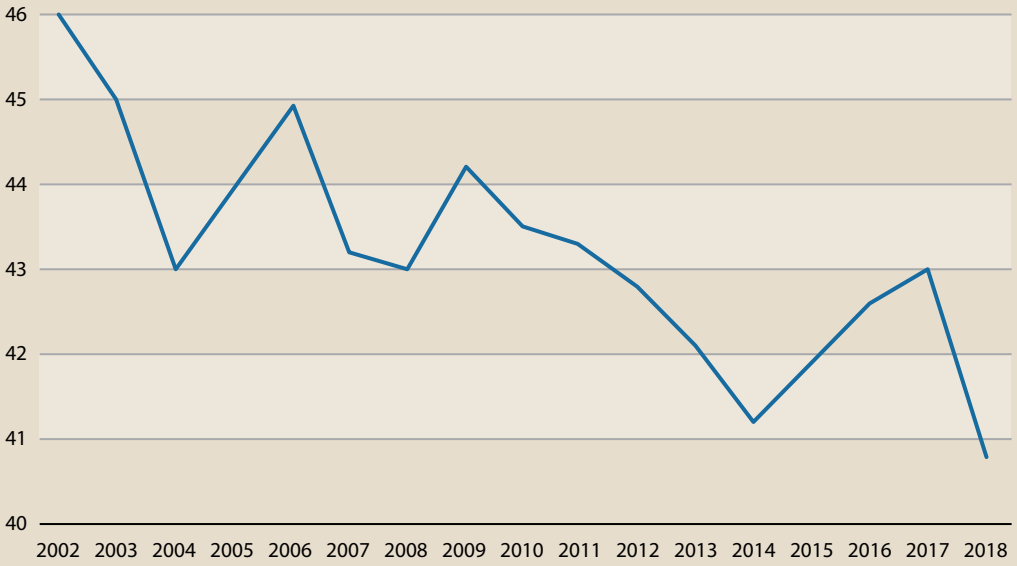
Sources: ILO and WDI databases; UNCTAD STAT (2018).

The declining real GDP growth rate and per capita GDP in Table 1, act as proxies for the underlying structural issues with Turkey's economy. To measure the extent of percolation of the sluggish real GDP growth, we look at Turkey's Gini coefficient as a measure of income inequality taking 'households' as the unit of analysis.

Despite a decline in Gini coefficient in the early years of the millennium, the gains have stalled resembling changing macroeconomic developments. Another reason for Turkey's inequality is, partly, its lopsided tax system which gets about two-thirds of its revenue from indirect taxes, including an 18% sales tax on most goods and services, rather than direct levies such as income tax, which can be such designed that wealthier people pay higher rates. The sales-tax system itself seems distorted, as the rate for clothing and caviar is 8% and zero for some precious stones [173].

FIGURE 1

SHOWCASING TURKEY'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 2007–17.



Source: UNU-WIDER.

Table 2 offers an insight into Turkey's performance on various pillars to assess the prevailing level of its competitiveness.

TABLE 2

SCORES INDICATING TURKEY'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**53.38**
Infrastructure	0.39
International shipments	0.07
Logistics competence	0.01
Tracking and tracing	0.18
Tracking timeliness	0.42
2. Labor and productivity	**60.86**
Per worker labor productivity	0.62
Per worker labor productivity growth	0.18
Per hour labor productivity	0.88
Per hour labor productivity growth	–0.12
TFP growth	–0.33

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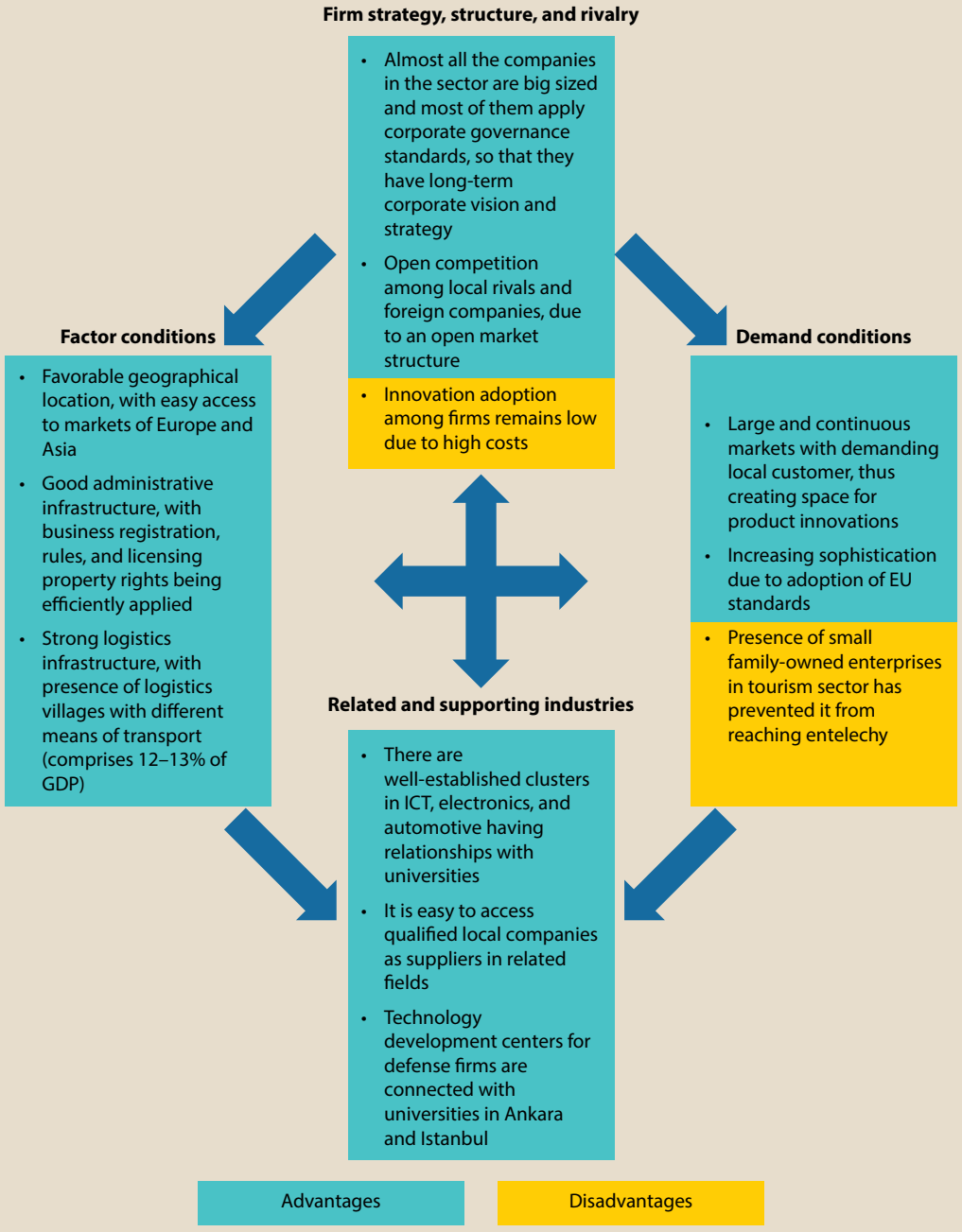
Pillar	Score
3. Financial access	**53.52**
No. of ATMs per 100,000 adults	0.61
No. of commercial bank branches per 100,000 adults	–0.03
Account (% of those aged 15+)	0.03
Borrowed money in the past year (% of those aged 15+)	0.61
Outstanding deposits with commercial banks (% of GDP)	–0.51
Outstanding loans with commercial banks (% of GDP)	–0.43
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	0.79
4. Trade	**71.34**
No. of tariff agreements	1.95
Duty-free imports (USD thousand) between 2014–18	–0.13
Maximum rate (%) tariffs 2014–18	–0.62
Duty-free tariff lines share (%) 2014–18	0.80
HH Market Concentration index	–0.69
Index of export market penetration	1.61
5. Starting a business	**97.66**
Starting a business	0.67
Registering property	1.12
Getting credit	0.75
Paying taxes	1.05
6. Industry, innovation, and R&D	**17.77**
High-technology exports as % of manufactured exports	–0.91
R&D expenditure as % of GDP	–0.03
High-technology exports (current USD)	–0.72
Patent applications of residents	–0.30
Direct resident trademark applications	0.63
Total	**59.08**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

FIGURE 2

KEY OBSERVATIONS ON TURKEY'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Turkey being located at the gateway connecting Europe to Asia, with its developing country status and a young and educated consumer base, is increasingly coming in the global limelight. The Porter's National Advantage Framework analyses show that Turkey's competitive advantage lies in electronics, automotive industries, and potentially in the tourism sector. The robust factor conditions, along with a sophisticated and highly demanding local consumer set, contribute to the same notion. An economy centered on industrial cluster development, along with the presence of

an open market structure puts a cherry on the cake. The only point of caution remains the low innovation rate, which is an effect of the high costs of innovation. The profile explores a few ways to mitigate that too.

Infrastructure

TABLE 3

SCORES INDICATING TURKEY'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	2.94	3.08	3.62	3.53	3.49	3.21	
International shipments	3.07	3.15	3.38	3.18	3.41	3.06	
Logistics competence	3.29	3.23	3.52	3.64	3.31	3.05	
Tracking and tracing	3.27	3.09	3.54	3.77	3.39	3.23	
Timeliness	3.38	3.94	3.87	3.68	3.75	3.63	

Source: Logistics Performance Index.

Turkey's geostrategic location, ongoing accession negotiations with European Union, participation in routes within the corridors of EU transport policy, and in-container flow between Europe and Asia bode well for the volume and value of Turkey's logistics activities. In view of recent dipping trends in Logistics Performance Index (LPI) parameters (see Table 3), Turkey is expediting implementation of rail freight corridors, coastal freight corridors, and international highway corridors to become a leading logistics hub. It is also building logistics centers and villages that will serve to lower the costs of transportation by offering different modes of transportation within these centers/villages [174]. These measures will support the movement of a greater volume of traffic between countries neighboring Turkey and add to Turkey's productivity gains.

Labor and Productivity

TABLE 4

TURKEY'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2008–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Labor productivity (based on hours worked)	1.03	1.02	0.98	1.00	1.05	1.07	1.15	1.19	1.23	1.24	1.28	
Labor productivity (based on number of employments)	1.05	1.03	0.98	1.00	1.04	1.06	1.12	1.16	1.20	1.21	1.25	

Source: APO Productivity Database 2019.
Unit: Index (2010=1.0).

Apart from a handful of industries such as motor vehicles, basic metals and textiles, productivity in manufacturing has more recently stagnated for Turkey (see Table 4). An economic memorandum by the World Bank [175] states that flat productivity gains in Turkey are more due to low-productivity business units that employ a large share of the low-skilled majority of the working-age population but survive mostly thanks to the incomplete enforcement of rules and regulations. It also states that participation of more productive Turkish companies to compete in the current world market is required, which can be enabled through structural reforms. These include but are not limited to further economic integration of Turkey's firms with international business and global value chains. Thus, expediting Turkey's accession to EU becomes important here. Simultaneously, efforts can be made towards improving R&D spends and targeted public incentives for innovative and young firms.

In services too, there is scope to expand more sophisticated industries like information and communications technologies, which can raise productivity in manufacturing and other sectors as well.

Starting a Business

TABLE 5

SCORES INDICATING TURKEY'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	81.8	81.4	81.4	81.6	81.0	79.1	79.2	81.0	81.9	88.2	
Registering property	75.6	75.7	75.0	75.0	73.4	76.4	78.5	78.5	81.5	79.9	
Getting credit	56.3	56.3	56.3	56.3	40.0	45.0	45.0	45.0	55.0	75.0	
Paying taxes	79.1	79.0	80.6	80.6	80.7	80.5	72.6	73.0	73.1	74.8	

Source: Doing Business, The World Bank, 2010–19.

Among all APO members, Turkey is one of the best places to start a business, as also reflected by the scores in Table 5. International trade links, proximity to both European and Asian markets, probusiness policies, and a sapid infrastructure create a conducive environment for entrepreneurs. The World Bank's Ease of Doing Business Index 2019 notes that Turkey has made stellar progress in reforms relating to company establishment, foreign trade processes, credit supply, tax payment, insolvency, and bankruptcy code. This kind of enabling environment for entrepreneurs will strengthen Turkey's domestic economy and also provide a competitive advantage to the country internationally.

Financial Access

Barring the variable of 'number of commercial bank branches per 100,000 adults,' Turkey's performance on financial access has been somewhat stable (see Table 6). Even the declining trend in bank branches can be attributed to financial sophistication, where increasingly more and more services are going online and thus, banks are striving to save real estate costs. The rising trend in 'number of ATMs per 100,000 adults' corroborates that finding. Access to finance is also essential for a successful development and growth of the private sector. In the absence of finance, enterprises

TABLE 6

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN TURKEY.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	43.03	46.15	52.21	58.76	63.15	71.51	76.27	79.11	77.80	77.83	78.29	
No. of commercial bank branches per 100,000 adults	17.16	17.34	17.88	18.23	18.60	19.63	19.59	19.14	18.07	17.32	16.82	
Outstanding deposits with commercial banks (% of GDP)	42.45	47.30	48.93	45.12	44.02	45.99	45.39	46.67	52.59	51.69	51.32	
Outstanding loans with commercial banks (% of GDP)	33.99	35.56	41.29	44.56	45.63	51.93	54.73	57.26	59.73	60.18	56.43	

Source: IMF, 2013–19.

cannot develop, innovate, and compete with other firms in countries that offer more favorable access to finance. Turkish Economic Review in 2017 stated that 97% of firms in Turkey use internal funds for working capital rather than bank credit. While this kind of firm-level fiscal prudence is appreciative, it exactly does not bode well for the dividends of investors. A freefalling lira is further expected to accentuate this fact as the USA bank Goldman Sachs estimated that every 10% drop in the lira impacts banks' capital levels by 50 basis points on an average, thus crippling the banks' ability to lend to the private sector. All these factors point toward an eroding investor sentiment. [177] In Turkey's case, clearly, the problem lies not in the financial architecture but in an eccentric monetary policy.

Trade

Table 7 provides scores for Turkey on various parameters of the trade pillar.

TABLE 7

DATA INDICATING TURKEY'S TRADING OUTLOOK.

Trade	2008	2009	2010	2011	2013	2015	2016	2017	2018	Trend
No. of tariff agreements	16	18	18	20	24	25	25	27	28	
Duty-free imports (in USD billion)	137.20	99.62	132.20	153.62	167.22	135.11	139.25	141.08	127.75	
Maximum rate (%) tariffs	180	180	225	225	225	225	225	225	225	
Duty-free tariff lines share (%)	73.38	75.96	75.86	76.05	77.04	74.92	76.22	69.64	69.92	
HH Market concentration index	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.03	0.03	
Index of export market penetration	19.37	19.4	20.63	21.01	22.75	23.21	24.27	25.28	24.23	

Source: WITS, 2013–18.

As stated by Turkish Economic Review [178], Turkey's performance in terms of the growth rate in exports and imports is quite unstable and asymmetric. For the period of the study (1983–2013), imports were more dominant than exports in Turkey's foreign trade. For instance, for the entire period, Turkey's total exports increased 26.5 times, from USD5.7 billion to USD151.9 billion; while total imports increased 27.2 times, from USD9.2 billion to USD251.7 billion. As a result, Turkey frequently suffers on account of CAD. In the midst of a staggering lira and high inflation rates, it is expected that Turkey's CAD problem will likely run longer due to a 'J-curve effect' in the short term.

TABLE 8

TURKEY'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %
Germany	9.61
UK	6.61
Italy	5.69
Iraq	4.97
USA	4.94

Top 5 import partners	Partner share in %, 2014–18
Russia	9.86
PR China	9.29
Germany	9.15
USA	5.55
Unspecified	4.95

Source: WITS, 2018.

In terms of technology components of foreign trade, Turkey's specialization lies in low- to medium-technology products, which have propped up by the rise of its petrochemical and electronics industries besides the traditional textiles and clothing industry. Hence, a sustainable strategy would be to expand into a fast-growing emerging market economy where the products will face low competition. With the demand from EU remaining subdued in the short- to medium-term, a focused strategy of 'frugal innovation' and exports to emerging market economies could solve Turkey's external balance sheet problem. Table 8 highlights Turkey's leading export and import partners.

Underlying Concern

While Turkey performs well in other areas including trade and starting a business, the area of concern stems from its performance on the pillar of industry, innovation, and R&D.

Industry, Innovation, and R&D

Innovation, R&D, and technology play a crucial role in ensuring competitive advantage for a nation. R&D, for instance, is not limited to being a measure for innovation; it also helps assimilate knowledge and gain competitive advantage. A study by Karahan and Karhan [179] find that almost half of the Turkish firms do not carry out innovation activities and that the industry sector is superior to other sectors in making innovation, as also indicated by the scores in Table 9. In sectoral concept, they observed that both the service sector and the industry sector focused on product innovation. They also established that those industry and service sectors that gave

TABLE 9

DATA INDICATING TURKEY'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trends
High-technology exports as % of manufactured exports	2.17	1.86	2.02	2.20	2.11	2.16	2.29	2.33	2.58	2.51	2.90	
Research and development expenditure as % of GDP	0.69	0.69	0.81	0.80	0.80	0.83	0.82	0.86	0.88	0.94	0.96	
High-technology exports (in current USD billion)	1.89	1.93	1.58	1.95	2.21	2.34	2.65	2.83	2.77	2.70	3.50	
Patent applications of residents	1,810	2,221	2,555	3,180	3,885	4,434	4,392	4,766	5,352	6,230	8,175	
Direct resident trademark applications	58,715	60,598	59,820	7,3142	103,750	97,304	93,342	97,139	95,914	94,574	106,099	

Source: World Development Index, 2011–18.

importance to innovation activities were more effective in product and service production processes too. It was also observed that the industry sector which did innovation activities realized more profits and benefits than service sector. The most important obstacle that the firms faced was the high cost of innovation.

An emerging trend worldwide in reducing R&D costs that Turkish firms can embrace is insourcing the entire scientific workflow to a lab as a service (LaaS) provider. A LaaS can be relied upon to provide not just individual personnel but an extensive results-based solution comprising scientists and technical staff as well as their instrumentation, consumables, and processes to achieve predefined outcomes [180]. This can shift lab costs from a capital expense (Capex) model to an operational expense (Opex) one, while potentially helping to reduce R&D lab budgets as well.

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to Turkey that would hinder its growth:

- **Discard economic populism:** Marred by an insistence on running huge government deficits and low interest rates, Turkey's economy runs a huge risk of implosion. Resultant high inflation rates coupled with Turkey's reliance on foreign energy imports bear bad news for Turkey's competitiveness and its CAD. So, a mix of austerity measures and monetary contraction would be a welcome move.

- **Pursue an aggressive national cluster development agenda:** Turkey's economy has naturally developed around clusters. However, its economic policy has not leveraged cluster development as a tool to create synergies. Even recent EU-financed cluster programs have not yet had a significant impact in Turkey. So, the advice is to support existing clusters and enable the emergence of new clusters in related fields. It is important

to utilize clusters as a central tool for upgrading company sophistication, stimulating growth in SMEs, and driving regional competitiveness.

- **Improve export competitiveness:** In order to benefit from shifts in global demand and better confront growing competition from other low-cost producers, Turkey needs to move up on global value chains. It can do so by attracting more pre-production design and R&D, for example, as well as through more post-production marketing and specialized logistic activities.

- **Move to the next level of competitiveness:** Turkey should work towards the creation of a private-sector-led National Council on Competitiveness to build consensus on an overall economic strategy and track implementation. Public sector's and academia's participation is critical in order to develop an effective national policy and coordinate its implementation.

Turkey's Competitiveness

Turkey does fare well in its overall competitiveness and productivity performance. However, its weakness lies in terms of innovation. Studies assert that Turkey might be stuck in a 'middle income trap,' wherein it would need to focus on efforts that help create 'institutional prerequisites of a high-income country' [181]. Barring R&D and innovation, Turkey performs satisfactorily on all pillars of the Porter's Diamond framework. With sustained efforts in developing the country's innovation and R&D practices, Turkey can fight the middle-income trap and achieve better economic gains.

Conclusion

There are certain underlying issues that need to be addressed by Turkey for it to achieve its utmost potential and make strides in terms of productivity and competitiveness. An intensified focus in building a thriving innovation ecosystem would lead to developmental outcomes for Turkey and ensure better competitive advantage for the nation.

VIETNAM

Vietnam, one of the stars of the emerging markets universe today, was one of the poorest countries in the world when the 20-year war ended in 1975. Growth under the government's subsequent five-year central plans was anemic too. However, a series of economic reforms, started in mid-1980s, steered the country toward a 'socialist-oriented market economy,' so much so that today its economic growth rate rivals even that of PR China. A closer scrutiny would reveal three broad economic reforms: robust trade liberalization; domestic deregulation and lowered cost of doing business; and heavy investment in human and physical capital. However, with the advent of western protectionism, there lie serious doubts about the sustainability of Vietnam's growth story.

Table 1 offers an overview of Vietnam and highlights significant trends on a historical trajectory that has impacted its productivity.

TABLE 1

MAJOR ECONOMIC TRENDS IN VIETNAM.

Overview				
Population (2019)	96462106			
Employment–population ratio (2018)	76.0%			
Labor force participation rate (2018)	77.2%			

Economic trends	2005	2010	2015	2018
GDP, current	57,633	115,932	193,241	244,498
GDP per capita, current USD	687	1,318	2,085	2,559
Real GDP growth, y-on-y, %	7.55	6.42	6.68	6.90
Current account balance, % of GDP	–0.97	–3.69	0.47	2.41

Sources: ILO and WDI databases; UNCTAD STAT (2018).

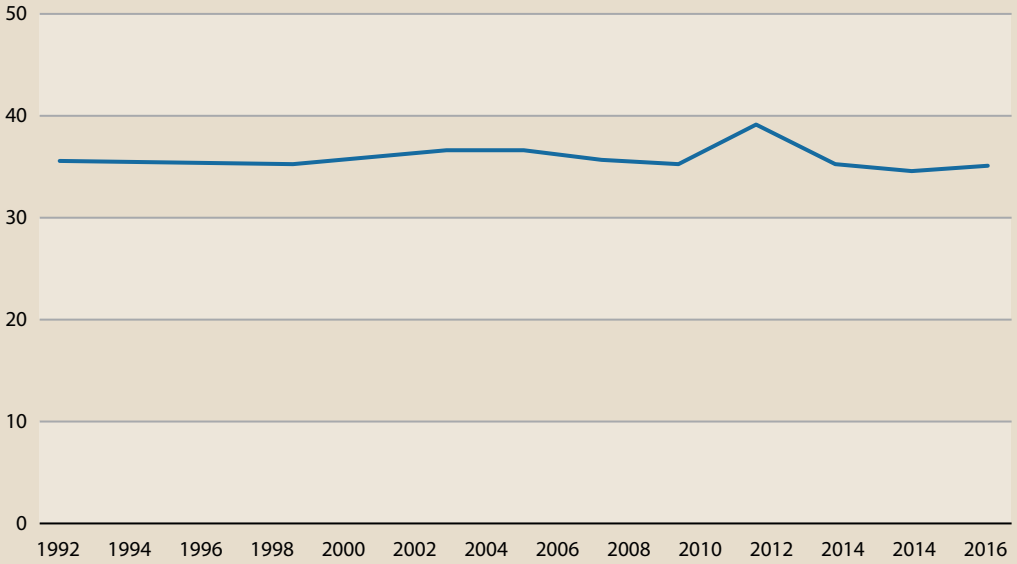
As one can see, economic growth has followed suit. Vietnam's strategy of becoming a manufacturing exports hub, where 99.2% of its GDP [182] is accounted for by exports, has paid off in terms of its real GDP increasing incrementally.

Importantly, the economic growth has been fairly inclusive. According to the World Economic Forum's Inclusive Development Index [182], in 2018, Vietnam was part of a group of economies that had done particularly well in making their growth processes more inclusive and sustainable. Women too fared better. Their employment rate is within 10% of men's, and women-led households are less likely to be poor than those led by men. Even the pattern of Gini Index suggests that growth has been less unequal than Vietnam's other Asian counterparts at the household income level. The Gini coefficients for income, which started at 0.375 in 2002, rose in 2008 and 2010, and then fell back to 0.360 in 2014, which prima facie, appears statistically significant on a narrow scale such as the Gini Index (see Figure 1). A study done by Benjamin, et al. [183] details how

sharp declines in the unequalizing effects of business income, especially remittances, have reduced urban inequality in Vietnam, which has led to this trend in Gini, besides the broad reforms mentioned before.

FIGURE 1

SHOWCASING VIETNAM'S INCOME INEQUALITY THROUGH GINI COEFFICIENT, 1992–2016.



Source: World Bank Development Research Group.

Table 2 offers an insight into Vietnam's performance on various pillars to assess the prevailing level of its competitiveness.

TABLE 2

SCORES INDICATING VIETNAM'S PERFORMANCE AS PER THE DIAMOND MODEL.

Pillar	Score
1. Infrastructure	**59.743**
Infrastructure	0.094
International shipments	0.296
Logistics competence	0.607
Tracking and tracing	0.561
Tracking timeliness	0.505
2. Labor and productivity	**66.106**
Per worker labor productivity	–0.867
Per worker labor productivity growth	1.159
Per hour labor productivity	–0.898

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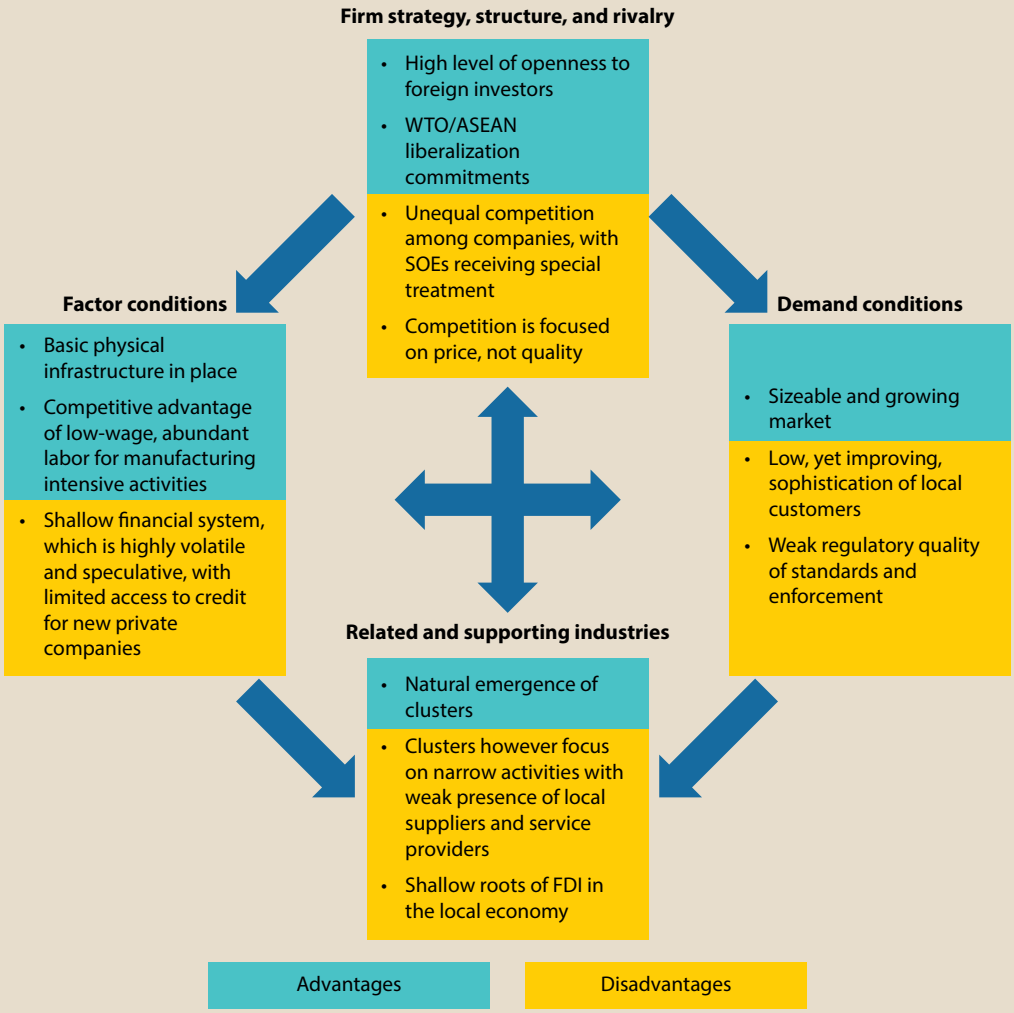
Pillar	Score
Per hour labor productivity growth	1.258
TFP growth	1.239
3. Financial access	**25.702**
No. of ATMs per 100,000 adults	–0.861
No. of commercial bank branches per 100,000 adults	–0.934
Account (% of those aged 15+)	–1.316
Borrowed money in the past year (% of those aged 15+)	–0.310
Outstanding deposits with commercial banks (% of GDP)	0.462
Outstanding loans with commercial banks (% of GDP)	0.616
Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)	–1.118
4. Trade	**36.936**
No. of tariff agreements	0.122
Duty-free imports (USD thousand) between 2014–18	–0.222
Maximum rate (%) tariffs 2014–18	–0.714
Duty-free tariff lines share (%) 2014–18	0.046
HH Market Concentration index	–0.374
Index of export market penetration	0.202
5. Starting a business	**80.157**
Starting a business	0.396
Registering property	0.369
Getting credit	1.059
Paying taxes	–0.204
6. Industry, innovation, and R&D	**29.715**
High-technology exports as % of manufactured exports	1.039
R&D expenditure as % of GDP	–0.457
High-technology exports (current USD)	0.352
Patent applications of residents	–0.402
Direct resident trademark applications	–0.304
Total	**49.727**

Key Observations

Based on the data gathered from Table 2, Figure 2 showcases areas of strengths and weaknesses for the country based on the Diamond model.

FIGURE 2

KEY OBSERVATIONS ON VIETNAM'S SCORES SHOWCASING PRESENT ADVANTAGES AND DISADVANTAGES.



Vietnam has undertaken several measures that enable development in both social and economic spheres. This has perhaps led to its considerable growth in terms of a conducive business environment for multinational enterprises (MNEs) and a rising consumer base with steady purchasing power. However, Vietnam still could do better on its financial access front, besides hashing out a better cluster development policy and a national innovation policy. The following section discusses the four attributes of the diamond in detail.

Infrastructure

Despite Vietnam's status of a regional manufacturing hub, and logistics service accounting for 15–20% of GDP [175], the underdeveloped logistics infrastructure, and a rapidly expanding but currently inadequate transport infrastructure, result in a relative high cost. Vietnam Logistics Business Association [185, 185] states that Vietnam's logistics costs are double those of developed economies and higher than the global average of 14%. More than three-fourths of Vietnam's freight transport are served by its road network but with 40% of it in poor condition, and PR China's

TABLE 3

SCORES INDICATING VIETNAM'S PERFORMANCE ON THE INFRASTRUCTURE PILLAR, 2007–18.

Infrastructure	2007	2010	2012	2014	2016	2018	Trend
Infrastructure	2.50	2.56	2.68	3.11	2.70	3.01	
International shipments	3.00	3.04	3.14	3.22	3.12	3.16	
Logistics competence	2.80	2.89	2.68	3.09	2.88	3.40	
Tracking and tracing	2.90	3.10	3.16	3.19	2.84	3.45	
Timeliness	3.22	3.44	3.64	3.49	3.50	3.67	

Source: Logistics Performance Index.

hegemonic stance in the South China Sea, Vietnam's underutilization of its 3,200 km rail network comes to the fore. With similarly competitive nations like India building rail freight capacities in the form of dedicated freight corridors, it becomes imperative for Vietnam to dilute the restraints around its logistics infrastructure to supplement its manufacturing competitiveness. Otherwise, the country faces risks to smooth operationalizations, which in turn could inadvertently increase productivity. Table 3 provides scores for Vietnam on various parameters of the infrastructure pillar.

Labor and Productivity

TABLE 4

VIETNAM'S PERFORMANCE ON LABOR AND PRODUCTIVITY, 2012–17.

Labor and productivity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Trend
Total factor productivity	1.06	1.01	0.97	1.00	0.99	1.00	1.03	1.07	1.08	1.10	1.14	
Labor productivity (based on hours worked)	0.94	0.92	0.92	1.00	1.02	1.06	1.13	1.25	1.30	1.39	1.50	
Labor productivity (based on number of employments)	0.91	0.94	0.96	1.00	1.03	1.07	1.11	1.17	1.24	1.31	1.39	
Capital productivity	1.13	1.07	1.03	1.00	0.98	0.96	0.95	0.95	0.95	0.95	0.94	

Source: APO Productivity Database 2019.
Unit: Index (2010=1.0).

In 2019, As per Vietnam's Ministry of Planning and Investment [186], Vietnam's labor productivity measured in terms of GDP per labor input, has doubled in the period 2011–18. However, compared with other APO nations, Vietnam's labor productivity is only 7.3% percent of Singapore's, 37% of Thailand's, and 44.8% of Indonesia's (Vietnam's performance on labor and productivity is provided

in Table 4). In a study done by the Japan Policy Research Institute [187], it is noted how Vietnam's own competitive advantage of cheap labor and low costs of raw materials is acting against its long-term interests. As long as the prevailing economic activities are making profits for the Vietnamese private enterprises, they have no incentive to make improvements to strategic planning, management skills, application of science and technology to production and business, and capital efficiency. One challenge to decreasing returns to factor stems from low capital adoption, which is a byproduct of 'scale' issues with Vietnamese private firms. However, this is a naturally occurring factor for any country making a switch from a command economy to a market economy.

Starting a Business

TABLE 5

SCORES INDICATING VIETNAM'S PERFORMANCE ON EASE OF STARTING A BUSINESS.

Starting a business	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Trend
Starting a business	75.9	77.8	78.0	79.2	78.9	79.2	82.7	81.8	82.0	84.8	
Registering property	77.4	78.5	78.5	78.6	78.6	78.6	70.6	70.6	70.6	71.1	
Getting credit	68.8	68.8	68.8	68.8	54.0	65.0	70.0	70.0	75.0	75.0	
Paying taxes	37.3	40.6	37.3	39.6	36.4	36.4	47.0	58.0	61.1	62.9	

Source: Doing Business, The World Bank, 2014–20.

Ease of doing business is vital for all countries but is particularly essential for lower-middle-income countries to enable local productivity and invite investments. With a favorable business-enabling environment, countries can attract greater FDI inflows, which can play a key role in providing economic gains. It is therefore important to streamline procedures to start new businesses. With a rank of 70 on the Ease of Doing Business rankings 2020, Vietnam has checked many boxes for foreign investors to base their operations out of Vietnam, as can be seen from the scores given in Table 5. These include stable political and business environment with high incentives for foreign investors; youthful, digitally savvy workforce with a developing culture of entrepreneurship; competitive production costs; and a fast-growing economy with 16 major free trade agreements signed with major developed markets. The future looks bright for Vietnam on this front.

Trade

Vietnam is one of the most open economies in the world with a trade-to-GDP ratio of 187.52% in 2018 [188]. As a result, Vietnam's per capita income increased nearly fourfold, and poverty was reduced from around 53% in 1992 to 2% in 2016. However, the link between trade openness and competitiveness remains weak in Vietnam's case.

Various manufacturing exports in Vietnam have low domestic value addition, wherein Vietnam is involved in mostly assembly functions. Trade costs are higher than the regional average. Domestic firms' participation in critical global value chains is also limited. Vietnam's export performance is derived from the foreign direct investment (FDI) sector [189].

TABLE 6

DATA INDICATING VIETNAM'S TRADING OUTLOOK.

Trade	2008	2009	2010	2012	2013	2014	2015	2016	2017	Trend
No. of tariff agreements	2	2	7	5	8	10	10	10	12	
Duty-free imports (in USD billion)	29.17	26.36	35.61	58.84	56.95	64.79	83.53	101.51	110.68	
Maximum rate (%) tariffs	140	140	135	135	135	135	135	135	135	
Duty-free tariff lines share (%)	32.11	31.59	35.26	39.61	39.89	39.57	45.55	46.55	46.43	
HH Market concentration index	0.08	0.07	0.07	0.06	0.06	0.07	0.08	0.08	0.08	
Index of export market penetration	9.20	9.34	9.88	10.98	11.63	12.20	12.46	12.96	13.23	

Source: WITS, 2008–17.

TABLE 7

VIETNAM'S TOP EXPORT AND IMPORT PARTNERS.

Top 5 export partners	Partner share in %
USA	19.31
PR China	16.45
Japan	7.81
ROK	6.88
Hong Kong	3.52

Top 5 import partners	Partner share in %, 2014–18
PR China	27.45
ROK	22.02
Japan	7.93
ROC	5.96
Thailand	5.02

Source: WITS, 2018.

Vietnam will likely be able to maintain its high export performance even if these challenges are not addressed, but there is scope for Vietnam to benefit even more from trade. Trade competitiveness can be enhanced in three key ways, among others: lowering trade costs associated with policy barriers to trade; improving the efficiency and reliability of transport infrastructure; and enhancing the integration of domestic production into GVCs. Table 7 highlights Vietnam's top export and import partners.

Underlying Concerns

The areas of concern for Vietnam particularly lie in financial access; and industry, innovation, and R&D.

Financial Access

TABLE 8

DATA INDICATING REACH OF FINANCIAL INSTITUTIONS IN VIETNAM.

Access to finance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Trend
No. of ATMs per 100,000 adults	18.27	23.48	30.58	36.27	46.19	51.69	57.18	67.57	72.67	77.52	88.65	
No. of commercial bank branches per 100,000 adults	28.90	28.55	26.32	29.60	29.68	29.37	32.31	31.33	31.65	28.59	31.09	
Outstanding deposits with commercial banks (% of GDP)	34.95	37.29	37.48	37.25	39.20	38.14	47.53	58.80	66.93	71.50	86.69	
Outstanding loans with commercial banks (% of GDP)	30.73	32.83	30.21	30.11	31.82	27.42	32.37	38.47	39.50	43.07	51.40	

Source: IMF, 2014–19.

Buoyed by years of strong growth, Vietnam has a burgeoning middle class with purchasing power to sustain restaurants and cafes that are full and open late in the night, busy retailers, and a high penetration of mobile phones at more than one per person. The economy, however, continues to run on cash and a majority of adults still do not have formal financial services such as a basic transaction account. Only about one-third of adults have a transaction account with a formal financial provider. A slow but steady transition to a 'non-cash' system has been historically proven to increase efficiency, promote business and economic development, and reduce poverty including in remote rural areas where traditional financial providers have difficulty in reaching. In order to do so in Vietnam, the government needs to take cognizance of the barriers to financial access (see Table 8), which remain primarily related to cost, distance, and trust deficit [190]. So, if Vietnam wishes to take advantage of the purchasing power of its citizens (who have a per capita income exceeding India), to attract more sophisticated consumer and capital goods, greater financial inclusion and literacy measures will go a long way.

Industry, Innovation, and R&D

Despite impressive economic and social development, Vietnam is approaching a crossroad. Previous sources of growth are diminishing in power, raising the threat of a 'middle-income trap.' Thus, Vietnam should rely more on productivity gains driven by innovation. The World Bank's outlook [191] for 2014 on Vietnam's current science, technology, and innovation (STI) capabilities is weak. National innovation system is in a nascent, fragmented state; and R&D is still a peripheral

TABLE 9

DATA INDICATING VIETNAM'S PERFORMANCE ON TECHNOLOGY, INNOVATION, AND R&D.

Industry, innovation, and R&D	2008	2009	2010	2011	2012	2013	2014	2016	2017	2018	Trends
High-technology exports as % of manufactured exports	8.76	10.45	13.00	18.60	26.89	33.22	31.74	37.76	41.41	40.16	
High-technology exports (in current USD billion)	3.01	3.53	6.07	11.71	21.34	32.76	36.38	55.22	74.11	82.61	
Patent applications of residents	204	258	306	300	382	443	487	560	592	646	
Direct resident trademark applications	20,832	22,378	21,215	22,376	22,813	24,629	26,563	34,971	35,520	37,476	

Source: World Development Index, 2008–18.

activity, both in the business and the public sector (see Table 9). While Vietnam has advanced the legal basis for STI, professionalized government agencies with a sufficient degree of operational autonomy and larger portfolios can help enhance policy implementation. Results of the 2012 OECD PISA assessment of the performance of secondary students bode well for Vietnam [192], indicating Vietnam that has made a substantial effort towards education and skilling. However, there still remains a scope to attune the formal education and training in line with the demands of the labor market through greater practicality.

Recommendations

The following steps can be undertaken to address prevailing weaknesses and underlying threats to Vietnam that would hinder its growth:

- **Use PPPs for HR development:** Public-private partnerships (PPPs) could be used to encourage businesses to take greater part in the national effort on human resource development. Firms, especially state-owned enterprises and MNEs, should be encouraged to increase their training investments, to fund demand-tailored aspects of formal education and to partake in decisions over curricula and program design [193].

- **Develop alternative channels for financial access:** Developing alternative financing institutions such as specialized micro-finance institutions (MFIs), low-capital local banks, postal savings banks, and financial cooperatives supplies people with substitutes to get access to finances.

- **Pursue a cluster-based development model:** To further increase manufacturing competitiveness at regional levels, and gain from regional competitive advantages, possible cluster initiatives like the electronics and engineering cluster in Hanoi, the logistics cluster in Ho Chi Minh City, and the agro-processing cluster in the Mekong Delta could be pursued.

- **Give impetus to offshore services:** Offshore services such as data, business-process outsourcing, and IT appear to be promising areas. While the current model of low-wage

manufacturing looking unsustainable with the threat of trade protectionism, specialized SEZs to attract business support centers of various MNEs could be looked at. Building on its expanded pool of university graduates, Vietnam has the potential to become one of the top ten locations in the world for offshore services.

Vietnam's Competitiveness

Vietnam has shown considerable and consistent growth in its attempts to achieve both social and economic developments. Its investments in human resource development have been rather significant; It has fared decently in terms of streamlining the processes for starting a business. Conversely, getting access to financial services is not easy for citizens, and neither is the cost of raising funds conducive for private enterprises. Infrastructural capacity needs to be improved further. Strategic outlook in terms of trading activities need to be revisited from the point of long-term sustainability, along with the current national innovation system. These play a pivotal role in not only improving productivity processes but also fortifying the ability of a nation to compete internationally, in a successful manner.

Conclusion

During the past couple of decades, Vietnam has emerged as one of Asia's great success stories. The country has benefited from a program of internal restructuring, a transition from the agricultural base toward manufacturing and services, and a demographic dividend powered by a youthful population. However, concerns abound whether its current export-based model of low-tech manufacturing goods can withstand the headwinds of protectionism, rise in real wages, and slackening demographic advantages. Only with sustained, rigorous efforts will Vietnam be able to fight these challenges.

CONCLUSION

Building productivity to provide growth and development is a well acknowledged fact. To a large extent, this increased productivity provides for an improved standard of living. Nations must therefore strive to build productivity in the long run, through sustained efforts. These sustained efforts arise from consistent efforts in areas of infrastructure, labor, finance, trade, business environment, and most importantly, innovation. Investments made in these areas warrant both social and economic development.

Quite often, the growth levels achieved are credited towards these countries achieving higher productivity levels. Greater productivity requires efficiency, building overall capabilities, and lowering input costs. Enhanced productivity gains provide for higher profitability and increased output, which further lead to reduced operating costs and greater efficiency. To encapsulate most of this productivity, Asia has to rely on economic cooperation from all the nations, by building better-integrated economies. In recent years, there has been a shift in growth levels and productivity of countries all across the globe. This has been demonstrated in several studies on productivity slowdown. Emerging economic trends have highlighted a slowdown in productivity among nations across the world, even though several advanced economies such as the USA have managed to stay afloat [1]

While many western developed countries seem to fare better than the rest of the world, many Asian economies like Singapore and PR China continue to rise above the ranks and ward off productivity slowdown. Based on this premise, it is important to determine the attributes that have enabled countries to maintain steady growth even as many other well-established economies falter. Even though factors that enable growth and productivity are specific to each country, given the heterogeneity of aspects such as their geopolitical history and presence of natural endowments, it is crucial to examine and diagnose the factors that drive productivity as well as those that serve as bottlenecks in all the countries. Development in all sectors, across all sections of the population, therefore, is crucial. For instance, IR Iran performs well in terms of financial access compared with other pillars of the diagnostic report. While financial access plays an important role, it is not nearly enough to sustain a country's development efforts. All sectors play an important role in development both individually and as a whole.

Findings from the competitiveness analysis of this report has revealed the intense need for countries to encourage innovation, improve trade practices, and invest in reducing social disparities to both improve and sustain their productivity levels in the long run. Countries must also counter geopolitical tensions, internal conflicts, and issues such as changing demographic to evade stagnancy or declining growth levels. Deciphering challenges in the volatile global market, diversifying exports, relaxing difficult administrative process for starting a business, or acquiring credit is significant for ensuring competitive advantage of nations. Policy focus must shift towards producing a more conducive environment for innovation and R&D to take place. Promoting new innovations for high-value industries also provides a competitive advantage to nations.

While companies across the globe differ in their practices, competitive advantage is vastly sought through innovation. It is manifested in the adoption of new technologies, production design, production processes, new marketing techniques, and ingenious methods of training.

Innovations are incremental in the sense that they create competitive advantages in unconventional ways such as perceiving new markets. Anticipating needs in local and foreign markets alike help companies in staying ahead of their competitors. Alternatively, exclusive considerations for local market needs will diminish international competitive success. The information outlines innovation processes. Information may be simply unavailable to other competitors, or they do not attempt to obtain it. Innovation emanates from the unusual effort and willingness to try new things.

After achieving success through innovations, companies must continuously strive to improve upon their innovations. If companies stop improving, they risk becoming obsolete either due to competing firms replicating their innovations or novel innovations rendering their previous work obsolete. Continuous upgradation not only ascertains a competitive advantage but also warrants increased productivity, as seen in the case of countries like Japan and the ROK.

For a country to develop and sustain its development efforts, it is imperative that developments take place across all spheres. Moreover, integrated growth is an important factor. Asian countries would be able to foster growth and magnify their productivity with enhanced regional cooperation. This would permit APO member economies to have better integration with each other, ultimately generating shared prosperity.

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APPENDIX

Pillar 1: Factor conditions	Description	Source
1. Infrastructure		
Pillar	**Description**	**Reference**
1.1. Infrastructure	Infrastructure pertains to quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology based on a survey conducted by LPI under World Bank. Quality was rated from "very low" (1) to "very high" (5)	Logistics Performance Index (World Bank) 2018
1.2. International shipments	International shipments pertain to ease of arranging competitively priced shipments, rated in a survey from "very difficult" (1) to "very easy" (5)	Logistics Performance Index (World Bank) 2018
1.3. Logistics competence	Competence and quality of logistics services (e.g., transport operators, customs brokers) was rated in a survey from "very low" (1) to "very high" (5)	Logistics Performance Index (World Bank) 2018
1.4 Tracking and tracing	Ability to track and trace consignments was rated in the survey from "very low" (1) to "very high" (5)	Logistics Performance Index (World Bank) 2018
1.5. Timeliness	Timeliness to shipments reaching destination within the scheduled or expected delivery time. It was rated from "hardly ever" (1) to "nearly always" (5) in the survey	Logistics Performance Index (World Bank) 2018
Total infrastructure score A=	(1.1. + 1.2.+1.3.+1.4.+1.5.+1.6.)/6	
2. Labor and productivity		
2.1. Per worker productivity	Thousands of USA dollars (constant prices and 2011 PPP, reference year 2017	APO Asian Economy Productivity Map (2019)
2.2. Per worker labor productivity growth	% per year	APO
2.3. Per hour labor productivity	USA dollars, constant prices and 2011 PPP reference year 2017	APO
2.4. Per hour labor growth	% per year	APO
2.5. TFP growth	% growth per annum	APO
Total labor and productivity score B	(2.1. + 2.2. + 2.3. +2.4. + 2.5 /5)	
Pillar 2: Demand conditions		
3. Financial access		
3.1. No. of ATMs per 100,000 adults		IMF (2018)
3.2. No. of commercial bank branches per 100,000 adults		IMF (2018)

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Pillar 2: Demand conditions	Description	Source
3. Financial access		
3.3. Account (% of those aged 15+)		Global Financial Inclusion Index (2017)
3.4. Borrowed money in the past year (% of those aged 15+)		Global Financial Inclusion Index (2017)
3.5. Outstanding deposits with commercial banks (% of GDP)		IMF (2018)
3.6. Outstanding loans with commercial banks (% of GDP)		IMF (2018)
3.7. Main source of emergency funds: loan from a bank, employer, private lender, older adults (% able to raise funds; aged 25+)		Global Financial Inclusion Index (2017)
Total financial access score C	(3.1. + 3.2. + 3.3. + 3.4. + 3.5. + 3.6. + 3.7)/7	
Pillar 3: Related/supporting industries		
4. Trade		
4.1. No. of tariff agreements		World Integrated Trade Services (WITS) 2018
4.2. Duty-free imports (USD thousand) between 2014-18		World Integrated Trade Services (WITS) 2018
4.3. Maximum Rate (%) 2014-18		World Integrated Trade Services (WITS) 2018
4.4. Duty-free tariff lines share (%) 2014-18		World Integrated Trade Services (WITS) 2018
4.5. HH Market Concentration index	This indicator is a measure of the dispersion of trade value across an exporter's partners. A county with a preponderance of trade value concentrated in a very few markets will have an index value close to 1. Thus, it is an indicator of the exporter's dependency on its trading partners and the danger it could face should its partners increase trade barriers. Measured over time, a fall in the index may be an indication of diversification in the exporter's trading partnerships. The user has the option of selecting product clusters, which will return the index calculated only for that specified subset of countries. Note that if a country exports to only a single market, then the indicator returns no value.	World Integrated Trade Services (WITS) 2018
4.6. Index of export market penetration	It is calculated as the number of countries to which the reporter exports a particular product divided by the number of countries that report importing the product that year	World Integrated Trade Services (WITS) 2018
Total trade score D	(4.1. + 4.2. + 4.3. + 4.4. + 4.5. + 4.6.) /6	

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Pillar 4: Firm strategy and rivalry	Description	Source
5. Starting a business		
5.1. Starting a business	Includes scores for procedures involved in starting a business, time and cost incurred	Doing Business (World Bank) (2020)
5.2. Registering property	Includes scores for procedures involved in starting a business, time, cost incurred, quality of land administration and reliability on infrastructure	Doing Business (World Bank)
5.3. Getting credit	Includes scores for strength of legal rights, depth of credit information, credit registry coverage (% of adults) credit bureau coverage (% of adults)	Doing Business (World Bank)
5.4. Paying taxes	Includes number of payments (per year), time (hours per year), total tax and contribution rate (% of profit) and post filing index (0-100)	Doing Business (World Bank)
Total Starting a Business score E	(5.1. + 5.2. + 5.3. + 5.4.) /4	
6. Industry, innovation, and R&D		
6.1. High-technology exports as % of manufactured exports	High-technology exports are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery.	World Development Indicators (WDI)
6.2. R&D expenditure as % of 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.	WDI
6.3. High-technology exports (current USD)	High-technology exports are products with high R&D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery. Data are in current U.S. dollars	WDI
6.4. Patent applications of residents	Patent applications are worldwide patent applications filed through the Patent Cooperation Treaty procedure or with a national patent office.	WDI
6.5. Direct resident trademark applications	Trademark applications filed are applications to register a trademark with a national or regional Intellectual Property (IP) office. Direct resident trademark applications are those filed by domestic applicants directly at a given national IP office.	WDI
Total Innovation, Industry, and R&D score F	(4.1. + 4.2. + 4.3. + 4.4. + 4.5. + 4.6.) /6	

Scores of all indicators under each pillar is then computed against the weightage assigned to it. The final productivity score will be calculated as follows:

0.25* (A+B) + 0.25* (C) + 0.25* (D+E) +0.25* (F)

Each indicator impacts and shapes the productivity performance for the nations locally and internationally. The analysis will comprise of a cross-country examination of all APO member economies along with an individual country analysis to provide for a comprehensive understanding of the level of competitiveness.

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