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FINANCIAL PERSPECTIVES OF GLOBALIZATION IN EMERGING ECONOMIES - CONCERNS FOR INDIA

Abstract:

Emerging economies (BRIC) are now on forefront of globalization in the resent scenario. From a financial perspective, globalization has resulted in huge financial flows to these economies that inter-alia include Portfolio investments by Foreign Institutional Investors (FII), Foreign Direct Investment by firms and institutions, External commercial borrowing and international resource mobilization. We argue that this spurt in financial globalization has resulted in volatility in financial markets, particularly stock markets and indirect contribution to GDP growth rate simultaneously creating concerns for the government policy makers and regulators especially in a country like India. We examine the case of India via investigation on association between GDP and stock market volatility and other selected macro economic indicators. The results on co-integrations, regression and GARCH specifications indicate that a positive significant impact of globalization on India's financial indicators. We find portfolio investments as deterrents to stock market volatility. Also, in some cases we find no integration across BRIC nations on selected macro economic variables.

Keywords:

Financial Globalization, Foreign Direct Investment (FDI), Gross Domestic Product (GDP), Volatility, Foreign Institutional Investors (FII)

JEL Classification: F01, F36, F21

INTRODUCTION

Liberalization and privatization has a positive effect on most of the emerging economies including BRIC nations. Gradual nature of liberalization combined with the costs of absorbing large inflows in emerging economies leads to rich dynamics of capital flows (Bekaert and Harvey, 2000; Errunza, 1999; Henry, 2000; Kim and Singal, 2000). Globalization offers an unprecedented opportunity for developing countries to achieve faster Economic Growth through Trade and Investment (Sridharan *et.al.*2009). Researches have also linked the progress made in integrating the financial markets of the major industrial countries United Kingdom, France, Germany Japan and the US to deregulation and liberalization.

Need of foreign capital flows are argued for many reason that inter-alia include development of infrastructure, industrialization, risk optimizations, comparative advantages, technological gap reduction etc. Financial globalization is criticized on account of inducing potential financial crisis due to international capital mobility (Reinhart and Reinhart, 2008), yet there are arguments to support that problem lies somewhere else, may be informational asymmetries (Schmukler, 2004). The impact of international capital flows primarily FDI affect the economic performance through production and financial linkages and multinational networks. Financial linkages produce *turbulence* or a *balancing effect* to the micro side of financial markets namely securities markets. De Gregrio and Guidotti (1995) show that the main channel of transmission from financial development to growth is the efficiency, rather than the volume, of investment. We have seen a period of 2008-2009, the most serious period of financial crisis with a major decline in macro indicators including GDP. Rose and Spiegel (2009) investigation on the role of trade and financial linkages in explaining the differential extent of the crisis across countries indicate that international linkages not to be clearly associated with incidences of the crisis. We observe that the effective GDP growth rate for emerging economies is rising overall compared to developed economies as per the UNCTAD Statistics. Our approach to the financial perspective of globalization in emerging economies with particular reference to India addresses the issue of growth linkage (GDP) and volatility that FDI brings in financial markets.

Foreign Direct Investment and Growth Argument

The integration of financial markets globally has provided opportunities to the developing nations to grow and synchronized with the developed world. FDI is one of the predominant and vital factors in influencing the contemporary process of global economic development.

The unprecedented growth of global FDI find role in the development strategy of both developed and developing nations and policies are designed in order to stimulate inward flows and provides a win – win situation to the concerned nations. Foreign direct investment is in contrast to portfolio investment, which is a passive investment in the securities of another country such as stocks and bonds. Adopting liberal policies and creating conditions conducive to investment as these things positively

influence the inputs and determinants of the investment process can only achieve sustainable development. Since 1990s FDI inflows to emerging markets rose faster than almost all other indicators of economic activity worldwide.

Developed economies consider FDI as an engine of market access in developing and less developed countries vis-à-vis for their own technological progress and in maintaining their own economic growth and development. Various studies have outlined that main determinants of FDI include institutional infrastructure, market size, and export intensity, efficiency of markets, and investment environment with the ensured political and economic stability in the host country and administrative procedures.

Most studies have indicated the positive impact of FDI on growth especially, the GDP. Andreas (2004) argues that FDI should have a positive effect on economic growth as a result of technology spillovers and physical capital inflows. Using cross – section and panel data analysis on a dataset covering 90 countries during the period 1980 to 2002, they show that FDI inflows enhance economic growth in developing economies but not in developed economies. Similarly, Salisu (2004) study of Nigeria examines the determinants and impact of Foreign Direct Investment on economic Growth in Developing Countries and finds that inflation, debt burden, and exchange rate significantly influence FDI flows into Nigeria though the contribution of FDI to economic growth in Nigeria was very low even though it was perceived to be a significant factor influencing the level of economic growth in Nigeria. Miguel (2006) finds the increase in both private and foreign investment per worker has a positive and economically significant effect on the rate of labor productivity growth. Government policies do affect the FDI (Okuda, 1994). Study on Turkey by Emrah (2006) suggests that in order to have a sustained economic development the government should improve the investment environment with the ensured political and economic stability in the country. Similarly, Khor (2001) study on Malaysia indicate that bi-directional causality exist, between FDI and economic growth. FDI contributes to economic development of the host country in two main ways, augmentation of domestic capital and enhancement of efficiency through the transfer of new technology, marketing and managerial skills, innovation and best practices and FDI has both benefits and costs and its impact is determined by the country specific conditions in general and the policy environment in particular in terms of the ability to diversify, the level of absorption capacity, targeting of FDI and opportunities for linkages between FDI and domestic investment (Samuel 2009; Morris, 1999). Regulation of FDI through a well structured policy framework is essential (Alhijazi,1999; Naga, 2003; Nirupam, 2006). As emerging economies integrate into the global economies international trade and investment, they will continue to accelerate Klaus (2003). Policy makers need to understand how institutional arrangements may generate favorable outcomes for both the home company and the host economy. Yew (2007) show that FDI, economic integration and human capital are robustly significant to economic growth, manufacturing sector growth and high technology sector growth for ASEAN countries. Studies on emerging markets indicate that congenial business environment is essential to attract FDI (Swapna, 2007).

Sasidharan (2007) found no evidence of horizontal spillover effects of FDI on India and requirements of FDI are growing (Peter, 2004; Balasubramanyam, 2007). Yet, the impact of the reforms in India on the policy environment for FDI presents a mixed picture (Kulwinder, 2005). Basu *et. al.* (2007) find that R&D as a significant determining factor for FDI inflows for most of the industries in India and there is a strong negative influence of corporate tax on FDI inflows.

India's economic reforms way back in 1991 generated strong interest for foreign investors and India turned into one of the favorite destinations for global FDI flows. FDI is central for India's integration into global production chains, which involves production by MNCs spread across locations all over the world. FDI incentives, removal of restrictions, bilateral and regional investment agreements among the Asian countries and emergence of Asia as an economic powerhouse (with China and India emerging as the two most promising economies of the world) develops new economics in the world of industrialized nations.

In the BRIC category we see a consistent rise in the GDP ratio for India in the last 24 years compared to other countries like China that faced ups and downs though performing better. However, in 2012 all the BRIC nations except Brazil faced a decline.

FDI inflows in India is examined under five broad heads: (i) Foreign Investment Promotion Board's (FIPB) discretionary approval route for larger projects, (ii) Reserve Bank of India's (RBI) automatic approval route, (iii) acquisition of shares route (since 1996), (iv) RBI's non – resident Indian (NRI's) scheme, and (v) external commercial borrowings (ADR/GDR) route. There has been a phenomenal rise in FDI since 2005 though the share of India GDP in world GDP has declined.

A large difference is also observed in FDI approvals and inflows and disbursements (25%-39% in last two years). India's diverse economy attracts high FDI inflows due to its huge market size, low wage rate and large human capital (which has benefited immensely from outsourcing of work from developed countries). India has large pool of human resources and human capital is known as the prime mover of economic activity. In the present decade India has witnessed unprecedented levels of economic expansion and also seen healthy growth of trade. Gross Domestic Product at Factor cost (GDPFC) as the macroeconomic variable of the Indian economy is one of the pull factors of FDI inflows into India at national level. It is conventionally accepted as realistic indicator of the market size and the level of output. The tremendous growth in GDP since 1991 put the economy in the elite group of trillion dollar economies. India makes its presence felt by making remarkable progress in information technology, high-end services and knowledge process services. By achieving a growth rate of more than 9% India has opened new avenues to foreign investors. Trade is a complement to FDI, such that countries tending to be more open to trade attract higher levels of FDI. Since liberalization and initiation of economic reforms since 1991, the value of India's international trade has risen to Rs. 20, 72,438 crores in 2008-09 from Rs. 91,892 crores in 1991-92.

Adequate foreign reserves are an important parameter of Indian economy in gauging its ability to absorb external shocks. Adequate foreign reserves of India indicates its ability to repay foreign debt which in turn increases the credit rating of India in international market and this helps in attracting more FDI inflows in the country. India's foreign exchange reserves comprise foreign currency assets (FCA), gold, special drawing rights (SDR) and Reserve Tranche Position (RTP) in the International Monetary Fund. The emerging economic giants, the BRIC (Brazil, Russian Federation, India, and China) countries, hold the largest foreign exchange reserves globally and India is among the top 10 nations in the world in terms of foreign exchange reserves. India is also the world's 10th largest gold holding country (Economic Survey 2009-10). Stock of foreign exchange reserves shows a country's financial strength. India's foreign exchange reserves have grown significantly since 1991. The reserves, which stood at Rs. 23850 crores at end march 1991, increased to Rs. 1283865 crores as in March 2008. The trend pattern of external debt to exports has been decreasing continuously since 1991-92, indicating towards a strong economy. This positive indication is a good fortune to the Indian economy as it helps in attracting foreign investors to the country.

Volatility in Country's Financial Markets Argument

Emerging markets witness a mixed effect of portfolio flows by foreign investors in their financial markets. While capital cost reduction and market efficiency argument is unchallenged, there is a large debate on the ill effects of volatility. WTO and other bodies have been pressuring the liberalization of markets particularly for the developing nations with a little highlighted focus on its repercussions. Emerging markets like India exhibit large potential for returns to Foreign Institutional Investors in portfolio trading. We emphasize on the volatility aspect of the FII flows and its contagion effect on other economic units in the country. FII trading activity creates turbulence in the securities and other related financial markets which most of the times the regulators are not able to resolve. Various studies have been conducted to study the relationship between the volume and level of stock price and indices. But, studies on the impact of FII trading on financial markets in emerging economies are more recent.

Liberalization of markets to FII usually starts with the initial surge in capital inflows and ends before the episode of capital inflows completely subsides (Calvo and Mendoza, 2000). There are supports to market efficiency that FII trading brings in (Li, 2002) though the realized impact is far larger than estimated (Richards, 2004). Volatility may seriously the smooth functioning of the financial system and adversely affect economic performance. Stock market volatility may result in significantly large return to the domestic investors implying increase in consumer spending (Campbell, 1996, Poterba 2000). Stock market surges weaken consumer confidence and thus drive down consumer spending. Stock market volatility may also affect business investment (Zuliu, 1995) and may affect the pace of economic growth directly (Arestis et al 2001). After implementation of economic reforms, the Indian securities market has now become comparable with securities markets of developed and other emerging economies. In fact, India has a turnover ratio, which is comparable with that

of other developed markets and also one of the highest in the emerging markets (NSE, 2005). The number of registered FII's has gone up from 833 in 2006 to 1772 in April 2012. From April 2004 to March 2012 FII's have bought Rs. 38,47,365 crores worth of securities and sold similar amount to the tune Rs. 38,53,743 crores. This brings motivation to examine whether their activity has actually brought market efficiency or volatility in the securities market.

METHODOLOGY

Globalization of financial markets and their impact on merging economies macro indicators would logically include the contribution to Gross Domestic Product (GDP) in real terms. We use the natural log of GDP (LNGDP) as a surrogate to Financial Globalization. The Foreign Direct Investment (FDI) as per world bank specification are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments.

Exports (EXP) and Imports (IMP) represents the value of all goods and other market services received and provided to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. They exclude compensation of employees and investment income and transfer payments.

Portfolio equity (PORT) includes net inflows from equity securities other than those recorded as direct investment and including shares, stocks, depository receipts, and direct purchases of shares in local stock markets by foreign investors. Data are in current U.S. dollars.

We use the published data of World Bank and UNCTAD for the period 1989-2012 for the BRIC nations representing emerging markets economies.

We conducted unit root test to examine the stationarity of the series based on Augmented Dickey-Fuller specifications. Johansen (1991) cointegration is the phenomenon that each component $Y_{i,t}$, $i = 1, \dots, k$, of a vector time series process Y_t is a unit root process, possibly with drift, but certain linear combinations of the $Y_{i,t}$'s are stationary. Thus

$$Y_t = Y_{t-1} + m + V_t$$

where V_t is a zero-mean k -variate stationary time series process and m is a k -vector of drift parameters, but there exists a $k \times r$ matrix b with rank $r < k$ such that $b'Y_t$ is (trend) stationary.

In order to estimate long run coefficients of the cointegration relationship we have used FMOLS and DOLS between-dimension approach proposed by Pedroni (2001) compared to the conventional OLS estimator, which is a biased and inconsistent estimator when applied to cointegrated variables. It can handle the likely endogeneity

of the regressors and serial correlation and also the form in which the data are pooled allows for greater flexibility in the presence of heterogeneous cointegrating vectors.

FMOLS can be derived from the following equation:

$$y_{it} = \alpha_i + x_{it}\beta + u_{it}, i = 1, \dots, N; t = 1, \dots, T$$

$$x_{it} = x_{it-1} + \varepsilon_{it}$$

Where y is the dependent variable (LNGDP) and x is the regressor and the vector of error process $\xi_{it} = (\mu_{it}, \varepsilon_{it})'$ is stationary with asymptotic covariance matrix Ω_i , which can be decomposed as

$$\Omega_i = \Omega_i^0 + \Gamma_i + \Gamma_i'$$

Here, Ω_i^0 is the contemporaneous covariance and is a weighted sum of autocovariances. Thus, the variables $y_{it}x_{it}$ are said to be cointegrated for each member of the panel, with cointegrating vector β if y_{it} is integrated of order one. The term allows the cointegrating relationship to include member specified effects. If y_{it} and x_{it} are cointegrated, the between-dimension panel FMOLS estimator can be expressed as:

$$\beta_{FMOLS,i} = \left[\sum_{i=1}^T x_{ij}^* x_{ij}^{*'} \right]^{-1} \left[\sum_{i=1}^T x_{ij}^* y_{ij}^* - T \gamma_i \right]$$

where $y_{it}^* = (y_{it} - \bar{y}_i)$; $x_{it}^* = (x_{it} - \bar{x}_i)$

$$\bar{y}_i = N^{-1} \sum_{t=1}^T y_{it}; \bar{x}_i = N^{-1} \sum_{t=1}^T x_{it};$$

$$y_{it}^* = y_{ij}^* - \Omega_{ue} \Omega_{e\varepsilon}^{-1} \Omega_{eu}; \gamma_i = \Gamma_{eu} \Omega_{e\varepsilon}^{-1} \Gamma_{ue}$$

Dynamic OLS Estimator equation of cointegrated system for a panel of $i=1, \dots, N$ members is

$$y_{it} = \alpha_i + \beta x_{it} + \mu_{it}$$

$$x_{it} = x_{it-1} + \varepsilon_{it}$$

where the vector error process $\xi_{it} = (\mu_{it}, \varepsilon_{it})'$ is stationary with asymptotic covariance matrix Ω_i . Thus, the variables x_i, y_i are said to co integrate for each member of the panel with co integrating vector β if y_{it} is integrated of order α_i allows the co integrating relationship to include member specific fixed effects.

In order to examine the impact of FII trading on volatility we use the famous autoregressive conditional heteroskedasticity (ARCH) models introduced by Engle

(1982) and extended versions- the GARCH models (Bollerslev, 1986). Suitability of these models rests on the notion of being able to capture both volatility clustering and unconditional return distributions with heavy tails. We draw motivation from various studies that subscribe to the hypothesis that GARCH (1,1) model performs better in predicting volatility of time series data for emerging markets (Gokcan, 2000; Wang *et al.* 2005).

Karmakar (2005) has also used conditional volatility models to estimate volatility of fifty individual stocks and observed that the GARCH (1,1) model provides reasonably good forecast. We estimate the time varying volatility using the GARCH specifications. The condition for variance stationarity is

$$E(\sigma_t^2) = \alpha_0 + \sum_{j=1}^q \alpha_j E[\sigma_{t-j}^2]$$

The basic ARCH and GARCH specification is

$$\sigma_n^2 = \gamma \mathcal{W}_L + \sum_{i=1}^m \alpha_i u_{n-i}^2$$

where

$$\gamma + \sum_{i=1}^m \alpha_i = 1$$

$$\sigma_n^2 = \gamma \mathcal{W}_L + \alpha u_{n-1}^2 + \beta \sigma_{n-1}^2$$

where $\alpha + \beta + \gamma = 1$

$$E[\sigma_{n+k}^2] = \mathcal{W}_L + (\alpha + \beta)^k (\sigma_n^2 - \mathcal{W}_L)$$

The GARCH forecast of volatility is

Conditional variance: $\log(h_t) = \omega + \alpha_1 z_{t-1} + \gamma_1 (|z_{t-1}| - E[|z_{t-1}|]) + \beta_1 \log(h_{t-1})$, where $z_t = \varepsilon_t / h_t$ and is the standardized residual. γ is the asymmetric component.

$v_i = \sigma_i^2$, defined as

$$\sum_{i=1}^m \left\{ -\ln(v_i) - \frac{u_i^2}{v_i} \right\}$$

We use the statistics of FII trading activity (Independent Variable FII) defined as the net of the daily value of assets bought and sold and S&P 500 Index (Dependent Variable NIFTY) closing values for the period 4th April, 2006 to 31st March 2012 resulting in 1490 observations. Of these observations from 1001 to 1490 are classified as the recent period of two years representing the post financial crisis of 2007 and the euro zone problems. In order to further determine the influence of NETEXP, FDI and PORT on GDP, we use a panel regression model for all the BRIC nations pooled for the period 1989-2012 assuming a linear model. The panel regression model based specification proposed by Gujarati (2006) uses a dependent

variable, which in our case is Y_{it} representing the GDP with a constant β_1 and β_{it} as regressors.

$$Y_{it} = \beta_1 + \beta_2 X_{2_{it}} + \dots + \beta_k X_{k_{it}} + \mu_{it}$$

Where $nations(i) = 1, 2, 3, \dots, k$ and $time\ period(t) = 1, 2, 3, \dots, n$

μ_{it} is a random error term denoting firm specific effects.

$i = 1, 2, \dots, k$ and $t = 1, 2, 3, \dots, n$, μ_{it} -firm specific effects,

We conducted unit root test to examine the stationarity of the series based on Augmented Dickey-Fuller and PP specifications. We first use a generic estimator first to find the co-efficient of the regressors and then proceed to find the impact of fixed effects (FE) and random effects (RE) in the cross sections. We can test whether a fixed or random effects model is appropriate using a Hausman test where

X_{it} and Z_{it} as instruments yields a consistent estimate. $H_0 : \alpha_i \perp X_{it}, Z_{it};$

$H_a : \alpha_i \perp X_{it}, Z_{it}$, If H_0 is true, both $\hat{\beta}_{RE}$ and $\hat{\beta}_{FE}$ are consistent, but only $\hat{\beta}_{RE}$ is efficient. If H_a is true, $\hat{\beta}_{RE}$ is consistent and $\hat{\beta}_{FE}$ is not. We have used e-views 8.0 version for all our computations and present the summary of the results.

FINDINGS

GDP Growth and FDI

We have examined whether there is a co-integration between the selected macro economic variable (GDP) of BRIC nations. Results of both *trace* and *max* value Johansen test indicate that the performance of the BRIC countries follow a strong integration at 5% level. Our results are different from the similar studies on long run integration (Sridharan, 2009; Agarwal, 2013) (Table 1). However we find only one-direction long run causality between FDI and Growth (GDP \rightarrow FDI) {Table 8.}

Results of country group variable integrations indicate that integration of selected macro economic variable for all BRIC nations one co-integrating equation exists based on Johansen Co-integration method (Table 2).

GDP Determinants

To establish a relationship between the GDP (dependent) and IMP, EXP, PORT and FDI (independent variables), we have first conducted ADF unit root tests (Table 3). Variables have been modified for stationarity at either 1st or 2nd difference level. Accordingly following estimation equations have been used-

$$\text{brazilgdp} = \alpha + \beta_{\text{exp}} \text{brazilexp} + \beta_{\text{imp}} D(\text{brazilimp}) + \beta_{\text{fdi}} D(\text{brazilfdi}) + \beta_{\text{port}} D(\text{brazilport}) + \varepsilon$$

$$\text{chinagdp} = \alpha + \beta_{\text{exp}} \text{chinaexp} + \beta_{\text{imp}} \text{chinaimp} + \beta_{\text{fdi}} \text{chinafdi} + \beta_{\text{port}} D(\text{chinaport}, 2) + \varepsilon$$

$$\text{indiagdp} = \alpha + \beta_{\text{exp}} \text{indiaexp} + \beta_{\text{imp}} \text{indiaimp} + \beta_{\text{fdi}} D(\text{indiafdi}) + \beta_{\text{port}} D(\text{indiaport}) + \varepsilon$$

$$\text{russiagdp} = \alpha + \beta_{\text{exp}} D(\text{russiaexp}) + \beta_{\text{imp}} D(\text{russiaimp}) + \beta_{\text{fdi}} D(\text{russiafdi}) + \beta_{\text{port}} D(\text{russiaport}) + \varepsilon$$

We have estimated panel co-integrating regressions for using FMOLS and DOLS. In the FMOLS estimates, we find some relationship between GDP and FDI for Brazil and India. However, the coefficient for India is negative and of low significance. However, contrarily, DOLS estimates show no significant of the repressors except for positive coefficient of FDI in case of India (Table 4). This lead to the conclusion that in long run, the GDP has been positively affected by FDI and coupled with the results of granger casualty test, GDP has a lag effect on FDI.

We further investigate the relationship between growth and financial flows using the panel regression. Interestingly, the co-efficient for exports is negative and for imports is positive for the panel data. FDI and PORTEQUITY are insignificant to affect the GDP growth rate. The results of Hausman test on period random effects confirm the results (Table 6).

Volatility in financial markets

In order to estimate the impact of FII investments on volatility, we have used the stock market index CNXNIFTY. We have conducted the granger casualty test to estimate the casualty effects between CNXNIFTY (NIFTY) and FII. We have divided the sample of 1501 least observations into two parts of 1000 and 501 observations. For the first part, we find that there is no causal relationship between NIFTY and FII. However, the recent observations confirm the casualty (Table 5). *It is seen that that in the period after the financial crisis, FII investments drive the market and high volatility and medium volatility regimes are seen during the sub periods. This is a cause of concern for the government and the policy makers.*

Further, GARCH (1,1) specification where NIFTY is dependent variable and FII is independent variable shows that FII trading activity has a significant impact on the market movements and may result in volatility shocks. Researches show that FII trading activity has reduced the market volatility (Bansal and Pasricha, 2009; Anshuman *et. al.*) but not in the recent measurement period 2010-2014. More concerns are for positive shocks than negative shocks that can also be seen in the period from Jan-April 2014. We, therefore, argue that regulatory mechanism for handling FII investments in India is fragile requiring immediate concern of the government agencies.

Exchange Management and Regulatory Issues

We also see an underdeveloped debt market that hold responsible for inbound flows confined to equity. Capital regulation is entrusted with large number of regulators like Reserve Bank of India (RBI), the Securities and Exchange Board of India, the Forward Markets Commission, the Insurance Regulatory and Development Authority, Pension Fund Regulatory and Development Authority and also the government machinery like the Ministry of Finance dealing with portfolio investments and the Ministry of Commerce dealing with foreign direct investment policy matters. We find a poor exchange rate administration by RBI. In order to have efficient exchange rate administration, capital account convertibility must be resolved similar other BRIC nations. Concerns have also been raised on RBI to end up discretionary regulation (Chakrabarty, 2014).

International Flows

Compared to BRIC counterparts and other emerging markets like China, India has not been able to establish as an international financial hub because of poor infrastructure and unstable tax policies Jonathan (2014). The portfolios of Indians are biased towards domestic firms and funds reflecting a combination of information asymmetries and capital controls (Shah, 2011). We therefore, establish that financial intermediation through FDI route, which mainly confines to financial assets, has brought new risk for the Indian financial system.

REMARKS

Emerging markets like India need FDI as a strategic component of investment for sustained economic growth. FDI flows in India have been confined to specific sectors and are significantly affected by the tax structures. Recent failure of legislative amendment to allow FDI in retail raises political uncertainties to the International business community.

Central government must extend the flexibility to states and offer additional incentives to foreign investors to invest in specific areas. In a more China style, technology transfers should be the basis of FDI that promotes employment and competition. The focus areas are establishing deeper linkages within the economy, stabilization and reliable macroeconomic environment to the investors.

Central bank and regulators have also a major role to play. They must address the issues of the volatility of net capital flows and exchange rate adverse movements that altogether change the business model of business firms. Tax reforms coupled with a sustainable investment policy would reduce uncertainty and bring stability to the overall financial posture of India. Inflation targeting and well regulated trading activities of FII in financial markets, particularly stock markets is much needed. The synchronization and flexibility of banks and firms to the international financial centers and transparent policies to communicate clearly with domestic and foreign financial market are imperatives to draw advantages of financial globalization.

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TABLES

Table 1: Johansen Co-integration Test Results GDP of BRIC Nations

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.717752	64.75705	40.17493	0.0000
At most 1	0.547317	38.19272	24.27596	0.0005
At most 2	0.459552	21.54888	12.32090	0.0011
At most 3	0.336868	8.626394	4.129906	0.0039

Trace test indicates no cointegration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**

None	0.717752	26.56434	24.15921	0.0232
At most 1	0.547317	16.64384	17.79730	0.0739
At most 2	0.459552	12.92249	11.22480	0.0249
At most 3	0.336868	8.626394	4.129906	0.0039

Max-eigenvalue test indicates no cointegration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 2: Results of Country Group Variables Co-integrations

Hypothesized No. of CE(s)	Brazil		Russia		India		China	
	λ_{trace}	Prob.**	λ_{trace}	Prob.**	λ_{trace}	Prob.**	λ_{trace}	Prob.**
None *	81.14654	0.0003	117.2217	0.0000	112.1466	0.0000	87.16619	0.0001
At most 1 *	46.08208	0.0114	67.42769	0.0000	56.88845	0.0005	41.58713	0.0358
At most 2	17.50631	0.2800	37.58007	0.0006	33.34141	0.0028	21.33857	0.1122
At most 3	7.054275	0.3197	20.43785	0.0018	18.71653	0.0037	8.580620	0.1951
At most 4	2.260596	0.1566	6.249231	0.0148	7.378927	0.0078	1.086347	0.3458
Hypothesized No. of CE(s)	λ_{max}	Prob.**	λ_{max}	Prob.**	λ_{max}	Prob.**	λ_{max}	Prob.**
None *	35.06446	0.0123	49.79399	0.0001	55.25820	0.0000	33.8768 7	0.0004
At most 1 *	28.57577	0.0118	29.84762	0.0076	23.54704	0.0604	45.57905	0.0003
At most 2	10.45203	0.4387	17.14223	0.0625	14.62488	0.1410	20.24857	0.1552
At most 3	4.793678	0.5068	14.18862	0.0147	11.33760	0.0478	12.75795	0.2438
At most 4	2.260596	0.1566	6.249231	0.0148	7.378927	0.0078	7.494273	0.2095

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Table 3: ADF test Results for FDI

FDI				
Cross-Sections	t-statistic	Probability	Lag	Observations
Brazil(1 st Diff.)	-4.100533	0.0051	1	21
Russia(1 st Diff.)	-4.837718	0.0010	0	21
China	-4.368313	0.0028	1	21
India(1 st Diff.)	-4.334230	0.0030	0	21
EXP				
Cross-Sections	t-statistic	Probability	Lag	Observations
Brazil	-4.443163	0.0024	0	21

Russia(1 st Diff.)	-4.582947	0.0018	0	21
China	-4.368313	0.0028	0	21
India	-4.019841	0.0060	0	21
IMP				
Cross-Sections	t-statistic	Probability	Lag	Observations
Brazil(1 st Diff.)	-4.205791	0.0040	1	21
Russia(1 st Diff.)	-4.560179	0.0018	0	21
China	-5.111077	0.0005	0	21
India	-3.510376	0.0181	0	21
PORT				
Cross-Sections	t-statistic	Probability	Lag	Observations
Brazil(1 st Diff.)	-4.603947	0.0017	1	21
Russia(1 st Diff.)	-3.261412	0.0311	2	20
China(2 nd Diff.)	-4.332993	0.0035	1	19
India(1 st Diff.)	-3.510203	0.0201	3	18

Table 4: Results of Panel Co integrating Regressions

(Dependent Variable GDP, Independent Variable: EXP, IMP, PORT and FDI)

FMOLS Estimates

Country	EXP	p-value	IMP	p-value	PORT	p-value	FDI	p-value	R ²
Brazil ⁺	+0.084698	0.0000	-0.345801	0.4004	-0.040391	0.9048	+0.445842	0.0130	0.854900
China	+0.788596	0.1152	-0.121131	0.8036	+0.047217	0.8984	+0.205559	0.3481	0.976391
India	+0.455704	0.0102	+0.251925	0.0993	+0.014919	0.8288	-0.087364	0.0001	0.795593
Russia	-3.297002	0.0946	+3.377977	0.0948	-0.021956	0.3340	-0.064945	0.6674	0.124172

DOLS Estimates

Country	EXP	p-value	IMP	p-value	PORT	p-value	FDI	p-value	R ²
Brazil	0.624515	0.0333	0.793078	0.3015	0.881824	0.3011	0.236607	0.4028	0.995571
China	-0.306310	0.4573	0.736368	0.2599	0.355109	0.7142	0.767708	0.1230	0.999914
India	+0.968308	0.2947	- 0.250264	0.7238	0.244883	0.2038	0.158241	0.0488	0.799707
Russia	-1.624682	0.7288	4.075512	0.3492	- 4.235139	0.1262	0.228999	0.1262	0.962224

Table 5: Pair wise Granger Causality Test Results

Sample: 1 1000

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
FII does not Granger Cause NIFTY	1492	0.30450	0.7318
NIFTY does not Granger Cause FII		0.55363	0.5751

Sample: 1001 1501

Lags: 3

Null Hypothesis:	Obs	F-Statistic	Prob.
FII does not Granger Cause NIFTY	498	0.4321	0.00373
NIFTY does not Granger Cause FII		0.2579	0.07525

Table 6: Panel Regression Coefficients-Random Effects

Dependent Variable: D(GDP)

Method: Panel EGLS (Period random effects)

Sample (adjusted): 1992 2013

Periods included: 22

Cross-sections included: 4

Total panel (balanced) observations: 88

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.091310	0.064175	-1.422826	0.1585
D(EXPORTS)	-0.378045	0.115176	-3.282333	0.0015
D(IMPORTS)	0.376072	0.117943	3.188588	0.0020
FDI	0.005027	0.012667	0.396841	0.6925
PORTEQUITY	0.012869	0.010082	1.276452	0.2054

Correlated Random Effects - Hausman Test

Equation: Untitled

Test period random effects

Test Summary	Chi-Sq. Statistic Prob.		Chi-Sq. d.f.
Period random	12.773702	4	0.0124

Table 7: GARCH (1,1) Specification for the period April, 2011-March 2014

Sample: 1 498

Included observations: 498

Convergence achieved after 83 iterations

Presample variance: backcast (parameter = 0.7)

GARCH = C(2) + C(3)*RESID(-1)^2 + C(4)*GARCH(-1)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
FIIACTIVITY	1.670449	0.333534	15.0083	0.0020
Variance Equation				
C	18565823	34481647	0.538418	0.5903
RESID(-1)^2	0.491020	0.646406	0.759614	0.4475
GARCH(-1)	-0.130511	1.292020	-0.101013	0.9195
R-squared	-191.448172	Mean dependent var		5417.793
Adjusted R-squared	-191.448172	S.D. dependent var		387.3506

Table 8 : Pair wise Granger Causality Tests

Sample: 1991 2013

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
FDI does not Granger Cause GDP	84	1.39156	0.2547
GDP does not Granger Cause FDI		4.86539	0.0102