



The Wide Angle

The Age of Chinese Capital

Summary

China's domestic investment currently generates a disproportionate share of global investment. However, as the pace of investment slows, the country is likely to generate large current account surpluses over a prolonged period. This will transform China from being "the factory of the world" to being the "investor to the world". We do not think a real appreciation of the CNY would correct these surpluses but could perversely add to them.

How the world absorbs China's large current account surpluses will define the next round of economic expansion. We feel that the scale of capital outflow from China could be so large that it may keep long-term capital cheap even if the world's major central banks tighten monetary policy. This is the context in which we should evaluate the IMF's new call for an increase in public infrastructure investment.

India could be a beneficiary of this era of cheap capital as it tries to replicate the East Asian model, but it is not likely to absorb a substantial portion of China's excess savings. Similarly, even if Germany increases domestic investment, the most we can expect from Europe is that it does not add further to the global savings glut.

Thus, a revival of infrastructure investment in the US is key to a sustained revival of global economic growth. This would lead us back to a period of large symbiotic imbalances – which we dub as "Bretton Woods Three". Far from decrying this as a failure of global policy co-ordination, economists should accept imbalances as the natural state of being and try to manage the accompanying distortions. However, if Bretton Woods Three fails to take off for whatever reason, we should reconcile ourselves to a long period of mediocre growth. Cheap capital, in this scenario, will continue to support asset prices and depress yields. History suggests that some of this cheap money would inevitably find its way into trophy assets.





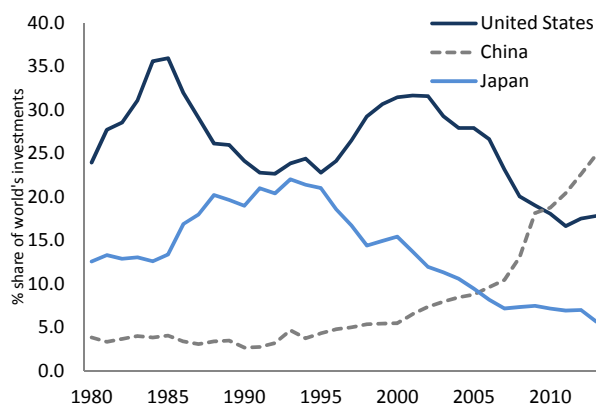
Who is not investing?

In recent weeks, a number of economists and policy-makers have argued that the global economy needs a sharp increase in investment, particularly public investment, as a way to lift it out of lethargy. In a speech on 2nd October, IMF Managing Director Christine Lagarde said that the world needed public investment in infrastructure in order to “overcome a new mediocre”¹. Former US Treasury Secretary Lawrence Summers made a similar argument in a Financial Times column titled “Why public investment really is a free lunch”². The same sentiment is echoed in the IMF’s latest World Economic Outlook that has a whole chapter dedicated to discussing “Is it time for an infrastructure push”?

The impression that one is left with from these arguments is that the world has not been investing for many years and that an investment binge, particularly in infrastructure, is needed to give the world economy some momentum. The data, however, shows a somewhat different picture. The world’s overall investment rate, according to the IMF’s own data, stood at 24.5% of world GDP in 2013 and will register something similar this year. This is actually near the top of long term range of 22-25%. So, what is going on?

A further investigation shows that real story is about a sharp shift in investment activity away from developed countries to China. Some other emerging economies like India have also increased their share but they pale in comparison to the dominance of China. The east Asian giant has seen its share of world investment rise from 4.3% in 1995 to an estimated 25.8% this year. In contrast, the United States saw its share peak at 36% in 1985 but, as shown in the chart below, has witnessed a large decline. Its share fell to just 16.6% of world investment in 2011 although it has increased marginally in the last two years. Japan’s decline has been even more dramatic. From a peak share of 22% in 1993, it accounted for barely 5.7% in 2013. Germany’s share too has declined from 8.5% in 1992 to 3.4% in 2013, which is the same as India’s share.

Figure 1: Shares in World Investments of US, China and Japan



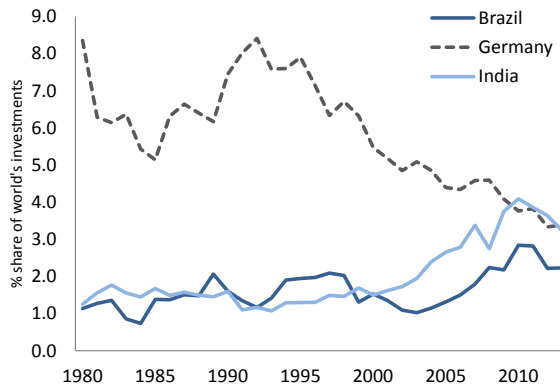
Source: International Monetary Fund, Deutsche Bank

¹ “The Challenges Facing the Global Economy: New Momentum to Overcome a New Mediocre”, transcript of speech by Christins Lagarde, IMF, 2bd October 2014. <http://www.imf.org/external/np/speeches/2014/100214.htm>

² “Why public investment really is a free lunch”, Lawrence Summers, Financial Times, 7th October, 2014

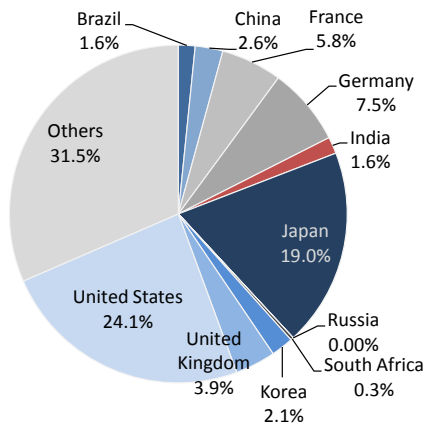


Figure 2: Shares in World's Investments of Brazil, Germany and India



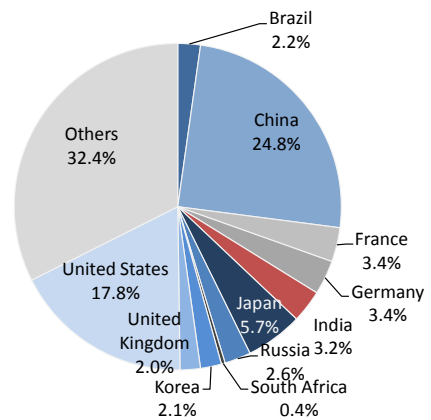
Source: International Monetary Fund, Deutsche Bank

Figure 3: Distribution of World's Investment across Countries in 1990



Source: International Monetary Fund, Deutsche Bank

Figure 4: Distribution of World's Investment across Countries in 2013

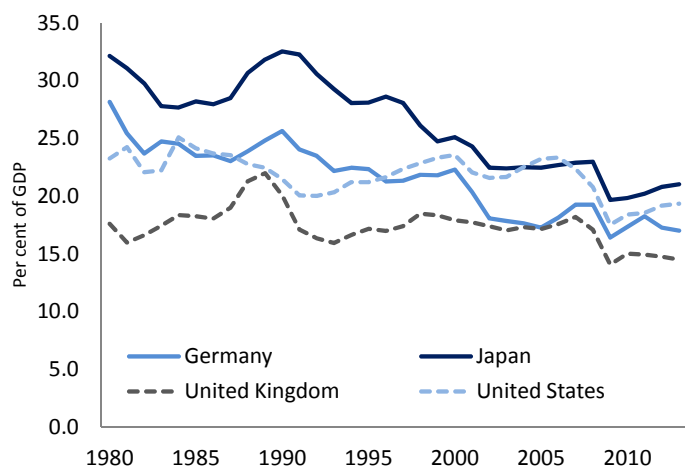


Source: International Monetary Fund, Deutsche Bank

It is important to note here that the decline in the importance of developed countries in global investment is not just about their overall declining share in the world economy. The gross investment rate of most of these countries have also been falling steadily over the years, and sharply since 2008. Between 1990 and 2013, the investment rate as proportion of GDP fell from 21.5% to 19.3% in the US, 20.1% to 14.5% in the UK, 32.5% to 21% in Japan and from 25.6% to 16.9% in Germany. During the same period, the investment rate jumped from 34.9% to 47.8% in China and from 26% to 31.4% in India. (Note that we have not broken up data into private versus public, and between infrastructure and non-infrastructure, as it would distract from the broader point.)

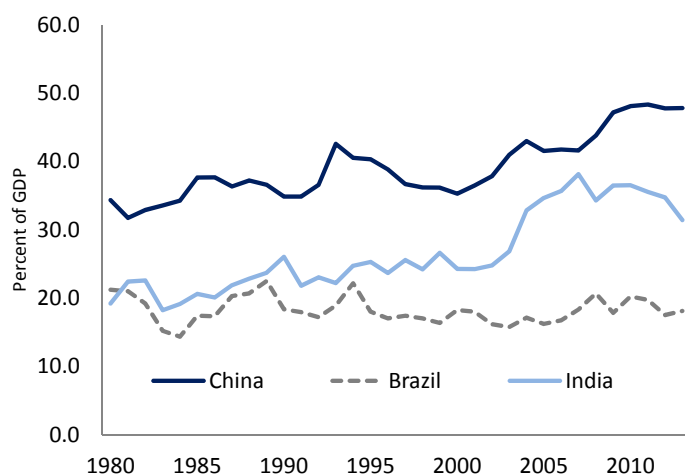


Figure 5: Investment Rates of Selected Developed Economies



Source: International Monetary Fund, Deutsche Bank

Figure 6: : Investment Rates of Selected Developing Economies



Source: International Monetary Fund, Deutsche Bank

As one can see, the problem of global investment is really a not about the world as a whole, but about developed countries. Their share in global investment has been declining not just because of their falling share of the world economy but also because of the fact their investment effort has been falling as a share of their own economies. In contrast, China's investment boom has almost singlehandedly held up the global investment rate. So, why is this a risk? In order to answer this question, we need to consider the implications of a likely slowdown in Chinese investment and the possibility that the country becomes a very large source of excess savings.

Sources of World Savings

China's growing share in global investment may be impressive but it was not funded by sucking in global capital but by deploying its huge pool of domestic savings. The country's share in global savings jumped from 4.4% in 1995 to an estimated 26.5% in 2014. As a share of its GDP, the savings rate jumped during the period from an already high 42% of GDP to around 50-52% in the



last few years (it is currently estimated to be a bit below 50%). This is why, despite sustaining a very high investment rate, China runs a current account surplus and exports capital.

China's savings-investment dynamic has had an important role in the evolution of global imbalances. As one can see from the chart below (Figure 9), China's savings rate was significantly higher than its investment rate before 2007. In that year, the savings rate was 51.8% of GDP as per IMF data and investment rate was 41.7%. Other data sources have somewhat different estimates, but the larger point is that there was a very large gap between the savings and investment rates. In turn, this excess savings was funding the US economy which, at the eve of the crisis in 2007, had an investment rate of 22.3% and a savings rate of 17.3%.

This imbalance was much condemned as the major source of global instability. However, as pointed out by Deutsche Bank's David Folkerts-Landau, Michael Dooley and Peter Garber, it was much more of a symbiotic system that they dubbed "Bretton Woods Two" that can be said to have even survived the Great Recession³.

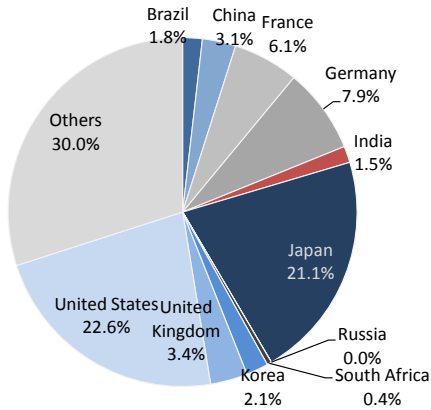
Critics of the Bretton Woods Two hypothesis will argue that the current account gaps of the two countries have substantially narrowed since 2007 – which is then interpreted to be closer to some notion of "equilibrium". However, the reality is that this narrowing of the external balances was due to perverse internal factors: China's savings rate did not decline but its investment rate jumped to unprecedented levels with government encouragement. Meanwhile, the US saw a collapse in investment rather than an increase in savings. The gross investment rate dropped from a peak of 23.3% of GDP in 2006 to 17.5% in 2009 before recovering to 19.3% last year – still well below pre-crisis levels.

Thus, the narrowing of current accounts balances was due to a further divergence of already skewed savings-investment dynamics of these countries and can hardly be called a return to balance. For the purposes of this discussion we have only taken the US and China, but the general argument can be extended easily to include the rest of the world.

³ "The Revived Bretton Woods System's First Decade", Michael Dooley, David Folkerts-Landau & Peter Garber, Deutsche Bank Research, 26th August 2014.

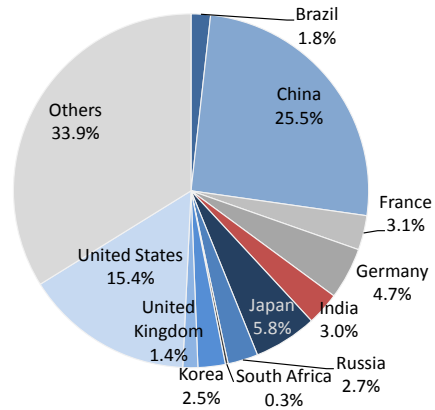


Figure 7: Distribution of World's Savings across Countries in 1990



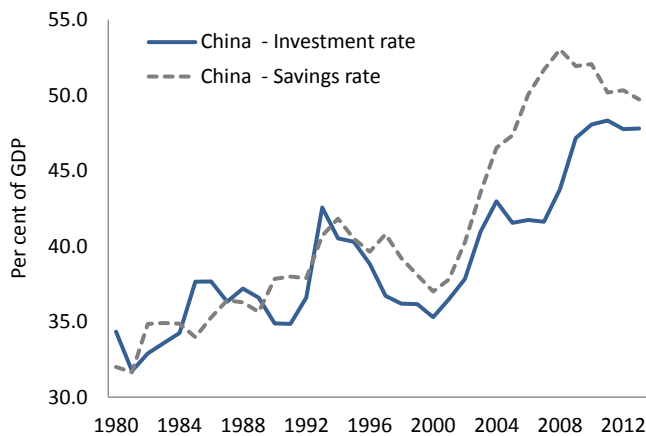
Source: International Monetary Fund, Deutsche Bank

Figure 8: Distribution of World's Savings across Countries in 2013



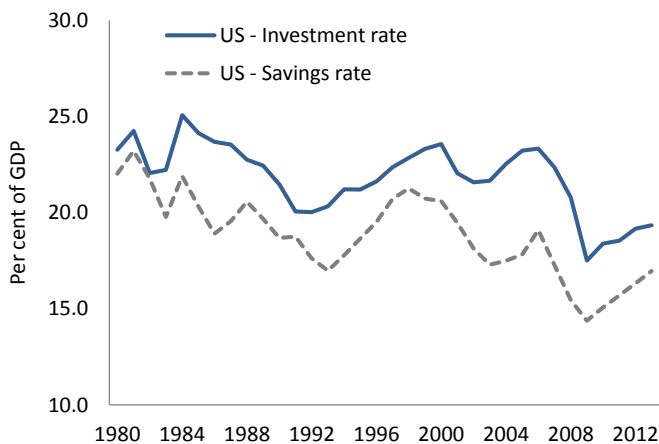
Source: International Monetary Fund, Deutsche Bank

Figure 9: Savings and Investment Rates of China



Source: International Monetary Fund, Deutsche Bank

Figure 10: Savings and Investment Rates of United States



Source: International Monetary Fund, Deutsche Bank

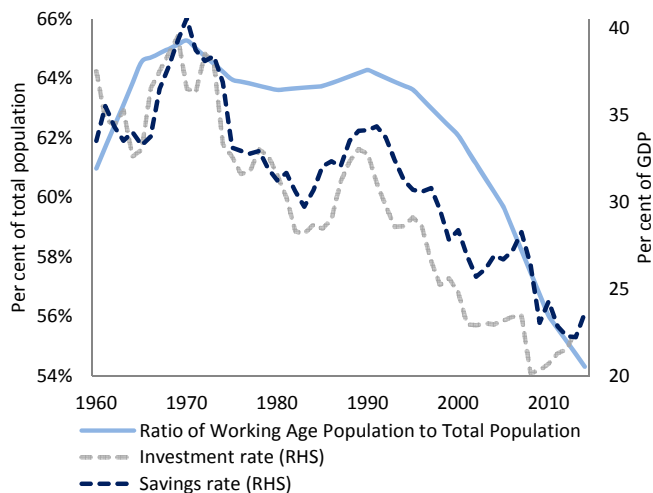


Demographics & the East Asian Model

As one can see, the internal savings-investment dynamics in China have not unraveled since 2007 but became even more skewed with the economy investing almost half the economy. The problem for a USD10 trillion economy is that it is not easy to find ways of efficiently deploying USD5trillion per year (and the number keeps rising). This is especially difficult when the country already has brand new infrastructure, excess manufacturing capacity in many segments and is trying to shift to services, a sector that requires far less heavy investment. So, it is not surprising that many observers expect China's investment rate to decline significantly over the next decade. The question from a global balance perspective is – how fast will the investment rate fall and what will happen to the savings rate when this happens?

The trajectory of the unwinding of China's savings-investment dynamic cannot be exactly predicted but we can look at the experience of other east Asian countries who used a similar investment driven growth model backed by a favorable demographic cycle. The share of population of working age population in Japan peaked around 1970 and then saw a second peak around 1990. This coincided with two savings-investment peaks. Despite building "bridges to nowhere", Japan's investment steadily declined after 1990 (i.e. a lesson that pumping public investment in infrastructure does not always work). It took twelve years from 1990 for the investment rate to decline by 10 percentage points (from 32.5% of GDP to 22.5%). The savings rate also declined but not fast enough to keep up with the investment decline (33.6% of GDP to 25.3%). This slowed down Japan's growth rate but simultaneously generated larger current account surpluses⁴.

Figure 11: Savings and Investment Rates in Japan and the Working Age Population (15-59 years)



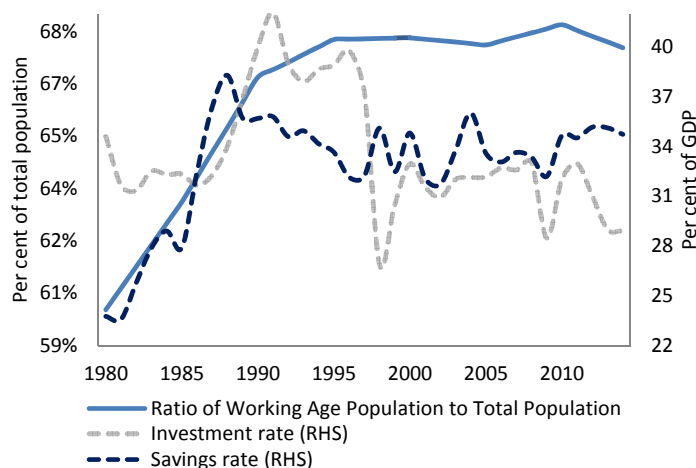
Source: IMF, OECD, The World Bank, UN Population Division, Deutsche Bank

⁴ Note that we have deliberately not distinguished here between the internal sources of savings – households, government and corporate. This is because in the long run is fair to assume a Ricardian equivalence. After all, corporate savings are eventually owned by some household (except that accruing to foreigners). Similarly, public assets and liabilities are eventually a part of the future stream of taxes and public services impacting households. Therefore, for long term analysis, its easiest to look at national savings as a whole.



The data for South Korea also tells a similar story – although the exact trajectory is influenced by the Asian Crisis 1997-98. The proportion of population of working age peaked in 1990s and 2000s and is now starting to decline. At the eve of the Asian Crisis in 1996, the country's investment rate was almost at 38% of GDP. It dropped sharply during the crisis, and despite a subsequent recovery is running at much lower levels. Yet again, the savings rate has been much more stable, resulting in structural current account surpluses.

Figure 12: Savings and Investments Rates in South Korea and the Working Age Population (15-59 years)



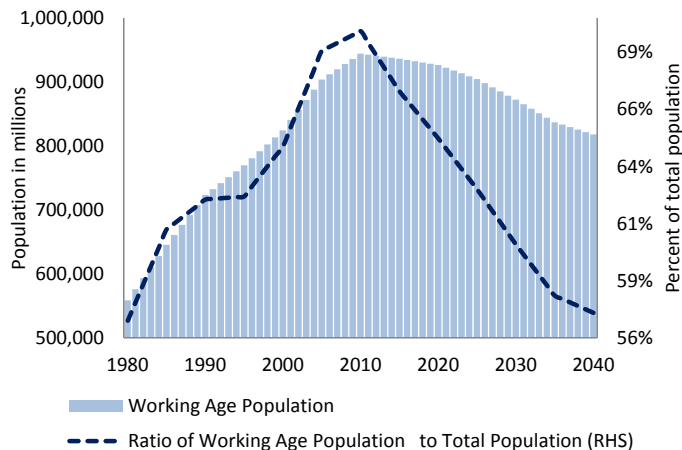
Source: IMF, UN Population Division, Deutsche Bank

Germany's current experience may be seen as a European version of this phenomenon. As the society has aged, its investment rate has declined but its savings rate has not declined (see Figure 15). Of course, China's future trajectory may not exactly follow other East Asians or Germany, but is important to note that past experience suggests that when a country goes past its demographic peak, the investment rate will tend to fall faster than the savings rate. As illustrated in Figure 13, China will soon experience a very rapid decline in the proportion of population of working age (defined here as 15-59 years).

The IMF's current projections show China's investment rate falling from 47.7% in 2014 to 45.8% in 2019 and its savings rate falling from 49.5% of GDP to 48.8%. As one can see, even with the IMF's conservative model, China ends up generating a current account surplus of 3% of GDP or USD459bn by 2019 but we think that the risk is that it could be even bigger. As we have seen, experience suggests that in a rapidly aging society, the investment declines can outpace the savings rate by larger margins. Should China follow this pattern, we should expect China to slow down significantly and to generate very large current account surpluses by the end of this decade. In turn, this flood of capital could hold down the long-term cost of capital down globally for many years irrespective of how much central banks in the rest of the world tighten monetary policy. Moreover, it will signal a return to large global imbalances. So, should economists be worried?



Figure 13: China's Working Age Population (15-59 years)



Source: UN Population Division, Deutsche Bank

The Economics of Perpetual Imbalance

One of the reasons that mainstream economists get worked up about global imbalances is that they remain endearingly loyal to the idea of the “equilibrium” – the intellectual legacy of Newtonian mechanics and Victorian engineering. The problem is that economic and financial systems are not machines with pulleys and levels. Rather they are complex, adaptive systems that have more in common with weather systems, cities, the English language, and biological ecosystems. This is not the place to list out all the characteristics of complex, adaptive systems except to point out that such systems do not return to some static equilibrium but tend to move from one dis-equilibrium to another. Writing in the context of biological ecosystems, a recent paper makes the following observation:

“Wallace was perhaps the first to challenge the very notion of a balance of nature as an undefined entity whose accuracy could not be tested. His skepticism was taken up again in the 20th century, culminating in a widespread rejection of the idea of a balance of nature by academic ecologists, who focus rather on a dynamic, often chaotic nature buffeted by constant disturbances”⁵

The above can be applied to other adaptive, complex systems as well. The English language keeps adding new words and usages without reaching an equilibrium. Similarly, Tokyo – the world’s largest city with 36 mn people – is still adding population despite being in a country with a shrinking population. In contrast, Detroit has kept losing population despite the fact that textbook economics would suggest that falling real estate prices would have stabilized the population at some level. These insights have an important bearing on current discussion.

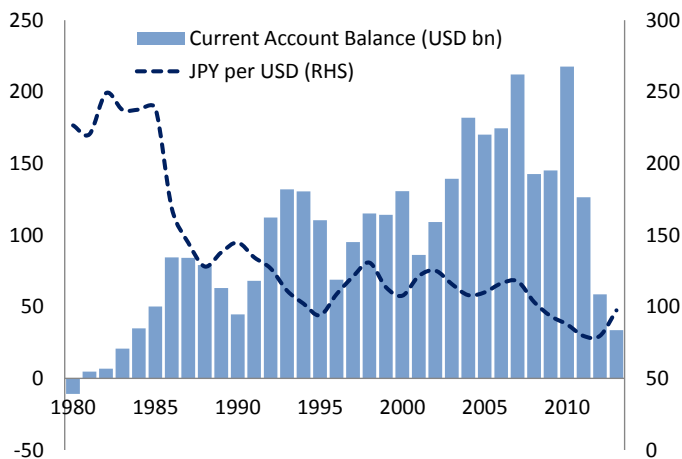
First, a real appreciation of the exchange rate, through inflation or a move in the nominal exchange rate, will not help China correct its large current account surplus. An appreciation will depress investment in the tradable sector that, in turn, could further feed the surplus. In other words, the loss of competitiveness is more than compensated by the decline in investment over a prolonged

⁵ “The Balance of Nature – Evolution of a Panchreston”, Daniel Simberlof, PLOS-Biology, October 2014
<http://www.plosbiology.org/article/info%3Adoi%2F10.1371%2Fjournal.pbio.1001963>



period. This is totally contrary to what mainstream economists expect but we have several examples of this in history. As shown in the chart below, the appreciation of the Yen from the mid-eighties was followed by larger current account surpluses even though Japan was constantly losing competitiveness throughout this period. It took almost three decades for this process to play out.

Figure 14: Japan's Current Account Surplus and the Exchange Rate



Source: IMF, Haver

The second implication of the complex, adaptive framework is that imbalance may be the natural state of the world economy. As discussed in previous articles in the Wide Angle series, virtually every period of globalization and prosperity through two thousand years of history has been accompanied by symbiotic imbalances⁶. In each case, these imbalances cause economic distortions and complaints, but they can endure for surprisingly long periods. For instance, in the first and second centuries AD, the world economy was driven by Indo-Roman trade. Throughout this period, India ran a current account surplus and the Romans kept complaining about the loss of gold – but the system endured for a very long time. The same can be said about the Bretton Woods system which, as my colleagues have argued, has endured far longer than conventionally believed. The absorption of China's pipeline of surpluses will require the world to return to an age of current account imbalances. The trajectory of the world economy will be determined by how it adapts to this reality rather than by some pre-conceived notion of balance.

Logic of Bretton Woods Three

As one can see from the above discussion, the world economy should expect to be flooded with cheap capital emanating from China. But, who is going to absorb it? The first country that comes to mind is India. It is a large, populous country that clearly needs capital to build a lot infrastructure. Moreover, Prime Minister Modi appears to be setting a course aimed at replicating the investment driven East Asian growth model (see our previous Wide Angle report "India 2020: The Road to East Asia", published 1st September 2014).

⁶ "Global Imbalances in the Post-Crisis World", Sanjeev Sanyal, The Wide Angle series, DB Research, November 2012 & "Bretton Woods Three and the Global Savings Glut", Sanjeev Sanyal, The Wide Angle series, DB Research, October 2013



Although India would undoubtedly benefit from an era of cheap capital, it is unlikely that it will absorb any significant portion of China's excess savings. First, it is just too small at this point of time to make a dent. As shown in Figure 4, India's share of world investment is 3.4% whereas China's share is 25.8%. Even a very large expansion in Indian investment will not be able to make up for a small decline in China. Second, the experience of the East Asian growth model is that it is ultimately sustained by mobilizing rising domestic savings and pumping out exports. So, India may initially absorb some international capital to get the process going but in the long term it may prefer to build foreign exchange reserves by running small deficits or even a surplus. From the individual country's perspective this may be good way to protect a rapidly expanding financial system from external shocks but, from a global imbalance perspective, rules out India as a country that will absorb much of the world's excess capital.

One could argue that other emerging economies also need infrastructure investment, but again one needs to be careful of advocating a blanket expansion in public investment without studying the efficiency and institutional capacity of individual countries. Studies show that indiscriminately ramping up debt-funded investment by emerging markets could cause long term damage. Indeed, IMF itself has a recent working paper by Andrew Warner that shows that ramping up public investments in low-income countries often have only a small positive impact in the short run and none at all in the long run⁷. Even the IMF's latest World Economic Outlook, for all its advocacy of public investment spending, finds that higher public investment in advanced countries is likely to finance itself but in developing countries is likely to cause indebtedness⁸. Thus, the call by the IMF and others to ramp up investment is really aimed at developed countries.

One developed country that is often urged to ramp up domestic investment is Germany. This is not surprising since Germany's savings-investment gap of more than 6% of GDP is so large that it currently generates an even larger current account surplus than China. As shown in the chart below, as Germany has begun to age, its invest rate has declined but savings rate has actually gone up! This has led many economists to demand that Germany increase domestic investment activity. A simulation by DIW, Berlin, suggests that a 3 percentage point of GDP closing of the investment gap would shift up the economy's potential growth rate from 1% to 1.6% by 2017⁹. In any case, the study argues that the returns from German investment abroad are so poor than it would be better to invest at home anyway. The case for higher domestic investment is strengthened by the argument that, unlike many other countries, Germany has the balance-sheet to sharply increase public investment in infrastructure. DIW studies suggest that the government budget will run a structural surplus by 2017 of EUR28bn or 1% of GDP.

Notwithstanding all these arguments, Germany's Finance Minister Schäuble has announced a balanced budget for 2015 and the following years up to 2018. As Deutsche Bank's economists said in a recent report "This is a clear indication that he is not prepared to boost German infrastructure investment further as requested not only in Germany but also by some other EMU countries and most recently ECB President Mario Draghi"¹⁰.

⁷ "Public Investment as an Engine of Growth", Andrew Warner, IMF Working Paper, August 2014. <http://www.imf.org/external/pubs/cat/longres.aspx?sk=41838.0>

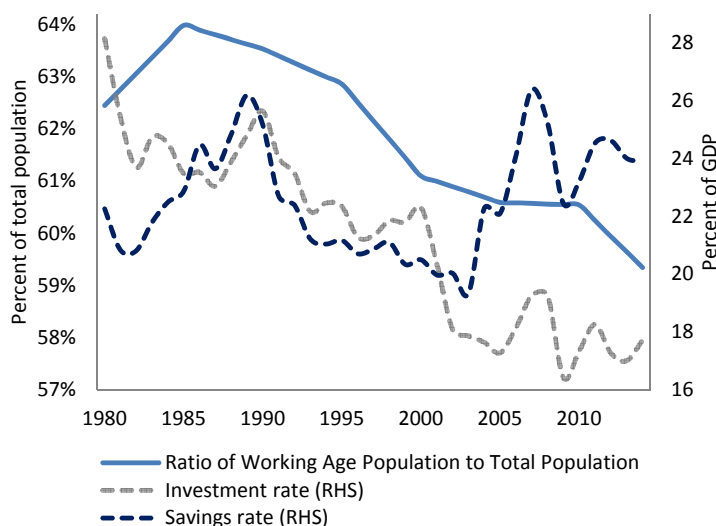
⁸ Box 3.4, Chapter 3, World Economic Outlook, IMF, October 2014.

⁹ "Investment for More Growth-An Agenda for Germany's Future", DIW Economic Bulletin, Vol.3 No. 8, 2013. (see article by Stefan Bach et al).

¹⁰ "Heightened Risks", Focus Germany, 30th September 2014



Figure 15: Savings and Investment Rates in Germany and its Working Age Population (15-59 years)



Source: IMF, Deutsche Bank

A recent Deutsche Bank study suggests that there is a risk that Europe, led by Germany, could add to the global savings glut¹¹. In other words, even if policy-makers accept the argument for a German investment boost, the best we can reasonably expect is that Europe stops adding to the world's excess savings. Thus, after surveying other candidates, we find that all realistic outcomes will depend on how the United States behaves in this environment. It is important not only because of its size and capacity but due to the fact that its deteriorating stock of infrastructure provides a good avenue for global capital. The American Society of Civil Engineers (ASCE) found that 32% of major roads in the US are in poor or mediocre condition while the US Federal Highway Administration estimated a 24-46% increase in annual capital outlay is needed for substantial improvement.

¹¹ "Euroglut: A New Phase of Global Imbalances", George Saravelos, Deutsche Bank, 6th October 2014



Figure 16: US Infrastructure Grade Sheet

Category	1988*	1998	2001	2005	2009	2013
Aviation	B-	C-	D	D+	D	D
Bridges	-	C-	C	C	C	C+
Dams	-	D	D	D+	D	D
Drinking Water	B-	D	D	D-	D-	D
Energy	-	-	D+	D	D+	D+
Hazardous Waste	D	D-	D+	D	D	D
Inland Waterways	B-	-	D+	D-	D-	D-
Levees	-	-	-	-	D-	D-
Public Parks and Recreation	-	-	-	C-	C-	C-
Rail	-	-	-	C-	C-	C+
Roads	C+	D-	D+	D	D-	D
Schools	D	F	D-	D	D	D
Solid Waste	C-	C-	C+	C+	C+	B-
Transit	C-	C-	C-	D+	D	D
Wastewater	C	D+	D	D-	D-	D
Ports	-	-	-	-	-	C
America's Infrastructure GPA	C	D	D+	D	D	D+
Cost to Improve (USD trillion) in 2010 prices	-	-	1.30	1.60	2.20	3.60

Source: 2013 Report Card for America's Infrastructure, American Society of Civil Engineers

NOTES

Grade A	Exceptional : Fit for the future
Grade B	Good : Adequate for now
Grade C	Mediocre : Requires attention
Grade D	Poor : At risk
Grade F	Failing / Critical : Unfit for purpose

The above table is an assessment by the ASCE of how US infrastructure has deteriorated between 1988 and 2013. As someone who lives in Singapore but travels frequently by the US, I am not at all surprised by the assessment. So how much would it cost to fix all this? The ASCE estimates that at 2010 prices, it would need USD3.64 trillion (USD3.95 in today's prices). Notice that this is just backbone infrastructure spending and ignores other forms of investment such as industrial capacity, housing and so on. Assuming that the infrastructure spend is spread till 2020, ASCE estimates a spending of USD 454bn per year in 2010 prices (USD494bn in today's prices) and a funding gap of USD 201bn (i.e. USD219 in today's prices).

Figure 17: ASCE's estimate of required Infrastructure Investment (in billions of 2010 US dollars)

Infrastructure Systems	Total Needs	Estimated Funding	Funding Gap
Surface Transportation	1,723.0	877.0	846.0
Water/Wastewater Infrastructure	126.0	42.0	84.0
Electricity	736.0	629.0	107.0
Airports	134.0	95.0	39.0
Inland Waterways & Marine Ports	30.0	14.0	16.0
Dams	21.0	6.0	15.0
Hazardous & Solid Waste	56.0	10.0	46.0
Levees	80.0	8.0	72.0
Public Parks & Recreation	238.0	134.0	104.0
Rail	100.0	89.0	11.0
Schools	391.0	120.0	271.0
TOTALS	3,635.0	2,024.0	1,611.0
Yearly Investment Needed	454.0	253.0	201.0

Source: 2013 Report Card for America's Infrastructure, American Society of Civil Engineers



The above numbers should be taken merely as an indication of the scale of magnitude rather than as hard estimates. Nonetheless, it illustrates the fact that, at least in theory, the US can absorb a significant part of China's future surpluses. A discussion of the political and institutional factors that will facilitate or obstruct such absorption is beyond the scope of this report, but the numbers show that the US is a country with the necessary scale.

To conclude, a few things are becoming clear about how the global economy will function over the next decade. First, the way the world absorbs China's large current account surpluses will define the next round of economic expansion. The scale of capital outflow could be so large that it may keep the long-term capital cheap even if the world's major central banks tighten (possibly even inverting the yield curve in some instances). An appreciation of the CNY would not correct these surpluses and may perversely add to them.

Second, India could be a beneficiary of this era of cheap capital as it tries to replicate the East Asian model, but it is not likely to absorb a significant portion of China's excess savings. Indeed, in the long run, it may prefer to build foreign exchange reserves and export capital. Similarly, the best we can expect from Europe is that it does not add to the world's savings glut.

Third, a revival of investment in the US is key to a sustained revival of global economic growth. This will lead us back to a period of large symbiotic imbalances – which we dub as “Bretton Woods Three”. Far from decrying this as a major failure of global policy co-ordination, economists should accept imbalances as the natural state of being and try to manage the resultant distortions.

Finally, if Bretton Woods Three fails to take off for whatever reason, we should reconcile ourselves to a long period of mediocre growth. Cheap capital, however, will continue to support asset prices and depress yields. If history is any indication, trophy assets may do especially well.

*The author of this report wishes to acknowledge the contribution made by **Sayandeb Banerjee** of Infosys Ltd, a third-party provider to Deutsche Bank of offshore research support services.*



The Wide Angle Series

13 June 2011
The Wide Angle
The End of Population Growth

Periodical
 Sophie Lorenz
 Global Markets Research

Summary

- Latest data from around the world suggests that human population will peak at around 10 billion in the 2030s, about half a century earlier than previously anticipated. In fact, global fertility rates are falling so fast that the world's population may have peaked for a few more decades before a rebound from the age structure and aging legacy, but reproductive capacity, not fertility, is the key to population growth.
- Both sides have been slow to acknowledge that the world's population is now falling in developing countries. This change, however, is not an end in itself. It is a long-term trend that will have far-reaching implications. The world's population is now falling in developing countries, but that is not the only story. The world's population is still growing, but the rate of growth is slowing down.
- The most recent economic, the world will be able to do so. The world's population is still growing, but the rate of growth is slowing down.
- The world's population is still growing, but the rate of growth is slowing down.

DISCLOSURE AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1, SECURITIES FUNDAMENTALS

20 June 2011
The Wide Angle
Is Outsourcing History?

Periodical
 Sophie Lorenz
 Global Markets Research

Summary

- The debate surrounding the manufacturing and loss of jobs in the US has been intense. The question of global outsourcing, however, has remained in perspective. In fact, China and India have the same amount of workers relative to the US economy as during a time when the US was the world's largest economy.
- The US has been the American manufacturing sector's largest competitor in the developed world since the end of the 1980s. The US has been the American manufacturing sector's largest competitor in the developed world since the end of the 1980s.
- The US has been the American manufacturing sector's largest competitor in the developed world since the end of the 1980s.

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20 June 2011
The Wide Angle
Can Asian consumers replace the West?

Periodical
 Sophie Lorenz
 Global Markets Research

Summary

- There are signs that the Asian consumer market is beginning to emerge. The Asian consumer market is beginning to emerge. The Asian consumer market is beginning to emerge.
- The Asian consumer market is beginning to emerge. The Asian consumer market is beginning to emerge. The Asian consumer market is beginning to emerge.
- The Asian consumer market is beginning to emerge. The Asian consumer market is beginning to emerge. The Asian consumer market is beginning to emerge.

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21 August 2011
The Wide Angle
The Future of Our Cities

Periodical
 Sophie Lorenz
 Global Markets Research

Summary

- The global economy is being disrupted by cities, and their disruption is spreading. The global economy is being disrupted by cities, and their disruption is spreading.
- The global economy is being disrupted by cities, and their disruption is spreading. The global economy is being disrupted by cities, and their disruption is spreading.
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3 November 2011
The Wide Angle
Are We Entering a Post Dollar World?

Periodical
 Sophie Lorenz
 Global Markets Research

Summary

- The global economy is being disrupted by cities, and their disruption is spreading. The global economy is being disrupted by cities, and their disruption is spreading.
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27 January 2012
The Wide Angle
Transportation versus Communications: What is Next?

Periodical
 Sophie Lorenz
 Global Markets Research

Summary

- The global economy is being disrupted by cities, and their disruption is spreading. The global economy is being disrupted by cities, and their disruption is spreading.
- The global economy is being disrupted by cities, and their disruption is spreading. The global economy is being disrupted by cities, and their disruption is spreading.
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22 July 2012
The Wide Angle
Who are the World's Consumers?

Periodical
 Sophie Lorenz
 Global Markets Research

Summary

- The world's population is still growing, but the rate of growth is slowing down. The world's population is still growing, but the rate of growth is slowing down.
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17 September 2012
The Wide Angle
What does the World Consume?

Periodical
 Sophie Lorenz
 Global Markets Research

Summary

- The world's population is still growing, but the rate of growth is slowing down. The world's population is still growing, but the rate of growth is slowing down.
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26 November 2012
The Wide Angle
Global Imbalances in the Post-Crisis World

Periodical
 Sophie Lorenz
 Global Markets Research

Summary

- The global economy is being disrupted by cities, and their disruption is spreading. The global economy is being disrupted by cities, and their disruption is spreading.
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The Wide Angle Series (contd...)

Deutsche Bank Research

The Wide Angle
What Drives 21st Century Cities?

Overview
The rise of a world power cannot be predicted until the rise of the population and the rise of the economy. The world's population is projected to reach 9 billion by 2050. The world's economy is projected to reach 25 trillion by 2050. The world's cities are projected to reach 1 billion by 2050. The world's cities are projected to reach 1 billion by 2050. The world's cities are projected to reach 1 billion by 2050.

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Deutsche Bank Research

The Wide Angle
Predictors of a Rogue Demographer

Overview
The world is currently in a demographic transition. The world's population is projected to reach 9 billion by 2050. The world's economy is projected to reach 25 trillion by 2050. The world's cities are projected to reach 1 billion by 2050. The world's cities are projected to reach 1 billion by 2050.

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Deutsche Bank Research

The Wide Angle
Britain Woods II and the Global Savings Glut

Overview
The world is currently in a demographic transition. The world's population is projected to reach 9 billion by 2050. The world's economy is projected to reach 25 trillion by 2050. The world's cities are projected to reach 1 billion by 2050. The world's cities are projected to reach 1 billion by 2050.

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Deutsche Bank Research

The Wide Angle
India 2020: The Road to East Asia

Overview
A clear and steadily coherent economic model is emerging from Prime Minister Manmohan Singh and policy circles. The model includes export-oriented manufacturing, heavy infrastructure building and urbanization. In our view, this suggests a path from India's current economic growth trajectory to an East Asian growth model based on the mass deployment of labour and capital.

The East Asian model will lead to the emergence of a new industrial revolution that will be a path to manufacturing-led growth. This will increase the overall demand for a range of 1.5x from 50 countries. This demand will be met by a range of 1.5x from 50 countries. This demand will be met by a range of 1.5x from 50 countries.

DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MCI (P) 1404/2014

The Random Walk Series

Deutsche Bank Research

The Random Walk
Mapping the World's Financial Markets

Overview
This is the first issue of a new series of publications that we have named The Random Walk. It is meant as a companion to The Wide Angle series that many readers will have already seen. Both the publications will use all global issues and markets on the basis of a common framework of analysis. The publications will use all global issues and markets on the basis of a common framework of analysis. The publications will use all global issues and markets on the basis of a common framework of analysis.

DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MCI (P) 1404/2014

Deutsche Bank Research

The Random Walk
Mapping the World's Prices

Overview
The macroeconomic comparison of prices has long been used to determine for a number of countries the relative price level. This has been done by comparing the price level of a country with the price level of a country. This has been done by comparing the price level of a country with the price level of a country.

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Deutsche Bank Research

The Random Walk
Mapping the World's Financial Markets 2013

Overview
It was our pleasure to publish the first edition of "Mapping the World's Financial Markets". The aim was to put together the first random walk edition on the financial markets of the world's major markets in an accessible format for the publication. The aim was to put together the first random walk edition on the financial markets of the world's major markets in an accessible format for the publication.

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The Random Walk series (contd...)

Deutsche Bank
Research

14 April 2013

The Random Walk Mapping the World's Prices 2013

The report is an attempt to track and describe global consumption. The data is provided in a broad context of consumption, including...
The available data sources are often limited to macroeconomic, macroeconomic and household consumption data. The data is provided in a broad context of consumption, including...
While it is difficult to generate the world's total consumption, this report is an attempt to track and describe global consumption. The data is provided in a broad context of consumption, including...
Based on our findings, we have found that the world's total consumption is growing at a steady pace. This is due to a number of factors, including...
We also found that China's consumption is growing at a steady pace. This is due to a number of factors, including...
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Deutsche Bank
Research

14 February 2014

The Random Walk Mapping World Consumption 2014

The report is an attempt to track and describe global consumption. The data is provided in a broad context of consumption, including...
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Research

14 April 2014

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Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Asia	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Europe	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
North America	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
South America	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Africa	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Oceania	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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Research

14 May 2014

The Random Walk Mapping the World's Prices 2014

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Appendix 1

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