

BRICs Monthly

Issue No: 11/05

May 31, 2011

Goldman Sachs Global Economics, Commodities and Strategy Research at <https://360.gs.com>

Population Growth and Ageing in the BRICs

Dominic Wilson
dominic.wilson@gs.com
+1 212 902 5924

Constantin Burgi
constantin.burgi@gs.com
+44 (0)20 7051 4009

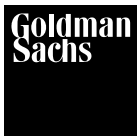
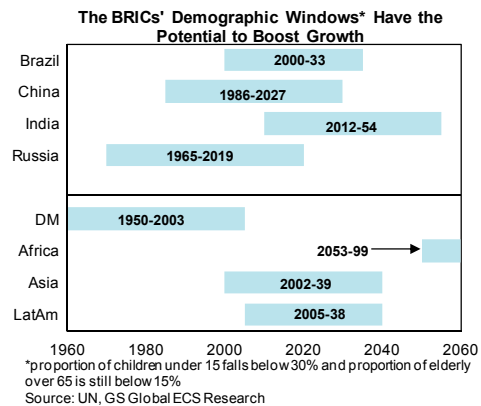
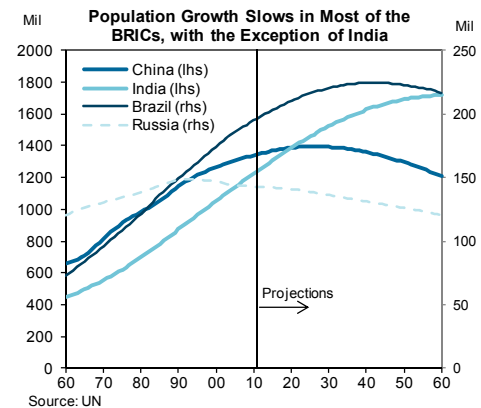
Stacy Carlson
stacy.carlson@gs.com
+1 212 855 0684

Population growth is expected to slow in the BRICs over the next few decades, pushing down their aggregate share of the global population. The age structure of the BRICs will also continue to shift progressively towards older populations. In the process, each of the BRICs will encounter—or is already encountering—an advantageous ‘demographic window’ in which the working-age population is disproportionately large. With an appropriate policy framework, this could provide a boost to growth in Brazil, China and India for several years; Russia’s window of opportunity has probably already passed.

Over the past 50 years, the population of the BRICs has more than doubled. However, population growth is expected to slow notably over the next several decades, producing a concurrent fall in their share of the global population. Only India should continue to see its population size and global share continue to expand.

The age structure of the BRICs will also shift progressively towards older populations over the next several decades. This shift reflects a ‘demographic transition’, during which a rapid fall in mortality rates and a more gradual fall in fertility rates produces a temporary population ‘bulge’. As this ‘bulge’ cohort passes into the working-age bracket, it has the potential to boost economic growth because this segment of the population provides relatively more labour and savings. This period of advantageous demographic profiles, known as the ‘demographic window’, is expected to last for several decades in Brazil, China and India, while it is likely nearing its end in Russia.

To harness the potential benefits of the ‘demographic window’, the BRICs must have in place an appropriate policy framework, particularly with regards to labour and financial markets and old-age pension preparations. One way to track the strength of current policies is our Growth Environment Score (GES) framework. This suggests that India, in particular, will need to make substantial improvements in order to take advantage fully of its ‘demographic window’.



Population Growth in the BRICs is Slowing....

The BRICs, along with much of the world, have seen a rapid expansion in population over the past half century. Over 2.9bn people currently reside in the BRIC nations, more than double the number in 1960 and representing approximately 42% of the world’s total population.

However, BRICs’ aggregate population growth is set to slow in the years to come, according to the most recent revision of the United Nations population projections.¹ These long-range projections necessarily rely on several assumptions, but provide a good directional sense of future population trends. Over the next 50 years, only India’s population will continue to expand, reaching nearly 1.7bn people by 2060. Brazil’s population is expected to stabilise in the next 25-35 years, while China’s population is forecast to start to decline within the next two decades. The number of people in Russia has been shrinking for nearly two decades already, and the pace of decline is expected to accelerate to nearly 0.5% per year over the next few years.

As a result, India is projected to overtake China as the most populous nation in the world in 2021, a position China has held since the UN data begins in 1950. India also is expected to be the only BRIC to maintain its share of the global population. China will see a significant drop in its share from nearly 20% currently to 13% in 2060, and Russia will see its already small share cut in half. Brazil will also see a small decline. A similar drop in global population weight is expected to occur in the developed world as well, as the centre of population gravity shifts increasingly toward Africa in the decades to come.

...And the Age Structure is Shifting

The age structure of the BRICs also will shift meaningfully over the next several decades. While the expected ageing of the developed world has commanded public attention, the greying of the BRICs will occur much sooner and faster. The median age in the BRICs is forecast to increase from 32 at present to over 45 by 2060, compared with a rise of just four years (from 40 to 44) in the developed world.

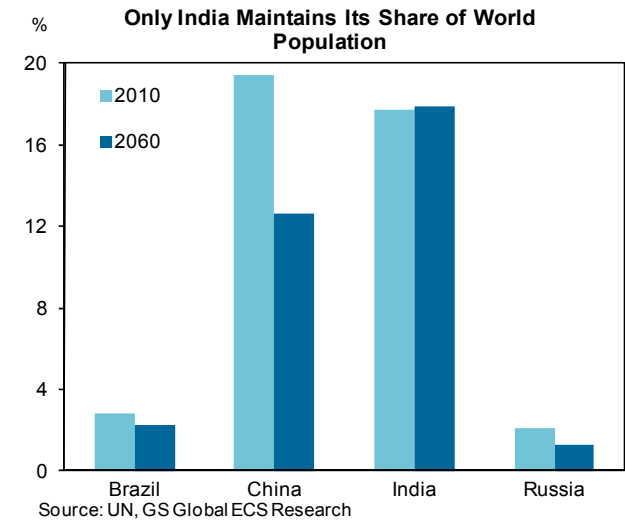
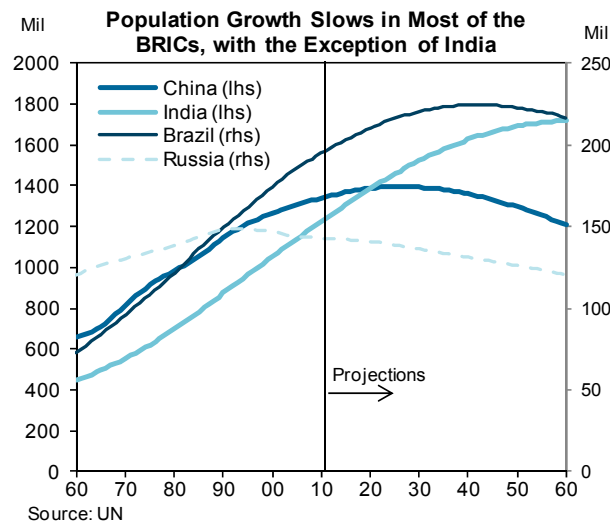
This dramatic shift in age structure reflects the ‘demographic transition’, a developmental phase through which the BRICs and much of the developing world are passing. This transition is typical of countries moving from the high fertility and mortality state common in less-developed countries to the low fertility and mortality equilibrium that characterises most developed countries, which have already undergone this transition.

This transition typically follows a standard pattern. First, mortality rates fall (particularly for the more-vulnerable infant/child segments of the population) and life expectancies increase as improvements in public health and sanitation reach developing countries. This step occurred in the 1970s in China and in the 1970s-80s in Brazil and India, but was absent in Russia, where the death rate has actually risen. Next, fertility rates decline gradually as parents realize fewer children will die during childhood and as it becomes more advantageous to have smaller families.² Birth rates in Brazil, China and India have fallen steadily over the past few decades and have also come down, albeit a bit more sporadically, in Russia.

The lag between the initial decline in mortality and the subsequent reduction in fertility produces a temporary boom in the population growth rate and a ‘bulge’ cohort that then works its way through the age structure. This produces an initial rise in the country’s dependency ratio (the ratio of working-age people to young and elderly ‘dependents’), followed by a 30/40-year-long fall as this cohort reaches the working-age bracket. This period—often referred to as the ‘demographic window’, when the working-age population is particularly large relative to dependents—can have potentially advantageous implications for economic growth and living standards.³

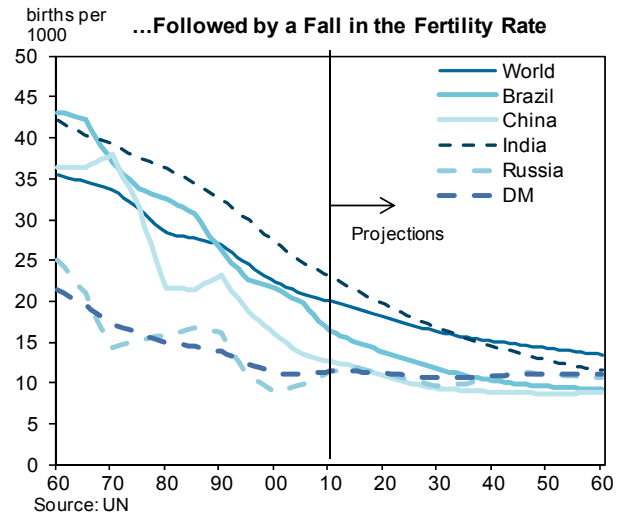
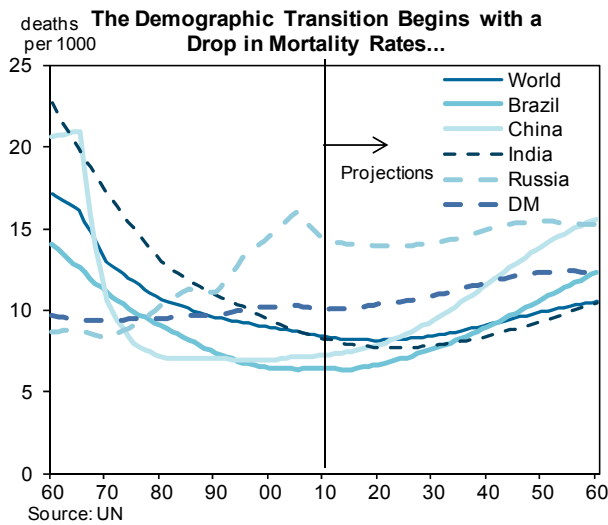
Implications for the Economy

There is a growing consensus that it is the age composition of the population, rather than the overall size or growth rate, that determines the economic impact of demographics. This stems from the fact that age groups behave differently: the young require large investments in health and



1. ‘2010 Revision of the World Population Prospects’, http://esa.un.org/unpd/wpp/unpp/panel_population.htm
 2. As children have a higher survival probability, parents have greater incentives to invest in education, which encourages them to invest more resources in fewer children.
 3. The UN defines the ‘demographic window’ as the period when the proportion of children under 15 falls below 30% and the proportion older than 65 is still below 15%.





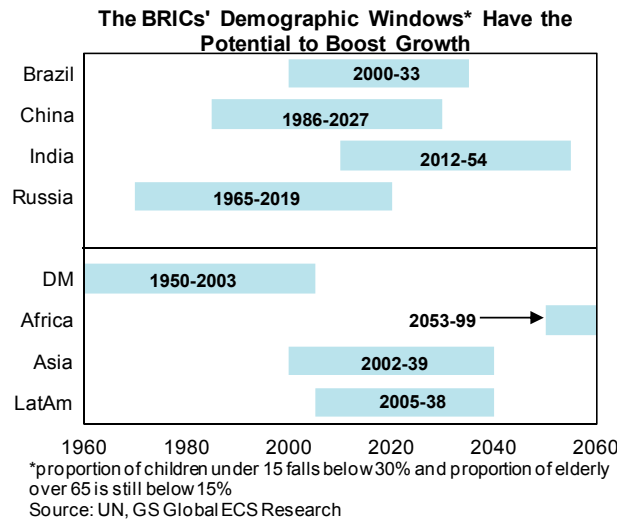
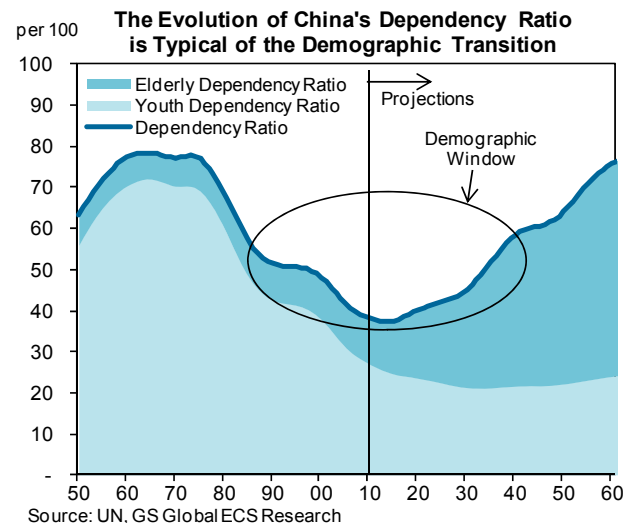
education, working-age adults tend to work and save more, and the elderly require health care and retirement support. Thus, the most favourable demographic profile occurs during the 'demographic window', when the working-age population is particularly large relative to the young or elderly segments. We incorporate the importance of the age structure into our own long-run growth projections, and have also explored how shifts in demographic profiles will influence global current account trends going forward.⁴

appropriate policy framework. The labour market must be sufficiently flexible to absorb the larger number of working-age people available to work. There must be adequate savings vehicles and trustworthy domestic financial markets to encourage this cohort to invest their savings domestically. And governments need to be sufficiently forward-looking to put in place programs, such as pension arrangements, in preparation for the eventual aging of their populations.

Among the BRICs, India has the highest potential to reap future benefits from its demographic window, which it is poised to enter next year. Brazil and China have already entered this phase, and are forecast to emerge from it within the next two decades. Russia, on the other hand, is nearing the end of its window and has already seen its dependency ratio turn upwards as its population begins to age noticeably. These differences are reflected in our BRICs' growth projections, in which growth in the labour force (as proxied by the working-age population) contributes relatively more to growth in India and actually detracts from growth in Russia.

We can use our Growth Environment Scores (GES) as a measure of the strength of economic, political and social conditions that influence growth. India's weak GES performance indicates that it will need to make significant policy improvements if it is to take advantage fully of the potential benefits of its demographic window. Brazil and China, on the other hand, have made continued progress in their GES, which helps to explain their demonstrated ability to harness their advantageous demographic profiles over the past decade. Russia's volatile GES performance helps to explain in part its inconsistent growth trajectory, and suggests that it has probably lost the growth bonus opportunity provided by its now-closing demographic window.

However, it is important to emphasise that the benefits of the demographic window can only be harnessed with an



4. See Global Paper 202, *Current Accounts and Demographics: The Road Ahead*.

Main Economic Forecasts

	2009	2010	2011	2012	2011				2012			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Real GDP Growth (yoy%)												
Brazil	-0.6	7.5	4.5	4.0	4.7	4.1	4.5	4.6	4.2	3.9	3.9	4.1
China	9.2	10.3	9.4	9.2	9.7	9.7	9.4	8.9	8.9	9.2	9.3	9.3
India	8.0	8.5	7.5	7.8	7.7	7.6	7.4	7.5	7.9	7.9	7.6	7.7
Russia	-7.9	4.0	5.3	5.6	3.7	4.4	6.0	6.6	6.3	5.9	5.3	5.2
BRICs	5.0	8.7	7.6	7.6	7.6	7.6	7.7	7.6	7.6	7.7	7.6	7.6
World	-1.8	4.2	3.6	4.1	3.6	3.3	3.5	3.6	3.9	4.1	4.0	4.0
Inflation (yoy%)												
Brazil	4.9	5.2	6.6	6.5	6.3	6.6	6.9	6.5	6.0	5.7	6.1	5.9
China	-0.7	3.3	4.7	3.0	5.0	5.4	5.0	3.6	3.0	2.8	2.9	3.2
India	3.8	9.6	8.1	5.1	8.8	8.9	8.2	6.3	5.2	5.0	5.0	5.4
Russia	11.7	6.8	8.4	6.2	9.5	9.5	8.3	7.1	6.2	6.2	6.2	5.9
BRICs	2.6	5.1	6.1	4.3	6.4	6.7	6.3	5.0	4.3	4.1	4.2	4.3
World	1.2	2.7	3.9	3.0	3.4	3.9	4.0	3.6	3.1	2.7	2.8	2.8
Exchange Rate (eoq)												
Brazil	1.74	1.66	1.62	1.85	1.63	1.55	1.60	1.62	1.70	1.75	1.80	1.85
China	6.83	6.62	6.23	5.82	6.55	6.45	6.36	6.26	6.17	6.07	5.97	5.87
India	45.14	44.70	47.00	47.00	46.00	46.20	47.00	47.00	47.00	47.00	47.00	47.00
Russia	30.24	30.54	26.12	25.25	28.22	28.81	27.86	26.12	25.71	25.25	25.25	25.25
Policy Rate (eoq)												
Brazil	8.75	10.75	13.25	13.25	11.75	12.25	12.75	13.25	13.25	13.25	13.25	13.25
China	5.31	5.81	6.56	6.56	6.06	6.56	6.56	6.56	6.56	6.56	6.56	6.56
India	5.00	6.75	8.00	7.50	7.25	7.50	8.00	8.00	8.00	7.75	7.50	7.50
Russia	6.25	5.00	6.50	7.25	5.25	5.50	6.00	6.50	7.00	7.00	7.25	7.25
Nominal GDP per Capita												
Brazil	8223	10641	12986	13201								
China	3739	4394	5244	6329								
India	1194	1440	1640	1812								
Russia	8777	10412	13268	14814								
BRICs	3238	3873	4582	5269								
EM	3517	4164	4904	5534								
DM	38274	39510	43009	44998								
World	12062	12764	14135	15068								

Source: GS Global ECS Research

We, Dominic Wilson, Constantin Burgi and Stacy Carlson, hereby certify that all of the views expressed in this report accurately reflect personal views, which have not been influenced by considerations of the firm's business or client relationships.

Global product; distributing entities

The Global Investment Research Division of Goldman Sachs produces and distributes research products for clients of Goldman Sachs and pursuant to certain contractual arrangements, on a global basis. Analysts based in Goldman Sachs offices around the world produce equity research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy. This research is disseminated in Australia by Goldman Sachs & Partners Australia Pty Ltd (ABN 21 006 797 897) on behalf of Goldman Sachs; in Canada by Goldman Sachs & Co. regarding Canadian equities and by Goldman Sachs & Co. (all other research); in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs & Partners New Zealand Limited on behalf of Goldman Sachs; in Russia by OOO Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman Sachs & Co. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom and European Union.

European Union: Goldman Sachs International, authorized and regulated by the Financial Services Authority, has approved this research in connection with its distribution in the European Union and United Kingdom; Goldman Sachs & Co. oHG, regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht, may also distribute research in Germany.

General disclosures

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by our Global Investment Research Division. SIPC: Goldman, Sachs & Co., the United States broker dealer, is a member of SIPC (<http://www.sipc.org>).

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and our proprietary trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, our proprietary trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research.

We and our affiliates, officers, directors, and employees, excluding equity and credit analysts, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research.

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options disclosure documents which are available from Goldman Sachs sales representatives or at <http://www.theocc.com/publications/risks/riskchap1.jsp>. Transactions cost may be significant in option strategies calling for multiple purchase and sales of options such as spreads. Supporting documentation will be supplied upon request.

All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Goldman Sachs responsible for the redistribution of our research by third party aggregators. For all research available on a particular stock, please contact your sales representative or go to www.360.gs.com.

Disclosure information is also available at <http://www.gs.com/research/hedge.html> or from Research Compliance, 200 West Street, New York, NY 10282.

No part of this material may be (i) copied, photocopied or duplicated in any form by any means or (ii) redistributed without the prior written consent of The Goldman Sachs Group, Inc.

© Copyright 2011, The Goldman Sachs Group, Inc. All Rights Reserved.