The BRIC Countries

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INTRODUCTION

The emerging market economies play an increasingly important role in
global economic development and for the global monetary and financial
system. The global impact is amplified by greater real-economic and
financial fluctuations in the emerging market economies than in more
mature market economies. After the crises in Asia and Russia at the end
of the 1990s, Brazil and Turkey in 1999-2001 and Argentina since 2001
the focus on the emerging market economies' economic and financial
potential has become sharper, with interest directed especially at four of
the largest of them, called the BRIC countries: Brazil, Russia, India and
China. Even though to some extent the focus on these particular four
economies is arbitrary, in both demographic and economic terms they
are among the largest countries in the world. In financial terms, the BRIC
countries also dominate the emerging market economies.

This article briefly presents the historical growth in the BRIC countries
and assesses their current role in the global economy. The long-term
perspectives for these economies are described in the context of eco-
nomic theory. Although other large emerging market economies such as
Mexico, South Korea, Indonesia, South Africa and Turkey share certain
characteristics with the BRIC countries, they are not considered further
in this article.

THE DEVELOPMENT OF THE BRIC COUNTRIES AND THEIR IMPACT ON
THE GLOBAL ECONOMY

Historical growth
With an average annual growth rate close to 9.8 per cent since 1980 China
definitely meets all the criteria for an emerging market economy. It is
followed by India and Brazil with average annual growth rates of respect-
ively 5.8 and 2.4 per cent, cf. Chart 1. Since 1998 Russia has also seen high
growth, now at the same level as India. For comparison, the average an-
nual growth since 1980 in seven of the large industrialised countries (G7)
was 2.7 per cent. In view of the significantly higher growth in China
global interest has so far concentrated mainly on China’s development, with the other BRIC countries playing a secondary role.

The long period of sustained high growth in China and India indicates that these countries have succeeded in creating the basis for a "tiger leap" in growth that so far has proved sustainable. It is harder to assess the sustainability of Russia’s growth in view of the relatively short period since the collapse of the Soviet Union and the ensuing Russian crisis that led to a major devaluation of the rouble. Moreover, to some degree the Russian economy is based on oil and gas production and mineral extraction and is therefore sensitive to price trends for these raw materials. Brazil has enjoyed some periods of high growth, but so far with no signs that these bursts of growth could become permanent. Mineral extraction is also a key element of Brazil’s economy.

**Economic significance to the global economy**

The high growth rates in China and India, and recently also Russia, have increased the BRIC countries’ importance to the global economy. Over the last 10 years the BRIC share of the global economy has thus increased by just over 1.5 percentage points. In terms of GDP at market prices, however, the BRIC countries’ role in the global economy is still relatively small. Today they account for approximately 8 per cent of the total global economy; while the seven countries in the G7 group account for almost 65 per cent, cf. Table 1. China is now the world’s 7th largest
economy, followed by India, Brazil and Russia in 12th, 15th and 16th place, respectively. Of the annual average global GDP growth at market prices of 3.9 per cent since 2000, 0.5 percentage point originates from growth in the BRIC countries.

If purchasing-power-adjusted exchange rates are instead applied to the comparison of GDP, the global weighting of the BRIC countries increases, due to their considerably lower price levels. Compiled in this way, the BRIC countries’ share of the global economy is almost 24 per cent, while that of the G7 countries falls to just over 43 per cent. Measured in terms of purchasing-power-adjusted GDP, the USA is still the largest economy, while China moves to the position of the world’s 2nd largest economy, followed by Japan and India in respectively 3rd and 4th position. In terms of purchasing-power adjusted GDP, in the period 2000-03 the BRIC countries contributed 1.4 percentage points of the annual global growth of 3.3 per cent.

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1 On the purchasing-power adjustment of GDP per capita, exchange rates based on the assumed purchasing-power parity are used to calculate GDP per capita in the same currency. Purchasing-power-adjusted GDP per capita takes into account the variations in countries’ price levels and therefore purchasing power at a given income level. Purchasing-power-adjusted GDP per capita is therefore a better comparative measure of prosperity. Under purchasing-power parity the exchange rate indicates the relation between two countries’ price indexes and is therefore a measure of purchasing power in the individual country. In countries with low price levels purchasing power will be greater, all other things being equal.
Another characteristic of the BRIC countries’ economic development is that generally their economic growth has fluctuated more strongly than has been the case for the developed countries. This tendency magnifies the significance of the BRIC countries to the global economy, since the fluctuations in their growth explain a relatively larger share of the global cyclical fluctuations than their economic weight would indicate.

**BRIC countries’ convergence**

The BRIC countries’ growth has led to a considerable absolute increase in prosperity. From 1980 and up to and including 2003 purchasing-power-adjusted GDP per capita (in current prices) has increased twelve fold in China, more than quadrupled in India and slightly more than doubled in Brazil. In Russia, purchasing-power adjusted GDP per capita is approximately ½ times higher than in 1998. In absolute terms, living standards in the BRIC countries are still low. The World Bank describes Brazil, Russia and China as "lower middle income" countries, while India is a "low income" country. Relative to the mature market economies the development in prosperity measured by purchasing-power-adjusted GDP per capita (current prices) has varied considerably among the four BRIC countries. While China and India have managed to relatively augment their prosperity compared to the USA, Brazil has become relatively poorer, cf. Chart 2.

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**BRIC COUNTRIES’ GDP PER CAPITA (PPP) RELATIVE TO THE USA**

![BRIC COUNTRIES’ GDP PER CAPITA (PPP) RELATIVE TO THE USA](chart.png)

Source: World Bank, World Development Indicators.
China has moved from GDP per capita of 3 per cent of the US level in 1975 to 13 per cent in 2002. For comparison, Brazil has become relatively poorer with a drop in GDP per capita from 27 per cent of the USA’s level in 1975 to 22 per cent in 2002. In Brazil’s case, this is partly due to lower growth than in the USA and partly to far stronger population growth in Brazil than in the USA. Higher population growth in India has also meant that only a relatively moderate catch-up effect has been achieved from its high economic growth. The opposite is the case for China, whose population count has expanded at a slower rate than the USA’s since 1991. According to the US Census Bureau, population growth in all BRIC countries is expected to diminish over time: Brazil’s population growth will be lower than the USA’s in 2012, with India following suit in 2030. As a result of this demographic trend, future economic growth will to a greater extent lead to increases in prosperity.

Income in especially Brazil and partly also Russia is unevenly distributed, cf. Table 2. The relation and causality between growth and income inequality are not unequivocal, according to the empirical surveys, cf. e.g. Quah (2001). While income inequality has increased in China and India, the incidence of absolute poverty\(^1\) has fallen considerably as a consequence of the sustained high growth, cf. Fischer (2003).

\(^1\) The absolute poverty level is often defined as an income of either 1 or 2 dollars per day.
A continued narrowing of the gap in living standards to the mature market economies will require sustained high growth. The prospects for the BRIC countries’ "catching-up" are illustrated in Table 3. In an extremely positive growth scenario where the BRIC countries (except Brazil) maintain the current relatively high surplus growth, 4-6 per cent in 2003, the consequence will be a significant catch-up in purchasing-power-adjusted GDP per capita. For example, from a low starting point China will catch up with the USA in the course of 41 years, given constant 5 per cent surplus growth in China. In a more moderate, but still optimistic, growth scenario with annual surplus growth of 3 per cent, it will take China a couple of generations to reach the US level of prosperity. For Brazil and Russia this will take around 50 years and India more than 80 years. Due to the lower growth forecast for the euro area and the lower starting point, the BRIC countries will catch up even faster with the euro area. In view of its surplus growth of 5 per cent, China, for example, will exceed GDP per capita in the euro area in 34 years’ time.

The above time horizons give a rough impression of the consequences of various constant growth scenarios. In practice, economic activity will naturally vary over time both for and among the individual countries. The key issue is the actual growth differential that the BRIC countries can maintain when incomes are rising. This depends on the input of production factors, capital and labour, as well as the development in productivity, which are both closely related to technological progress and education. Box 1 describes the components that underlie growth, especially the concept of total factor productivity, in more detail.

Goldman Sachs (2003) projects the economic course of the BRIC countries to give a rough estimate of these countries’ significance to the global economy up to 2050. Focus is thus on the overall economic activity in the various BRIC countries. A relatively simple growth model that is
based on the model in Box 1 is applied to create the projections. The model builds on projections of the input of capital and labour, as well as an assumption regarding catching-up as absolute convergence in total factor productivity between the BRIC countries and the USA, on the basis of the difference in GDP per capita. In view of the BRIC countries’ low prosperity they will first and foremost experience a strong increase in total factor productivity. Furthermore, the increased productivity in the BRIC countries leads to substantial appreciation of their local currencies in the range of 130 to 289 per cent up to 2050. The growth rates diminish over time in step with the income increase in the BRIC countries.

Based on these assumptions, economic activity in the BRIC countries measured as GDP in dollar terms changes significantly in the period up to 2050, cf. Table 4. China will thus overtake the USA as the world’s largest economy, while India, Brazil and Russia will rank respectively 3rd, 5th and 6th.

The apparently optimistic growth projections in Goldman Sachs (2003) are supported by other studies, such as Rodrik and Subramanian (2004) regarding India, and Heytens and Zebregs (2003) concerning China,
although these studies are based on a far shorter time horizon. The projections are also underpinned by long-term consensus expectations indicating the market participants’ estimates of economic growth up to 2014, cf. Chart 3. For China, India and Russia these estimates are more positive than the projections in Goldman Sachs (2003).

If Goldman Sachs' growth projections prove to be sustainable, global growth in the next 10 years may exceed the average global growth rate in the last 20 years, cf. a recent study by Goldman Sachs (2004).

### BRIC COUNTRIES’ ECONOMIC MAGNITUDE IN RELATION TO G7

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Country (GDP in billion dollars, current prices)</th>
<th>Country (GDP in billion dollars, current prices)</th>
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<tbody>
<tr>
<td>1</td>
<td>USA (10,882)</td>
<td>China (44,453)</td>
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<tr>
<td>2</td>
<td>Japan (4,326)</td>
<td>USA (35,165)</td>
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<tr>
<td>3</td>
<td>Germany (2,401)</td>
<td>India (27,803)</td>
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<tr>
<td>4</td>
<td>UK (1,795)</td>
<td>Japan (6,673)</td>
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<tr>
<td>5</td>
<td>France (1,748)</td>
<td>Brazil (6,074)</td>
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<tr>
<td>6</td>
<td>Italy (1,466)</td>
<td>Russia (5,870)</td>
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<tr>
<td>7</td>
<td>China (1,410)</td>
<td>UK (3,782)</td>
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<tr>
<td>8</td>
<td>Canada (834)</td>
<td>Germany (3,603)</td>
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<tr>
<td>9</td>
<td>India (599)</td>
<td>France (3,148)</td>
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<tr>
<td>10</td>
<td>Brazil (492)</td>
<td>Italy (2,061)</td>
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<tr>
<td>11</td>
<td>Russia (433)</td>
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Note: In Goldman Sachs (2003) the basis for comparison is G6, and therefore Canada is not included in the projections for 2050.

GROWTH FACTORS

The BRIC countries’ opportunities for sustainable surplus growth depend on their ability to achieve growth in the components underlying the long-term economic growth.

Decomposition of the historical growth in the BRIC countries, cf. Table 5, reveals fundamental differences in growth factors among the BRIC countries and in relation to market economies such as the USA, Japan and Germany. Characteristic of the high growth in China is that it stems from strong expansion of capital input, as well as growth in both labour productivity and technological progress in the form of total factor productivity. On the other hand, the contribution from a larger workforce has been smaller. An equivalent pattern is seen for the slightly lower growth in India, where employment has played a greater role, however. In stark contrast, Brazil and Russia have seen low or directly negative productivity growth. In this context it is, as mentioned, hard to assess Russia’s growth since the period observed has seen various strong disturbances to the economy. Brazil’s growth is primarily based on accelerated accumulation of production factors. All components contribute to growth in the USA, while employment growth has been negligible or declining in Germany and Japan.

Institutional framework
Rodrik (2003) finds many examples of growth accelerations, but only few have proved sustainable. Whether a country can maintain high economic growth depends on many factors, but the sustained build-up and development of an institutional framework over time are considered vital to long-term success in supporting growth and increasing flexibility.
to resist shocks to the economy. The required quality of institutions thus changes over time in step with economic development. Institutional development should be interpreted in the broadest terms and e.g. includes ongoing development and reforms of the legal system, liberation of market forces, health and school education programmes, financial institutions and markets, and public administration. Furthermore, for the BRIC countries it is vital to create institutions that can ensure sound macroeconomic policy and reduce vulnerability to various shocks. Unstable economic conditions with high inflation impede growth, savings and investments. Several organisations prepare relative indices of the countries’ competitiveness in the broad sense in order to assess their potential for sustainable growth. The BRIC countries are still considered to have a good way to go before the institutional framework is at the level of the mature market economies.

**Openness**

During the 1990s the Washington Consensus guidelines\(^1\) gained ground as a tool for achieving economic growth. A key element of these guidelines is that economic growth is best achieved through economic liberalisation, including the capital balance, and by allowing the free movement of goods and production factors. Openness contributes especially to generating growth by facilitating greater access to capital and technology – traditionally production factors in scant supply in less developed economies. Moreover, due to the international division of work, increased trade will also help to sustain the growth process in less developed countries that typically have an ample supply of cheap labour. Greater openness also generally increases competition and adds to the pressure for supplementary reforms in other areas.

To a high degree the BRIC countries have achieved greater prosperity in step with the opening up of the countries to the outside world, cf. Chart 4. With the exception of Russia, which is subject to special circumstances, all BRIC countries have followed a similar pattern, where increasing openness, measured by exports as a ratio of GDP, has closely accompanied growing prosperity. Especially China has undergone significant development in terms of both openness and prosperity. In the course of 25 years exports as a ratio of GDP have increased from approximately 14 per cent to 42 per cent, while at the same time GDP per capita has risen by more than 1,300 per cent.

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1 According to the Washington Consensus economic growth is achieved by following a number of guidelines for sound economic policy, such as fiscal discipline, tax reforms, liberalisation of financial markets, liberalisation of inflows of foreign direct investment, trade liberalisation, privatisation, deregulation, secure property rights, etc. Subsequently these guidelines have been extended to include e.g. “prudent” capital account opening, independent central banks and inflation targeting.
Total factor productivity
There is normally a close correlation between economic growth and growth in total factor productivity, cf. the definition in Box 1 on p. 45. This correlation is confirmed by a cross plot between economic growth
and growth in total factor productivity for a large panel of countries in the period 1980-2003, cf. Chart 5. There is a clear correlation between growth in total factor productivity and economic growth, and this also seems to apply to the BRIC countries. If it continues, Russia and Brazil’s historical lack of ability to sustain growth in total factor productivity will contribute to curbing the future growth of these economies.

**Capital**

An increase in the use of either capital or labour generally implies diminishing marginal product, such that relatively more of a production factor would have to be accumulated in order to generate a given growth rate. In the long term, growth based exclusively on factor accumulation can be vulnerable to changes in access to the production factors.

As stated, capital accumulation in especially China and to some extent India has been high. In China, so far the high investment ratio has been superseded by an even higher savings ratio, so that for a number of years China has not had to face a current-account deficit. Russia’s savings ratio is also high. In Brazil, the savings ratio has been low, on average just below 20 per cent of GDP, which has aggravated external vulnerability.

Direct investments by countries with ample capital in countries where capital is in shorter supply facilitates access to newer technology. Since the early 1990s China has thus seen a strong influx of foreign capital as direct investments, cf. Chart 6. Since 1994 this has also applied to Brazil, although in its case this is more related to the privatisation of existing state-owned enterprises. Lately Russia has seen a strong increase in the volume of direct investments, albeit from a rather lower level.

**Population growth and education level**

In population terms the BRIC countries today account for approximately 42 per cent of the world’s population. China and India have the world’s two largest populations, while Brazil and Russia rank respectively 5th and 7th. Looking forward, demographic projections from the US Census Bureau indicate that the BRIC countries’ total population is expected to increase from approximately 2.7 billion in 2003 to approximately 3.4 billion 2050. In the same period, the BRIC countries’ share of the world’s total population is expected to drop from the present 42 per cent to 37 per cent. Population growth will be strongest in India, where the popu-

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1 The high savings ratio in China, where income per capita is low, has been a puzzle. Modigliani and Cao (2004) state that the background to the households’ high savings ratio lies in strong economic growth, as well as China’s population policy. Controlled population growth significantly reduced the share of the population aged under 15 from the mid-1970s to 2000, and also undermined the traditional role of the family to care for its elderly members.
lation count is expected to rise to 1.6 billion, although Brazil and China will also see net population growth to respectively 228 million and 1.4 billion people. In relative terms, however, Brazil and China’s shares of the global population will decline. According to the projection, Russia is expected to continue recent years’ tendency for negative population growth. In 2050 Russia’s population is expected to be only approximately 80 per cent of the current level (approximately 118 million). The spread of HIV/AIDS appears to have a potential high impact on especially Russia’s demographic development, cf. Box 2.

Today Brazil, China and especially India have a relatively high proportion of young people compared to Western Europe, while the share of the population that is active in the labour market is approximately the same. On the other hand, the share of elderly people is relatively smaller. In Russia a larger percentage than in Western Europe are active in the labour market. This situation does not change significantly up to 2050, although the demographic distributions in the BRIC countries gradually more and more resemble those of Western Europe. In China and Russia the active share of the population will be rising up to 2010-15, while this will be the case for Brazil and India up to respectively 2015-20 and 2035-40. In Western Europe, the ratio will be falling from 2004.

In terms of education level, Russia is the leading BRIC country. Based on a number of World Bank indicators, the population’s education level
does not seem to differ significantly from the mature market economies, and illiteracy is almost non-existent. Brazil and China rank next and are not very far apart. Around 10 per cent of China’s adult population are illiterate, compared to almost 15 per cent in Brazil. The younger generation is generally better educated, even though the proportion of young people in higher education is still well below the level in the mature market economies. India lags behind the other BRIC countries. A good 40 per cent of the adult population are illiterate, while the youth illiteracy ratio is almost 30 per cent.

**CONCLUSION**

For some years reforms and greater openness have increased the global economic significance of the BRIC countries. These countries still have strong growth potential, especially in view of their large, young populations. The key challenge faced by the BRIC countries will be to maintain robust and sustainable growth in order to reduce the gap in living standards to the mature market economies. However, it is hardly realistic to believe in a smooth extended catching-up process without major fluctuations. In the course of time the BRIC countries will have to face some
major challenges and history tells us that not all countries are equally successful at tackling these challenges.

The challenge they all face includes ensuring sustainability at a high growth rate, reducing the rural/urban income gap and maintaining macroeconomic stability. Reforms of the financial sector in order to better handle rising capital flows and mobilise domestic savings into productive investments will also be important. The BRIC countries share a number of common characteristics, but there are also important differences. Brazil will face the major challenge of opening up its economy and creating a larger domestic savings pool to finance investments. In Russia, the challenge is to reduce the economy’s dependence on oil and to fight corruption, while in India the key challenges are greater openness, better education and improved infrastructure. In China, ongoing reforms of state-owned enterprises and banks will take high priority.
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