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The financial crisis: impact on BRIC and policy response

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The Financial Crisis: Impact on BRIC and Policy Response

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Abstract

The paper looks at the transmission channels by which the financial crisis affected the four emerging economies- Brazil, Russia, India and China, the degree and extent of the impact of the crisis, the subsequent policy interventions which enabled recovery and an assessment of how successful recovery has been in these economies. We conclude by noting that in the long term global recovery will necessitate a rebalancing of the world economy which in turn means that the hub of global consumption has to shift from the west to the global south, particularly to BRICs.

"What we know about the global financial crisis is that we don't know much."- Paul Samuelson

" …the economics profession went astray because economists, as a group, mistook beauty, clad in impressive-looking mathematics, for truth." -Paul Krugman

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I. Introduction

Prior to the financial crisis, the global economy was going through a change. The erstwhile engine of global growth, the USA, was weakening and the new growth poles were emerging. BRIC was one of emerging growth poles that caught the imagination of the world. With a very large pool of physical and human resources and rapidly increasing share in global GDP growth, this group of heterogeneous economies were showing a great potential to replace US as an engine of global economic growth. This possibility was further vindicated during the financial crisis when BRICs managed to grow at a decent rate. Though, like other economies, this group also suffered from the indirect impact of financial crisis, the severity of impact felt in this block was much lesser as compared to many developed and developing economies. The downturn was shallow and recovery was relatively quick and strong. Against this backdrop, this paper attempts an in-depth analysis of the impact of global financial crisis on BRICs and examines its potential role in rebalancing of global growth.

Broadly, the paper has been divided into seven sections. After providing a brief over view of BRICs economies in section two, section 3 deals with the impact of the crisis on BRICs. Section 4 discusses the monetary and fiscal policy response to the crisis, while section five provides a critical assessment of recovery and issues related to exit policy. Finally, before summarizing paper in section seven, section six makes few observations regarding the global imbalances and consumption pattern in BRICs.

II. An Overview of BRIC

In order to understand why BRIC constitutes an important block in the geo-politics of our times it is important that we put into perspective what BRIC means for the world economy at large. Brazil, Russia, India and China together constitute roughly 25% of the total land coverage on the planet and are home to 40% of the world population. More than one fifth of the world GDP originates from these four countries and this is only set to increase in the coming years. In fact what captured the world's imagination regarding BRIC was not what it was but the sheer potential it had in the coming decades. It is now widely believed that China will surpass US as

the largest economy of the world by 2030; BRIC would become as big as the G7 by 2032 and India will become the second largest economy after China by the halfway mark of this century.[2]

The recent financial crisis clearly demonstrated how resilient these economies were to external shocks. It is estimated that BRIC contributed 30% of the global GDP growth between 2000 and 2008 but its contribution to global growth since 2007 was roughly 45%. Furthermore while much of BRIC has returned to the trend growth rate, advanced economies are just beginning to pull themselves out of the recession. It is expected that the former will close the output gap, which has been the result of the crisis at least two years before the latter will.

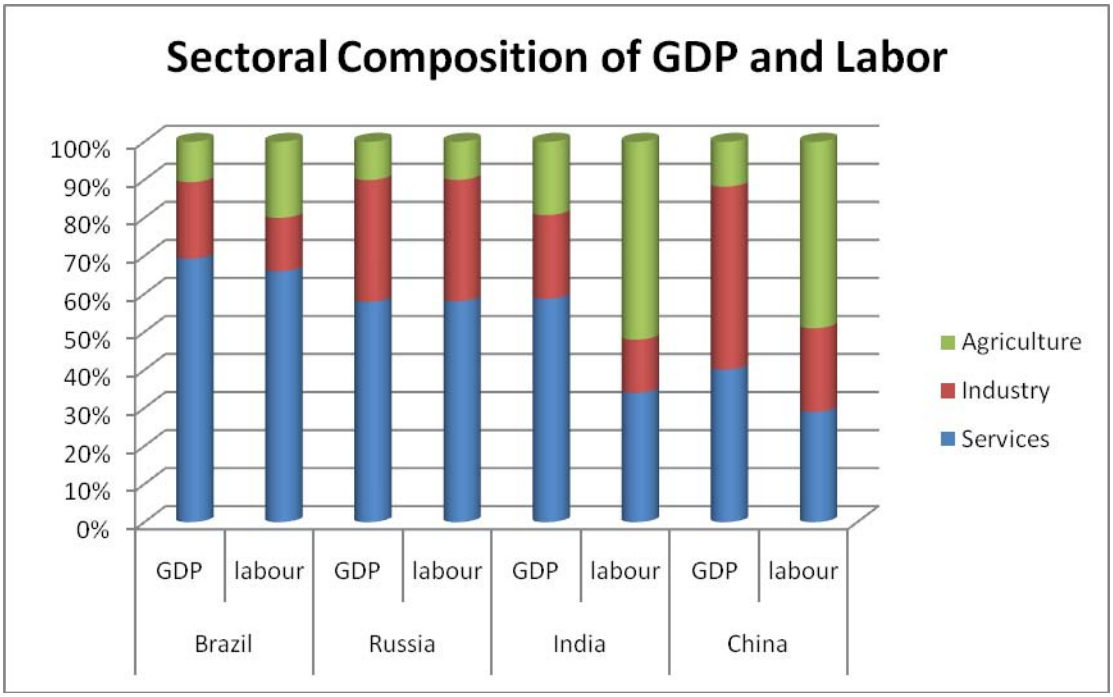
In spite of the rather stellar performance of BRIC vis-a-vis the crisis it is important to note that structurally the four economies are quite different from each other. While agriculture contributes roughly 18% (Figure 1) to India's GDP, it employs around 52% of labour; service sector on the other hand contributes bulk of the country's GDP (53.4%). Agricultural productivity in China, very much like India, is low as indicated from its low contribution to GDP and the large share of labour dependent on it. The distinguishing feature in the Chinese case is that the lion's share of its GDP comes from the manufacturing sector (48.1%) while it employs only 22%.

Brazil and Russia structurally are very different from India and China especially if one takes into account the role of agriculture in the economy. Services play an important role in both these economies. Industry led by an overt dependence on oil production, makes industry crucial for Russia.

Figure 2a and 2b gives a clear picture of how important trade is in the respective economies and how important a role services play in their trade. While China's trade is almost 60% of its GDP, that for Brazil is low at 20%. Furthermore India is the only country among the four which is a net exporter of services and the significance of services for Indian trade is evident from the fact that 35% of her export constitutes of services. China's focus on manufacturing is clear from Figure 2b where we note only 8.3% of China's total export arises from export of services.

[2] Global Economics Paper No: 99 & 152, Goldman Sachs

Figure 1.



Source: National Sources

Figure 2a.

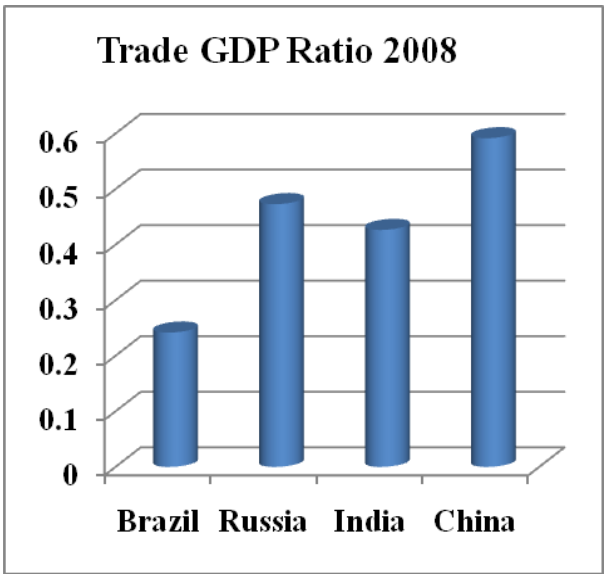
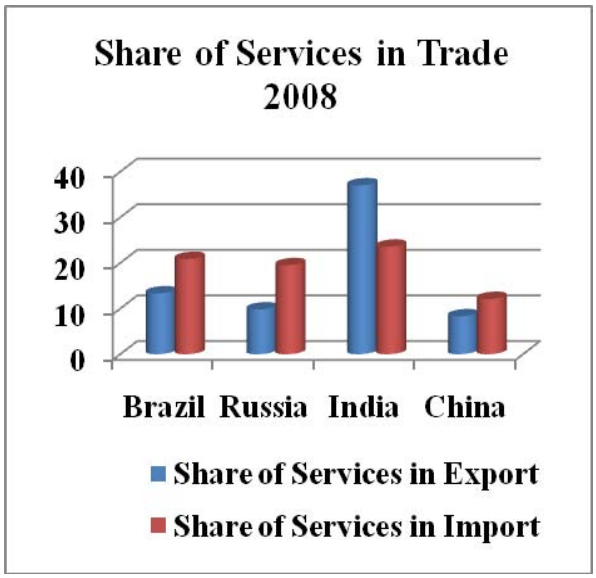


Figure 2b.

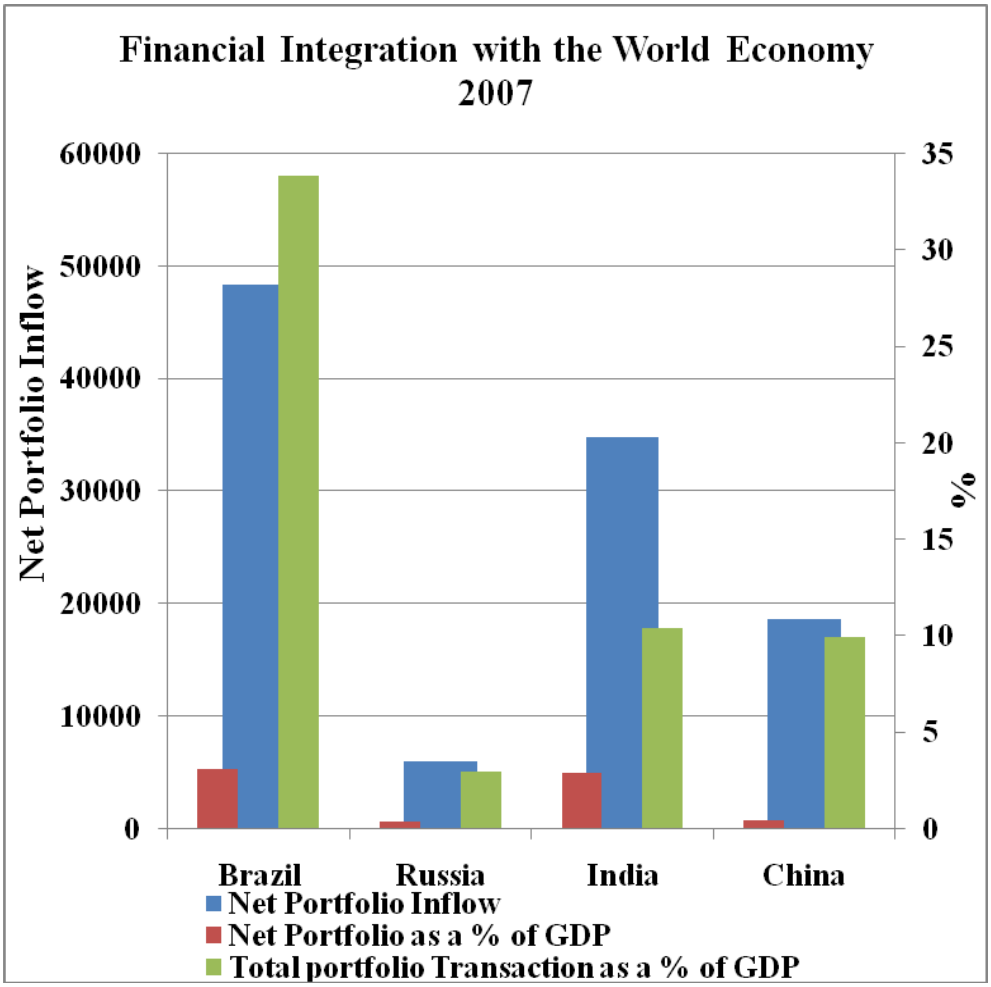


On umpteen occasions it has been argued that the impact of the financial crisis on a transition economy is often severe if there is a high degree of financial integration with the global

economy. We take the ratio of total FII flow i.e. the sum of inflow and outflow to GDP as a measure of financial openness. The total portfolio transaction as a percentage of GDP varies widely across the four economies with the corresponding Figure for Brazil being 33%.

From the above discussion it is clear that Brazil, Russia, India and China the four economies under consideration are a very heterogeneous block with fundamental structural differences within the economies. Thus the causes and consequences and remedies for the impact of the crisis on the four economies will widely differ. This indicates that so far as panaceas are concerned a one-size-fits-all policy is best avoided.

Figure 3.

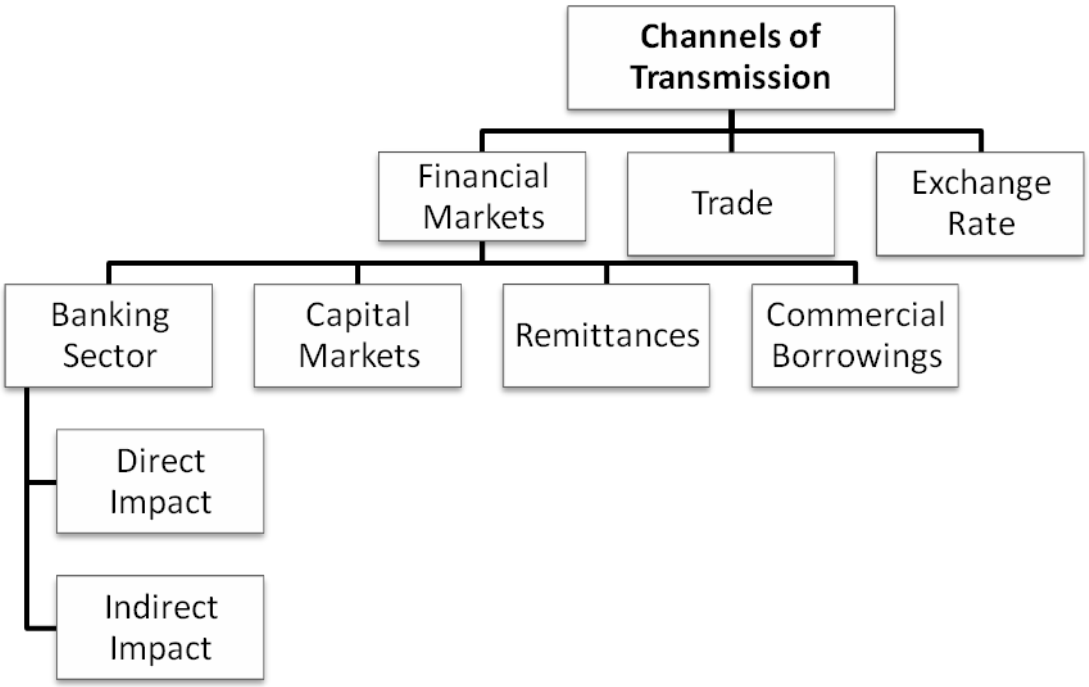


III. Transmission Mechanism

Two things are clear from the above discussion. First, the extent of structural heterogeneity within the economies was very high prior to the crisis. Second, the level of integration with the global economy was high for these countries especially in terms of trade and internal capital flow but these measures too varied across countries. The above facts imply that it was impossible for these economies to remain decoupled from the turbulence felt in rest of the world. But how did this shock, which emanated from the western shores of Atlantic get transmitted, to the BRIC?

The following schematic diagram might help us understand this phenomenon.

Figure 4



We shall analyse in detail each aspect. It is important to note at this point that direct impact on the banking sector refers to the impact caused by a bank's holding of toxic foreign assets. However a bank may also be affected when credit expansion in an economy is hurt or short term interest rate rises or if the general level of expectation about the future in the economy is low. Such an impact is may be thought of as an indirect effect.

1. **Banking Sector**

Banks and Non-bank Financial intermediaries faced limited impact due to the crisis. On one hand the exposure of these institutions to the complex financial instruments were limited creating an automatic buffer; on the other hand domestic deposits and liquidity was abundant giving a cushion to the banking sector, something which was hardly observed in the advanced economies. Sometimes it was the central banks which took proactive steps to increase countercyclical capital provisioning requirements. This was particularly true for Reserve Bank of India whose countercyclical initiatives under the leadership of YV Reddy prevented the firms from being exposed to the subprime crisis.[3]

Financial soundness may be measured by direct exposure which is measured in terms of the amount of foreign assets (toxic or otherwise) owned by the domestic banks or in terms of the share of domestic banks' assets owned by foreign firms. Figure 5 below illustrates the latter. This share was highest for Brazil (25%) and Russia (12%) indicating that any shock in the global economy would more promptly impact them than it would in India and China whose corresponding shares are much less. In India only ICICI Bank was partly exposed to the crisis but a strong balance sheet and timely government intervention helped it tide over the problems.[4] Thus level of financial exposure in the case of Brazil and Russia far exceeded that of India and China by all measures.

Figure 5

[3] Kumar and Vashisth (2009)
[4] Kumar and Vashisth (2009)

There was however a decline in the financial soundness indicators, though not uniformly across the board, as evident from Table 1 which compares the 2005 values with the latest. The Capital Adequacy Ratio, which indicates how much cushion a bank has against potentially toxic assets, has risen across the board but mostly under statutory conditions. Other indicators like Return on Assets and Return on Equity have fallen except for India and China. Non-performing Liquidity Ratio has increased considerably for Brazil and particularly so for Russia. It has however decreased for India from 4.4% to 2.4% and for China from 8.6% to 1.2% indicating the overall financial health of Indian and Chinese financial sector is perhaps better than that of Brazil and Russia. A part of this reason can be traced to the proactive role of RBI in regulating. Reserve Bank of India was one of the few central banks in the world which introduced countercyclical capital provisioning requirements by increasing the provisioning requirements of the commercial banks lending to the real estate sector. This measure, it is widely believed, played a crucial role in India to prevent a potential real estate price bubble. It is also true that the Indian financial sector is far less developed than its Brazilian and Russian counterpart. Thus it is amply clear from the above discussion that the impact of the crisis on the banking sector has been varied among the BRIC. While India and China were hardly affected, the financial soundness indicators worsened, on some occasions severely for Brazil and Russia.

1. **Foreign Institutional Investments**

A strong reversal of trend was observed in the case of FIIs inflow into Brazil, Russia and India. While exodus of FIIs began from the Q3 of 2008 itself, that of India and Brazil began from Q4 2008. In Q4 2008 alone, Russia lost $25billion worth FIIs while Brazil saw $20billion dollar make a quick exit from their economy. The corresponding Figure for India was a little under $6billion. After the outflow of FIIs was arrested in Q1 2009, the economies saw the first positive inflow in 2009Q2. FII into China was not in the least affected by the financial crisis. A major reason for this was the fact that like FDI, a substantial part of its FII inflow came rerouted from Taiwan and other similar tax havens.

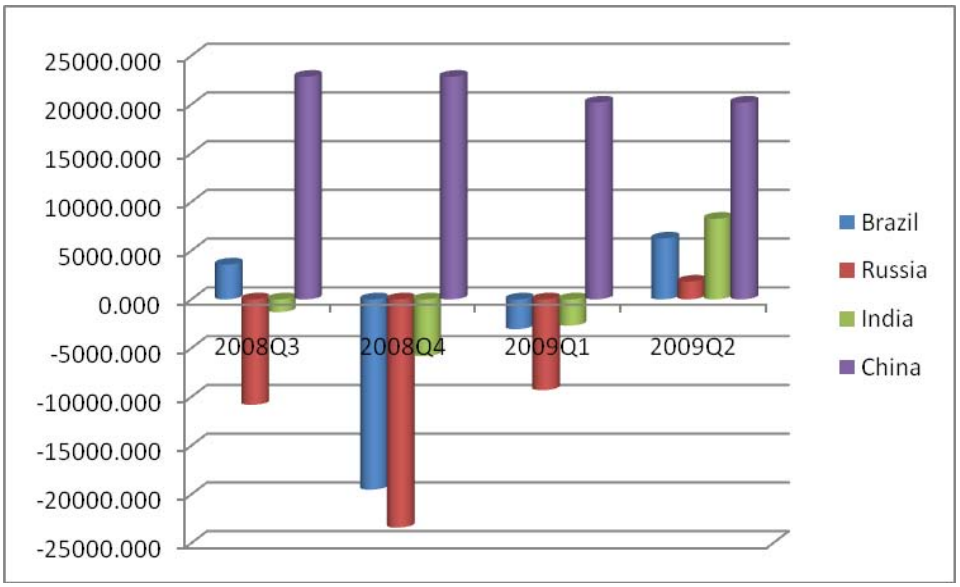
Table 1

	CAR		ROA		ROE		NPL ratio		Liquidity Ratio	
	2005	L	2005	L	2005	L	2005		2005	L
Brazil (October 2009)	17.89	18.2	2.9	1.5	29.5	13	3.5	4.5	55.32	53.9
Russia (November 2009)	15.98	20.9	3.2	0.7	24.2	4.9	2.6	9.6	28.45	27.5
India (March 2009)	12.8	13.2	0.9	1	13.3	12.5	5.2	2.4	11.92	11.3
China **(November 2009)**	2.5	10	0.6	1.1	15.1	17.1	8.6	1.6	NA	NA
Source: IMF										

2. Capital Markets

The result of exodus of foreign institutional investment was immediately reflected in the stock markets. There was a general fall in the level of the market indices as is evident from the movements illustrated in Figure 7. We consider Indice Bolsa de Valores do Estado de São Paulo (IBOVESPA) for Brazil, Russian Trading System Index (RTSI) for Russia, Bombay Stock Exchange (BSE) for India and Shanghai Stock Exchange (SSE) for China.

Figure 6. Foreign Institutional Investments



As expected, as FII outflow was very limited in China; the SSE continued a healthy run through the crisis period. For Brazil, Russia and India however the impact of the financial crisis is clearly felt in terms of the market indices. The downturn started somewhere around May 2008, when the market got the first hints from the US subprime crisis. Lehman collapse accentuated the effect further especially in India. Subsequently starting from April-May 2009 the stock markets have shown signs of recovery. This may also be the result of abundance of liquidity in the world. The excess liquidity always finds a way to invest itself in high return markets, which in the current context mean emerging market economies.

The collapse of the stock market indices saw a substantial drop in market capitalisation. The market capitalisation index for China dropped over 200 % between November 2007 and November 2008. But subsequently it increased and as Figure 8b shows that market capitalisation as a fraction of GDP collapsed after a steep increase in 2007 for all the BRIC countries.

Figure 7

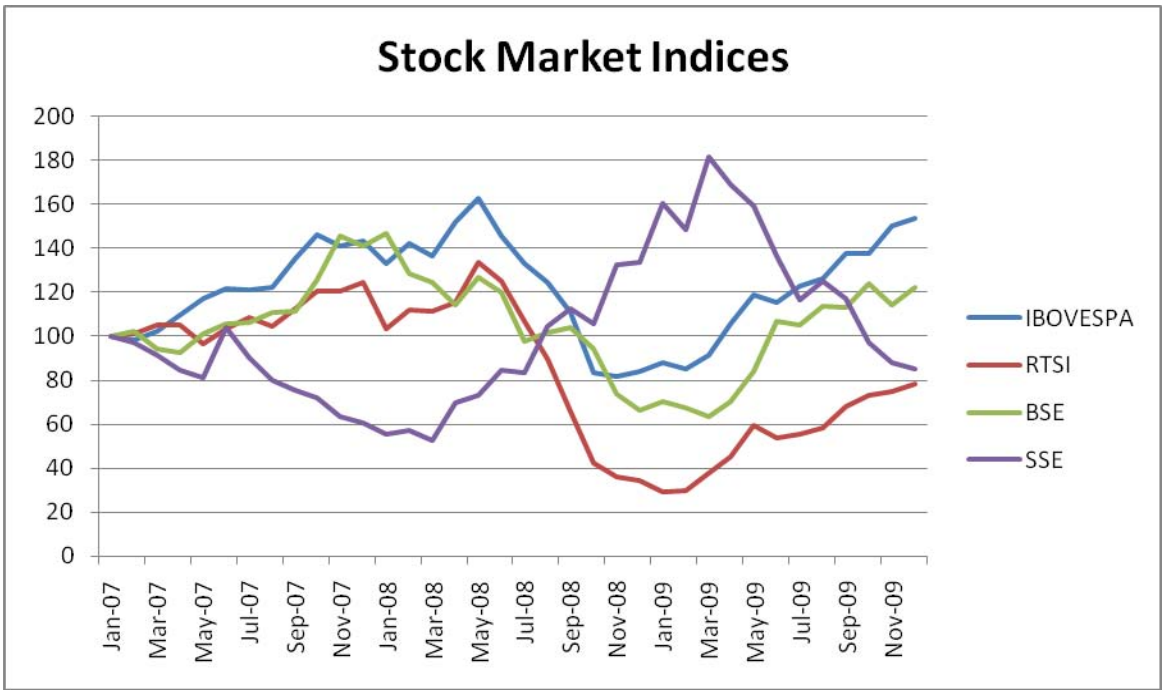
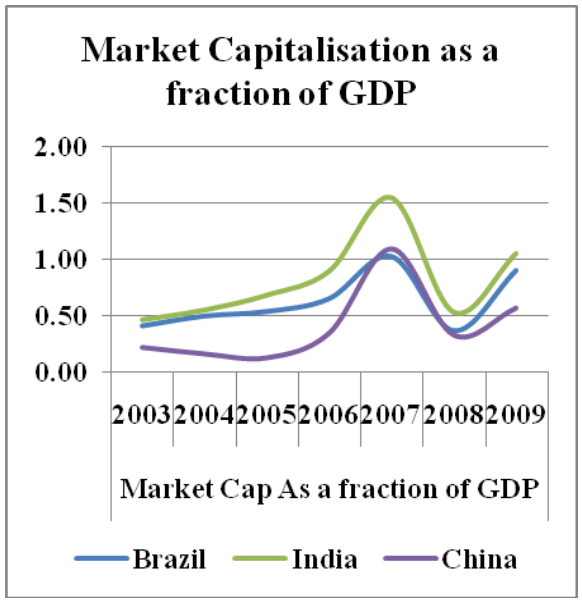


Figure 8a

Figure 8b



3. Short Term Credit and FDI

Short term credit plays an important role in emerging market economies like the BRIC. The corporate sectors often finds it difficult to generate sufficient investible resources domestically in order to expand. Short term credit can effectively bridge the gap and help make fresh investments possible. Furthermore an increasing number of companies emanating from emerging market economies are endeavouring to expand globally. The necessary resources required to help finance acquisitions and mergers abroad often come from the short term credit.

Table 2[5] shows that there has been a decline in short term credit for each of the BRIC economies. Russia in this regard was the hardest hit, with a very large decline in short term borrowing, especially in 2008 Q4 and 2009 Q1. The extent of decline has declined substantially over the next three quarters but continues to e negative. Similarly short term debt declined substantially in Brazil. India was not affected to the extent Russia and Brazil was, is evident from the ECB figures. It was $-457million in 2009 Q2 and recovered soon after. China too was affected briefly in the second semester of 2008, though the short term credit has not returned to the pre crisis level.

The significance of FDI in growth of the emerging market economies has been well documented[6]. The period of moderation was accompanied by a steady rise in FDI in these economies and this is believed to be one of the important reasons for the stellar performance of these economies in terms of economic growth. While this was not true for Russia, Brazil, India and China have seen a steady rise in FDI in a wide range of sectors. The onset of the global crisis meant the growth rate of FDI plummeted. It is estimated that for Russia in particular, it will be at least 2013 before it reaches the pre-crisis levels of FDI.

It is interesting to note at this point that impact of all of the above has been reflected in the exchange rates. Brazil, Russia and India experienced notable appreciation in their respective

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[5] Since different countries often follow different accounting procedures, the definition of short term credit differs from country to country. Here we take for each country, what comes closest to short term credit.

[6] "How does foreign direct investment affect economic growth?" E. Borensztein, J. De Gregori and J-W. Lee, Journal of International Economics Volume 45, Issue 1, 1 June 1998, Pages 115-135

currencies, with the notable exception of China. In fact the combined currency appreciation for Brazil, Russia and India from 2008 Q3 to 2009 Q1 has been 38.6%, 34.72% and 13.7% respectively, but for China it has been only 0.25%. The figures clearly reveal what is now a well known secret that the Renminbi is hugely undervalued. The extent of undervaluation has been debated, estimates ranging from 25% to 40%. This in fact has been dubbed as an obvious form of protectionism and is being taken up at many multilateral forums. Significantly the above trend has been reversed subsequently; the next three quarters has resulted in depreciation of the currencies except for India

Table 2.

Short Term Credit in BRICs (in Millions of Dollars)				
	Russia: short term borrowing	Brazil: Short Term Debt	India: ECB	China: Short Term Credit
2008Q1	12921	-56	4,827	
2008Q2	44049	-50	1,467	46727.68
2008Q3	29990	217	1,690	
2008Q4	-26178	108	3,884	-49,830.78
2009Q1	-16698	-3568	1,117	
2009Q2	-3687	-9610	-457	2304.16
2009Q3	-9927	-10737	1,209	
2009Q4	-10254	-1175	1,538	NA
Source: National Sources				

4. The Great Trade Collapse

The global financial crisis led to what is widely acknowledged to be the steepest fall in trade since the World War II. Figure 10 illustrates the extent to which growth rate in total trade fell. We include the growth rate for the world as well to enable us to compare how the BRIC have performed when compared to the world average. The trade collapse began from Q3 2008 and lasted till Q3 2009. Q4 results indicate that recovery from this contraction has at least begun.

Figure 9

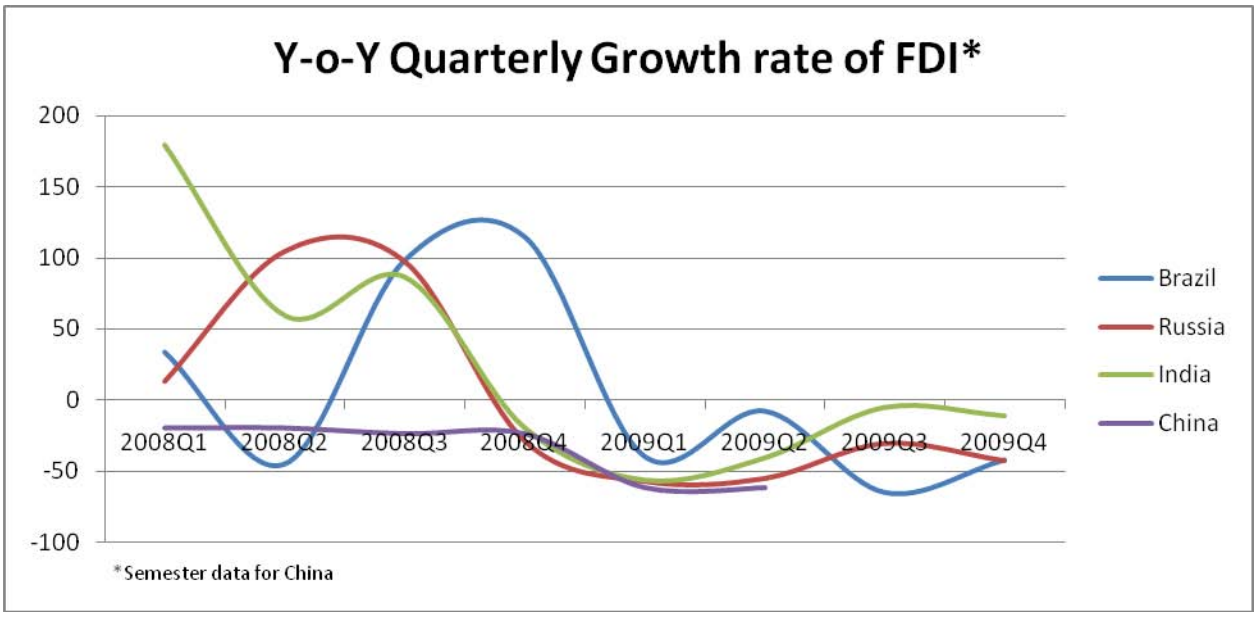


Table 3

	Exchange Rate		Foreign Exchange Reserve	
	2008Q3-2009Q1	2009Q2-2009Q4	2008Q3-2009Q1	2009Q2-2009Q4
Brazil	-38.61	16.22	7.85	-16.00
Russia	-34.73	3.34	32.35	-2.93
India	-13.69	-4.40	12.94	-1.77
China	-0.26	0.05	-2.53	-12.54
Source: IFS, IMF				

The severest impact of the trade collapse is observed in Russia. It is true that trade collapse in Russia has been acutely felt. However a part of the reason for this decline can be traced to the high base effect during the same time in the previous year. Q3 2007 to Q3 2008 was the halcyon days for Russia since it was riding high on the back of a global crude oil price rise. The export values for Russia were thus inflated which next year resulted in the high base – a phenomenon we discussed above.

Figure 10

This is further evident from Table 4. Growth Rate of export hovered around 68% each quarter for the first three quarters for Russia. It however plummeted to -52.4% in the first quarter of 2009. This dip continued for three quarters in succession. Note that the drop in export was led by drop in export of goods, primarily export of crude oil. In fact it was not so much the volume of petroleum export that was affected but the value of it. The sharp decline in international prices of crude oil led a sharp decrease in the value of oil exported from China. The fact that share of services in total export continued to rise during the peak of the crisis period also suggest that it is the drop in export of goods which led to the sharp decline in export for Russia.

A similar phenomenon is observed in the case of Chine. Growth of export declined to -22.2% in the first semester of 2009. However during this period the share of services in total export increased to 0.11 from 0.10 indicating that growth of export of manufactured products has declined at a greater rate than that of services.

For India services constitute the major part of its export basket. While export did drop in India, the decline is much less than that observed in others, especially Brazil and Russia. This is primarily due to the fact that decline in services export has been rather mitigated. Export growth in services saw maximum dip of -14% in Q3 2009. Given that services play by far the most significant role in India's export basket, one may conclude that the limited impact on India's

trade may be attributed to the cushioned effect on its services sector. However here are some indications that there has been a lagged effect on export of services.

Table 4

Country	**Brazil**			**Russia**			**India**			**China**		
Indicator	**Growth of Export**	**Growth of Export of services**	**Share of Services in Total Export**	**Growth of Export**	**Growth of Export of services**	**Share of Services in Total Export**	**Growth of Export**	**Growth of Export of services**	**Share of Services in Total Export**	**Growth of Export**	**Growth of Export of services**	**Share of Services in Total Export**
2008 Q1	**13.8**	**25**	**0.19**	**68**	**34.7**	**0.09**	**25.8**	**3.3**	**0.61**	**22.4**	**29**	**0.08**
2008 Q2	**32.5**	**31.6**	**0.13**	**67.2**	**42.9**	**0.1**	**37.4**	**22.5**	**0.47**			
2008 Q3	**38.8**	**38.8**	**0.14**	**69.3**	**36**	**0.1**	**30.3**	**47**	**0.57**	**13.6**	**13.1**	**0.1**
2008 Q4	**6.9**	**15.5**	**0.17**	**1.2**	**11.8**	**0.12**	**-11.9**	**9.3**	**0.7**			
2009 Q1	**-19.4**	**-6.5**	**0.22**	**-52.4**	**-18.8**	**0.15**	**-7**	**-6.9**	**0.61**	**-22.2**	**-23.8**	**0.11**
2009 Q2	**-25.4**	**-14**	**0.15**	**-51.3**	**-19.7**	**0.16**	**-22.8**	**-10.4**	**0.54**			
2009 Q3	**-30.5**	**-15.2**	**0.17**	**-45.6**	**-22.4**	**0.14**	**-14.4**	**-14.4**	**0.5**	**NA**	**NA**	**NA**
2009 Q4	**-12.5**	**-0.1**	**0.19**	**-13.8**	**-12.3**	**0.12**	**19.8**	**-9.3**	**0.53**			

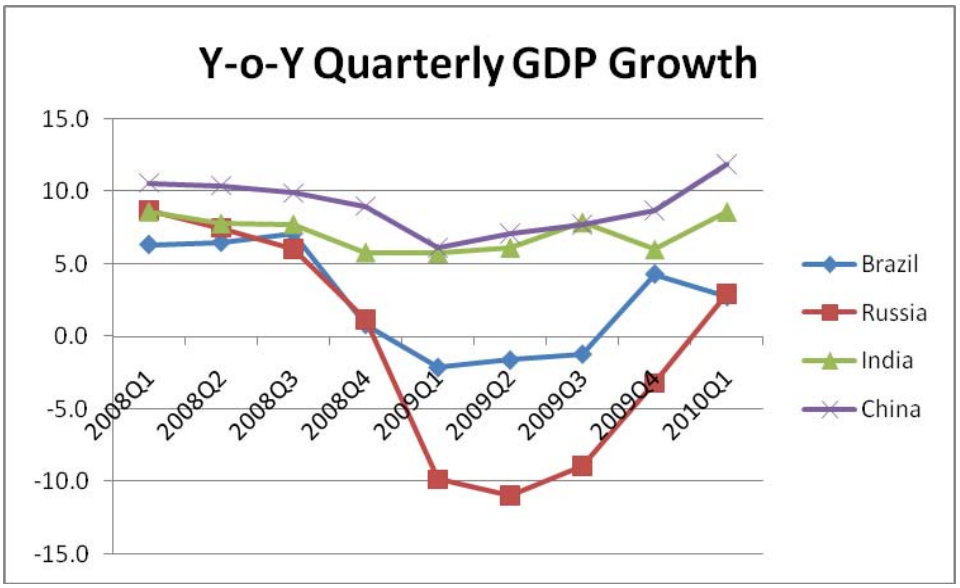
5. Effect on the Real sector

The BRIC economies were cruising along well until the financial crisis hit the world economy. As is clear from Figure 11.a the growth rate ranged from a moderate 6 per cent to a high 11 per cent. From 2008 Q3 onwards the impact of the crisis was felt by each economy in a distinct way. While on hand China and India weathered the crisis pretty well with growth rates remaining above the 5 per cent mark throughout and peaking up sharply subsequently from 2009 Q4, on the other hand quarterly GDP growth rate for Brazil and Russia in particular plummeted. In fact for three subsequent quarters beginning from 2008 Q4 the GDP growth rate hovered around -10 per cent. The same for Brazil was in red until 2009 Q4 when it showed the first signs of recovery.

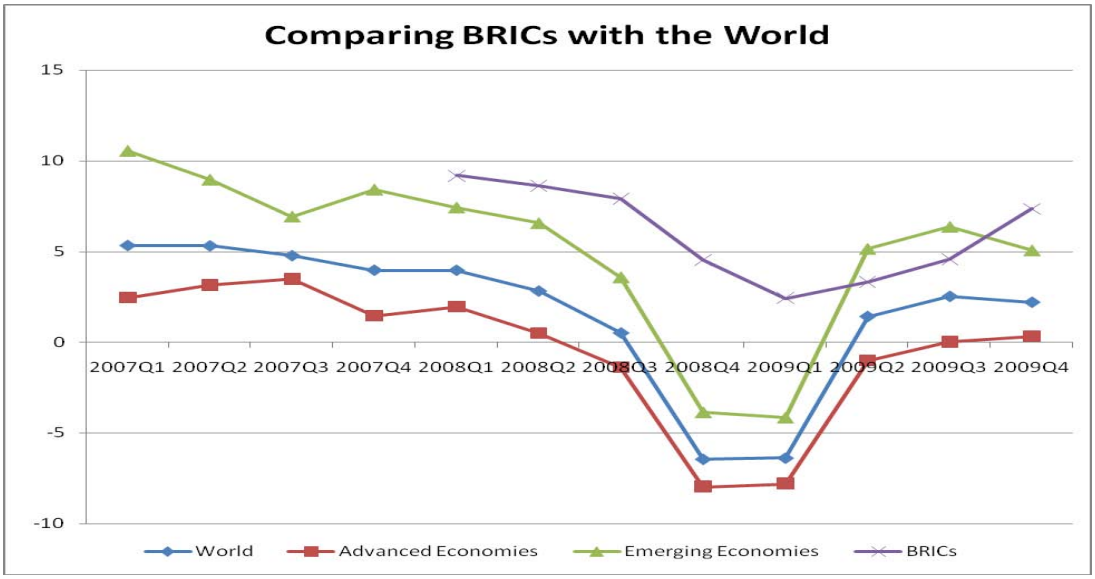
When we analyzed the structural differences in the four economies, we noted that the degree of financial integration (as distinct from real sector integration) differed widely in the four economies. While Brazil and Russia was highly integrated, India and China was not. No wonder then that the latter was not hit as hard as the former. Greater financial integration for Brazil and Russia meant that the numerous transmission channels which were at work more readily affected them than it did the rest.

Figure 11.b compares the quarterly growth rates of the BRIC economies with that of the Emerging Economies, Advanced Economies and the world. Q4 2008 and Q1 2009 was the period when the economies were hardest hit and advanced economies grew at around -8 per cent for the two quarters. The trough is clearly evident for the world economy and the emerging market economies as well, however the BRIC economies as a whole have clearly escaped the magnitude of recession experienced by the others. Whatever little dip we see in the growth rates are because of the effect on Brazil and Russia. This comparative picture illustrates the resilience of the BRIC economies in the face of an acute global economic meltdown.

Figure 11.a



Figureure 11.b



IV. Policy Responses

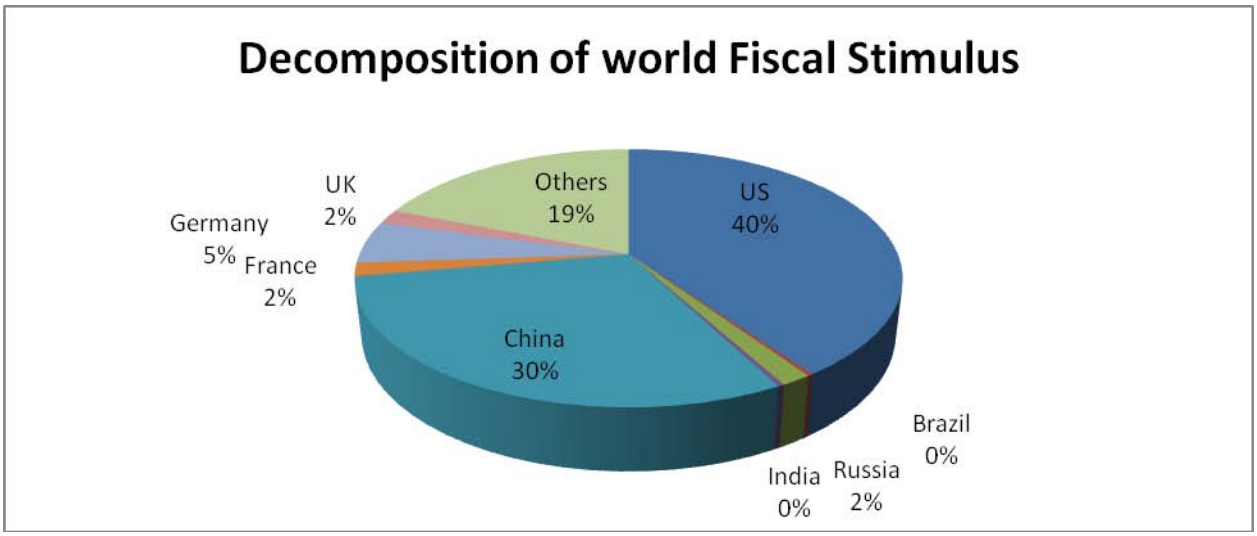
1. Fiscal Policy Response

It was agreed by the world leaders that a coordinated fiscal response was required to pull the world economy out of the recession. After decades of irreverence, Keynesian policies and its variants came to dominate the centre stage of world economic policy formulations.

The extent and depth of fiscal policy interventions have been a matter of debate. However we distinguish here between financial packages from offered by various countries from fiscal responses, unlike many other papers. This distinction is important since financial packages offered by various countries to banks and other financial institutions posing systemic risks to the economy essentially aim at asset swaps, bank injections, loan guarantees. The impact of this, in terms of spur in general demand of the economy, is indirect. Fiscal stimulus on the other, by way of tax cuts and public spending on goods and services, aim directly at inducing demand in the economy.

We consider here the direct fiscal responses by the BRIC economies and contrast them with that of some of the advanced economies in Figure 11.

Figure 11 [7]



[7] Complied by Sameer Khatiwada, ILO

The size of the aggregate global fiscal stimulus is about $1957.97 billion, roughly 3.16% of world GDP. Out of this United States' and Chinese response constituted of a whopping 40% and 30% respectively. Us and China were by far the largest contributor to the aggregate stimulus. Germany pledged 5% and UK, France and Russia pledged 2% each of the world total. India and Brazil pledged only 0.3% of the world total. In terms of their 2008 GDP Brazil, Russia, India and China put forth a stimulus of 0.3%, 1.7%, 0.5% and 6.9% respectively.

What is interesting to note here is that the nature of the stimulus in the four countries differed in terms of whether the stimulus was tax cut induced or spending led. The impact of the two has been known to be different. Alesina and Ardagna (2009) found from data starting from 1977 to 2007 that in US tax cut induced fiscal measures have contributed to growth more than direct spending. Table 5 shows us that while Brazil and Russia predominantly went the tax-cut way, India and China preferred direct public spending. Brazil in fact took this opportunity to extend the widely hailed and highly successful BOLSA program; the minimum wage was increased by 12% and a host of tax concessions to spur private consumption demand.

China invested massively in rural infrastructure, railways, airport, power grids etc. It endeavoured to extend social security to much of its population by way of increasing the number of pension funds, offering farm subsidies and providing low rent housing to its citizens. It however also offered direct tax concessions to nine of its major industries.

Incidentally the Indian Union budget 2008-09, announced in March 2008, was an expansionary one. It was essentially electoral considerations which led to pay commission rewards and major food and fertiliser subsidy. Substantial part of the outlay was earmarked for National Rural Employment Guarantee Scheme and farm loan waiver scheme. It was fortuitous that months before the crisis hit the world, India was already on an expansionary drive, rendering post crisis fiscal intervention less necessary. However, it did offer fiscal stimulus by investing in infrastructure and providing indirect tax concessions and giving assistance to the export industry.

Table 5: Fiscal Responses and Classifications[8]

	Fiscal Stimulus			**Classification of Fiscal Measures**		
Country	**USD amount (bb)**	**Percent 2008 GDP**	**Tax Cut/Spending**	**Public Spending on Goods and Services**	**Stimulus aimed at consumers**	**Stimulus aimed at firms**
Brazil	**5.1**	**0.3**	**T**		**extension of the BOLSA program; increase in minimum wage by 12%; tax cuts on consumer loan and personal income to boost sales**	**tax cuts to auto manufacturers**
Russia	**30**	**1.7**	**T**		**tax cuts**	**tax cuts**
India	**6.5**	**0.5**	**S**	**spending on roads, ports and infrastructure**		**cut in excise duties for export and labor intensive sectors**

[8] Complied by Sameer Khatiwada, ILO

China	**586**	**6.9**	**S**	**massive investment in rural infrastructure, railways, airport, power grids etc.**	**increase in the number of pension funds, farm subsidies, low rent housing development**	**direct tax cuts for 9 industries(steel, telecom, auto included), removal of loan quotas on commercial investors**
Source: IILS, Bloomberg, National Media						

2. Monetary Policy Response

The overarching objective of the monetary response had been to inject credit into the system and thus spur aggregate demand and growth. The Bank Rate of People's Bank of China reduced from 4.14% to 2.79% in December 2008 and has stayed at that for quite some time now. Reserve Bank of India slashed reverse repo rate from 6% to 3.25%, repo rate from 8% to 4.75%, CRR and SLR too were reduced from 9% to 5% and 25% to 24% respectively in the immediate aftermath of the crisis. Russia drastically reduced its required reserve ratio from 7% in September 2008 to 0.5% in November 2008 to pump liquidity into the economy. The SELIC Policy rate in Brazil was brought down to a historic low of 8.75%. It is important to note at this point that Brazil and Latin American economies in general, have an inherent tendency to overheat resulting in inflationary trends. Inflation targeting has always been an important objective for the central bank and a high interest rate regime has been maintained in Brazil. Though over the years the equilibrium interest rate has been declining, this extent decline has been unprecedented. We shall evaluate the impact of the above mentioned monetary policy interventions on credit in the section below.

V. Recovery and Exit Policy

As discussed above following the financial crisis, there was a coordinated effort by the major economies to give a fillip to aggregate demand in the economy by means of fiscal and monetary

response. The world economy recovered earlier than expected. United States registered a positive GDP growth of 2.2% and 5.6% in the third and fourth quarter of 2009 respectively. The green shoots of recovery in the global economy were evident from the third quarter itself. Let us examine how the BRIC economies fared.

Figure 12.a and 12.b gives us an indication of the extent of recovery in terms of production and sales. The production index of Brazil has gone up from Q1 2009 after a notable decline. For India the production index had plateaued during the peak of the crisis in Q3 and Q4 3008 but has since then shown a steady rise. The increase in Russian production index has been very gradual post Q2 2009. This may be in explained in part by the fact that the sales index for Russia has not picked up significantly. While demand from consumers in Brazil have clearly picked up, whatever little increase in production in Russia may be entirely from replenishment of depleted inventory.

Figure 12.a

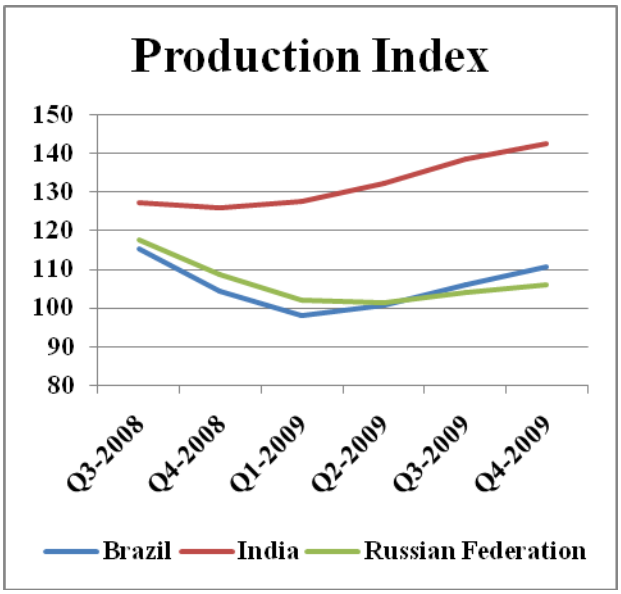
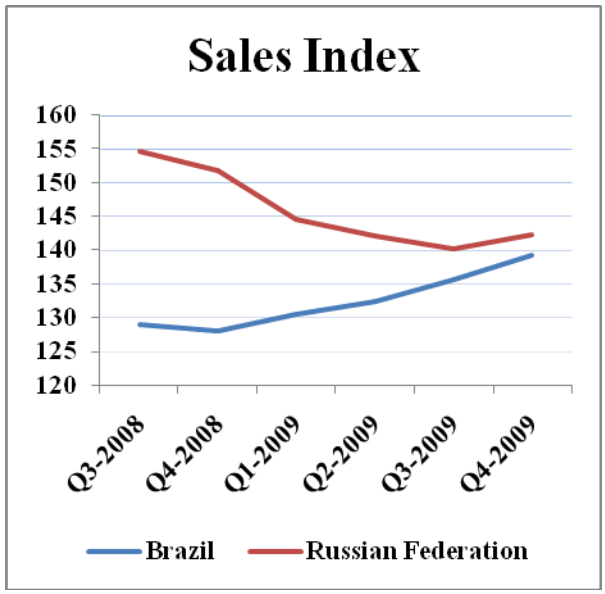


Figure 12.b

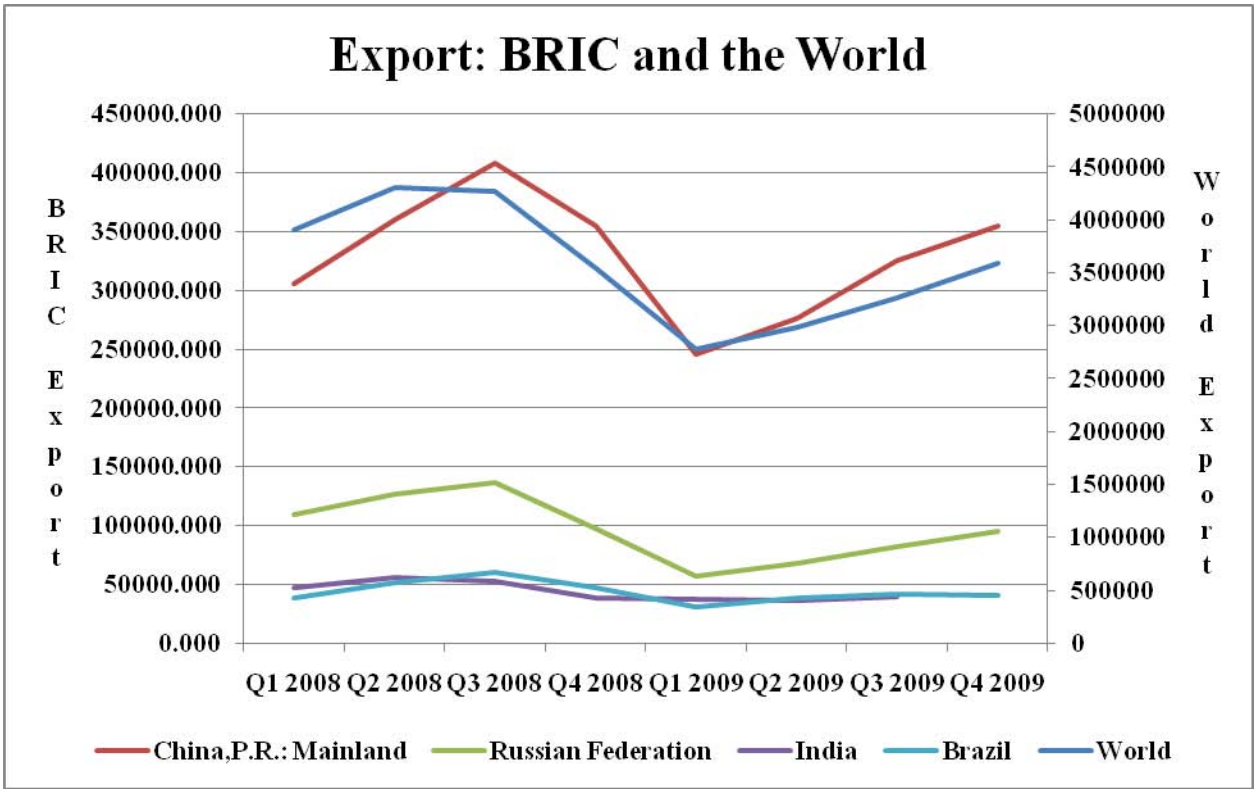


Source: OECD

The world recovery has been accompanied by a substantial increase in world trade. World and Chinese export have risen sharply to the pre-crisis levels after a sharp dip. The export from Russia has also picked up; the major part of this has come from an increase in oil price though.

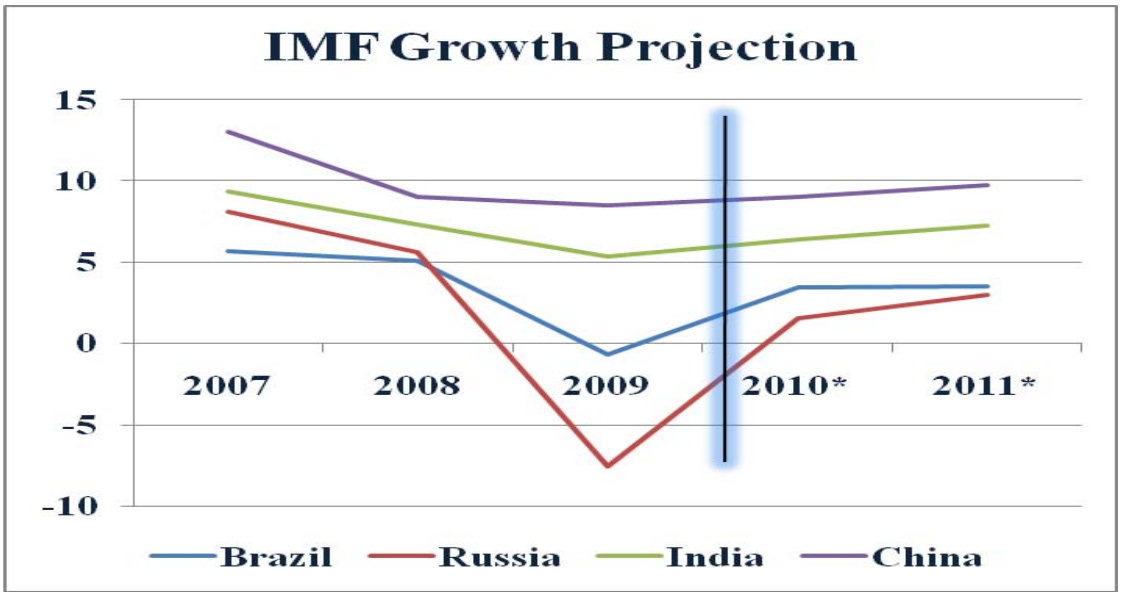
The consensus view on world growth is that double dip is unlikely to happen, but the recovery will be gradual. The same has been forecast for BRIC as well. While India and China has already reached their trend growth rate, Brazil and Russia will do so by Q3 2010. Figure 14 clearly shows that Russia has been the hardest hit in terms of GDP Growth rate and will take the longest to close the output gap.

Figure 13



Source: IFS, IMF

Figure 14



Source: IMF

VI. Global imbalance and consumption pattern in BRIC

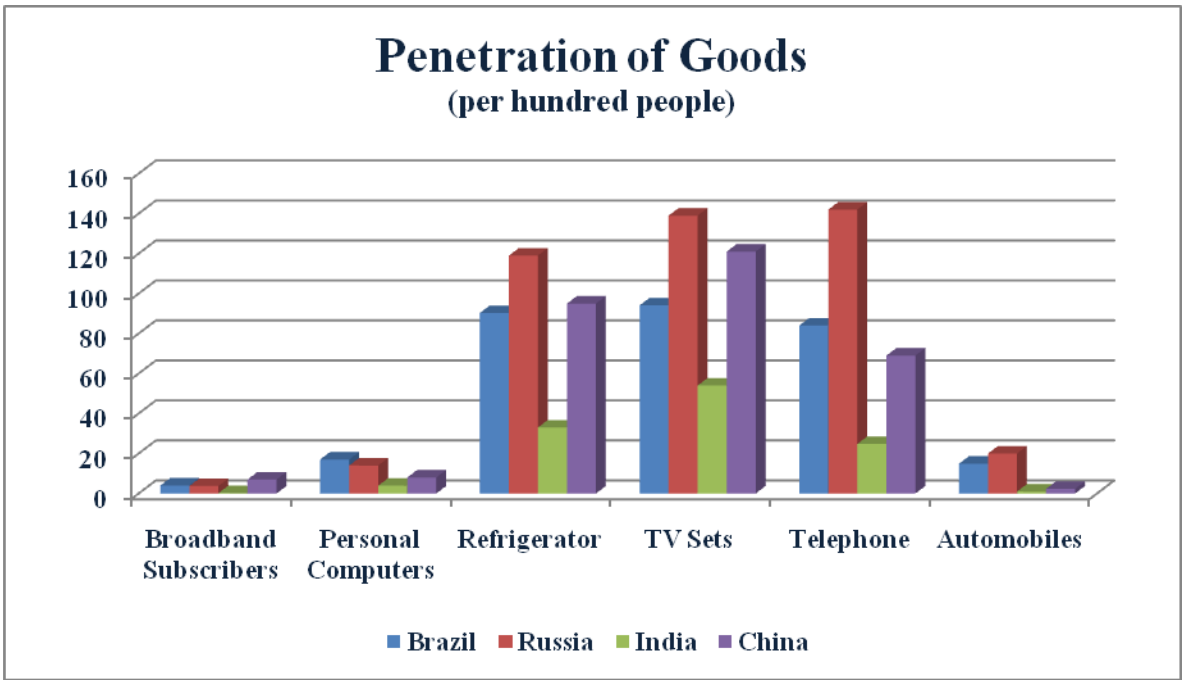
Of the many reasons which have been attributed to the causes of financial crisis, it is widely believed by economists that global imbalances have played an important role. It has certainly played a role in perpetuating the crisis if not causing it directly. United States has historically had a current account deficit of around 6.5% of its GDP. Post crisis, following a drop in international crude oil prices, slow growth and falling imports the current account deficit has fallen and it is expected to be 4% in the near term. However according to an estimate from Peterson Institute for International Economics, in the long term it is expected to be $5 trillion annually, more than 10% of US GDP[9]. What continues to drive this current account deficit in US?

The answer may be found in the consumption pattern in US. Personal and Government consumption together constituted 88.7% of GDP and personal consumption itself constituted around 70.7% of GDP in the US in 2008. Economists argue that this high level of consumption in the US and its natural corollary a corresponding high level of saving in emerging economies, particularly China and other oil exporting countries is unsustainable. What is i necessary thus is

[9] http://www.iie.com/research/topics/hottopic.cfm?HotTopicID=9

global rebalancing. We will examine if BRIC can play a role in causing this shift in consumption from the west towards the emerging market economies.

Figure 15

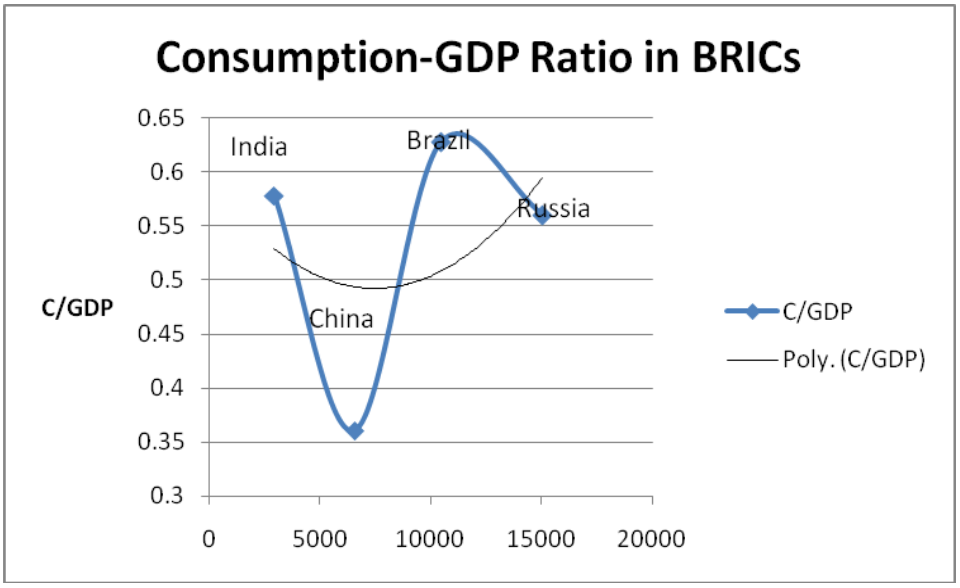


Source: Goldman Sachs

It is clear from Figure 15 that penetration of goods (number of a particular good per hundred people) as estimated for the six different product groups in the four countries has been rather low. Russia is by far the most mature consumer market. Brazil is a close second. This is evident from the fact that the per capita income of the India and China are much lower than that of Brazil and Russia. Penetration of goods is the weakest in India. The level of penetration in the case broadband and personal computers is very low for the all the four countries indicating a potential in the near future. While there are about 19 and 17 automobiles per hundred people in Russia and Brazil respectively, that for India and China is negligible. Though India is a laggard in all respects, it is currently experiencing phenomenal growth rates in some consumer goods sectors like mobile telephony, personal computing, internet and cars.

As per capita income continues to rise in the BRIC, the burgeoning middle class, especially in India and China will drive the consumption and result in its shift from the rich countries to the emerging market economies.

Figure 16



Source: IFS, IMF

Economic theory suggests that at low levels of income, people consume more and save less. This is driven by the fact that a only when a bare minimum level of subsistence consumption is met, one intends to address issues like inter temporal consumption and thus saving. As income rises, consumption levels fall relative to income and finally when income exceeds a threshold level, the consumption to income ratio rises again. The economic rationale of the third stage lies is that when at higher levels of income the basic necessities of living are taken care of and there exists a well knit social safety net individuals tend to consume higher end products leading to a rise in the consumption income ratio.

The above theorisation is empirically validated as well. The relation between per capita GDP and Consumption GDP ratio has been found to be a U shape. Low PCI countries tend to have a higher C/GDP and this is set to decrease initially and finally increase again where high per capita income countries consume more relative to their income. Figure 16 suggests this relationship holds true for BRIC as well. While Brazil and Russia lies on the right of the trough of the U,

India lies on the left and China at the bottom of the U. Thus for China the consumption-GDP ratio is all set to increase while India has not even begun to traverse the cycle. Evident thus is the fact that consumption China is set to increase in the coming days. For India the consumption level in itself is set to rise, however India's GDP is set to increase at an even higher rate. Thus the Consumption GDP ratio will initially decline and then rise again.

A vexing question still remains. Why has the consumption relative to income not risen to the same extent as income itself? Milton Friedman's permanent income hypothesis professes that transitory or short term changes in income does not change the level of consumption, what changes the consumption level is the long term income expectations. It is possible that the consumers in the emerging market economies perceive the increases in income as transitory; once this rise gets a seal of permanence, the consumption levels are going to rise. On an aggregate thus a rise in consumption-GDP ratio follows a rise in income level but with a lag. Possibly this is the phenomenon we are observing in emerging markets in general and BRIC in particular. One must note though that Brazil to some extent and Russia in particular does not share the consumption characteristics of India and China and the consumption potential in the former is much less than that in the latter.

Rebalancing in the world economy, inter alia implies shift in the consumption from advanced economies to the emerging market economies. This ipso facto means a reduction in savings in the emerging economies and a corresponding increase in saving in the west. Our analysis shows that this transition from high-saving low-consumption to moderate-saving high-consumption phenomenon is feasible in the transition economies and BRIC can play an important part in it.

VII. Conclusion

In line with the global experience, BRICs also suffered from the financial crisis that griped the global economy toward the end of 2008. However, the severity of the impact was not uniform across all these economies. With a higher level of financial integration, Brazil and Russia suffered the most while India and china experienced only a moderate slow down in their GDP growth. Depending on the fiscal space all BRIC economies announced fiscal stimulus to abort the contagion of financial crisis. The biggest fiscal stimulus was announced by China followed by Russia, India and Brazil. Apart from size, the fiscal responses of these economies also differ

in nature. While Brazil and Russia went for tax rebate to shore up the private demand, India and China opted for direct public spending on infrastructure development. Interestingly Brazil took this opportunity to extend its widely hailed and highly successful BOLSA program and raised the minimum wage by 12 percent. The monetary policy response was rather simple and uniforms. All economies reduced interest, with Russia going for most the liberal monetary policy regime.

The liberal monetary policy along with fiscal expansion helped BRICs to recover sooner rather than later. The recovery was first observed in India and China during the first quarter of 2009 when these economies witnessed a turnaround in their GDP growth. Brazil also embarked on the path of recovery in the fourth quarter of 2009 followed by Russia in the first quarter of 2010. However, in case of Brazil and Russia, the economic recovery is still fragile and hence government should continue with expansionary policies. In the long run it is imperative that the global economy is rebalanced and BRIC has to play an important role in ensuring that the rebalancing takes place.

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