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China-India and the Global Talent Shortage

Much has been said and written about the impact of China and India on the global economy. On one hand, these countries have dramatically increased the effective supply of labour and capital to the world economy. On the other hand, they have increased the demand for all kinds of natural resources. However, there is yet another important area of impact – the global demand for skills. Most commentators seem to assume that China and India are net suppliers of human capital. This is a misconception. By expanding the global economic base, India and China have expanded the demand for skills but do not themselves have tertiary education systems that can deliver the human capital.

This imbalance between the excess supply of labour and capital and the shortage in skills has important implications for the global division of production. We can already see that the shortage in skills is becoming a major constraint to growth in India and may soon be threatening the current services outsourcing dynamic. We feel that India will instead change its growth model in favour of a more conventional “East Asian” trajectory of investment-driven growth. Together, India and China will flood the world with products that use their labour and capital but will also exponentially increase the global demand for skills. A supply-side response from Asia’s university systems will take at least a decade.

We feel that this is great opportunity for Western Europe and, in particular, Germany. First, the mass deployment of labour and capital in Asia will generate a lot of demand for capital goods and design. Second, and more importantly, Western Europe is the only existing large pool of underleveraged human capital in the world. We feel that rising returns to skills will soon sway workers in countries like Germany to voluntarily work longer hours – especially in view of ongoing tax reform. In turn, this could potentially generate the highest growth seen in these countries in a generation.

Bottom line: If you believe in China and India, Buy Germany!

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India’s Graduates: Just Not Enough



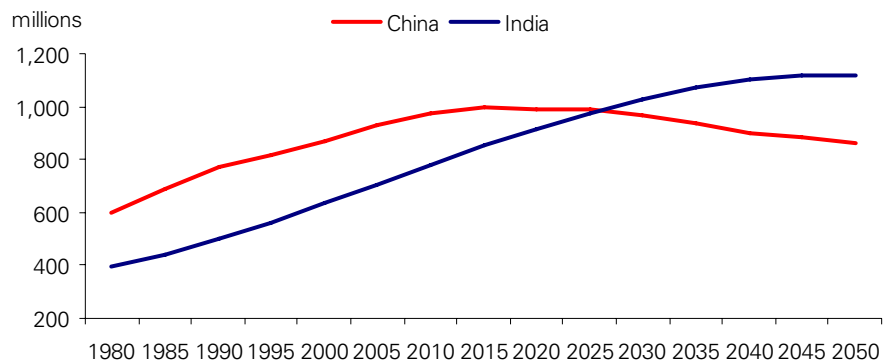
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Demographics: Impact on Supply of Labour and Capital

The most visible implication of the entry of the two giants China and India into the world economy has been the addition of two massive pools of labour. Not only do these two countries have very large populations of over a billion each, the age profile of these population has meant that China and, more recently India, are witnessing an explosive increase in labour supply. Between 1990 and 2005, China’s working age population (15-64 years) rose from 768mn to 929mn. The deployment of this huge of pool of labour by China has already had a major impact on the global production process. According to UN population statistics, China’s working age population will rise to a peak of 998mn by 2015 after which it will decline steadily.

India’s age profile is over fifteen years behind China’s but its working-age population is already growing rapidly. Between 1990 and 2005, the population in the 15-64 year range rose from 501mn to 703mn. However, India should increasingly take over the baton from China. UN projections suggest that India’s potential labour force will keep growing for several more decades – to 918mn by 2020 and eventually to over 1100 by 2040. Even if one ignores the possible contributions from populous Asian countries like Indonesia and Bangladesh, there can be no doubt on these estimates that the global labour force will be growing strongly for at least another decade (after 2015 ageing in China, Japan and Western Europe should begin to slow down the process). Also note that India’s effective contribution is not just due to the numbers. A recent acceleration in the spread of basic literacy will make it possible for the first time to deploy the new entrants into the labour force in activities like manufacturing, construction and low-technology services¹.

China & India: Working Age Population



Source: UN Population Division
 Note: Working Age defined as 15-64years.

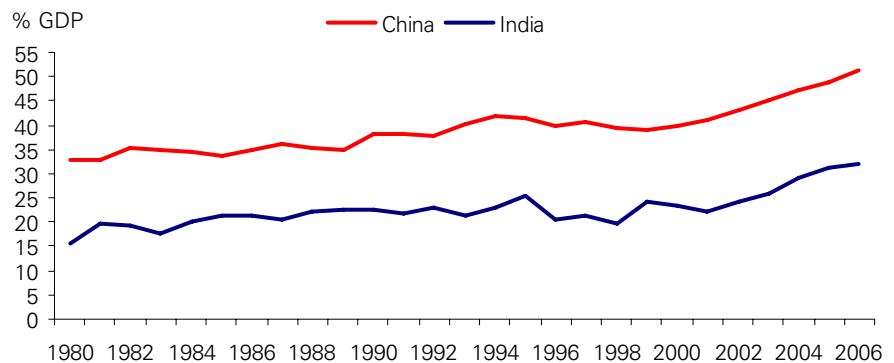
The above demographic transition, however, does not just affect the supply of labour. Population dynamics affect savings rates and, in turn, the global availability of capital. Sharp declines in dependency ratios have played an important role in driving up savings rates in Asian countries over the last half-century². Japan was the first manifestation of this phenomenon but the more recent boom in Chinese savings has been an important driver of the “global imbalance” dynamic. Our estimates suggest that China’s gross domestic savings stood at 52% of GDP in 2006 and, given the demographics, this proportion is not likely to decline much till 2015. Moreover, India too is now embarking on the same process. Its savings rate has jumped from 23% of GDP at the beginning of this decade to over 32%. In our view, India’s savings rate will

¹ For a discussion on the recent improvement in basic literacy read “India: White Collar to Blue”, by Sanjeev Sanyal, Deutsche Bank GM Research, October 2005.

² For a discussion on the impact of demographics on savings read, “Demographics, Savings and Hyper-Growth”, by Sanjeev Sanyal, Deutsche Bank GM Research, July 2005.

be as high as 40% before 2020, perhaps by 2015. In other words, the rise in the global savings pool could accelerate in the next few years as India enters the fray.

China & India: Savings Rates



Sources: World Bank WDI, DB Global Markets Research

So far, the large deficits run up by the US have allowed the world's "excess savings" to be absorbed, thereby keeping the world economy as a whole in equilibrium. Going forward, however, India's growing savings will have to be absorbed by the world at a time that US households themselves may be attempting to save more in order to repair their balance-sheets. This suggests that the global economy will be drenched in savings until the ageing process in China, Japan and other countries begins to unwind the demographics-savings nexus from the middle of the next decade. In turn, this implies that the real long-term cost of capital could remain exceptionally low till around 2015 (irrespective of what central banks do to short term rates).

The global availability of a large pool of capital and labour, in our view, creates the initial conditions for continued economic expansion in Asia through the mass deployment of these resources (what economists call "factor accumulation"). Assuming supportive policies, India and China can continue to see strong expansion in manufacturing, construction, and low-technology services. Give the difference in age-profiles, India has the opportunity to increasingly rival China in these activities. We do not think that the poor state of physical infrastructure in India is a serious long-term concern since the building of this infrastructure, assuming reasonable policies, will be itself one of the main drivers of the new growth dynamic. We feel that the greater constraint to both China and India will come from other sources – scarcity of natural resources and, contrary to popular perceptions, skills.

Demand from China-India: The Global Skill Shortage

The most obvious area where demand from India and China is already having an impact is on natural resources and commodities. Both countries are natural resource poor compared to their growing needs. Their hunger for commodities ranging from energy to metals has already had a major impact on prices and increasingly we see these countries scouring the globe to secure supplies – witness Chinese investments in Africa. Nonetheless, this paper is not directly concerned with this issue as it is now widely discussed. Our focus here is on how India and China are having a major impact on another area – the global demand for skills.

There is a widely held view that the globalization of India and China has added large numbers of highly skilled workers to the global talent pool. This is a misconception. The large populations and the large numbers of universities create an impression of plenty in the popular imagination. First, the numbers of graduates being produced by India and China need to be properly measured. The popular press often quotes numbers that, in our view, massively exaggerate both Indian and Chinese numbers.

For instance, the number of engineers being produced by the US every year is often put at 70,000 while the numbers for China and India are put at 600,000 and 350,000 respectively. However, these statistics are incomparable many US institutions are not included while for the Asians all kinds of diplomas and informal certificates are included. According to a study by Gary Gereffi and Vivek Wadhwa of Duke University, when one compares like to like (i.e. full engineering degrees), the numbers look as follows: 137,000 for the United States, 351,000 for China and 112,000 for India³.

Secondly, and even more importantly, there is a serious difference in quality. The success of Indian professionals in the West and reports of China's ambitious space programme create the impression that the bulk of the graduates are highly skilled. Unfortunately, if one digs beyond the handful of elite institutions, the quality of tertiary education is poor. China has elite universities like Peking, Tsinghua and Fudan while India has Delhi University, the Indian Institutes of Technology and the Indian Institutes of Management. However, these institutions are not representative of their respective education systems. A McKinsey study in 2005 concluded that only 25% of Indian trained engineers and 15% of finance/accounting graduates have the skills to work for an international company. Just 10% of graduates with generalist degrees in arts and humanities made the grade. The proportions are even worse for China⁴. In our view, the difference is even wider if one looked at post-graduate degrees. A separate study by MeritTrac, similarly found that only 23% of Indian MBAs were employable even by local companies. This "employability" problem has led to a situation where there are both a large number vacancies as well as a large number of unemployed graduates.

In the past, China and India did not have enough opportunities for even the small pool of skilled workers. This resulted in a continuous brain drain. Chinese and Indian students still go abroad in droves but now they are attracted by the quality of western universities rather than driven out by the lack of job opportunities at home. As the economies of China and India have grown, the demand for skills has grown. These are not merely in the export-oriented sectors but also in domestically-oriented ones like banking, entertainment, airlines, hotels and so on. The expansion is causing severe shortage of high-skill workers in both countries that, in turn, is being translated into very sharp salary increases. The trend looks set to continue for the foreseeable future. A survey of white collar professionals by HR consulting firm Watson Wyatt showed that middle management salaries would rise by an average 16% in India and by 9% in China this year (with appreciating exchange rates, the increases are even higher in dollar terms).

As economic opportunities grow and salaries rise, for the first time we can see a trickle of western-educated Indians and Chinese going back home to work. We are also witnessing a small but increasing number of foreign nationals being employed by Indian/Chinese companies in specialist jobs and as consultants. More importantly, however, most skills are directly or indirectly tradable. As India and China grow, they should begin to demand services and products that require ever more skill-inputs – from designer handbags, expensive art and fine wines to high-tech machinery and medical care. Till now, these two countries supplied the rest of the world with talent through a sustained brain drain from their elite universities but, we think, from now they will cause a global talent shortage. Their tertiary education systems may of course improve with time but we expect a supply-side response to take many years – it takes time to build these institutions and then educate a generation of students. Therefore, in our view, we need to look elsewhere in the world for existing reservoirs of underutilized skills.

³ "Framing the Engineering Outsourcing Debate: Placing the US on a Level Playing Field with China and India", Gary Gereffi & Vivek Wadhwa, Duke University, December 2005.

⁴ "Ensuring India's Offshoring Future", Diana Farrel, Noshir Kaka and Sascha Sturze, McKinsey 2005.

Implications for the Global Economy

All these processes have important implications for the world economy. First, the intensification of the global savings glut should further drive down the real long-term cost of capital over the next few years irrespective of central bank monetary policy. In order to restore equilibrium, we expect the real cost of capital should fall till it has triggered an investment boom (say in Indian infrastructure construction and/or manufacturing capacity) that uses up this ballooning pool of savings. Second, growth in India and China should cause a severe-talent shortage that, in our view, cannot be eased for at least a decade by a supply response because high-quality universities take many years to build. This means that this shortage would benefit those parts of the world that have under-utilized reserves of human capital.

In our view, both of these factors can potentially play to the advantage of Western European countries, especially Germany. The country is the world's largest goods exporter and machinery/electrical equipment account for around 20% of its merchandise exports. Given Germany's leading position in this field, an investment boom in Asia should significantly increase the demand for German exports. Indeed, it can be argued that the revival of Germany's export sector in recent years already reflects this phenomenon⁵.

Nonetheless, we think that this direct impact on German goods exports to Asia will be the less important phenomenon. The more important impact, in our view, will derive from a generalized global skill shortage. As China and India try to expand their economies over the next decade through the mass deployment of labour and capital, this shortage should only get worse. Rising returns to education (and hence higher fees) may eventually elicit a supply-side response from the world's university systems. Indeed, fees in the world's best schools have seen very significant increases in recent years. Private "for-profit" universities have begun to grow (for instance, the University of Phoenix network) even as traditional institutions have begun to set up "branches" in various parts of the world. However, the process is necessarily slow because it takes a long time to first build the capacity and then to pump students through it⁶. Thus, the only immediate option is to leverage the world's existing human capital.

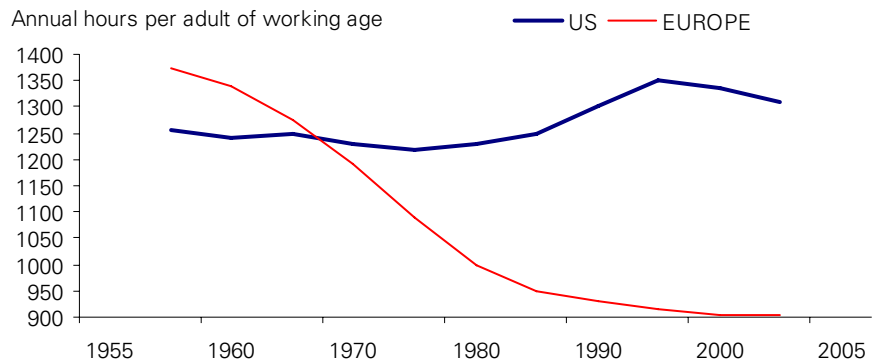
The biggest exiting pool of underleveraged human capital is in Western Europe. This is not about high unemployment rates (the jobless are mostly low-skill workers anyway) but about the short hours worked by employed (and skilled) workers in this region. According to a study by Richard Rogerson⁷, the hours worked by the average European (here defined as France/Germany/Italy) declined by a third between 1956 and 2003 and by 45% relative to the US. As shown in the chart below, the number of hours worked by the average European has continuously declined for half a century. Rogerson shows that this preference for "leisure" had an impact on effective labour supply that is of an order of magnitude greater than increases in unemployment.

⁵ Unfortunately, the current revival in German exports is still too new to be able to econometrically prove the direct causality between the demand for German machinery and an investment boom in Asia. See "What explains Germany's rebounding export market share?", Stephan Danninger and Fred Joutz, IMF Working Paper February 2007.

⁶ On-line education can be scaled up very fast but, so far, is not a credible alternative to the face-to-face approach.

⁷ "Structural Transformation and the deterioration of European Labour Market Outcomes", by Richard Rogerson, NBER Working Paper February 2007.

Hours worked in Europe and the US



Source: Richard Rogerson, NBER Working Paper, Feb 2007
 Note: Europe relates to Germany, France and Italy.

Now the question arises – why would these Europeans begin to work harder? We do not believe that Europeans are inherently “lazy”. Indeed, till the late sixties, the average European worked harder than the average American. We feel that Europeans will respond like everyone else to economic incentives. First, the global skills shortage will increase the returns to work. A global index for salaries is not available but we have strong anecdotal evidence that compensation for high-skilled workers is rising very quickly around the world. We feel that demand from India and China will further intensify this process.

Second, tax reforms could significantly change the incentive to work. Empirical analysis by Rogerson shows that if the US were to adopt European magnitude tax and spending programmes, the time allocations by American workers would be very similar to that of the Europeans. Europe (particularly Germany) has been steadily reforming its tax structure and, therefore, it is reasonable to expect a steady increase in hours worked by German workers (see appendix for an overview of reforms). In turn, this could lead to an unexpectedly strong economic growth in this part of the world.

Implications for Investors

As the above dynamics unfold, we foresee three broad implications for international investors:

First, the two Asian giants should be able to sustain high growth rates for a long time by deploying ever more capital and labour, although age-profiles suggest that India will take over the baton from China by the middle of the next decade. Note that China’s manufacturing/construction driven trajectory may provide a better guide to India’s future than its current high-end services driven model. It also means that the country’s financial system will need to continue expanding at an exponential pace in order to deploy the rising pool of savings.

Second, the global skills shortage should increase returns to good-quality private sector businesses engaged in education/training (especially those with good brands). Since skills are directly/indirectly tradable, this should be true world over and not just in Asia.

Finally, in our view investors should look at German companies with skills. Not only should these become increasingly competitive in a skill-shortage world, but it is likely that Asian companies will look to collaborate with or even buy-out such firms in order to secure skill supplies (in the same way Chinese companies are currently securing natural resource supplies in Africa). Also, we would consider the second-round impact of such growth on the domestic economy – for instance, demand for high-end property and luxuries.

Appendix. A Brief Overview of German Tax Reform

During the last few years the German government introduced two main tax reforms in line with their stated principle "lower tax – broaden the tax base" namely the "Tax Reform 2000" and the "Corporate Tax Reform 2008". The reforms were implemented in several stages (see chart below). The following is a brief overview:

"Tax Reform 2000"

Income tax:

- reduction of the initial tax rate to 15% (2000: 22,9%) and the top rate to 42% (2000: 51,0%) from 1 January 2005
- basic personal allowance for income tax was raised to € 7,664 from 2004 on (2000: € 6,902)

Corporation tax:

- the corporation tax was lowered to a uniform 25% in 2001 (exception 2006: 26,5% for the remedial of flood damages)

Tax base:

- tax base was broadened → remedy for depreciation allowances

(Change from 1st January 2007: Increase in tax on very high earners)

- from 2007 top rate for taxable income of € 250,000 (single)/ € 500,000 (joint filing) is 45% again (but still 42% between € 52,152 and € 250,000)

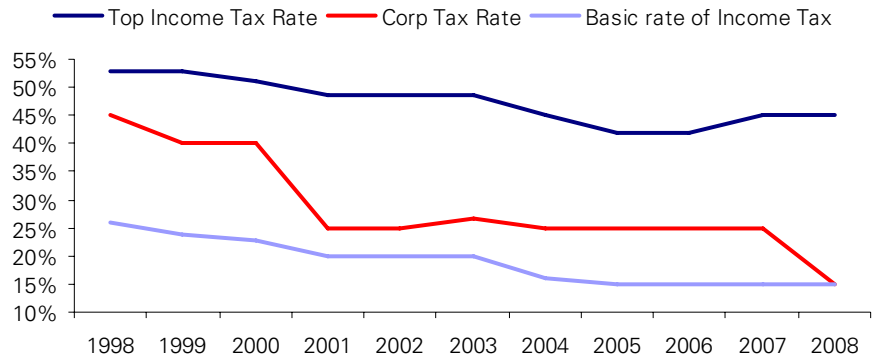
"Corporate Tax Reform 2008":

With the "Corporate Tax Reform 2008" the German government aims to reduce overall tax from 38% currently, to below 30% with the reduction of corporation tax and several other changes, combined with the broadening of the tax base. The reforms will be mainly introduced on 1 January 2008. The key points of the draft adopted in March 2007 are:

Reforms:

- corporation tax will be lowered from 25,0% to a uniform 15,0% (+ 5,5% solidarity surcharge)
- the basic federal rate will be lowered from 5% to 3,5%
- introduction of an interest barrier to limit the deductibility of interest (exemption: € 1 million)
- introduction of a uniform tax rate of 25% for income from capital (i.e. interest dividends, sale of shares)
- trade tax is no longer a tax deductible expense
- maximum allowable reserves for small enterprises will be increased from € 154,000 to € 200,000
- abolishment of the declining-balance depreciation

Germany: changes in tax rates



Source: www.bundesfinanzministerium.de

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