# Global Emerging Economies: Development Realities and Prospects

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***Abstract:*** *Economic globalization has catalyzed the global flow of economic factors and set the stage for the rise of fast-developing emerging economies with worldwide influence. Research has found that the emerging economies of China, Brazil, Russia, India, and South Africa have experienced significantly varying changes in their per capita GDP over time. Over the past decade, China has maintained a steady rate of economic growth with subdued volatility. In contrast, Brazil, Russia, India, and South Africa have all registered more volatility in their rates of growth. China has no significant correlation with other emerging economies in terms of imports and exports in goods and services and foreign direct investment (FDI), and their mutual influences are not evident. Going forward, for sustainable socio-economic development, China needs to optimize its industrial structure, promote the enhancement of ecological and institutional environments, and bring about all-round socio-economic progress, by initiating a new round of opening up at a higher level, broadening the space for international cooperation, building an open economy, promoting equal opportunity, and pursuing an inclusive path of growth.*

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## 1. Research Background

Since the 1990s, production factors such as capital, technology, information, products, labor, and managerial experience have flowed across countries and regions worldwide, making the global economy interrelated and interdependent across borders. The trend towards global economic integration has become increasingly evident. As economic growth has gained momentum and economic factors have become more liquid, the global economy has seen a rapid flow of investment capital and technologies to low-cost, efficient, and fast-growing regions, matching production and services with demand. In this growth trend, some countries and regions have emerged as suitable destinations for industrial relocation.

Economic globalization has catalyzed the global flow of economic factors and set the stage for the rise of fast-developing emerging economies with worldwide influence. According to the International Monetary Fund (IMF), the first echelon of emerging economies includes China, Brazil, India, Russia, and South Africa, known collectively as the "BRICS" countries. In the current stage of global economic growth, new-generation information technology, computer science and artificial intelligence (AI) are transforming the modes of production and marketing in the manufacturing and service sectors, propelling global industrial relocation and change in the industrial layout. Although leading economies like the US,

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Japan, and the EU remain key drivers of the global economy, emerging economies such as China are contributing a growing share to world economic growth. When the global financial crisis of 2008 sent the rich world into recession, the weight of the global economy shifted towards emerging economies, highlighting their global influence.

However, some emerging economies have experienced structural problems in their industrial production and supply. Since 2012, Brazil has been plagued by slowing economic growth and rampant inflation. High production cost, obsolete technology, and a distorted industrial structure have had a negative impact on Brazil's manufacturing development, international competitiveness, and macroeconomic performance.

India's economy is also faced with structural problems. Since 2018, India has seen falling growth rates, slowing industrial production, and contractions in 15 sectors including automobiles, paper-making, and furniture manufacturing. A major agricultural country, India has suffered from depressed agricultural prices and a falling growth rate in rural consumption, causing farmers' incomes to stagnate. With insufficient investment, construction in India's infrastructure remains retarded. Also, its industrial and agricultural products lack competitiveness, the employment rate is low, and exports contribute a modest share to the economy. Similar to China, all emerging economies need supply-side structural reforms.

The rapid development of emerging economies has always received great attention in academia. Some scholars have focused their discussion on the development modes and motivations of emerging economies. In reviewing the research literature, it can be found that most studies on emerging economies have focused on two aspects: Some have investigated specific issues such as FDI, trade liberalization, their status in the international division of labor, innovation capacity, and industrial upgrade. Others have examined cooperation among emerging economies and its effects on countries involved in the Belt and Road Initiative (BRI). Using the gravity model, some scholars (Mei and Cui, 2018) estimated trade facilitation among BRICS countries and the potentials of trade between them. Based on an extended KWW accounting method, some scholars (Liu and Zhang, 2018) measured the decomposed export value-added of the equipment manufacturing sector in BRICS countries or compared the GVC status indexes for the manufacturing and service sectors of BRICS countries with the GVC status index designed by Koopman *et al.* (Jü and Zhou, 2018). He (2018) discussed emerging economies' outbound direct investment (ODI) from an institutional perspective. Ma and Liu (2018) examined development issues for emerging economies and identified a transition from bilateral to multilateral cooperation for scientific research among BRICS countries.

According to economic theories, a country's economic development is manifested in its economic aggregate, structure, and foreign trade. Hence, this paper will perform a comparative study on emerging economies from the above four aspects, concentrating in particular on the economies of China, Brazil, India, Russia, and South Africa. The remainder of this paper features sections on the economic aggregate and industrial structure of the emerging economies, their foreign trade, and implications for China's development going forward.

## 2. Economic Aggregate and Industrial Structure

### 2.1 Measurement of Economic Aggregate

When it comes to selection of an indicator for a national economic aggregate, an authoritative recommendation can be found in the System of National Accounts (SNA) developed by John Richard Nicolas Stone, Nobel laureate in economics and renowned British statistician and economist. The SNA reports a country's national economic accounting data with standard international concepts, definitions and classifications, so that indicators used in such reporting such as GDP and GDP per capita can be applied in the international comparison of economic aggregate or structure. In this paper, therefore, GDP

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**Table 1: Economic Aggregates of Emerging Economies**

| | GDP (100 million USD) | | | | | Per capita GDP (USD) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | China | Brazil | Russia | India | South Africa | China | Brazil | Russia | India | South Africa |
| 2000 | 12,110 | 6,553 | 2,600 | 4,766 | 1,365 | 959 | 3,778 | 1,772 | 468 | 3,073 |
| 2008 | 46,010 | 16,955 | 16,608 | 11,051 | 2,871 | 3,473 | 8,852 | 11,635 | 958 | 5,802 |
| 2009 | 51,100 | 16,689 | 12,227 | 14,352 | 2,972 | 3,839 | 8,623 | 8,563 | 1,227 | 5,926 |
| 2010 | 61,010 | 22,082 | 15,249 | 17,436 | 3,753 | 4,561 | 11,295 | 10,675 | 1,470 | 7,380 |
| 2011 | 75,760 | 26,118 | 20,538 | 18,240 | 4,169 | 5,636 | 13,231 | 14,366 | 1,495 | 8,083 |
| 2012 | 85,600 | 24,592 | 21,941 | 18,280 | 3,963 | 6,338 | 12,343 | 15,322 | 1,480 | 7,574 |
| 2013 | 96,110 | 24,644 | 22,983 | 18,570 | 3,668 | 7,081 | 12,258 | 16,015 | 1,484 | 6,908 |
| 2014 | 104,830 | 24,168 | 20,860 | 20,410 | 3,509 | 7,684 | 11,919 | 14,279 | 1,611 | 6,509 |
| 2015 | 110,630 | 18,013 | 13,747 | 21,030 | 3,177 | 8,068 | 8,810 | 9,389 | 1,639 | 5,803 |
| 2016 | 111,950 | 17,958 | 12,878 | 22,740 | 2,958 | 8,120 | 8,713 | 8,780 | 1,751 | 5,318 |
| 2017 | 122,500 | 20,553 | 15,778 | … | 3,494 | 8,836 | 9,897 | 10,745 | … | 6,182 |
| Mean | 79,783 | 19,848 | 15,946 | 16,688 | 3,264 | 5,872 | 9,974 | 11,049 | 1,358 | 6,233 |

Source: *BRICS Joint Statistical Publication 2018* by the NBS, China Statistics Press, October 2018.

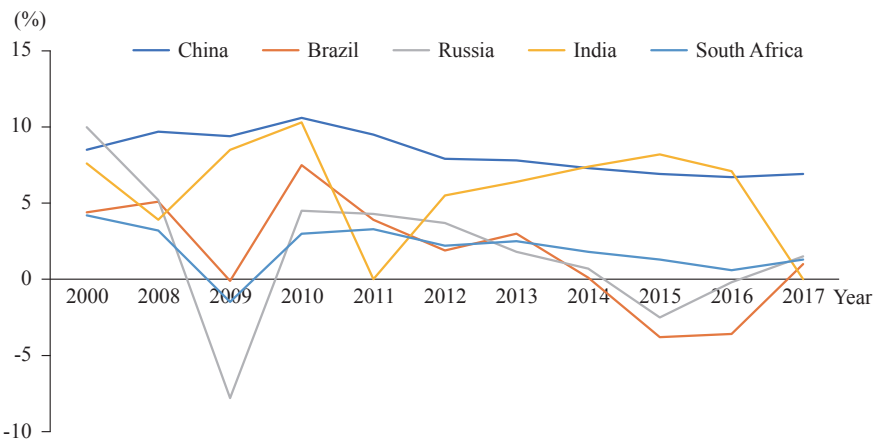


**Figure 1: Dynamic Comparison of GDP Growth Rates**

and GDP per capita are used in measuring an emerging economy's economic aggregate.

Based on the *BRICS Joint Statistical Publication 2018* drafted by the National Bureau of Statistics (NBS) and others, we have compiled data and calculated relevant indicators as follows (see Table 1).

As can be learned from Table 1, among the five emerging economies in the first echelon, China has the largest economic aggregate and is far ahead of other emerging economies in terms of GDP. Brazil comes second and South Africa comes last. In terms of GDP per capita, however, Russia tops the chart, trailed by Brazil, and India comes last with a GDP per capita of only about 12% of Russia's.

In regards to the dynamic GDP growth of the five emerging economies, we have drawn the following chart for a comparison of their quarterly GDP growth rates based on data from the *BRICS Joint Statistical Publication 2018* (see Figure 1).

As shown in Figure 1, China's economic growth rate has remained steady over the past decade with subdued volatility in the GDP growth rate and decreased only a little, even during the global financial crisis of 2008. Brazil, Russia, India, and South Africa, however, all recorded wild swings

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in their economic growth rates, which decreased in 2008 and 2009 before recovering slowly. China outperformed other emerging economies in terms of the GDP growth rate during this period. India also maintained fairly high GDP growth rates, but the GDP growth rates of Russia and South Africa remained low. Russia's GDP growth rate decreased in 2008 and 2009, recovered in 2010 and 2011, but started to slide again after 2013 and reached another low in 2015. South Africa's GDP growth rate has been modest but stable and free from wild fluctuations except for a minor slip after 2014. Brazil showed a volatile GDP growth rate, which peaked in 2010 before slowing, followed by a rebound in 2013 and then another downturn, until there was an upturn in 2017. China did well in terms of both the speed and the stability of its economic growth, in comparison to other emerging economies.

### 2.2 Measurement and Analysis of the Industrial Structure

The allocation of industrial resources across industrial sectors, i.e., each industrial sector as a share of overall economic activity, is a key manifestation of a country's level of socio-economic development. The proportion and structure of industrial sectors reflect the technological and economic ties, interdependence, and interactions between the industrial sectors. William Petty was one of the first scholars to conduct a theoretical study on the relationship between change in industrial structure and economic growth. British economist and statistician Colin G. Clark further uncovered that with rising per capita national incomes amid economic development, the labor force will migrate from primary to secondary industries, and that secondary industries, as a share of the GDP aggregate, will continue to rise. When the per capita national income increases further, the labor force will migrate to tertiary industries, giving rise to a changing industrial structure. In comparing the realities of the development of emerging economies, it is necessary to review the current status and the change in their industrial structure. Here, we have listed data reflecting changes in the industrial structure of emerging economies and indicators of calculation and analysis (see Table 2).

Notably, a few sums of average shares in Table 2 may not be 100, which is due to statistical errors. Table 2 reveals the change in the industrial structure of the five emerging economies. India had the highest value-added from primary industries as a share of GDP, and Russia had the lowest. China had the highest value-added from secondary industries as a share of GDP, and South Africa had the lowest.

**Table 2: Industrial Sectors as a Share of Emerging Economies' GDP (%)**

| | Primary Industry | | | | | Secondary Industry | | | | | Tertiary industry | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | China | Brazil | Russia | India | South Africa | China | Brazil | Russia | India | South Africa | China | Brazil | Russia | India | South Africa |
| 2000 | 14.7 | 5.5 | … | 25.3 | 10.7 | 45.4 | 26.7 | … | 23.7 | 24.5 | 39.8 | 67.7 | … | 51 | 64.8 |
| 2008 | 10.3 | 5.4 | 4.4 | 20.4 | 12.4 | 46.9 | 27.3 | 35.9 | 25.7 | 22.1 | 42.8 | 67.3 | 59.7 | 53.9 | 65.5 |
| 2009 | 9.8 | 5.2 | 4.6 | 20.3 | 11.8 | 45.9 | 25.6 | 33.7 | 25.2 | 21.6 | 44.3 | 69.2 | 61.7 | 54.5 | 66.6 |
| 2010 | 9.5 | 4.8 | 3.8 | 21 | 11.9 | 46.4 | 27.4 | 34.8 | 24.3 | 20.9 | 44.1 | 67.8 | 61.4 | 54.6 | 67.2 |
| 2011 | 9.4 | 5.1 | 3.9 | 21.7 | 12.1 | 46.4 | 27.2 | 33.9 | 29.3 | 20.3 | 44.2 | 67.7 | 62.2 | 49 | 67.6 |
| 2012 | 9.4 | 4.9 | 3.7 | 21.3 | 11.5 | 45.3 | 26.1 | 33.8 | 28.7 | 20.5 | 45.3 | 69.0 | 62.5 | 50 | 68.0 |
| 2013 | 9.3 | 5.3 | 3.6 | 21.4 | 11.4 | 44 | 24.9 | 32.4 | 27.9 | 20.6 | 46.7 | 69.8 | 64 | 50.6 | 68.0 |
| 2014 | 9.1 | 5.2 | 4.1 | 20.9 | 10.8 | 43.1 | 24 | 32.1 | 27.3 | 21.2 | 47.8 | 70.8 | 63.8 | 51.8 | 68.0 |
| 2015 | 8.8 | 5.0 | 4.6 | 20.1 | 10.1 | 40.9 | 22.3 | 33.1 | 27.4 | 21.3 | 50.2 | 72.7 | 62.3 | 52.5 | 68.6 |
| 2016 | 8.6 | 5.5 | 4.7 | 20.4 | 10.4 | 39.9 | 21.2 | 32.5 | 26.9 | 21.2 | 51.6 | 73.3 | 62.8 | 52.8 | 68.4 |
| 2017 | 7.9 | 5.3 | 4.4 | … | 10.6 | 40.5 | 21.5 | 33.4 | … | 20.9 | 51.6 | 73.2 | 62.2 | … | 68.6 |
| Mean | 9.7 | 5.2 | 4.2 | 21.3 | 11.25 | 44.1 | 24.9 | 33.6 | 26.6 | 21.4 | 46.2 | 69.9 | 62.3 | 52.1 | 67.4 |

Source: *BRICS Joint Statistical Publication 2018* drafted by the National Bureau of Statistics (NBS) and others, China Statistics Press, October 2018.

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Brazil had the highest value-added from tertiary industries as a share of GDP, which was close to 70%, and China had the lowest, i.e., below 50%. As these indicators suggest, India is a typical agricultural country, China is an industrial powerhouse, and Brazil is a service-based country.

Each emerging economy has distinctive features in its industrial structure. Brazil, the fifth largest country in the world by land area, ranks first in Latin America in terms of economic strength. It is a major producer and exporter of multiple agricultural products, ranking first globally in terms of coffee, cocoa, sugar cane, corn, and soybean outputs. With a complete range of industries, Brazil boasts advanced mining, petrochemical, iron and steel, and automotive industries. Tertiary industries are Brazil's pillar industries, comprising real estate, leasing, tourism, finance, insurance, information, advertising, consulting, and technical services, which are vital to the Brazilian economy and create significant value-added and jobs.

Russia is weak in agriculture and relies on farming and livestock production to equal degrees. Russia's main crops include wheat, barley, oats, corn, rice and beans, and its livestock production mainly comprises cattle, sheep and hog breeding. As an industrialized country, Russia has a complete range of industries with strengths in timber processing, machinery, iron and steel, metallurgy, petroleum, natural gas, coal, forestry, and petrochemical industries. Russia's nuclear, aviation and aerospace industries, in particular, wield great clout globally. With a booming IT industry, Russia leads the world in rocket technology, iron and steel, electronics, and software development.

India, one of the world's largest producers of agricultural products, with value-added from agriculture making up a significant share of its GDP, is also one of the world's largest grain producers and a net exporter of agricultural products. India also has a complete industrial system and strong textile and mining industries. It is experiencing rapid development in iron and steel, machinery, electric power, textiles chemical, food, precision instrument, automotive, software, aerospace, and space industries. India's service sector is relatively advanced and accounts for a major share of its economy. In particular, India has made remarkable achievements in software and software service outsourcing. Perhaps due to the infrastructure gaps and under-investment, India has been attempting to rely on the service sector as a driver of economic growth. Becoming aware of its manufacturing weakness, India has made great efforts to foster high-tech industries in an attempt to join the ranks of leading manufacturing countries.

South Africa, the second-largest economy in Africa, is blessed with a relatively high standard of living and steady economic development in comparison to other African countries. With an adequate infrastructure in communication, transportation and energy, the mining, manufacturing, and service sectors are pillars of the South African economy. Agriculture, forestry, and fishery have been shrinking as a share of South Africa's GDP and does not offer many formal jobs. With a complete range of manufacturing sectors, South Africa boasts advanced technologies and such advantageous sectors as iron and steel, metal product, petrochemical, transportation equipment, food processing, textiles and apparel.

China, the world's second-largest economy, trails the US in terms of GDP aggregate. However, it is the world's largest industrial producer and largest agricultural country. Nevertheless, agriculture, as a share of total output value, has been on the decrease in China. China's complete industrial system allows it to manufacture all sorts of products for domestic use and export worldwide. China is the world's largest producer of over 220 types of industrial goods such as iron and steel, glass, cement and automobiles, with the largest manufacturing net export volume, globally. Secondary industries account for a significant share of value-added in China while tertiary industries make up a smaller share.

In terms of dynamic change of the industrial structure, both China and India have seen their primary industries make up a slightly smaller share of the economy, while in Brazil, Russia, and South Africa, primary industries account for a more stable share of the economy. Secondary industries as a share of the economy barely budged for all emerging economies. Since the dawn of the new century, China's tertiary industries have continuously risen as a share of its economy. Brazil saw its tertiary industries increase

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modestly as a share of the economy. The share of tertiary industries in the economy, however, has remained more or less the same in Russia, India, and South Africa. According to Lewis's dual economy structure theory, some emerging economies such as India have yet to complete major adjustments in their industrial structure as a historic mission.

## 3. Foreign Trade

Modern economic principles provide theoretical support for discussing the trade of emerging economies. According to the mercantilist school in the early times, the only form of wealth is gold and silver, the amount of which is the only measure of a country's wealth and prosperity, and a primary channel to acquire gold and silver is international trade. A country becomes prosperous when it enjoys a trade surplus that comes with an inflow of gold and silver. For this reason, the State must intervene in economic life by prohibiting the outflow of gold and silver and increasing their inflow. The government must control agriculture, commerce and manufacturing, develop foreign trade monopolies, protect the domestic market with high tariffs and other trade restrictions, and use colonies as sources of raw materials and markets for the home country. Precious metals are essential to a country's wealth. If a country lacks precious metal ores, it must obtain such resources via trade. A country must maintain a foreign trade surplus, i.e., exports must exceed imports. It must use less money to buy foreign goods than it receives from the sale of its domestic goods in order for more money to flow back to the home country. It must export more than it imports to maintain a trade surplus.

According to François Quesnay, a representative figure of physiocracy in the early times, a country's wealth is not determined by its monetary wealth; the benefits accrued to a country in foreign trade cannot be measured by the amount of money it receives because a country is engaged in international trade to exchange goods with foreign countries for the purpose to meet the needs of domestic consumption. Despite an emphasis on agricultural production, physiocracy also underscores the importance of increasing wealth to people's livelihoods and the freedom of commerce as consistent with the natural order. In all trade activities, both buyers and sellers may enter into contracts based on their free will and self-interest. Physiocracy advocates the complete freedom of commerce: The most favorable domestic commerce and foreign trade policies for a country and its people are to maintain the complete freedom of competition.

After investigating the horizontal division of labor and the drivers behind surging international trade, new trade theories represented by Paul Krugman argued that in a market of imperfect competition, international trade may originate from the professionalization of production and economies of scale; even in countries with consistent endowments of technologies and production factors and similar preferences, product heterogeneity will still induce intra-industry trade and international trade. Countries with great differences will have a higher demand for trade. Similarly, countries also have a demand for each other's technologies, i.e., even for countries with homogeneous R&D capabilities, their technological and product heterogeneity will still induce international technology transfers. As long as there is heterogeneity, therefore, there will be trade in technologies and products between countries with similar or disparate strengths.

International trade theories originate from the practice of trade. In today's world of economic globalization, trade is a key aspect of a country's economic openness or status as an open economy. An emerging economy must be an open economy as a self-isolated economy cannot develop sustainably. For this reason, we need to compare emerging economies in terms of international trade. Here, international trade data and indicators for emerging economies are listed below (see Table 3).

As shown in Table 3, China has the largest total import and export volumes in goods and services among all emerging economies, followed by India and Russia, and South Africa comes last. Russia has the highest ratio between exports and imports in goods, followed by China, and both countries have been

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**Table 3: Comparison of International Trade among Emerging Economies**

| | Total imports and exports of goods and services (100 million USD) | | | | | Ratio between exports and imports in goods (%) | | | | | FDI inflows (100 million USD) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | China | Brazil | Russia | India | South Africa | China | Brazil | Russia | India | South Africa | China | Brazil | Russia | India | South Africa |
| 2000 | 4,774 | 1,370 | 1,690 | 1,259 | 702 | 115.9 | 97.2 | 235..5 | 88.2 | 111.9 | 407 | 330 | 27 | 40 | 9 |
| 2008 | 26,469 | 4,476 | 8,897 | 6,470 | 2,092 | 134.8 | 113.6 | 161.5 | 61 | 95.6 | 924 | 507 | 748 | 419 | 92 |
| 2009 | 23,052 | 3,540 | 5,903 | 6,232 | 1,647 | 126.6 | 119.4 | 161.6 | 62 | 101.5 | 900 | 315 | 366 | 377 | 75 |
| 2010 | 30,898 | 4,757 | 7,628 | 8,261 | 2,101 | 119.2 | 110.1 | 159.8 | 67.9 | 104.5 | 1,057 | 885 | 432 | 360 | 36 |
| 2011 | 38,358 | 5,945 | 9,835 | 10,158 | 2,506 | 114.5 | 112.1 | 161.8 | 62.5 | 102.7 | 1,160 | 1,012 | 551 | 466 | 42 |
| 2012 | 41,183 | 5,849 | 10,345 | 10,176 | 2,414 | 118.7 | 107.7 | 157.1 | 61.2 | 95.3 | 1,117 | 866 | 506 | 343 | 46 |
| 2013 | 44,758 | 6,052 | 10,616 | 9,952 | 2,357 | 120.1 | 100.2 | 152.9 | 69.8 | 93.1 | 1,176 | 697 | 692 | 360 | 83 |
| 2014 | 47,045 | 5,829 | 9,914 | 9,980 | 2,261 | 124.1 | 97.1 | 161.4 | 69.3 | 95.5 | 1,196 | 972 | 220 | 451 | 58 |
| 2015 | 43,624 | 4,670 | 6,751 | 8,822 | 1,957 | 136.8 | 110.2 | 176.9 | 68.8 | 95.9 | 1,263 | 747 | 69 | 556 | 17 |
| 2016 | 41,401 | 4,209 | 5,986 | 9,190 | 1,798 | 132.6 | 132.3 | 147.1 | … | 102 | 1,260 | 782 | 325 | 602 | 22 |
| 2017 | 46,351 | 4,733 | 7,377 | … | 2,033 | 127.4 | 141.8 | 148.3 | … | 104.8 | 1,310 | 703 | 279 | … | 13 |
| Mean | 35,265 | 4,675 | 7,722 | 8,050 | 1,988 | 125 | 113 | 166 | 68 | 100 | 1,070 | 711 | 383 | 397 | 45 |
| Standard deviation | 12,355 | 1,304 | 2,517 | 2,649 | 476 | 7 | 13 | 8 | 8 | 5 | 245 | 226 | 222 | 145 | 28 |
| Coefficient of dispersion | 0.35 | 0.27 | 0.32 | 0.32 | 0.23 | 0.05 | 0.11 | 0.05 | 0.11 | 0.05 | 0.22 | 0.31 | 0.57 | 0.36 | 0.62 |

Source: *BRICS Joint Statistical Publication 2018* compiled by the NBS and others, China Statistics Press, October 2018.

exporting more than they import, while South Africa has the lowest ratio. China has received the highest FDI inflows, followed by Brazil; South Africa comes last on this measure. From a dynamic perspective, China's "total import and export volumes in goods and services" has fluctuated more significantly, and South Africa's has fluctuated mildly. India and Brazil have registered wild fluctuations in their "ratio between exports and imports in goods" while other countries experienced smaller volatilities. South Africa and Russia recorded significant fluctuations in their "FDI inflow" while China's volatility in this respect has been smaller.

As shown by those indicators, China is a major trade power with an open economy, which can be ascribed to its hefty production and service export capacities, its open-economy policies, and a climate that is conducive to investment. These strengths have been verified by relevant indicators in the Global Innovation Index 2019 (GII)[1] released by the World Intellectual Property Organization (WIPO), on which China ranked 14th of all the countries listed, and first among middle-income economies. This makes China the only middle-income economy to rank among the top 30, while all other emerging economies ranked below 45th. On this index, China scored high in terms of institutions and openness. China scored 74.7 points for its business environment, 75.4 points for policy stability, 74.5 points for information and communication technologies, and 88.2 points for trade, competitiveness and market size, 84.9 points for intellectual workers, and 86.1 points for government online services. China also ranked among the highest in terms of numbers of patents, contour designs for industrial goods, trademarks, net

[1] The Global Innovation Index (GII) is an annual ranking jointly initiated by the World Intellectual Property Organization (WIPO), Cornell University, and the European Institute of Business Administration (INSEAD) in 2007. It measures the innovation performance of over 120 economies around the world. This index is calculated by taking the average of more than 80 indicators, which fall into two categories of innovation inputs and innovation outputs. Innovation inputs include five aspects, i.e. institutions, human capital and research, infrastructure, market sophistication, and business sophistication; innovation outputs include two aspects, i.e. knowledge and technology outputs, and creative outputs.

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**Table 4: Partial Correlation Coefficients of China's Foreign Trade with Other Emerging Economies**

| | Total import and export volumes in goods and services | | | FDI inflow | | |
|---|---|---|---|---|---|---|
| | Partial correlation coefficient | Semi-impartial correlation coefficient | P value | Partial correlation coefficient | Semi-impartial correlation coefficient | P value |
| Brazil | 0.1944 | 0.0415 | 0.6762 | 0.7579 | 0.3313 | 0.0484 |
| Russia | 0.1628 | 0.0345 | 0.7273 | -0.0912 | -0.026 | 0.8459 |
| India | 0.7367 | 0.2281 | 0.0589 | 0.8839 | 0.5389 | 0.0083 |
| South Africa | -0.6323 | -0.1709 | 0.1276 | 0.3219 | 0.097 | 0.4814 |

high-tech exports, and creative products. These indicators have verified China's performance in terms of international trade and economic openness.

Based on data from Table 3, we may further calculate the partial correlation coefficients (PCC) of China's "total import and export volumes in goods and services" and "FDI inflow" with other emerging economies for an analysis of their net correlation, with results shown below (see Table 4).

The semi-partial correlation coefficient in Table 4 reflects the unique contribution of an explanatory variable to the multiple correlation coefficient. As can be seen from the partial correlation coefficient in Table 4, China has no significant correlation with other emerging economies in terms of imports and exports in goods and services and foreign direct investments (FDI). There is no significant interaction effect between China and those emerging economies with respect to foreign trade.

Like other emerging economies, China also faced a swathe of structural problems in its new industrial revolution, which included diminishing demographic dividends, rising costs of production factors, a weak industrial base, non-optimal manufacturing structure with advanced manufacturing making up a small share, insufficient total factor productivity (TFP), and a dire need for industrial transition and upgrade. In advanced manufacturing, China was dependent on critical technologies from foreign countries, and had yet to develop its own technologies essential to high-end manufacturing. China was faced with sobering environmental problems and limited natural resources, huge disparities in socio-economic development across cities and the countryside and between provinces, inter-industry development imbalances resulting in an unreasonable internal structure, as well as unbalanced investment and consumption and significant income gaps.

To address these problems, China has initiated supply-side structural reforms as a national strategy and taken steps to resolve excess capacity in such sectors as iron and steel, coal, cement, glass, iron ore, and non-ferrous metals sectors. China is also committed to fostering strategic emerging industries under the "Made in China 2025" strategy, vowing to develop into a competitive manufacturing powerhouse by phasing out obsolete capacities, optimizing industrial structure, cutting business costs, and ramping up TFP. Improving product quality will further address people's growing needs for material and cultural life. China is also reforming its administrative, fiscal, financial and jurisdictional systems, creating a nationally unified market, and addressing development imbalances between eastern, central and western regions. In protecting the environment and making full use of natural resources under the broader goal of ecological civilization, China is also reforming the ownership and paid use of natural resources, ecological compensation, energy and water rights, among other systems, for sound economic development.

## 4. Outlook of Emerging Economies

As shown in the prior comparative study, in their economic development, all emerging economies

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are confronted with structural problems amid the new industrial revolution. Given this reality, China should optimize its industrial structure by enhancing ecological and institutional environments, and advancing supply-side structural reforms. China should expedite a new round of opening up at a higher level, broaden international cooperation, and build an open economy, by pursuing a path of inclusive growth through supply-side structural reforms for sustainable socio-economic development.

### 4.1 Optimize Industrial Structure, Enhance Ecological and Institutional Environments, and Propel Supply-Side Structural Reforms

As mentioned before, emerging economies have enjoyed rapid development with robust momentum. However, their economic growth has been unstable, and their industrial structure is yet to be improved. Some emerging economies still lack production capacity and international competitiveness. As an emerging economy, China must optimize its industrial structure and bolster ecological and institutional environments for social and economic progress on all fronts.

Walt W. Rostow(1960) put forth the famous theory of stages of economic growth, including the traditional society, the preconditions for take-off, the take-off, the drive to maturity, the age of high mass-consumption, and beyond consumption (the search for quality). In each of these stages, there are one or a few innovative sectors with strong spillover effects that drive development in other sectors. These dominant or driving industries will display different characteristics across stages of economic development, and may generate forward, backward and lateral effects that correlate various industries to form an integrated industrial system that drives the economy forward.

Scholars of modern economics have put forth different criteria on the selection of dominant industries, which keep evolving and present higher requirements on the optimization of industrial structure for the modern society. As a competitive emerging economy, China must strive to optimize its industrial structure and create a modern industrial system. It should focus on industries with strategic significance, such as cutting-edge and extreme manufacturing, new-generation information technology, and national defense. Priority must also be given to industries that are important to people's livelihoods, such as biomedicine, modern agriculture, energy conservation and environmental protection, strategic resources, industrial infrastructure, and public welfare projects. China should also upgrade traditional industries such as iron and steel, textiles, nonferrous metals, and coal industries, phase out and relocate uncompetitive industries, promote the integration and collaboration between new-technology industries, commercialize R&D results, and expedite the diffusion of new technologies.

Hence, we should evaluate industrial policy effects and keep industrial policies abreast with industrial development. With the goal to turn China into a competitive manufacturing powerhouse, we must reinforce our institutional systems for industrial development, strive to improve business environment, issue policies to address specific problems arising from industrial development, and make structural arrangements to remove institutional constraints to industrial development. We must ensure more efficient allocation of production factors and resources, and offset the deficiencies of technology and market mechanisms by improving industrial policies and business environment. China must continue to outperform in terms of economic growth, foster strengths in the institutional environment, and enhance workforce competitiveness in preparation for receiving advanced manufacturing relocations from other countries. There is a strong case for China to embrace investments from leading manufacturing countries such as the US, Japan and Germany, as well as multinational corporations, and facilitate the adoption of new technologies of global concern in such areas as cybersecurity, electronic payment, and financial currencies. China should also selectively relax market access criteria, slash tax rates and fees, and invigorate market dynamism and give full play to the decisive role of the market in resource allocation through institutional development and government reforms. Chinese companies should offer high-quality products and services that are internationally competitive. Policymakers should also increase the productivity of such production factors as labor, capital, and land, promote clean and

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green production, develop a circular economy, and raise resource allocation efficiency and TFP at a deeper level.

### 4.2 Accelerate the New Round of Opening up, Broaden International Cooperation, and Build an Open Economy

It has been the common aspiration of humankind to fight natural disasters through collaboration, address conflicts and contradictions between individuals and collectives and between regions and the whole nation, and share the dividends and results of development in ways acceptable to all. As shown in the history of human society, external openness, international cooperation and the development of open economies have been the relentless pursuits of all countries. In today's world of economic globalization and interdependence, the case for international trade cooperation and technology exchanges is stronger than ever. To this aim, supply-side structural reforms are intended to broaden international cooperation and build an open economy.

Since the 1980s, economists led by Paul Krugman have extensively investigated international trade and cooperation, identified the causes and determinants of international trade, the international division of labor, and trade protectionism, and put forth ideas and theories on optimal trade policies, which have evolved into a complete theoretical system of international trade underpinned by the two pillars of economies of scale and the market of imperfect competition. In practice, the United Nations and relevant international organizations have been committed to promoting international trade and advancing international economic and trade cooperation between developing and developed countries.

Hence, China should closely follow the trends of technology development on the world stage, step up international cooperation in science and technology, and expand cooperation on new technologies to take the initiative and accomplish progress in the new technology revolution. Diverse platforms for international technology cooperation should be built with world-class standards to promote cooperation among enterprises, universities, and research institutions. China should work with both developed and developing countries for technology importation, transfer, cooperation, and innovation with a market-oriented approach for common development. With national high-tech development zones, key research institutions, universities and enterprises as pilot programs, China should cooperate with overseas industrial, academics and research programs to explore humanity's unknown fields, and tackle centennial technological difficulties to effectively cope with global challenges. The government should extend more support to international technology cooperation, attract suitable foreign-funded enterprises and research institutions to participate in China's R&D programs, promote the technology spillover effects of multinational conglomerates, and enhance China's original innovation capacity. It is advisable to cut tariff rates and remove non-tariff barriers when appropriate to promote balanced trade development in China and other countries and open China's market more widely to the outside world. China should import more goods and services, especially high-quality agricultural products, finished goods, and services to meet people's growing needs for material and cultural consumption.

### 4.3 Pursue Inclusive Economic Growth amid Supply-Side Structural Reforms for Sustainable Socio-Economic Development

In the 1950s and 1960s, economic growth and urbanization created huge pressures on the environment and natural resources. As people started to reflect upon the old models of economic growth, US biologist Rachel Carson brought forth the issue of sustainable development in her famous work, *The Silent Spring*. The public started to realize that the previous path of development was unsustainable and undesirable. They called for sustainable development that focuses on both the speed and the quality of economic growth. Economic development has its boundaries and cannot be sustained if it goes unchecked. Environmental problems must be addressed at the source to transform the development pattern.

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Human society is at the dawn of a new industrial era, in which sustainable economic growth has become a common aspiration of all countries. The United Nations and relevant international organizations have adopted an array of documents including the Our Common Future, the 21st Century Agenda and the Framework Convention on Climate Change. These policy documents have put forth a development model acceptable to all with an integrated approach to economic growth, social development and environmental challenges, eliciting common actions from all countries. In September 2000, the United Nations Millennium Summit witnessed the signing of the United Nations Millennium Declaration by 189 countries. As stated in the United Nations Millennium Declaration, "Only through broad and sustained efforts to create a shared future, based upon our common humanity in all its diversity, can globalization be made fully inclusive and equitable." It called for universalizing primary school education, eliminating extreme poverty and hunger, improving maternal and women's health, reducing child mortality rate, and promoting gender equality; ensuring environmental sustainability; creating open, rules-based and non-discriminatory trade and financial systems; and working with developing countries to create decent and productive employment opportunities for the youth. The Bangkok Declaration of the Asia-Pacific region on the United Nations Development Agenda beyond 2015 has reaffirmed the commitments to eradicating poverty, abandoning unsustainable modes of consumption and production, and protecting and managing natural resources as the foundation for human survival.

For fast-growing emerging economies, maintaining sustainable and inclusive economic growth is a priority, which China must follow as well. China should strive to create an environment conducive to industrial upgrade, manage externalities and cooperation effectively, support investment in more complex new products, achieve economic diversity, and provide more sophisticated goods and services. Legal systems should be put into place to balance the interests of all stakeholders at various levels, improve the quality of economic growth, enhance human welfare, and achieve the goal of poverty reduction, good governance, environmental protection, and social justice.Hence, we should consider the needs of all quarters of our society, support SMEs and protect their legitimate rights, protect vulnerable and marginalized groups, and involve the civil society in policy-making. We should bolster the social safety net, create social capital, and increase social inclusiveness, productivity, and sustainability. CE

## *References:*


[1] Feng, Shunhua, and Poling Xu. 2003. "Structural Crux of Russian Economy." *World Economy And Politics*, 9: 70-75+7.

[2] He, Yanqin. 2018. "An Empirical Study on the Impact of Institutional Quality of Emerging Economies on China's OFDI Reverse Technology Spillover Effect." *Time Finance*, 12: 362-363.

[3] Ju, Zongzheng, and Shengqi Zhou. 2018. "A Comparative Study on the International Division of Labor Status of Brics Countries in the Global Value Chain." *Jiangsu Business Theory*, 15: 43-51.

[4] Liu, Sichen, and Shiqi Zhang. 2018. "Comparative Study on the Value Added of Brics Equipment Manufacturing Industry Exports." *Statistical Research*, 35(08): 48-57.

[5] Mei,Yuhang, and Riming Cui. 2018. "Trade Facilitation and Measurement of Trade Potential Among Brics Countries." *Journal of Northeast University of Finance and Economics*, 6: 46-51.

[6] Ma, Zhiyun, and Yun Liu. 2018. "On the Effects of Science Research Cooperation among Brics Countries to the Countries of the Belt and Road." *Scientific Research,* 36(11): 1953-1962+1985.


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