# The State of the Global Economy

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#### Changing Patterns in the Global Economy: The Shifting Centre of Gravity

- The most important development in the global economy during the last three and a half decades is the opening of the Chinese economy and its participation in the World.
- It has lead to a gradual shift in the centre of gravity of the global economy, albeit gradually, from the developed economies of North America and Europe to the economies of East Asia, over the past three decades.
- This gradual shift in the centre of gravity of the global economy means that the East Asian economies have been steadily coming into their own and becoming less dependent on the developed economies, enabling a "partial de-coupling" of the East Asian economies from the developed economies of the West.
- The fact that the Chinese economy could continue to grow, albeit at a somewhat lower rate, even as the U.S. and European economies went into recession, lends credence as well as empirical support to the "Partial De-Coupling Hypothesis".

#### Changing Patterns in the Global Economy: The Shifting Centre of Gravity

- However, more recently, the other BRICS (Brazil, Russia, India, China and South Africa) and East Asian economies have also begun to slow down because of the expectation of the end of "quantitative easing (QE)" on the part of the U.S.
- However, the Chinese economy alone is not large enough to turn the World economy around. The idea of a G-2 group of countries consisting of China and the United States leading the World economy is premature.

### Changing Patterns in the Global Economy: GDP

- In 1970, the United States and Western Europe together accounted for over 60% of World GDP. By comparison, East Asia (defined as the 10 Association of Southeast Asian Nations (ASEAN)--Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam--+ 3 (China, Japan and the Republic of Korea) and South Asia combined accounted for less than 15% of World GDP.
- In 1990, the United States and Western Europe together still accounted for over 55% of World GDP while East Asia and South Asia combined accounted for not quite 20% of World GDP.
- By 2012, the share of United States and Western Europe in World GDP has declined to approximately 45% whereas the share of East Asia and South Asia have risen to 30%.

# The Distribution of World GDP, 1970 and 2012, US\$



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#### Changing Patterns in the Global Economy

- The East Asian (defined as the 10 Association of Southeast Asian Nations (ASEAN) + 3 (China, Japan and the Republic of Korea) share of World GDP rose from just above 10% in 1970 to approximately 25% in 2012.
- The Japanese share of World GDP declined from a peak of 18% in the mid-1990s to 8% in 2012 while the Mainland Chinese share of World GDP rose from 3% in 1970 and only 4% in 2000 to over 11% in 2012.

## The Shares of East Asia, China, Japan and South Korea in World GDP, 1960-present

The Shares of East Asia, China, Japan and South Korea in World GDP, 1960-present



#### Changing Patterns in the Global Economy: Economic Growth

- China, India and South Korea are among the fastest growing economies during the past four decades.
- Russia has also grown at a very high rate during the past decade because of its significant oil production and high oil prices.
- Brazil has also grown very fast during the past decade because of the world natural resource boom but has begun to slow down recently.
- However, all the developed economies—the U.S., Euro Zone, Japan, and the U.K.—had relatively low and declining growth rates during the past decades. Even though there are now early signs of a steady economic recovery, the rates of growth have remained low by the historical standards of these economies.

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#### Decade Average Annual Rates of Growth of Real GDP of East Asian Economies



### The Growth of Real GDP in East Asian Economies, 1970-2012



### The Growth of Real GDP per Capita in East Asian Economies, 1970-2012

Real GDP per Capita of East Asian Economies in 1970 and 2012, in 2012 USD thousands



#### Changing Patterns in the Global Economy: International Trade

- In 1970, the United States and Western Europe together accounted for over 60% of World trade. By comparison, East Asia and South Asia combined accounted for less than 10% of World trade.
- In 1990, the United States and Western Europe together still accounted for approximately 55% of World trade while East Asia and South Asia combined accounted for just over 10% of World trade.
- By 2012, the share of United States and Western Europe in World trade has declined to below 45% whereas the share of East Asia and South Asia has risen to 30%.
- The regional distribution of international trade parallels approximately the regional distribution of GDP.

#### The Distribution of Total International Trade in Goods and Services, 1970

The Distribution of Total International Trade in Goods and Services in 1970



#### The Distribution of Total International Trade in Goods and Services, 2011

The Distribution of Total International Trade in Goods and Services in 2011



#### Changing Patterns in the Global Economy: International Trade

- The East Asian (defined as the 10 Association of Southeast Asian Nations (ASEAN) + 3 (China, Japan and the Republic of Korea) share of World trade rose from 9.9% in 1970 to 25.8% in 2012.
- The Chinese share of World trade rose from 0.7% in 1970 to 10.7% in 2012.
- Chinese international trade accounted for 41.2% of East Asian international trade in 2012.

#### The Rising Share of East Asian Trade in Total World Trade, 1960-present



#### The Share of Chinese Trade in Total World Trade, 1950-present



#### The Share of Chinese Trade in Total East Asian Trade, 1952-present



#### Changing Patterns in the Global Economy: International Trade

- Most of the East Asian economies are either export-oriented or were export-oriented as they began their processes of economic development.
- However, contrary to the public impression, the ratio of Chinese exports to GDP is actually relatively low compared to other East Asian economies (see the following charts). This is really a reflection of the fact that China is a large continental economy. Most large economies, such as the U.S. and Japan, have relatively low exports to GDP ratios.

### Exports of Goods and Services as a Share of GDP in East Asian Economies



#### Exports of Goods as a Percent of GDP: East Asian Economies



#### Exports of Goods as a Percent of GDP: Mainland China, Japan, Korea & Taiwan



### Exports and Imports as a Percent of Chinese GDP, 1957-present

Exports and Imports as a Percent of Chinese GDP, 1957-present



#### Changing Patterns in the Global Economy: Growth in International Trade

- South Korea, and more recently, China, India, Brazil and Russia, have had the highest rates of growth in international trade.
- Growth in Chinese international trade has been particularly rapid during the past decade because of its accession to the World Trade Organisation (WTO) and because of the expiration of the Multi-Fibre Agreement governing world trade in textiles.
- India, Russia and Brazil have also had exceptionally high rates of growth in their international trade during the past decade.
- However, all the developed economies—the U.S., Euro Zone, Japan, and the U.K.—had relatively low and declining rates of growth of international trade during the past decades.

#### Average Annual Rate of Growth of Total International Trade in Goods and Services

Average Annual Rates of Growth of Total Real Trade in Goods and Services, in 2000 USD



#### Changing Patterns in the Global Economy: Capital Markets

- Over the years, the capital markets in East Asian economies have also grown. At year end 2012, the combined market capitalisation of all East Asian stock exchanges amounted to US\$14.2 trillion, behind the market capitalisation of U. S. stock exchanges of US\$18.7 trillion but ahead of the market capitalisation of all European stock exchanges combined of US\$10.4 trillion.
- Again, this is a relatively recent phenomenon. For example, the Chinese stock exchanges at Shanghai and Shenzhen did not even get started until the mid-1990s.

### End of Year Market Capitalisation of Selected Stock Exchanges



#### Market Capitalization of Stock Exchanges Year End 2012 (US\$)

- U.S.A.
- Europe
- East Asia

18.7 trillion10.4 trillion14.2 trillion

- Exchanges:
  - ♦ U.S.A.: NASDAQ and NYSE
  - Europe: Athens Exchange, BME Spanish Exchanges, Budapest SE, Cyprus SE, Deutsche Borse, Irish SE, London SE group, Luxembourg SE, NYSE Euronext (Europe), Oslo Bors, SIX Swiss Exchange
  - East Asia: Bursa Malaysia, Hong Kong Exchanges, Indonesia SE, Korea Exchange, Philippine SE, Shanghai SE, Shenzhen SE, Singapore Exchange, Taiwan SE, Thailand SE, Tokyo SE Group
  - Data source: World Federation of Exchanges

#### The Chinese and East Asian Economies in the Global Context

- China has made tremendous progress in its economic development since it began its economic reform and opened to the World in 1978. China is currently the fastest growing economy in the World—averaging 9.8% per annum over the past 36 years. It is historically unprecedented for an economy to grow at such a high rate over such a long period of time.
- Between 1978 and 2013, Chinese real GDP grew more than 26 times, from US\$356.5 billion to US\$9.32 trillion (in 2013 prices), to become the second largest economy in the World, after the U.S.
- By comparison, the U.S. GDP (approx. US\$16.8 trillion) was less than 2 times Chinese GDP in 2013.

# Chinese Real GDP in US\$ Since 1952 (2013 Prices)



## Actual Real GDPs and their Annual Rates of Growth: China & the U.S. (2013 US\$)

The Real GDP and Its Annual Rates of Growth of China and the U.S. (trillion 2013 US\$)



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#### The Chinese and East Asian Economies in the Global Context

- Despite its rapid growth, in terms of its real GDP per capita, China is still a developing economy.
- Between 1978 and 2013, Chinese real GDP per capita grew
  18.5 times, from US\$370 to US\$6,850.5 (in 2013 prices).
- By comparison, the U.S. GDP per capita of approximately US\$53,086, was 7.7 times Chinese GDP per capita in 2013.

## Real Chinese GDP per Capita in US\$ Since 1952 (2013 Prices)



#### The Chinese and East Asian Economies in the Global Context: International Trade

- China has also grown into the second largest trading nation in the World in terms of the total value of international trade in goods and services, after the U.S.
- While China is the largest exporting nation in terms of goods and services, followed by the U.S., the U.S. is the largest importing nation in terms of goods and services, followed by China. China is also the largest exporting nation in terms of goods alone, followed by the U.S. The U.S. is the largest exporting as well as importing nation in terms of services, followed by respectively the United Kingdom and Germany.

### International Trade & Its Rate of Growth: A Comparison of China and the U.S.

The Value of International Trade and Its Rate of Growth: A Comparison of China and the U.S.


#### The Chinese and East Asian Economies in the Global Context: The Renminbi

- The Renminbi is increasingly used as an invoicing and settlement currency for cross-border transactions, especially those involving Chinese enterprises as transacting parties.
   The proportion of Mainland Chinese international trade settled in Renminbi has grown rapidly, from almost nothing
  - settled in Renminbl has grown rapidly, from almost nothing in 2010Q1 to US\$240 billion in 2013Q4 or 21.8% of the total value of trade in goods and services. In absolute value, some US\$960 billion of Chinese international trade is now settled in Renminbi annually.
- The central banks and monetary authorities of many countries and regions have entered into swap agreements with the People's Bank of China, the central bank of China.

#### Renminbi Settlement of Chinese Cross-Border Trade, Billion US\$ and Percent



Q1/2010Q2/2010Q3/2010Q4/2010Q1/2011Q2/2011Q3/2011Q4/2011Q1/2012Q2/2012Q3/2012Q4/2012Q1/2013Q2/2013Q3/2013Q4/2013

#### The Chinese and East Asian Economies in the Global Context: The Renminbi

- The exchange rate of the Renminbi relative to U.S. Dollar is likely to hold steady or appreciate modestly over the next few years. This should facilitate the further internationalisation of the Renminbi.
- Capital account convertibility of the Renminbi is expected to be achieved before 2020. It can occur sooner if shortterm capital flows, both outbound and inbound, can be appropriately "discouraged".

#### The Importance of Investment in Tangible and Intangible Capital: High Saving Rates

- Economic growth in East Asia has been under-pinned by a high domestic saving rate (see the following charts), with the Philippines being a notable exception.
- A high domestic saving rate means, among other things, that most of the East Asian economies can finance all of their domestic investment needs from their own domestic savings alone. Thus, they can achieve a high rate of growth of their tangible capital stocks without having to depend on the more fickle foreign capital inflows (including foreign portfolio investment, foreign direct investment, foreign loans or foreign aid).
- Thus, Chinese economic growth since 1978 has been supported by a high domestic saving rate, on the order of 30% and above, except for a brief start-up period in the early 1950s, enabling a consistently high domestic investment rate. The Chinese saving rate has stayed around 40% since the early 1990s and has at 40 times approached or even exceeded 50% in more recent years.

#### The Saving Rate and Real GDP per Capita: East Asian Economies



100,000

# Saving Rates of Selected Asian Economies (1952-present)



#### Chinese National Savings and Gross Domestic Investment as Percents of GDP





## The Importance of Investment in Tangible and Intangible Capital: R&D Investment

- The principal sources of economic growth of East Asian economies will gradually evolve from the growth of tangible inputs such as tangible capital and labour, to the growth of intangible inputs such as human capital, R&D capital, and reputational capital (branding and goodwill). This is true of the experience of developed economies such as the U.S.
- Sustained investment in human capital and research and development (R&D) is essential for the occurrence of technical progress or growth in total factor productivity in an economy.
  China has also begun to invest heavily in R&D in recent years—its R&D expenditure has been rising rapidly, both in absolute value, and as a percentage of GDP. But it still lags behind the developed economies as well as the newly industrialised economies of East Asia. (The Chinese R&D Expenditure/GDP ratio is targeted to reach 2.2% in 2015, still below the historical average of 2.5% for the U.S.)

#### R&D Expenditures as a Ratio of GDP: G-7 Countries, 4 East Asian NIES & China

**R&D** Expenditures as a Percentage of GDP: G-7 Countries, 4 East Asian NIEs and China 4.5 The U.S. Germany **─**≭**─**The U.K. Japan 4 South Korea France Canada Italy -+-Singapore Taiwan – China Hong Kong 3.5 3 Percent, 1.5 1 0.5 0  $\begin{array}{c} 1978\\ 1979\\ 1980\\ 1981\\ 1982\\ 1982\\ 1986\\ 1986\\ 1986\\ 1986\\ 1986\\ 1996\\ 1999\\ 1999\\ 1999\\ 1999\\ 1999\\ 1999\\ 1999\\ 1999\\ 1999\\ 2000\\$ 975 677

# The Importance of Investment in Tangible and Intangible Capital: R&D Investment

- One indicator of the potential for technical progress (national innovative capacity) is the number of patents created each year. In the following chart, the number of patents granted in the United States each year to the nationals of different countries, including the U.S. itself, over time is presented.
- The U.S. is the undisputed champion over the past forty years, with 121,026 patents granted in 2012, followed by Japan, with 50,677. (Since these are patents granted in the U.S., the U.S. may have a home advantage; however, for all the other countries and regions, the comparison across them should be fair.)

# The Importance of Investment in Tangible and Intangible Capital: R&D Investment

- The number of patents granted to Chinese applicants each year has increased from the single-digit levels prior to the mid-1980s to 4,637 in 2012.
- The economies of South Korea and Taiwan, granted 13,233 and 10,646 U.S. patents respectively in 2012, are still far ahead of Mainland China—they have been averaging approximately 10,000 patents a year each.

#### Patents Granted in the United States: G-7 Countries, 4 East Asian NIEs & China



# The Importance of Investment in Tangible and Intangible Capital: R&D Investment

- The stock of R&D capital, defined as the cumulative past real expenditure on R&D less depreciation of 10% per year, can be shown to have a direct causal relationship to the number of patents granted (see the following chart, in which the annual number of U.S. patents granted is plotted against the R&D capital stock of that year for each country).
- The chart shows clearly that the higher the stock of R&D capital of an economy, the higher is the number of patents granted to it by the U.S.
- Because China has had both a much lower R&D expenditure to GDP ratio and a much lower GDP than the United States and other developed economies in the past, it will take more than a couple of decades before the Chinese R&D capital stock can catch up to the level of U.S. R&D capital stock (and hence to the number of U.S. patents granted each year).

### Patents Granted in the United States and R&D Capital Stocks, Selected Economies



Patents and R&D Capital Stocks of Selected Economies

**R&D** Capital Stocks, in 2011 USD millions

# The Importance of Investment in Tangible and Intangible Capital: R&D Investment

- However, innovation also depends on the existence of competition. Monopolies are generally not very good in innovation and not very good in making full use of their innovation. East Asian economies must create and maintain a competitive market environment with free entry and exit so as to encourage innovation.
- In addition, in order to encourage innovation, East Asian economies also need to protect intellectual property rights vigorously. This has been achieved in South Korea and Taiwan.
- Finally, in order that "break-through" innovation can occur, the East Asian economies must commit a much greater share of its R&D expenditure to the support of basic <sup>51</sup>

### Basic Research Expenditure and Its Share in Total R&D Expenditure: China & U.S.

Basic Research Expenditure and its Share in Total R&D Expenditure: A Comparison of China and the U.S.



#### The Partial De-Coupling Hypothesis

- Throughout the 2007-2009 global financial crisis, as well as the subsequent European sovereign debt crisis, the East Asian economies and the economies of the BRICS countries (Brazil, Russia, India, China and South Africa) continued to do reasonably well. China, in particular, has been able to maintain its real rate of growth above 7.5% since 2007, lending credence to the "Partial De-Coupling Hypothesis", that is, the Chinese and East Asian economies can continue to grow, albeit at lower rates, even as the U.S. and European economies go into economic recession.
- This partial de-coupling can occur because of the gradual shift of the economic centre of gravity of the World from the United States and Western Europe to Asia (including<sub>53</sub> both East Asia and South Asia) over the past three decades.

#### The Partial De-Coupling Hypothesis

- A particularly interesting development is the rise in intra-East Asian international trade. The share of East Asian trade destined for East Asia has risen to over 50% in the past decade. This is a sea-change compared to 30 years ago when most of the East Asian exports was destined for either the United States or Western Europe.
- Similarly, the share of East Asian imports originated from East Asia has remained above 45%.

#### The Share of East Asian Exports Destined for East Asia



#### The Share of East Asian Imports Originated from East Asia



#### The Partial De-Coupling Hypothesis

- The fact that the Chinese economy has continued to grow at an average rate of more than 9% per annum since the beginning of the global financial crisis in 2007 is further proof that the Chinese economy has been at least partially de-coupled from the rest of the World economy, and in particular, from the United States and Europe, both of which have been mired in economic recession and recovering very slowly.
- Any doubt that the Chinese economy can be partially de-coupled from the World economy should be resolved by an examination of the following three charts on the rates of growth of exports, imports and real GDP of East Asian economies. Even though Chinese exports and imports fluctuate like those of all the other East Asian economies, the rate of growth of real GDP of the Chinese economy has been relatively stable compared to those of the other East Asian economies.

## Quarterly Rates of Growth of Exports of Goods: Selected East Asian Economies



## Quarterly Rates of Growth of Imports of Goods: Selected East Asian Economies



#### Quarterly Rates of Growth of Real GDP, Y-o-Y: Selected East Asian Economies





#### The Partial De-Coupling Hypothesis

- From a macroeconomic point of view, de-coupling should be considered a positive development for the global economy. It allows the global economy to be diversified so that the entire global economy will not all go into economic recession at the same time.
- At a time of rising economic globalisation, it is important to assure that not everything is perfectly correlated or transmitted. Some "quarantine" or separation is desirable and essential.
- For example, the "globally systematically important financial institutions (GSIFIs)" should be discouraged from engaging in too much business with one another so that when one of them fails it will not bring down all the others.

- "Quantitative Easing (QE)" was started by the U.S. Federal Reserve Board on 25th November 2008, in the immediate aftermath of the collapse of Lehman Brothers. At the time, the World economy was shell-shocked from the freezing up of the entire financial system. Financial institutions did not trust one another and credit had all but dried up.
- Quantitative easing, as opposed to just easing, implies that not only would short-term credit be easily available, as indicated by the extremely low federal funds interest rate for overnight money, but also that the Federal Reserve Board would try to bring down medium and long-term interest rates by purchasing U.S. Treasury and other securities of such maturities in large quantities on a regular basis.

◆ At the start of QE1, the U. S. Federal Reserve Board announced that it would purchase up to US\$600 billion in U.S. agency mortgage-backed securities (MBS) and agency debt, mostly held by the U.S. financial institutions, in an attempt to restore liquidity to the financial system and shore up the financial balance sheets of the financial institutions. On 18th March 2009, the Federal Reserve Board expanded the programme by an additional US\$1.05 trillion for the purchase of U.S. Treasury securities and agency debt. • "QE1" was successful in rescuing the major financial institutions in the U.S. and prevented the U.S. financial system from collapsing. 63

- As the U.S. real economy did not seem to respond to QE1, QE2 was launched by the Federal Reserve Board on 3rd November 2010, when it began to purchase an additional US\$600 billion of longer dated U.S. Treasury securities, at a rate of US\$75 billion per month, with the objective of lowering the longer-term interest rates so as to stimulate real investment by U.S. firms. This programme was concluded in June 2011, followed by "Operation Twist" in September 2011.
- "Operation Twist" was a plan to purchase US\$400 billion of bonds with maturities of 6 to 30 years and to sell the same quantity of bonds with maturities of less than 3 years, thereby lowering the longer-term interest rates without having to increase the money supply. In June 2012, the Federal Reserve Board expanded "Operation Twist" by adding a further US\$267 billion.

• A third round of quantitative easing (QE3) was launched by the Federal Reserve Board on 13th September 2012, committing to the purchase of US\$40 billion of agency mortgage-backed securities (expanded to US\$85 billion and to include U.S. Treasury securities in December 2012) per month until the labour market improves "substantially". ◆ In May 2013, Chairman Ben Bernanke of the Federal Reserve Board raised the possibility of "tapering" and eventually ending QE3 publicly for the first time.

#### Quantitative Easing: Objectives

- QE1 was launched essentially to restore liquidity to the financial system and to take the mortgage-backed securities off the balance sheets of the major U.S. financial institutions.
- QE2 and QE3 were meant to stimulate the real economy, but fell far short of their objectives. They also had the effect of devaluing the U.S. Dollar relative to most of the currencies of the World. The QEs could be viewed as a form of currency manipulation as given the already low domestic rates of interest in the U.S. the excess liquidity was bound to leave the U.S. en masse to seek higher yields elsewhere in the absence of U.S. capital control, thus<sub>66</sub> driving up the exchange rates of the other currencies.

### Quantitative Easing : The Effects on the U.S. Economy

- With QE1, the U.S. money supply was increased quickly and the short-term interest rate was also driven quickly to almost zero, and it has stayed there since.
- However the long-term interest rate remained relatively high until the introduction of "Operation Twist" under QE2.
- QE3 was quite effective in keeping the long-term interest rate low, until the possibility of "tapering" was introduced to the market in May 2013.
- Successive QEs led to large increases in the U.S. money supply (M2).
- However, the U.S. unemployment rate came down very slowly, and the rate of growth of U.S. real GDP remained sluggish and tentative, certainly relative to past economic recoveries.

### U.S. Money Supply (M2), trillions US\$, 01/01/2007-11/25/2013



### U.S. Money Supply (M2), trillions US\$, 01/01/2007-11/25/2013



## U.S. Federal Funds Rate, the 10-year U.S. Treasury Rate, and the Rate of Inflation



### The Quarterly Rates of Growth of Real GDP & Monthly Rates of Unemployment in the U.S.



# Quantitative Easing : The Effects on the U.S. Economy

- The low interest rates in the U.S. drove up the U.S. stock market as evidenced by the S&P 500 stock price index.
- However, it took the decline in the long-term interest rates to push the price of housing back up moderately, at a level still far short of its peak in 2006.
#### Comparison of Case-Shiller U.S. Home Price Index and S&P 500 Index (1997M1=100)



#### Comparison of Case-Shiller U.S. Home Price Index and S&P 500 Index (1/3/2007=100)



### Exchange Rate Indexes of Selected Economies (11/25/2008=100)



### Quantitative Easing : The Impact of

- Quantitative Easing on the World Economy
- The excess liquidity released through the QEs and the excessively low interest rates in the U.S. have led to a massive exodus of short-term capital from the U.S. to the rest of the World seeking higher yields.
- This massive liquidity drove up the exchange rates of most other currencies relative to the U.S. Dollar (thus effectively devaluing the U.S. Dollar), and lowered interest rates almost everywhere, which in turn fueled a rise in asset prices (real estate and stock prices) worldwide.
- ◆ In some of the economies, such as Brazil, India, Indonesia and Turkey, this massive liquidity caused economic boomlets.

### Exchange Rate Indexes of Selected Economies (11/25/2008=100)

Exchange Rate Indexes of Selected Economies (11/25/2008=100)



### The Exchange Rate Revaluation/Devaluation of Selected Economies (2008/11/25-2010/11/03)

The Exchange Rate Revaluation/Devaluation during QE1					
11/25/2008-11/3/2010					
Currency	11/25/2008	11/3/2010	Revaluation/		
			Devaluation		
			against US\$		
RMB	6.8245	6.6746	2.20%		
Euro	0.76748	0.71357	7.02%		
Japanese Yen	95.532	81.387	14.81%		
Australian Dollar	1.54135	1.00368	34.88%		
Korean Won	1501.72	1110.23	26.07%		
New Taiwan Dollar	33.349	30.425	8.77%		
Indonesian Rupiah	12209	8931	26.85%		
Malaysian Ringgit	3.6207	3.0853	14.79%		
Philippines Peso	49.409	42.475	14.03%		
Singapore Dollar	1.5108	1.2889	14.69%		
Thai Baht	35.205	29.787	15.39%		
Vietnamese Dong	16 <b>98</b> 7	19408	-14.45%		
Indian Rupee	49.894	44.38	11.05%		

### The Exchange Rate Revaluation/Devaluation of Selected Economies (2010/11/03-2012/09/13)

The Exchange Rate Revaluation/Devaluation during QE2					
11/3/2010-9/13/2012					
Currency	11/3/2010	9/13/2012	Revaluation/		
			Devaluation		
			against US\$		
RMB	6.6746	6.329	5.18%		
Euro	0.71357	0.77454	-8.54%		
Japanese Yen	81.387	77.404	4.89%		
Australian Dollar	1.00368	0.95702	4.65%		
Korean Won	1110.23	1128.8	-1.67%		
New Taiwan Dollar	30.425	29.599	2.71%		
Indonesian Rupiah	8931	9561.7	-7.06%		
Malaysian Ringgit	3.0853	3.0805	0.16%		
Philippines Peso	42.475	41.679	1.87%		
Singapore Dollar	1.2889	1.2302	4.55%		
Thai Baht	29.787	31.001	-4.08%		
Vietnamese Dong	19 <b>49</b> 8	20751	-6.92%		
Indian Rupee	44.38	55.352	-24.72%		

### The Exchange Rate Revaluation/Devaluation of Selected Economies (2012/09/13-2013/11/29)

The Exchange Rate Revaluation/Devaluation during QE3					
9/13/2012-11/29/2013					
Currency	9/13/2012	11/29/2013	Revaluation/		
			Devaluation		
			against US\$		
RMB	6.329	6.0949	3.70%		
Euro	0.77454	0.73507	5.10%		
Japanese Yen	77.404	102.505	-32.43%		
Australian Dollar	0.95702	1.096	-14.52%		
Korean Won	1128.8	1057.8	6.29%		
New Taiwan Dollar	29.599	29.606	-0.02%		
Indonesian Rupiah	9561.7	11909	-24.55%		
Malaysian Ringgit	3.0805	3.2245	-4.67%		
Philippines Peso	41.679	43.671	-4.78%		
Singapore Dollar	1.2302	1.2549	-2.01%		
Thai Baht	31.001	32.089	-3.51%		
Vietnamese Dong	207891	21198	-2.15%		
Indian Rupee	55.352	62.384	-12.70%		

### The Exchange Rate Revaluation/Devaluation of Selected Economies (2008/11/25-2013/11/29)

The Exchange Rate Revaluation/Devaluation during QE1-3					
11/25/2008-11/29/2013					
Currency	11/25/2008	11/29/2013	Revaluation/		
			Devaluation		
			against US\$		
RMB	6.8245	6.0949	10.69%		
Euro	0.76748	0.73507	4.22%		
Japanese Yen	95.532	102.505	-7.30%		
Australian Dollar	1.54135	1.096	28.89%		
Korean Won	1501.72	1057.8	29.56%		
New Taiwan Dollar	33.349	29.606	11.22%		
Indonesian Rupiah	12209	11909	2.46%		
Malaysian Ringgit	3.6207	3.2245	10.94%		
Philippines Peso	49.409	43.671	11.61%		
Singapore Dollar	1.5108	1.2549	16.94%		
Thai Baht	35.205	32.089	8.85%		
Vietnamese Dong	16 <b>%5</b> 7	21198	-25.01%		
Indian Rupee	49.894	62.384	-25.03%		

#### Interest Rates of Selected Economies



#### **Interest Rates of Selected Economies**



# Stock Price Indexes of Selected Economies (11/25/2008=100)



# Stock Price Indexes of Selected Economies (11/25/2008=100)



# Quantitative Easing : Counter-Quantitative Easing by the Euro Zone and Japan

- Japan, which saw its exchange rate rose to 75 Yen/US\$ from 100 Yen/US\$ as a result of the QEs, greatly hurting its exports, decided to launch its own "Counter-QE", which was effective in driving the exchange rate of the Japanese Yen back to the 100 Yen/US\$ level.
- The Bank of Japan could have achieved the same result by intervening directly in the foreign exchange market to stabilise the Japanese Yen/U.S. Dollar exchange rate, but there was probably opposition to its direct intervention from the U.S. Government on ideological grounds.
- The Euro did not appreciate too much relative to the US\$ except during QE1 because of the sovereign debt and other economic problems within the Euro Zone itself.

# Exchange Rate Indexes of the Euro and the Japanese Yen (11/25/2008=100)



#### Quantitative Easing: Tapering

- "Quantitative Easing" has not been particularly effective in stimulating new investment, increasing real GDP or lowering unemployment in the U.S.
- That is why I argued previously that there would not be QE3 because it would not have been effective in improving the real economy in the U.S.
- However, there was QE3 and it was, as expected, not effective in stimulating the U.S. real economy. Thus, tapering and ending QE3 was only be a matter of time.
- In May, when the future leadership of the Federal Reserve Board was still uncertain, Chairman Ben Bernanke wanted the public to be prepared for a possible change in the policy.

### Quantitative Easing: Tapering

- By September, it became clear that Vice-Chairman Janet Yellen would become his successor. But it was not the right time to begin tapering because of the uncertain economic environment created by Congressional bickering on the budget and the debt ceiling.
- That is why tapering began after the December meeting of the U.S. Federal Open Market Committee.

### Quantitative Easing: What Could Have Been Done?

- Instead of purchasing U.S. Treasury and agency securities during the QEs, the U.S. Federal Reserve Board could have offered to purchase say US\$600 billion worth of new medium and long-term bonds issued by the fifty individual states, approximately in proportion to their populations, the proceeds of which would be used solely for the construction of new basic infrastructure or the major maintenance of existing basic infrastructure within the respective states.
- This could have created the aggregate demand necessary to make good use of the existing excess capacity in the construction and the construction material sectors as well as their idle workers in the U.S. It would have boosted both real GDP and employment across the board.
- Such an offer should be welcome by the governors of almost all states that suffer from sluggish economic recovery, high employment rates and budget deficits.
- Moreover, the purchase of such bonds would not require the approval of the 90
  U.S. Congress.

# Quantitative Easing: The Effects of Its Ending

- QE3 has not had much effect on the real U.S. economy and hence will also not have much impact on the real U.S. economy when it is finally ended. However, it did lead to a rise in the prices of assets, especially financial assets, and a decline in the long-term interest rates, including mortgage rates, and hence a slight recovery of the housing market.
- If the medium- and long-term interest rates were to rise again after the ending of QE3, the asset prices may fall significantly, and the recovery in consumption and investment may stall once again because of the negative "wealth effect."
- The QEs collectively, through the excess liquidity released to the rest of the World, have also enabled the U.S. Dollar to devalue relative to most other currencies in the World, helping U.S. exports. They have also led to temporarily lower interest rates and higher asset prices elsewhere. With the tapering and ending of QE3, these developments are likely to be reversed.

# Quantitative Easing: The Effects of Its Ending

- The failure of "Quantitative Easing" to stimulate the real economy in the U.S. clearly demonstrated the limits of monetary policy acting alone.
- In any case, the end of QE will only come gradually, through tapering, even though the effects of the ending of QE3 may be felt sooner because of changes in expectations.

### **Concluding Remarks**

- The centre of gravity of the global economy has been gradually shifting to East and South Asia from North America and Europe. The centre of gravity of the East Asian economy has been gradually shifting to China from Japan.
- The Chinese and East Asian economies have been partially decoupled from the United States and Europe.
- The growth of tangible capital, supported by a high domestic saving rate, has been the principal source of past Chinese and East Asian economic growth.
- The growth of intangible capital (human capital and R&D capital) will have to become a much more important source of Chinese economic growth as it has already become in the more developed East Asian economies such as Japan, South Korea, Singapore and Taiwan.