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Spotlight on Demographic Giants: China and India

GLOBAL DEMOGRAPHICS RESEARCH

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A Demographics-Focused Analysis Covering the "People Characteristics" of the World's Two Largest Emerging Economies

- Although China and India are often compared and spoken of in the same breath, we focus on highlighting their many demographic differences. Our demographic focus is not just on people numbers, as is commonly the case, but rather on people characteristics, such as *"consumers and workers"*.
- We believe that it is more useful to group countries on the basis of GDP per capita than merely on GDP growth. On GDP per capita, India lags far behind China. We caution against the use of groupings of countries, such as BRIC, as we believe that such groupings mask very important underlying fundamental differences. In our report, we highlight important GDP and structural differences between China and India.
- China is much older (higher median age) and healthier (higher life expectancy) than India but has lower population/labour force growth and higher old-age dependency, factors that could have adverse effects on its economic growth and fiscal sustainability.
- China has a much higher economic activity rate than India as a result of China's much higher female participation rate. This suggests a better and more equal utilization of the labour force in China than in India.
- The differing family structures of China and India influence their consumer expenditure patterns. China's and India's consumer expenditure pattern differences have varying implications for the sectoral growth of their economies as well as that of their trading partners.
- Key challenges that both countries need to address are the growing rural-urban and rich-poor differences. Inter-regional differences also pose the challenge of balanced development, which has both economic and social implications.
- The pension and health implications of aging will be faced more acutely by China than India in the near future given China's older population. These are likely to require China to make policy changes both at the social and economic levels. It can learn from the Western pension systems by not making unsustainable promises while it increases its pension coverage. We highlight the differences in retirement, pensions and health between China and India.
- India faces a larger urbanization challenge than China on account of its higher population density. This has implications for infrastructure and commodities demand.
- We are bullish on the pharmaceutical and health care, financial services, technology, consumer retail and education sectors, based on the underlying demographics of China and India.

Our demographic perspective is broad, different from the norm and focused on "people characteristics" rather than only on mortality, longevity and migration[1]. We believe that a focus on people as consumers and workers is critical to understanding the economic and financial implications of the behaviour of individuals in families, in companies and as residents or citizens in countries. Here, we shine the spotlight on the demographics of China and India.

They are the two most populous countries in the world, accounting for 37.2% of the world's population today – with China's estimated 2010 population of 1.35 billion people and India's population of 1.21 billion people. In terms of current GDP, China and India account for low but increasing shares of the world's economy, as shown in Exhibit 1. The combination of GDP and population yields GDP per capita. Relative to the G3 (US, Japan and Germany), China's and India's GDP per capita levels are very low. Just focusing on GDP growth masks intrinsic differences in GDP per capita between China and India – GDP per capita in China, at USD4,243 is nearly three times that of India, at 1,177 USD.

Exhibit 1: Current Population, Labour Force, GDP and GDP Per Capita

2010

	China		India		G3 (US, Japan, Germany)	
	Value	Share of World	Value	Share of World	Value	Share of World
Population (Million)	1,354	19.6%	1,214	17.6%	527	7.6%
Labour Force (Million)	798	24.5%	484	14.8%	272	8.3%
GDP (Billion USD)	5,745	9.3%	1,430	2.3%	23,321	37.6%
GDP Per Capita (Current, USD)	4,243	-	1,177	-	44,278	-

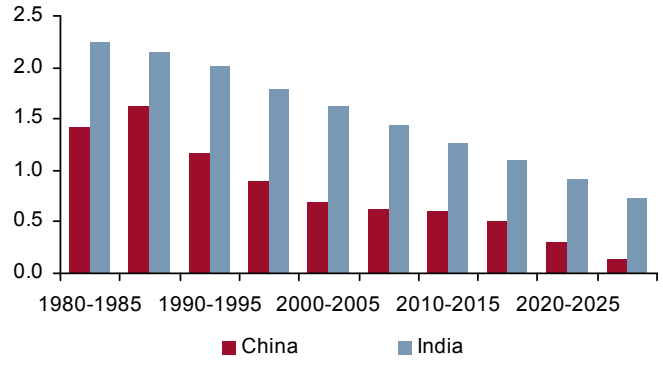
Source: Credit Suisse, IMF, UN, ILO

Core Demographics

Population growth rates have been declining in both China and India starting from the mid-1980s and are projected to decline further in the coming decades, as shown in Exhibit 2. The decline is much more dramatic in China as a result of its "One-Child Policy" (from 1.42% p.a. in 1980-1985 to 0.63% p.a. in 2005-2010). According to UN projections, Chinese population growth is projected to turn negative from 2035 onwards. In India, population growth fell from 2.24% p.a. in 1980-1985 to 1.43% in 2005-2010 and is projected to fall to 0.73% in 2025-2030.

Exhibit 2: Population Growth Rate

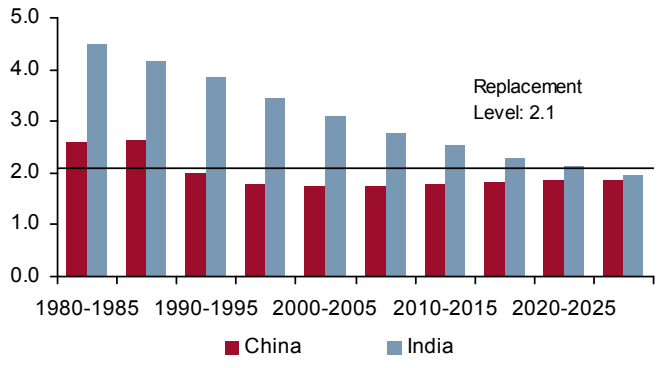
Growth rate per annum (%)



Source: Credit Suisse, UN

Exhibit 3: Total Fertility Rate

Children per woman



Source: Credit Suisse, UN

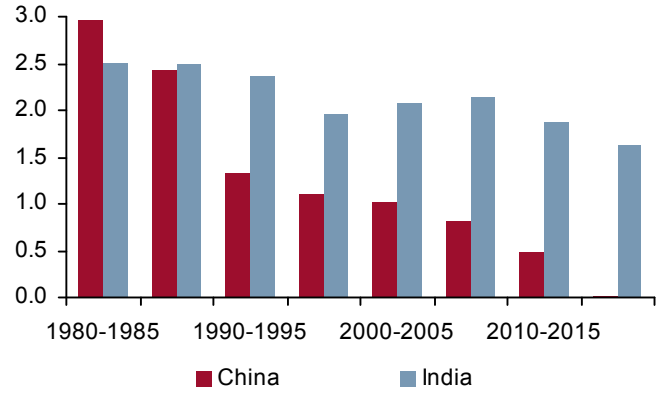
[1] Please refer to *Why Demographics Matters? And How?*, Credit Suisse Demographics Research (2006)

As shown in Exhibit 3, China's total **fertility rate** (number of children per woman of child-bearing age) has been lower than that of India. It fell below the replacement level of 2.1 children per woman in 1990-1995, was stable between 1995 and 2010 and is expected to increase slightly during 2010-2030. The Indian fertility rate has been declining since the 1980s, from 4.5 children per woman (1980-1985) to 2.8 (2005-2010), but it is still well above the replacement level. It is projected to fall below replacement level in 2025-2030 to 1.96.

As shown in Exhibit 4, the Chinese labour force growth rate has declined significantly, especially since the 1990s, and is expected to be close to zero in 2015-2020. The Indian labour force growth rate has been high and stable in the past and is projected to remain so until 2020.

Exhibit 4: Labour Force Growth Rate

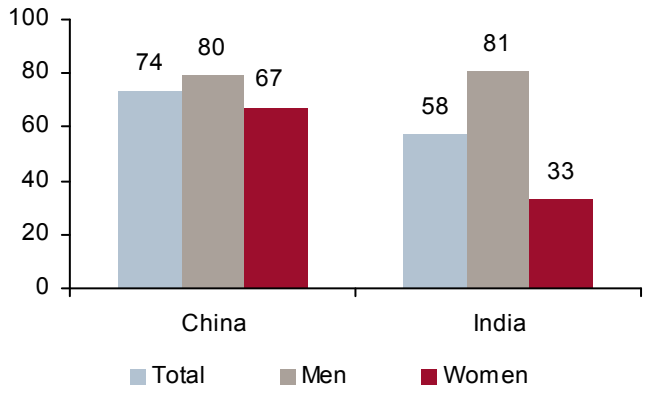
Growth rate per annum (%)



Source: Credit Suisse, ILO

Exhibit 5: Economically Active Population

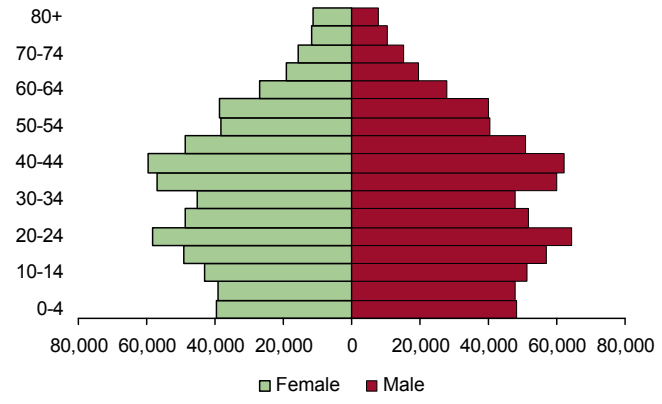
Rates, 2010



Source: Credit Suisse, ILO

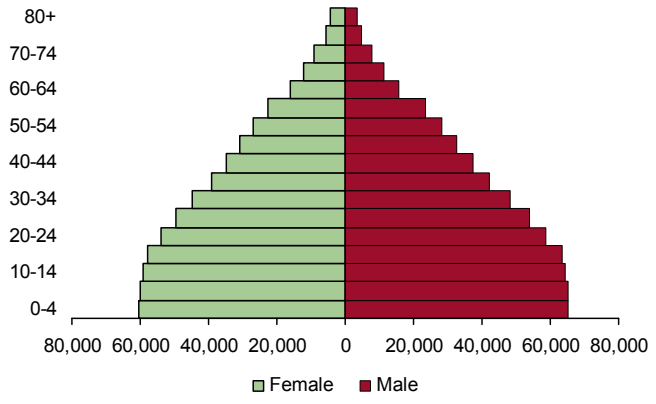
Economic activity rates measure the ratio of the economically active population to the total population aged 15 years and above. Overall, the economic activity rates are higher for all age groups in China. The gap between male and female economic activity rates is very high in India (48%) compared to China (12%), highlighting India's larger gender gap in the labour force, as shown in Exhibit 5. To examine the gender gap in the population, the population pyramids that capture the age structure of both countries are presented in Exhibits 6 and 7.

Exhibit 6: Population Pyramid – China (2010)



Source: Credit Suisse, UN

Exhibit 7: Population Pyramid – India (2010)



Source: Credit Suisse, UN

The gender gap in China is high at lower age groups, as is evident from the lower bars. According to UN Population Division data, there are 1.2 males per female in China in the 0-14 age group in 2010 and 1.08 males per female in India in the same age group. The overall male-female ratio for China is 1.079 in 2010 and for India 1.068. This is attributed mainly to the preference for the male child in both China and India.

"Save the Girl Child" and "National Mission for Female Literacy" are two programmes spearheaded by Indian Prime Minister Manmohan Singh to address this issue. President Hu Jintao of the People's Republic of China has also similarly emphasized the need to pay great attention to the increasing gender disparity and deal with the problem as a key task. This is also reflected in the current proposals of China's Twelfth Five-Year Plan (2011-2015).

As shown in Exhibit 8, the under-25 age group in India accounts for 50% of the country's population, in contrast to 37% for China. In the Appendix, we include population pyramids at different points in time for China and India to give quick insight into age distribution differences.

Exhibit 8: Age Distribution

Share of Population in Different Age Groups

	China		India	
Age Groups	**1990**	**2010**	**1990**	**2010**
Less than 15	28%	20%	38%	31%
15-24	22%	17%	19%	19%
25-34	17%	14%	15%	16%
35-54	21%	31%	19%	22%
55-64	7%	10%	5%	6%
65+	6%	8%	4%	5%

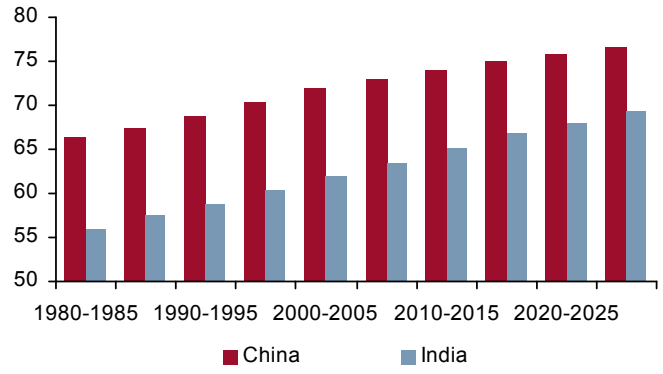
Source: Credit Suisse, UN

Longevity (Life Expectancy)

Life expectancy at birth is much higher in China than India, and the gap between the two is declining very slowly, as shown in Exhibit 9. The difference is quite stark.

Exhibit 9: Life Expectancy at Birth

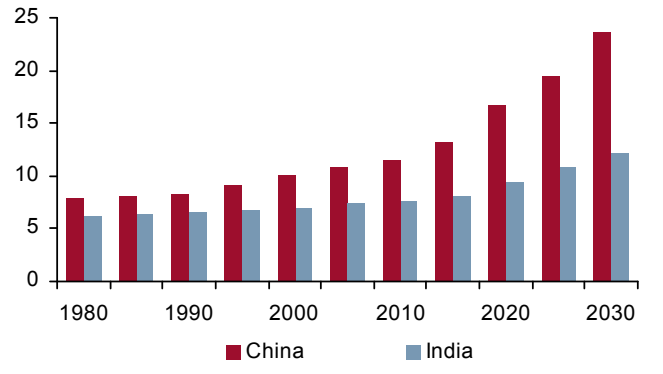
Years, both sexes



Source: Credit Suisse, UN

Exhibit 10: Old-Age Dependency Ratio

People aged 65+ per 100 people aged 15-64



Source: Credit Suisse, UN

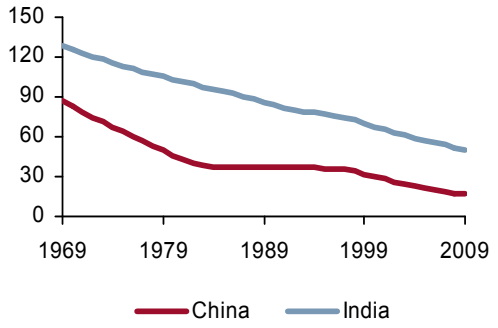
Life expectancy at birth in China has increased from 66.4 years (1980-1985) to 73 years (2005-2010) and in India from 56 years (1980-1985) to 63.5 years (2005-2010). Another measure of longevity, conditional life expectancy at 65 (i.e., life expectancy at age 65) is also higher in China (15.7 years in 2005-2010) than in India (13.7 years in 2005-2010). As

shown in Exhibit 10, the old-age dependency ratio (defined as people aged 65+ per 100 people aged 15-64) has risen very dramatically in China, from 7.9 (1980) to 11.4 (2010), and this rise is expected to continue to 23.7 (2030). India, on the other hand, has experienced a relatively modest increase from 6.3 (1980) to 7.7 (2010).

A major factor contributing to the life expectancy difference is the difference in infant mortality rates. Infant mortality has been declining in both China and India as health conditions have improved. However, infant mortality is still much higher in India than China. This has implications for primary health care. As shown in Exhibit 11, infant mortality in India has declined from 129 deaths per 1,000 live births in 1969 to 50 deaths per 1,000 live births in 2009, while that in China has decreased from 87 (1969) to 17 (2009). We discuss this issue further later in our section on health.

Exhibit 11: Infant Mortality

Deaths per 1,000 live births



Source: Credit Suisse, UNICEF

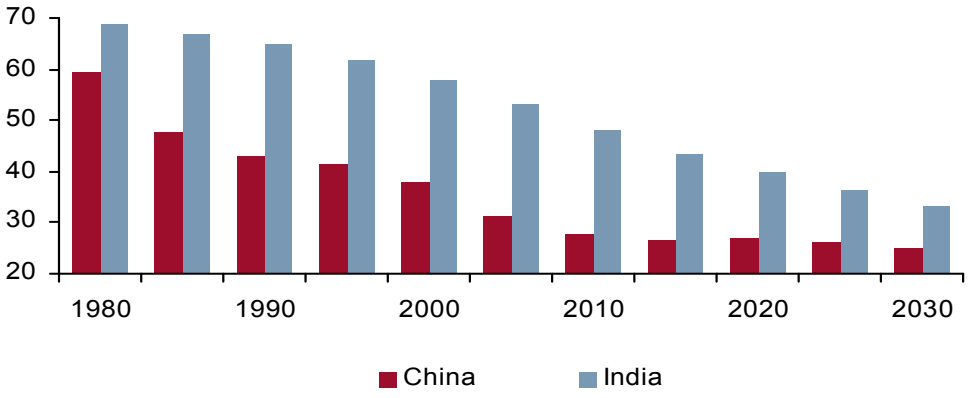
The median age in China (34.2 years) is also currently much higher than in India (25 years). This relative aging of China could be a potential disadvantage in terms of future age-related expenditures, potential labour force growth, GDP growth and fiscal sustainability compared to India. It also reflects that China is at a different stage of demographic transition from India.

Youth Dependency Ratio and Demographic Transition

Although a lot of emphasis in the demographics literature is placed on aging and old-age dependency ratios, we think that it is very important to consider youth dependency too (see Exhibit 12).

Exhibit 12: Youth Dependency Ratio

People aged 0-14 years per 100 people aged 15-64



Source: Credit Suisse, UN

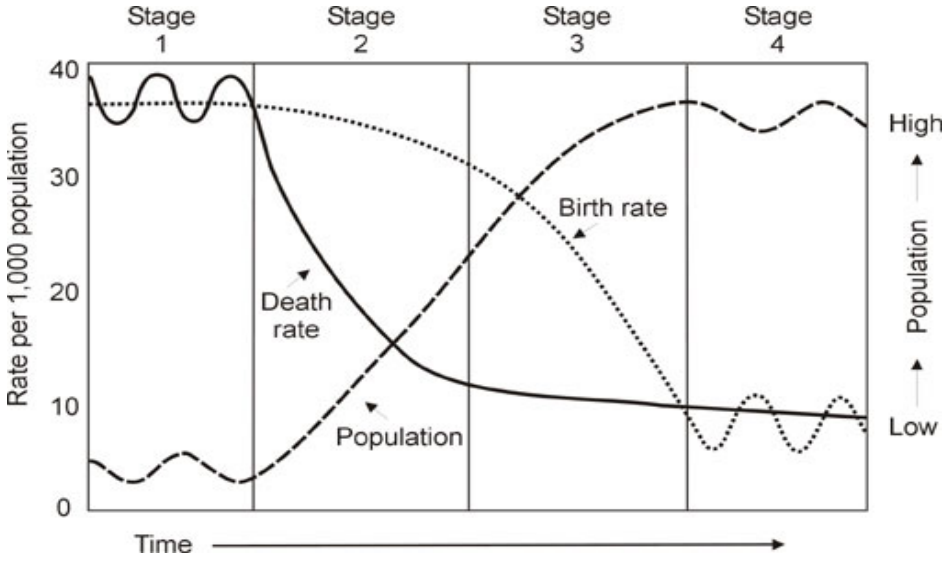
The youth dependency ratio is a leading indicator of potential labour force growth. The literature on economic growth argues that the most important determinant of international differences in output per worker is differences in total factor productivity. Kogel (2005) finds that the youth dependency ratio reduces total factor productivity growth through reduced aggregate savings.

In addition to the above, a popular model of population change over time attributed to Warren Thompson, a US demographer, is called the "demographic transition". We show in Exhibit 13 a diagrammatic representation of the demographic transition. The four stages are briefly described as follows:

- Stage I: High and fluctuating birth and death rates, stationary population numbers and rates
- Stage II: High birth rates, fall in death rate, increase in population, increase in number of young people
- Stage III: Decline in fertility rate, population growth as a result of population momentum
- Sage IV: Low birth and death rates, stable population, increase in the number of elderly

According to the demographic transition framework, **China is in Stage 3, and India is in Stage 2**.

Exhibit 13: Demographic Transition Model of Warren Thompson



Source: Credit Suisse, "Demographic Transition Theory", John Caldwell (2006)

- The **demographic dividend theory** (coined by Bloom and Canning 2002) attributed one-third to up to 40% of the GDP per capita growth in South Asia, East Asia and Latin America to demographic factors. The essence of this g theory, which has been tested to conform with historical data, is that as countries industrialized and urbanized, infant mortality rates fell along with the fall in fertility rates, as women had fewer children and educated them better in the cities. The better-educated children entered the work force a decade or two later as a productive labour force, saving more and contributing to higher GDP growth. Exhibit 14 below, abstracted from an IMF research paper (2006), shows that demographics contributed in a major way to the increase in GDP per capita and that there are two distinct stages in the demographic dividend theory. The stages are described as follows:
- **First Dividend**: Fertility rates fall, and the labour force temporarily grows more rapidly than the dependent population, freeing up resources. This results in more rapid per capita income growth.
- **Second Dividend**: The population concentrated at older working ages facing an extended period of retirement has an incentive to accumulate assets – unless its needs will be provided by families or governments. Additional assets are invested domestically/aboard, and national income rises.

In the case of East and South East Asia, the demographic dividend accounted for 1.9% of the 4.32% GDP per capita growth over three decades.

Exhibit 14: Demographic Dividend

GDP/N - actual growth in GDP per effective consumer, 1970-2000, in percent a year. The effective no. consumer is the no. of consumers weighted for age variation in consumption needs.

	Demographic Dividends: Contribution to Growth in GDP/N			Actual Growth in GDP/N
	First	Second	Total	
Industrial Economies	0.34	0.69	1.03	2.25
East and Southeast Asia	0.59	1.31	1.90	4.32
South Asia	0.10	0.69	0.79	1.88
Latin America	0.62	1.08	1.70	0.94
Sub-Saharan Africa	-0.09	0.17	0.08	0.06
Middle East and North Africa	0.51	0.70	1.21	1.10
Transition Economies	0.24	0.57	0.81	0.61
Pacific Islands	0.58	1.15	1.73	0.93

Source: Credit Suisse, IMF

GDP Decompositions and Structural Differences

GDP Growth Decomposition

We apply a growth accounting framework that helps us examine how much of GDP growth can be explained by changes in the labour force structure. This growth-accounting approach was pioneered in an ECB paper by Maddaloni et al. in 2006 and explained in an earlier Credit Suisse demographics research report[2].

In Exhibit 15, we show a demographic decomposition of real GDP growth into the following categories:

- Working-age population growth (population aged 15-64 years)
- Labour-productivity growth (real GDP/hours worked)
- Labour-utilization growth[1] (hours worked/working-age population)

This GDP decomposition is done for periods when the data is available, with hours worked data being the constraining factor. We note that labour productivity growth is a significant factor in explaining real GDP growth in China and India. In 1992-1998, the major differences in labour productivity growth between China and India resulted in large differences in their GDP growth. In 2002-2006, the difference between the labour productivity growth was not as large, resulting in relatively comparable GDP growth rates. Working-age population growth was higher in India than China in both periods, highlighting the positive effect of its relatively younger population as well as its start from a lower level.

Exhibit 15: Real GDP Growth and its Components

Average Growth Rates (%)

	1992-1998				2002-2006			
	WAP Growth	Labour Productivity Growth	Labour Utilization Growth	GDP Growth	WAP Growth	Labour Productivity Growth	Labour Utilization Growth	GDP Growth
China	1.17	11.13	-1.59	10.71	1.51	7.77	0.47	9.75
India	2.32	3.99	-0.30	6.00	2.13	5.47	-0.02	7.57

Source: Credit Suisse, IMF, ILO, China Labour Statistical Yearbook

[2] Please refer to *A Demographic Perspective of Economic Growth*, Credit Suisse Demographics Research (2009), for more details.

Economic Structure

We consider the **gross value added** (GVA) per worker by sector in the analysis below. Services contributed to 52% of India's gross value added in 2008 and had the highest GVA per worker, reflecting its services-based development model. Industry added 48% of gross value in China and had the highest GVA per worker, as a result of its manufacturing-led growth strategy. Common to both economies is that agriculture contributes a low share to GVA while employing about half of the total workforce (Exhibit 16).

Exhibit 16: Sectoral Decomposition of Gross Value Added and Employment

2008

	China			India		
	Share in Gross Value Added	Share in Employment	Gross Value Added per Worker (USD)	Share in Gross Value Added	Share in Employment	Gross Value Added per Worker (USD)
Agriculture	12	40	1590	19	57	950
Industry	48	27	9609	29	19	4382
Services	40	33	6535	52	24	6228
Total	100	100	5416	100	100	2862

Source: Credit Suisse, UN, NBS, Planning Commission, NSSO

In Exhibit 17, we highlight the GDP decomposition by expenditure for China and India.

Exhibit 17: GDP Breakdown by Final Expenditures

Share of Current GDP (%)

	1990		2000		2008	
	China	India	China	India	China	India
Household Consumption	46.2	65.6	46.7	64.1	36.8	58.1
- Durable Goods	3.2	1.5	3.8	2.1	3.0	2.0
- Semi-Durable Goods	5.1	5.3	4.0	4.7	3.2	4.1
- Non-Durable Goods	25.6	40.8	19.9	32.6	14.4	28.9
- Services	12.3	17.9	18.9	24.7	16.2	23.1
Government Consumption	14.1	11.7	15.8	12.6	13.0	11.7
Investment	36.1	24.2	35.1	24.2	42.5	35.6
Exports	19.0	7.1	23.3	13.2	34.9	23.5
Imports	15.6	8.5	20.9	14.2	27.2	29.0

Source: Credit Suisse, Euromonitor, World Bank

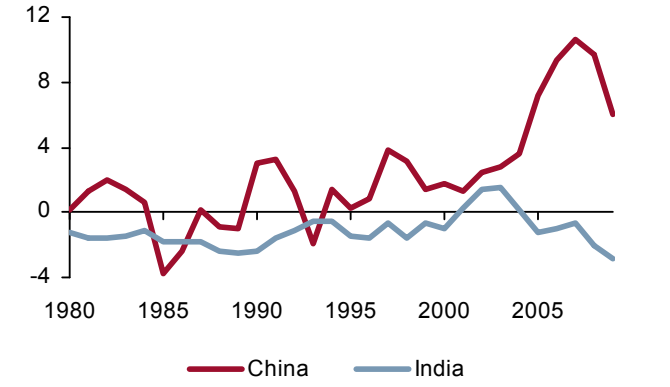
The share of household consumption has been much higher in India than in China. The share of imports and exports has been high in China, given its overall strong current account surplus (Exhibit 18). The share of imports and exports in India has also increased substantially. Combined imports and exports as a percentage of GDP, a measure of the openness of the economy, has been higher in China (62%) than in India (52%).

Demographics has an effect on current accounts, as capital flows are affected by differences in savings rates. In a couple of earlier reports[3], we documented the impact of demographics on capital flows and current accounts and then applied our finding to the Japanese current account in the future. The links between trade balances, current accounts and demographics was alluded to by William Poole in a couple of speeches in 2004 and 2007.

[3] Please see *Demographics, Capital Flows and Exchange Rate*s, Credit Suisse Demographics Research (2007); Demographics, the Japanese Current Account and a Disappearing Savings Rate, Credit Suisse Demographics Research (2009)

Exhibit 18: Current Account Balance

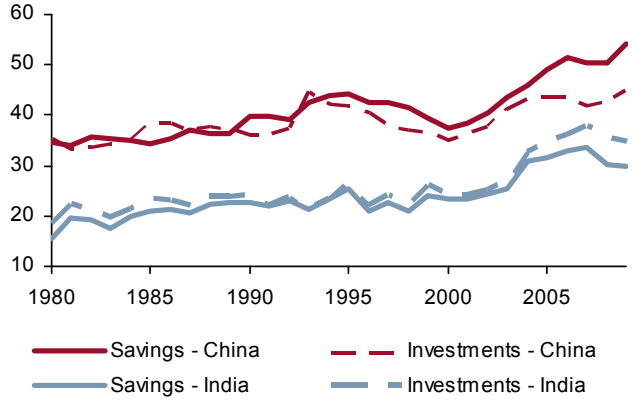
Percentage of GDP (%)



Source: Credit Suisse, IMF

Exhibit 19: Investments and Gross Domestic Savings

Percentage of GDP (%)

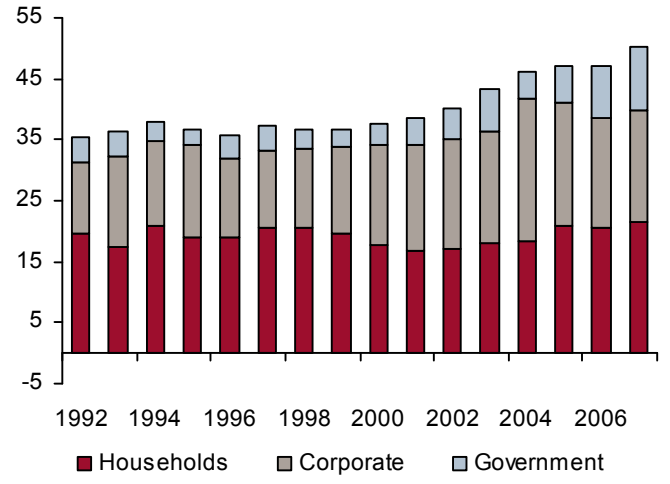


Source: Credit Suisse, World Bank

China is well known for its increasingly high savings rate (see Exhibit 19). As of 2007, overall gross domestic savings were much higher in China (50.2% of GDP) than in India (37.7% of GDP). Gross domestic savings increased from USD65.96 billion in 1980 to USD1,770 billion in 2007 in China and from USD 28.31 billion in 1980 to USD 366 billion in India However, the structural components of savings are very different (see Exhibits 20 and 21).

Exhibit 20: Composition of Gross Domestic Savings – China

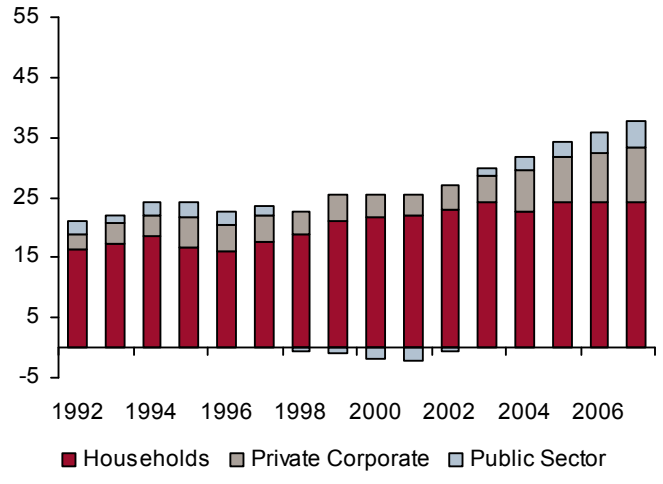
Percentage of GDP (%)



Source: Credit Suisse, CEIC

Exhibit 21: Composition of Gross Domestic Savings – India

Percentage of GDP (%)



Source: Credit Suisse, MOSPI

In 2007, household savings were 21.5% of GDP in China, lower than the 24.3% in India. Household savings and household consumption as shares of GDP are both lower in China than in India because a smaller proportion of final GDP created is distributed to households in China. Corporate savings have been increasing in China and were as high as 18.5% of GDP in 2007, mainly resulting from the prevalence of state-owned enterprises paying out low dividends as profits improve. In India, private corporate sector savings were 8.8% of GDP in 2007. We also note that public-sector savings in India were negative from 1998 to 2002 and improved to 4.5% of GDP in 2007, while government savings in China were 10.5% in 2007.

Financial Markets

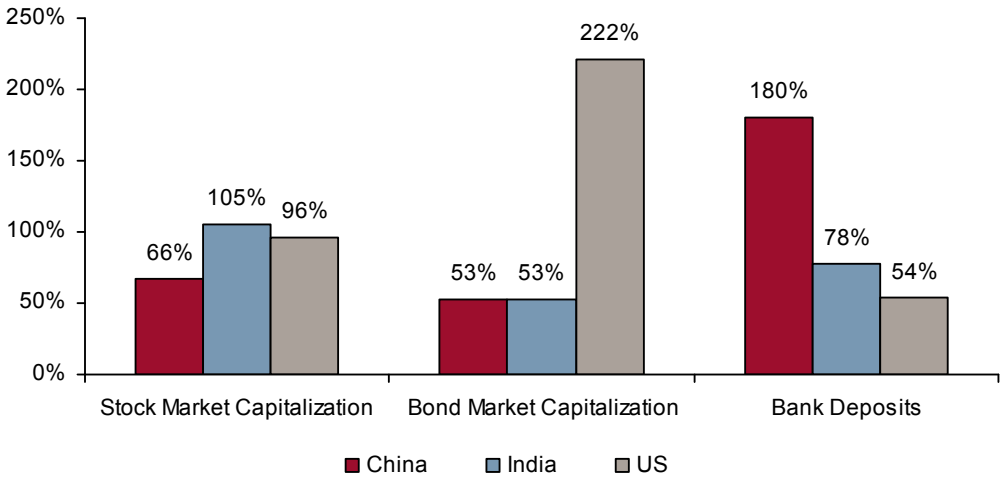
Both China and India have experienced significant developments in the capital markets in the last two decades, with the establishment of modern-day stock exchanges and rapidly evolving banking sectors. These developments have fueled economic growth as financial market growth has complemented economic development.

One important characteristic of the financial sector in China is the dominance of traditional commercial banking as the primary channel of financial intermediation, with bank deposits as high as 180% of GDP in 2009, compared to 78% in India and 54% in the US. Correspondingly, the equity and bond markets in China are small as measured by percentage of GDP (see Exhibit 22).

India lies between China and the US, with commercial banking playing a significant but not as dominant a role as in China. India also has a larger equity market than China as a proportion of its GDP. In USD terms, the comparative numbers for equity market capitalization are USD3,316 billion in China and USD1,373 billion in India at year-end 2009.

Exhibit 22: Size of Asset Markets

% of GDP, 2009



Source: Credit Suisse, CSRC, CBRC, NBR, ChinaBond, SEBI, RBI, the BLOOMBERG PROFESSIONAL™ service, IMF, FRB

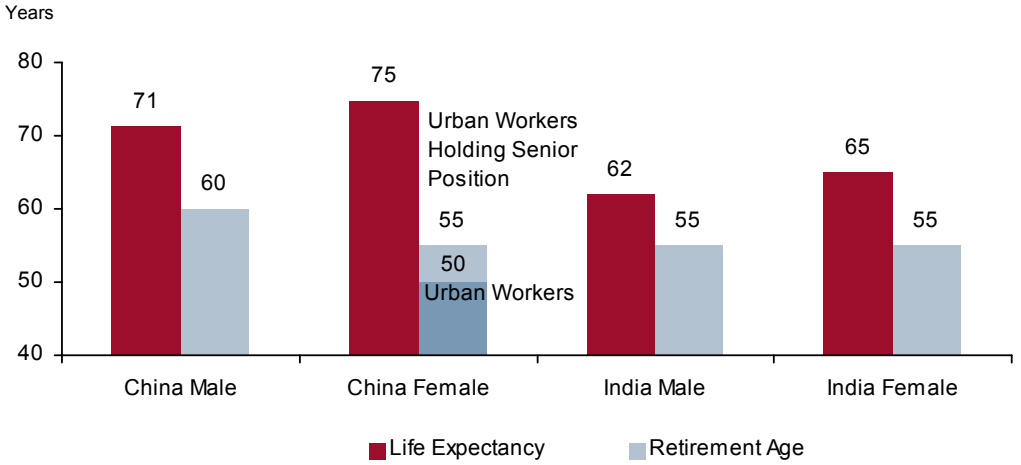
The Retirement and Pensions Challenge

As the populations of first China and then India get older, they should face the same challenges that the Western countries have faced. However, they can learn from the mistakes of the developed countries. We think that a few easy-to-adopt lessons are to link retirement age to life expectancy, not make long-term retirement promises that cannot be negotiated and get retirees to plan for and play an active stakeholder role in providing for their retirement income as part of a multi-pillar pension arrangement.

Exhibit 23 presents the trends in life expectancy along with current retirement ages. We note that the retirement periods in China are longer for the typical male and female. In fact, Chinese females face similar or longer retirement periods than their developed-country counterparts, and it is worth noting that retired Chinese women often support their children and grandchildren by helping the younger households with child- care and house-work.

In the case of India too, the pension issue is getting more attention as the urban middle-class professional or civil servant lives much longer than the average life expectancy numbers indicate.

Exhibit 23: Life Expectancy and Retirement Age



Source: Credit Suisse, UN, OECD, MOHRSS

We discuss below some facets of the mandatory retirement schemes in China and India.

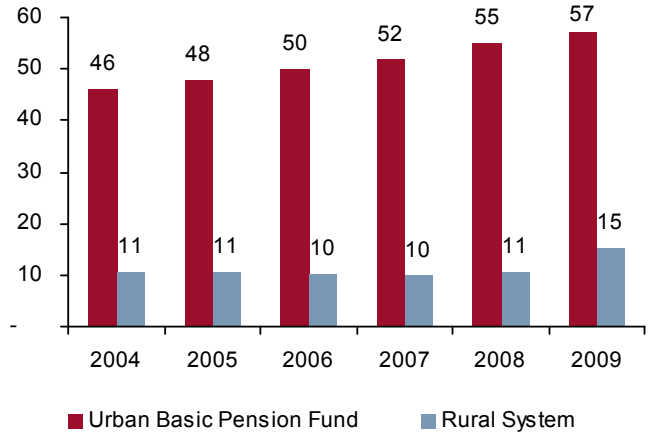
The Chinese Pension System

The Chinese have a two-tier pension system that consists of a basic pension and a mandatory contribution to a second-tier plan. The urban pension system (also referred to as the Basic Pension System) was introduced in 1997 and revised in 2006. It mainly covers urban workers. A separate rural pension system was started in 1992. At the end of 2009, the urban basic pension system covered 235.5 million members in total, including 58.1 million retirees whose cost to the system was 953.4 billion yuan. The rural system covered 86.9 million members in total, including 15.6 million retirees who received 7.6 billion yuan in payouts.

In Exhibits 24 and 25, we highlight the current pension coverage as well as the increasing coverage trend over time. Both coverage and payouts have increased over time.

Exhibit 24: Pension Coverage – China

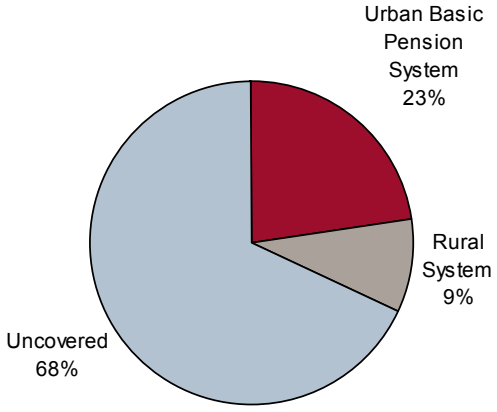
Percent of Urban and Rural Workers Covered by Public Pension



Source: Credit Suisse, MOHRSS

Exhibit 25: Pension Coverage – China

Percent of Workforce Covered by Public Pension, 2009



Source: Credit Suisse, MOHRSS

Societal practices in China still reflect people's expectation that they will depend on their children when they grow old. The traditional concept of supporting the elderly financially is almost as alive now as it has always been in China. There is, however, the concern of the burden on the young couple having to support four parents and one child.

According to the OECD (2009), the gross replacement rate for median wage-earning male Chinese workers is 67.6% of lifetime average earnings. The corresponding number for Chinese women is 44.8% of their lifetime average earnings.

The Indian Pension System

India has low pension coverage under four of five different schemes, the oldest and most established of those being the Employees Provident Fund (EPF) Scheme. The pension system is estimated to cover around **38-39 million** of the **320-330 million** people in the paid work force. Approximately 23 million of the 39 million are government employees covered under the civil services defined benefit scheme.

The **EPF programme** is a contributory provident fund whereby the employee contributes 12% of monthly PF salary, and the employer matches this contribution. 3.67% of the employers' share goes towards EPF, and the 15.67% accumulates interest and is paid out as a lump sum on retirement.

Employees Pension Scheme (**EPS**): the remainder of the 12% contributed by the employer (i.e., 8.33%) is diverted to EPS and complemented by a government subsidy of 1.16% of the salary into EPS. This accumulation is paid out on retirement based on a formula that uses pensionable salary, pensionable service and a constant factor of 1/70. In addition, there is social assistance for the needy elderly above 65 years who do not have a regular means of subsistence from their own income. There is also an Employees Deposit Linked Insurance Scheme that pays the dependents of an employee an insurance premium linked to the Provident Fund accumulated in credit.

Government employees who joined before January 2004 are entitled to a **defined benefit final salary index linked** pension. As a first step towards instituting pension reforms, the government of India moved from a defined benefit pension to a defined contribution system by making it mandatory for its new recruits (except armed forces) with effect from 1 January 2004. Since 1 April 2008, the pension contributions of central government employees covered by the **New Pension System** (NPS) have been invested by professional pension fund managers in line with investment guidelines of government applicable to non-government provident funds. The government s announced that NPS would be available to every citizen from 1 April 2009 on a voluntary basis. The New Pension System reflects the government's effort to find sustainable solutions to the problem of providing adequate retirement income.

According to the OECD (2009), the **gross replacement rate** for median wage-earning male Indian workers is 40.4% of lifetime average earnings. The corresponding number for Indian women is 44.8% of their lifetime average earnings

Family Structure and Consumption Expenditures

In Exhibits 26-29, we highlight the family size differences between China and India.

Exhibit 26: Household Size – China (1980)

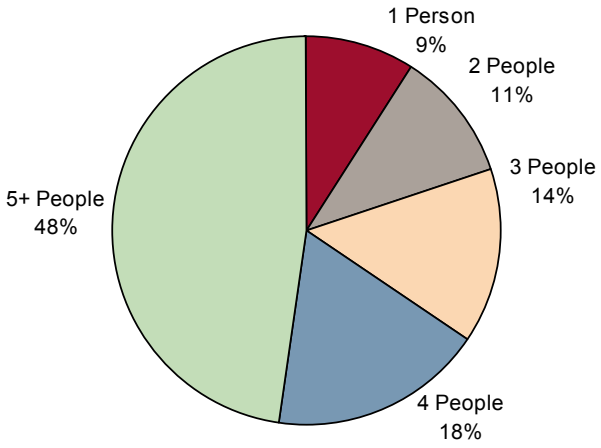


Exhibit 27: Household Size – India (1980)

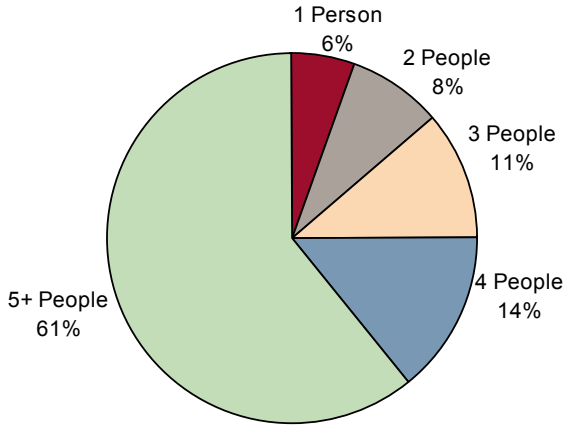
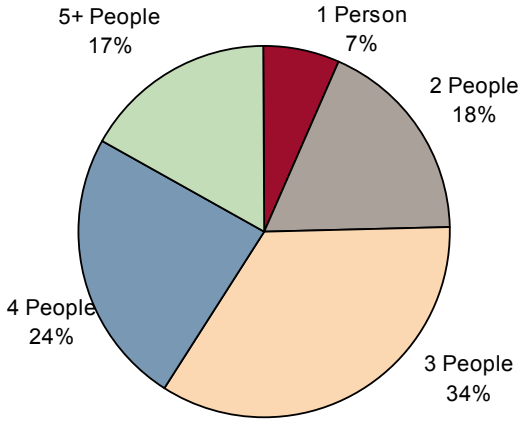
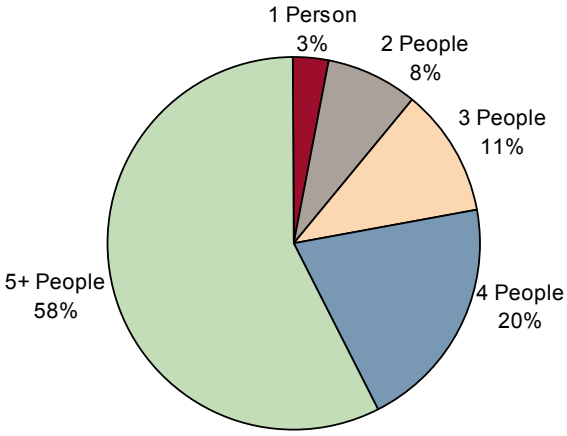


Exhibit 28: Household Size – China (2009)



Source: Credit Suisse, Euromonitor

Exhibit 29: Household Size – India (2009)



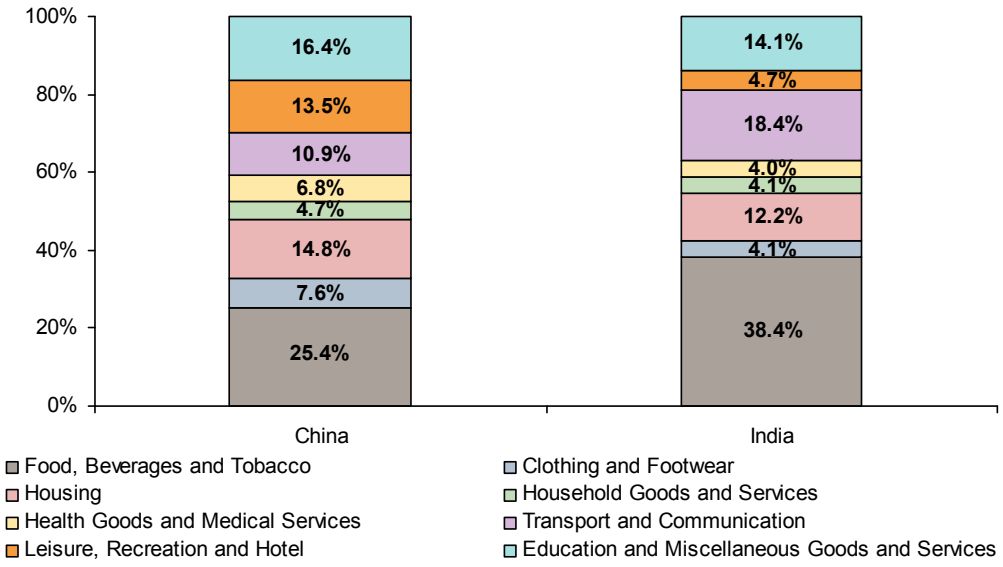
Source: Credit Suisse, Euromonitor

In the past, Indian and Chinese family structure had been dominated by 5+ people households (more so in India than China). From 1980 to 2009, China experienced a major reduction in 5+ people households and a significant increase in 3-people households. Household size did not change significantly in India from 1980 to 2009. However, family composition did change in India between 1980 and 2009, with an increase in the share of couples without children (from 3% in 1980 to 12% in 2009) and a reduction in the share of couples with children (from 58% in 1980 to 52% in 2009) and single persons (from 6% in 1980 to 3% in 2009). China underwent a similar change, with an increase in the share of couples without children (from 2% in 1980 to 13% in 2009) and a reduction in the share of couples with children (from 56% in 1980 to 49% in 2009) and single persons (from 9% in 1980 to 7% in 2009).

As shown in Exhibit 30, food, beverages and tobacco constituted the highest share of consumption expenditure in both China and India in 2009, with India having the higher share. The Chinese spend a greater proportion on leisure, recreation and hotel than Indians. Both spend a relatively low proportion on household goods & services, health goods & medical services and clothing & footwear.

Exhibit 30: Consumption Expenditure by Major Groups

Share of Total Consumption Expenditure –- 2009



Source: Credit Suisse, Euromonitor

From Exhibit 31, we can see the differences in development between China and India, in terms of their ownership of personal computers, telephone lines, cars, mobile telephones and their Internet usage.

Exhibit 31: Ownership Pattern

Per 1,000 People – 2009

	China	India
Personal Computers in Use	77.3	41.2
Internet Users	282.6	101.9
Telephone Lines in Use	276.3	31.1
Mobile Telephone Subscriptions	532	385.7
Passenger Cars in Use	36.5	25.2

Source: Credit Suisse, Euromonitor

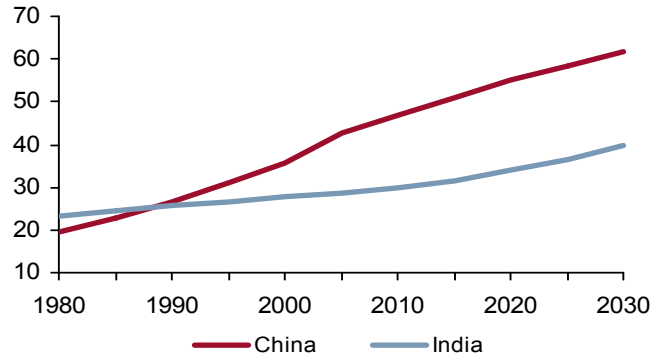
Urbanization and Rural-Urban Differences

China has experienced rapid urbanization in recent decades. In 1980, India had a higher proportion of its population living in urban areas (23.1%) than China (19.4%). In the 1990s, China overtook India, and today, 47% of its population is urban compared to 30% in India (see Exhibit 32).

Currently, 718.3 million people live in rural areas in China and 635.8 million people in urban areas. In India, 850 million people live in rural areas and 364.5 million in urban areas. The gap in the percentage of the population that is urban between China and India is projected to widen (with the percentage of the urban population in China projected to be 61.9% in 2030 and in India projected to be 39.7%) and then drop thereafter.

Exhibit 32: Urbanization

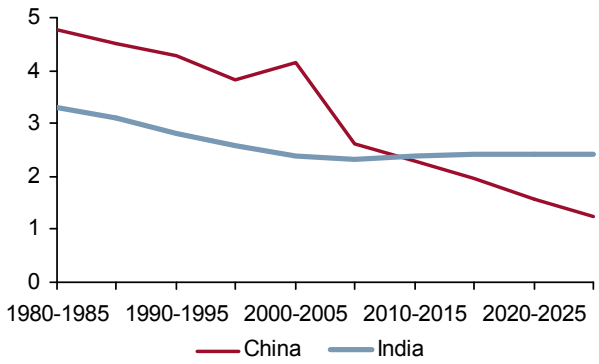
Urban population as a percentage of total population



Source: Credit Suisse, UN

Exhibit 33: Urban Growth

Growth rate per annum

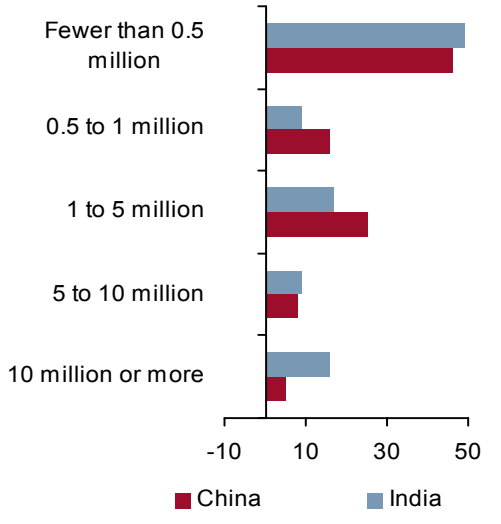


Source: Credit Suisse, UN

Annual urban population growth in China in the past has been higher than that of India (4.76% in 1980-1985 in China versus 3.3% in India), and this is true even today (2.62% in 2005-2010 in China versus 2.31% in India). But by 2010-2015, Indian urban population growth is projected to overtake that of China, as seen in Exhibit 33.

Exhibit 34: Urban Agglomerations

% of Total Urban Population, 2010



Source: Credit Suisse, UN

Differences also exist between the urban landscape of China and India, as shown in Exhibit 34. In 2010, India has three megacities (i.e., cities with a population of 10 million or more): Delhi, Kolkata and Mumbai, where 16% of the urban population resides. China has two megacities (Shanghai and Beijing), where 5% of the urban population resides. China has a greater proportion of its urban population residing in cites of size class 0.5-5 million than India. The spatial distribution of the population is relatively less crowded in China, with a population density of 141 people per square kilometer, compared to India, where an average of 369 people reside in 1 square kilometer. This has implications for air pollution, noise pollution, quality of drinking water, crime and other sustainability issues.

Significant rural-urban disparity is another shared characteristic of the two countries, with urban areas reaping most of the benefits from economic developments. On the other hand, large rural populations still living on agriculture are becoming a smaller part of these fast-growing economies. In 2008, urban and rural per capita consumption expenditures in China were 13,565 yuan and 3,960 yuan, respectively. In India, the 2008 monthly per capita consumption expenditure in rural areas was 772 rupees and in urban areas was 1472 rupees.

Regional Differences

China

China has **three broad economic regions**: the Eastern region, characterized by its affluent economy; the Central region, with its heavy-machinery, resource-intensive inlands; and the Western region, with its vast under-developed highlands (see Exhibit 35).

The Eastern region, home to 44% of the nation's 1.3 billion population and covering 14% of the country's area, is densely populated. The region is relatively more urbanized, with 55% of the population in 2008 urban dwellers compared to the national average of 47%. It also is home to most of the nation's largest cities. In stark contrast, the Western region is sparsely populated and less urbanized, with 22% of the national population living on 56% of land, and only 37% of the inhabitants residing in urban areas. The Central region lies in between the two.

As the pioneer in the Economic Reform and Opening Up, the Eastern region benefited from synchronized efforts on the infrastructure front, huge inflows of foreign direct investment and a high degree of international trade. This prosperous area contributed to 61% of national GDP, employed 45% of labour and enjoyed a GDP per capita of 34,295 yuan in 2008. The Central region has been characterized by traditional heavy-machinery business and has been reliant on nature resources. With a 26% share in national GDP, its GDP per capita was 18,923 yuan in 2008, only half of the Eastern region's. The economy in the West region has lagged on all measures – level of GDP per capita, labour productivity and investment. The "Great Western Development" strategy of the central government aims to gear infrastructure development and entice foreign investment there.

The Eastern region is the most industrialized, with 52% of the region's GDP from industry and produced by 34% of the labour force, 41% from services by 35% of the labour force, and 8% from agriculture by 31% of the labour force. Again, the West is at the other end of the spectrum, and the Central region in between (see Exhibit 36).

Exhibit 35: Regional Differences for China

2008

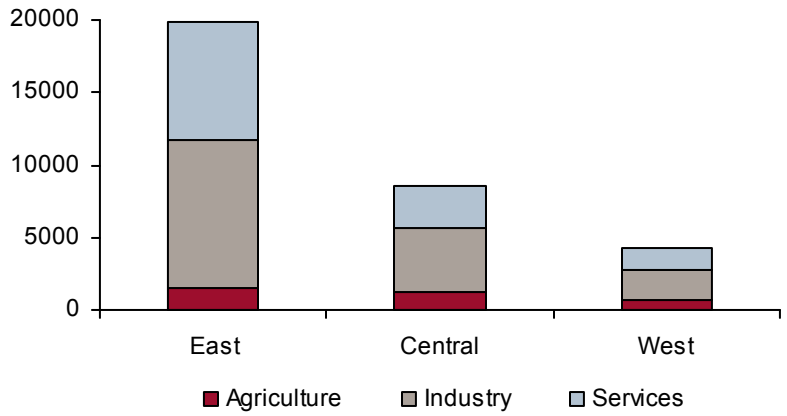
	Share of Land	Share of Population	Share of GDP	GDP Per Capita	Household Expenditure Per Capita, Yuan			Investments
	%	%	%	Yuan	Total	Rural	Urban	Billions Yuan
East	14	44	61	34,295	11,243	5,097	16,331	9,776
Central	29	34	26	18,923	6,650	3,554	10,670	4,888
West	56	22	13	14,581	5,842	2,915	10,775	2,600

Source: Credit Suisse, NBS

In line with the income differences are the household consumption disparities. The relatively higher-earning easterners spent 11,243 yuan on average in 2008, while the westerners could only afford 5,842 yuan, a big contrast taking into account the higher price levels in the Eastern region.

Exhibit 36: Regional GDP Breakdown for China

2008, Billions Yuan



Source: Credit Suisse, NBS

India

India is also confronted by increasing regional disparities in terms of income, socio-economic development and living conditions, as seen in Exhibit 37. The goal of regional balance is repeatedly emphasized in India's five-year plans as the benefits of India's economic growth fail to reach the lesser developed states.

The highest GDP and GDP per capita figures are evident in the Southern and Western regions. Maharashtra in the Western region had the highest GDP in India (438,731 crore rupees) in 2005-2006. In terms of GDP growth, we again see the Western and Southern regions leading, with high growth experienced in Gujarat, Goa, Haryana and Chandigarh and low growth in Bihar, Uttar Pradesh and Madhya Pradesh. The Northern region accounts for the highest share of the population, while the Northeastern region has the lowest share. The highest poverty rates are seen in the Eastern states of Orissa, Bihar, Chhattisgarh and Jharkhand (above 40%), while Punjab, Chandigarh, Jammu and Kashmir have relatively low poverty rates (below 10%).

Exhibit 37: Regional Differences for India

	GDP at Current Prices		Population		Per Capita GDP	GDP Growth
	2005-2006		2005		2005-2006	1999-2006
Regions	Rupee in Crores/10 Million	Share	In Thousands	Share	Rupees	Annual Growth Rate
North	686,866	23%	276,394	25%	24,851	7.89%
North East	91,725	3%	41,660	4%	22,018	7.73%
East	443,320	15%	244,154	22%	18,157	7.47%
Central	167,931	6%	88,984	8%	18,872	6.39%
Western	794,272	27%	222,541	20%	35,691	8.42%
Southern	804,181	27%	238,451	21%	33,725	8.49%

Source: Credit Suisse, Census of India, Planning Commission

Montek Singh Ahluwalia of India's Planning Commission[4] has attributed the differential performance of the Indian states in the post-reform period not to conscious government policies that limit the benefits of liberalization to certain states but to the differential ability of the states to provide an environment conducive to benefiting from the reforms. This differs from China, where we see the Eastern region initially benefitting from the targeted policies. Thus, better facilities – such as infrastructure, labour skills/education and a more investor-friendly environment in high-growth states – have led to a reallocation of investment and growth in these states.

Social Well-Being

Education

China fares better than India in almost all education indicators, except for primary gross enrollment ratio, where the levels were similar in 2007, as shown in Exhibit 38 . Secondary and tertiary gross enrollment ratios were much higher in China than in India in 2007, leading to a better-educated young population. India has a much lower adult literacy rate and hence a larger illiterate adult population. It is worth noting that the male and female education gap is lower in China.

Exhibit 38: Education – Selected Indicators

Data for gross enrolment rates is for 2007

Data for adult literacy rates is for 2009, and for adult illiterate population is for 2008 for China and 2006 for India

	Gross Enrolment Ratio (%)						Adult Literacy Rate (%)		Adult Illiterate Population
	Primary		Secondary		Tertiary				
	Total	Gap (Male – Female)	Total	Gap (Male – Female)	Total	Gap (Male – Female)	Total	Gap (Male – Female)	Million
China	112.1	-4.3	74.0	-2.6	22.1	0.1	94.0	6.6	67.2
India	113.1	3.6	57.0	8.7	13.5	4.7	67.7	21.3	283.1

Source: Credit Suisse, World Bank, UNESCO, Euromonitor

Note: Gap is the difference between male and female gross enrollment ratio/adult literacy rate

Primary and secondary enrollment ratios for female were higher than for male in China, while the opposite was true in India for all education indicators.

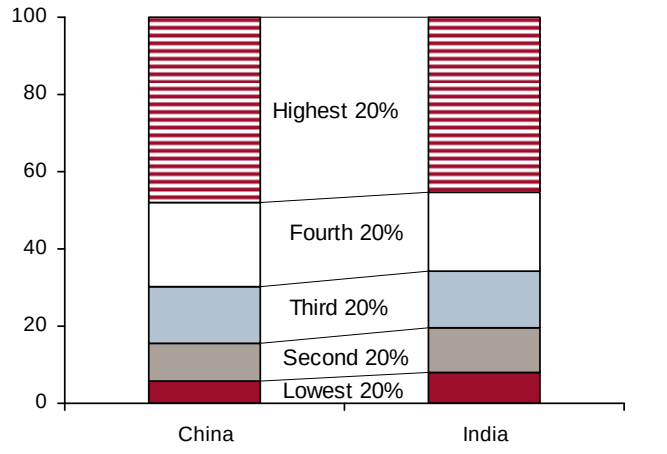
Equality

The proportion of Chinese and Indian population suffering from poverty is falling, as indicated by the falling poverty gap and poverty headcount ratio at 1.25 a day (PPP) in the two countries. Although poverty has been falling, income inequality has been rising, especially in China, with the poor holding a small share of national income, while the rich controlling a large share (see Exhibit 39). The Gini Index, a measure of income inequality, was 41.5 for China in 2005 and 36.8 for India. Significant income disparities are also evident within different regions and within rural-urban areas.

[4] *State Level Performance Under Economic Reforms in India*, Montek S. Ahluwalia (2000)

Exhibit 39: Income Distribution, 2005

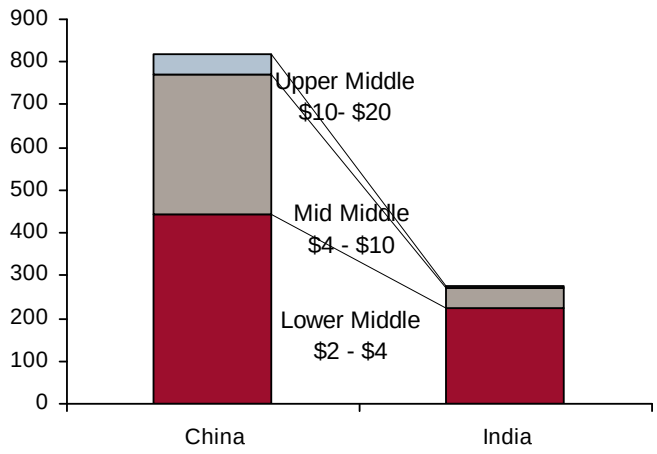
Income share (%)



Source: Credit Suisse, World Bank

Exhibit 40: Middle Class Population, 2005

In Million – by consumption expenditure per day per person (2005 PPP$)



Source: Credit Suisse, ADB

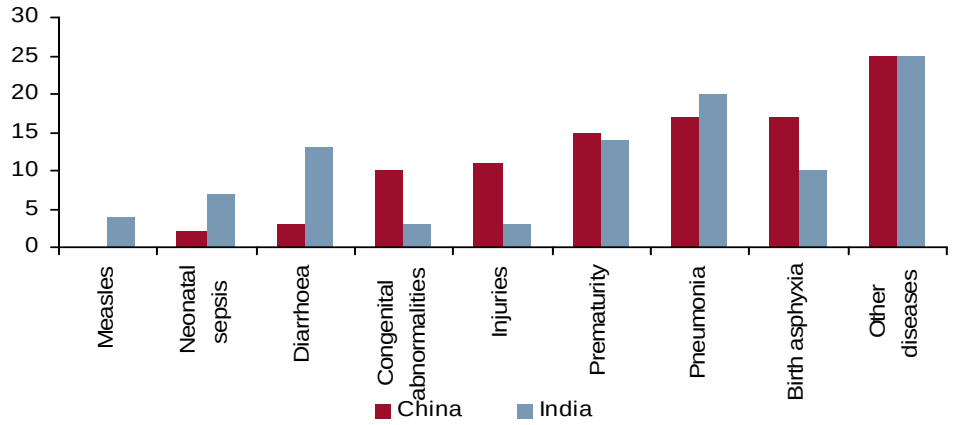
Another trend evident in the two countries is the rising middle class, as seen in Exhibit 40. In 2005, 443 million, 328 million and 46 million people in China were considered lower, middle, and upper middle class, respectively (with consumption expenditure of USD2-4, USD4-10 and USD10-20 per person per day in 2005) The respective numbers for India were 224 million, 45 million and 5 million. One interesting observation is that the size of the lower middle class in China is declining quickly, as many people shift to the rapidly expanding mid middle and upper middle classes. In India, however, all categories of middle classes are expanding gradually.

Health

Infant mortality has been declining in both China and India as health conditions have improved. However, infant mortality is still much higher in India than China. Infant mortality in India declined to 50 deaths per 1,000 live births in 2009, while it decreased in India to 17.

Exhibit 41: Distribution of Causes of Death Among Children Under 5 Years

Percentage- 2008



Source: Credit Suisse, WHO

In Exhibit 41, we note the distribution of causes of death among children aged less than 5 years for both China and India. In 2008, pneumonia was the most common cause of death for Indian children, while the highest percentage of deaths among children in China was birth asphyxia.

In 2004, overall mortality rates in India were dominated by non-communicable diseases (713 deaths per 100,000 people), followed by communicable diseases (377 deaths per 100,000 people) and injuries (116 deaths per 100,000 people). In China, mortality rates were much lower than in India (non-communicable diseases 627, communicable diseases 86 and injuries 73).

The poor health of the average Indian relative to the Chinese can be explained by the differences in GDP per capita, population density, living standards, sanitation and education.

Sector Implications

As a result of the above analysis, commentary and facts, we believe that some sectors are positively disposed to demographics and underlying economic factors. From a macro-demographic viewpoint, we think that the following sectors have a positive demand and growth outlook.

- **Pharmaceuticals, biotech and healthcar**e: as a result of aging, health and increased incomes.
- **Financials (banking, fund management and insurance)**: given the retirement, savings and insurance-related demand by the middle classes and others over the life cycle and the increased need for financial penetration and access in rural areas, maybe through microfinance initiatives.
- **Consumer retail including leisure and luxury**: as a result of income and middle-class growth, combined with an increase in the number of ultra-rich, and changes in family structure, leading to more non-durable consumption demands.
- **Infrastructure and commodities**: given rural to urban migration, combined with a transition from agriculture to manufacturing/services and from manufacturing to services, leading to demands for new infrastructure, which in turn leads to higher commodity demands.
- **Technology**: as a result of decreasing population growth rates, offset partly by increased labour and total factor productivity, as this could necessitate better work practices and use of modern technology.
- **Education**: given that we consider this the most important sector to guide sustained long-term balanced growth, as it could mitigate existing inequalities and lead to more efficient outcomes across all sectors of the economy and it is vital in the mission to equalize gender opportunities in all spheres.

Conclusions

Overall, although China has to deal with the oncoming challenge of pensions, retirement and health for its aging population, it remains ahead of India in terms of its current living standards. India's challenge can be very simply put as one of capitalizing on the prospects of its demographic dividend, thanks to its younger population. But having a younger, less healthy and less educated population is not going to be conducive to its progress towards the next stage. The history of democracy, India's legal system and its open entrepreneurship are reasons for India to be optimistic about its prospects, in our opinion. In addition, pro-active and effective policy measures on the labour, health and education fronts could facilitate reaping its potential demographic dividends.

China's leaders will need to embrace social, economic and financial policy changes to deal with the fact that it has grown older before it has grown richer, unlike the aging developed countries of the world.

Acknowledgements

We gratefully acknowledge helpful input of Liyan Shi throughout the process of writing this report.

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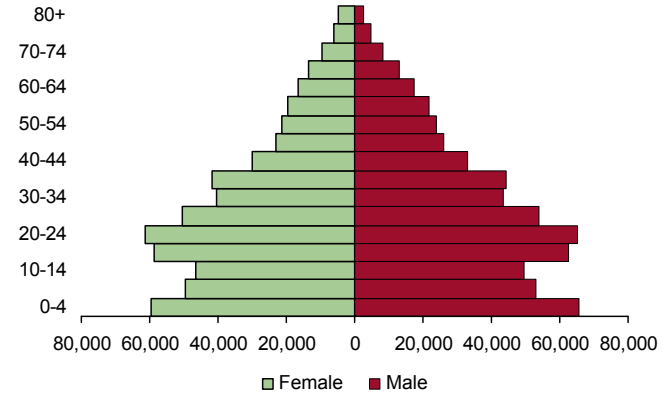
Xinhua News, "President Hu Jintao urges: Curb the gender imbalance and care for girls" (10 March 10^{h} 2004)

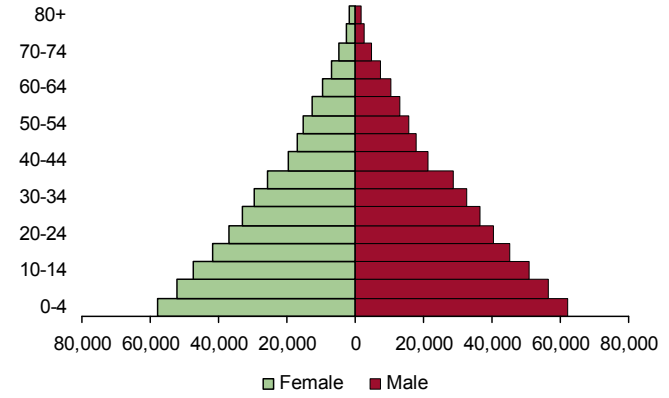
Appendix 1: Population Pyramids 1990, 2010 and 2030

Exhibit 42: Population Pyramid – China (1990)



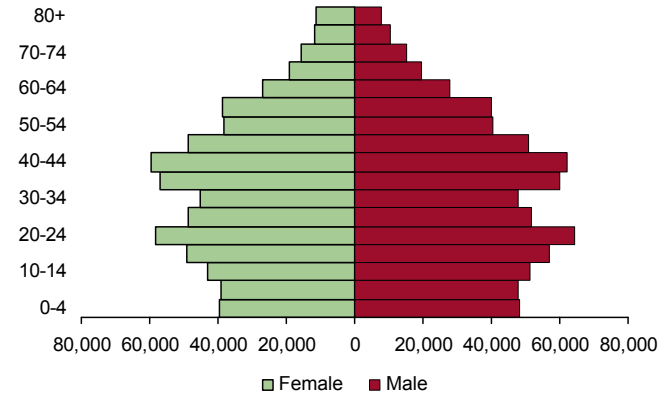
Source: Credit Suisse, UN

Exhibit 43: Population Pyramid – India (1990)



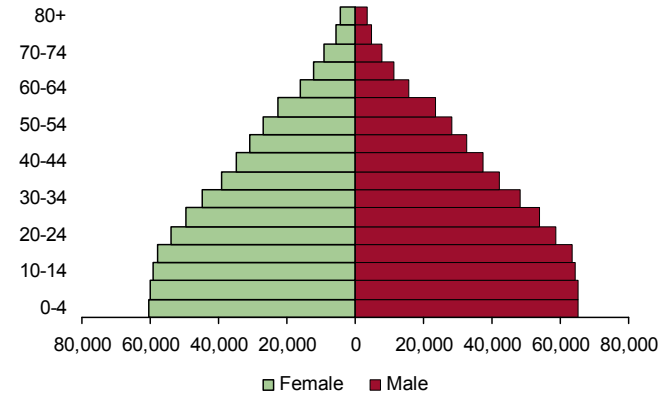
Source: Credit Suisse, UN

Exhibit 44: Population Pyramid – China (2010)



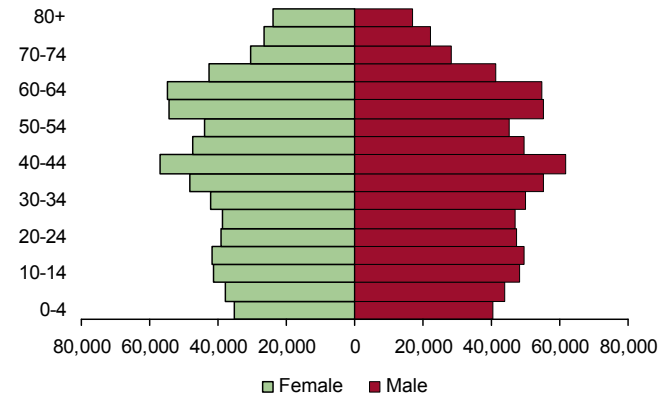
Source: Credit Suisse, UN

Exhibit 45: Population Pyramid – India (2010)



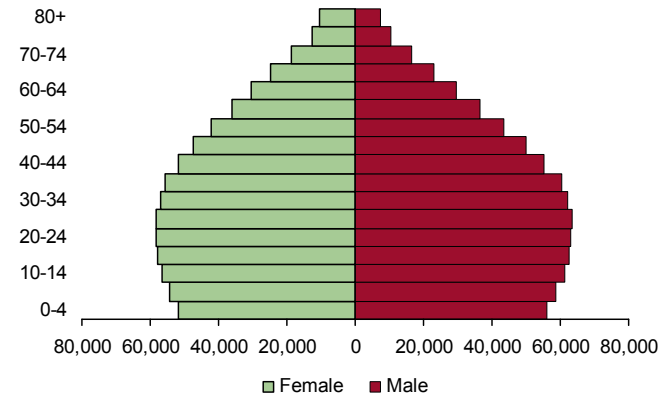
Source: Credit Suisse, UN

Exhibit 46: Population Pyramid – China (2030)



Source: Credit Suisse, UN

Exhibit 47: Population Pyramid – India (2030)



Source: Credit Suisse, UN

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