

Effects of Financial Liberalization on Macroeconomic Volatilities: Applications to Economic Growth, Exchange Rate and Exchange Rate Pass-Through

Seyed Komail Tayebi*

Leila Toriki**

Received: 2010/02/27

Accepted: 2012/02/08

Abstract

This paper explores effects of financial liberalization on macroeconomic volatilities (such as economic growth, real exchange rate and exchange rate pass through) in developing countries. It also examines the interaction between such volatilities in a theoretical and empirical framework of a macro-model. To this end, we have used data of 43 developing economies over the period of 1996-2005, and then estimated a panel-simultaneous equation system to find out the effects of financial liberalization on macroeconomic volatilities. Empirical results show a significant inverse effect of financial liberalization on economic growth volatility. But effects of the financial liberalization on the volatilities of real exchange rate and exchange rate pass-through have been positive and significant as expected. Furthermore, the results show that such volatilities have a significant interacted relationship.

Keywords: Financial Liberalization, Macroeconomic Volatilities, Developing Countries, Panel-Simultaneous Equations

1- Introduction

The recent wave of financial liberalization since the mid-1990s has been marked by a surge in capital flows among developing countries. The strong presumption has been that the effects of financial liberalization would be large, especially for developing countries that tend to be relatively capital-

* Professor, Department of Economics, University of Isfahan, Isfahan, Iran, (Corresponding Author)

** Assistant Professor, Department of Economics, University of Isfahan, Isfahan, Iran.

72/ Effects of Financial Liberalization on Macroeconomic Volatilities...

poor and have more volatile income growth. While capital flows have been associated with high growth rates in some developing countries, a number of countries have experienced a collapse in their growth rates and significant financial crises, resulting in serious macroeconomic volatility costs.

It is important to see whether liberalization of international financial system brings stability to domestic economy or not. It is also possible to realize an economic stabilization in the long-run through financial liberalization.

This paper focuses on explaining the effect of financial liberalization on volatilities of macro variables, more specifically; financial liberalization might cause fluctuations in economic growth, exchange rate, and its pass through. Such changes can make feedbacks on the relevant variables simultaneously due to their interrelationships. The examination of such relationships after financial liberalization in the selected developing countries is the main purpose of this paper, which is a gap in the literature.

To specify a theoretical framework, it is necessary to analyze the role of financial liberalization in economic growth, exchange rate, and exchange rate pass through. Accordingly, the remaining of the paper focuses on the conceptual discussion of the subject in Section 2. Section reviews the literature, and Section 4 specifies a simultaneous panel framework to explore the effects of financial liberalization on macroeconomic volatilities. Section 5 represents empirical results, and finally Section 6 concludes.

2- Conceptual Discussion

Rapid financial liberalization in emerging markets since the late 1980s and early 1990s has resulted in sharply increasing trade and financial integration among many economies with global markets. However, the experience with international capital flows has been very volatile as the economies have suffered from financial crises. Although it is generally agreed that the development of domestic financial markets is conducive to growth, there is currently less agreement on whether liberalization to international finance is also advantageous for growth (Eichengreen, 2003).

Moreover, international capital mobility has made various risks in a number of developing countries, which have been capital hosts. The extensions of such risks have been based upon external shocks, domestic political instability and institutional weakness. Additionally, recent financial

crisis, which have emerged due to development in trade and financial integrations, has brought diffusion to other countries. However, such integrations that expand freely capital flows, adjust the effectiveness of risks.

The extremely high costs of these crises have contributed to the widely held view that countries should not liberalize financial markets and capital flows before strengthening their financial institutions and establishing sound systems of prudential regulation and supervision. Although many economists share the view that countries should not liberalize international capital flows before establishing a core set of sound institutions, some have emphasized that opening up to foreign capital provides countries with incentives for strengthening financial sector institution and can be important in overcoming resistance to financial sector reform. Rajan and Zingales (2003) disagree the prescription that "countries with a weak institutional environment should postpone financial sector liberalization till they strengthen their institution". In their view, having access to an improved financial system is particularly important for promoting growth, and opening up to foreign capital is a particularly important vehicle for inducing changes in institutional environments that suppress financial market competition and limit access to finance. Some economists pay attention to the fact that market imperfections and financial crises deprive countries of the full benefits of international financial integration.

According to the literature of financial economics, capital mobility is arising from return rate, risk level and liquidity degree (Mishkin, 2004). If risk level and liquidity remain unchanged, financial liberalization increases return rate, because the shortage in developing countries allows them to import required capital. In addition to capital mobility, both financial liberalization and integration are components of international financial flows, which may affect a number of macroeconomic variables such as prices, exchange rate and economic growth.

In practice, the effects of such variables which emerge through financial liberalization should be addressed to the real and nominal aspects, volatilities of growth rate, exchange rates and prices, respectively. In this position, a change in each variable can have an attraction with the other changes.

First, it is possible to verify changes in exchange rate. In fact, financial liberalization is expected to increase capital inflows in developing countries.

74/ Effects of Financial Liberalization on Macroeconomic Volatilities...

An increase in exchange supply arising from capital inflows causes a new equilibrium point in exchange market in a lower rate (Rose 1996).

Since import price index in developing countries equals the ratio of external price index to exchange rate, a fall in exchange rate, as a result of increasing capital flows, may lead to a rise in domestic prices of imports (Chacholiades, 1982). This change leads consumer price index and exchange rate to go up, which is based on a change in purchasing power parity (PPP). Such developments affect exchange and goods markets in a higher level of equilibrium in which increase exports, and then economic growth increases potentially.

Due to the shortage of capital in developing countries, there is a chance of attracting foreign capital through holding a higher rate of investment return. Increasing financial flows through capital mobility of financial liberalization accumulates capital in a host developing country appreciating potentially domestic value of the country's currency.

This development affects prices level by improvement of terms of trade, which is influenced by the enhancement of export price index.

In contrast, capital control restricts tradable sectors to have access to adequate financial resources, causing inflationary effect for the whole country. In practice, volatile capital flows create volatilities in domestic and import prices, the relationship in which Devereux (2003) emphasized between capital flows and price indices.

Exchange rate is an effective factor in evaluating profitability and efficiency of investment projects, affecting total investment, both on domestic and foreign investments. Long run stability in exchange rate, for instance, could secure domestic economy which enables investors to make a right decision on their present and future investment plans. In this case, it is expected that more financial flows enter a host country to provide adequate resources of investment. In addition, attracted financial flows expand capital market through reducing financing costs improving financial structure and growth (Harvey and Bekaert, 1998).

Economic growth arising from capital liberalization influences substantially price levels. Volatility of economic growth affects all markets resulting in synchronized volatilities in prices and exchange rate. Volatile exchange rate also leads to volatile import price causing pass through volatility. Figure 1 draws such simultaneous relationships created initially by

one of aspects of financial flows (financial integration, financial liberalization and capital mobility)

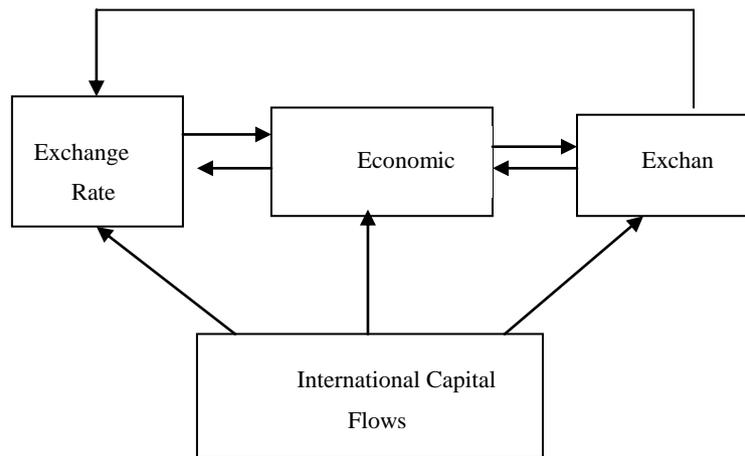


Figure 1: Relationship between Financial Liberalization and Macroeconomic Volatilities: Conceptual Discussion

Source: Compiled by researchers

3- Related Literature

In this section, we review some studies, in which their findings and implications are available in the literature of global financial markets.

Alan Gelb (1989) finds a positive correlation between financial intermediation and growth for thirty-four countries. Jung (1986) finds that the causality between financial-sector development and economic growth runs in both directions, although slightly more often from financial development to growth.

Goldstein and Turner (1996) cite inadequate preparation for financial liberalization as one of leading factors behind banking crises. Gavin and Hausmann (1996) see the origin of banking crises as residing in a credit boom that allows almost any borrower to service its debt by borrowing from another source, thus depriving lenders of the information that they need in order to discriminate between sound and risky borrowers. If followed by a macroeconomic crisis, continued debt servicing becomes problematic, and many borrowers default on their loans. There is evidence of widespread

76/ Effects of Financial Liberalization on Macroeconomic Volatilities...

distress borrowing in both Argentina and Turkey after liberalization. In both countries, the corporate sector experienced a decline in earnings during the early stages of liberalization. The liberalization of interest rates created a vicious cycle of unsustainably high interest rates at banks to cover growing numbers of non-performing loans, and further distress borrowing by the corporate sector.

Kose et al. (2003) examines the impact of international financial integration on macroeconomic volatilities. According to economic theory does not provide a clear guide to the effects of financial integration on volatility, implying that this is essentially an empirical question. They provide a comprehensive examination of changes in macroeconomic volatility in a large group of industrial and selected developing economies over the period 1960-99. They report two major results: First, while the volatility of output growth has declined in the 1990s relative to the three earlier decades, on average, the volatility of consumption growth relative to that of income growth has increased for more financially integrated developing economies in the 1990s. Second, increasing financial openness is associated with rising relative volatility of consumption, but only up to certain threshold. The benefits of financial integration in terms of improved risk-sharing and consumption smoothing possibilities appear to accrue only beyond this threshold.

Cunado et al. (2006) test whether the dynamic behavior of stock market volatility in six emerging economies has changed over the period 1976:01–2004:12. This period corresponds to years of profound development of both the financial and the productive sides in these emerging countries, but also to the years of the major financial crises. Their analysis suggests that changes in volatility behavior may have been overstated in the past, simple specifications account for most of the dynamics of the stock market volatility and therefore become powerful tools for volatility analysis. Additionally, they show that financial liberalization of emerging markets has generally reduced the level of market volatility and its sensitivity to news.

Ito (2006) investigates whether financial openness leads to financial development after controlling for the level of legal/institutional development, and whether trade opening is a pre-condition for financial opening. The focus is on Asia. In a panel encompassing 87 less developed countries over the period 1980 to 2000, a higher level of financial openness

is found to spur equity market development only if a threshold level of legal development has been attained, a condition which tends to prevail particularly among emerging market Asian countries. On the issue of sequencing, trade openness is found to be a prerequisite for successful inducement of financial development via capital account liberalization.

Bekaert et al. (2005) examine the effects of both equity market liberalization and capital account openness on real consumption growth variability. That shows that financial liberalization is mostly associated with lower consumption growth volatility. They conclude countries that have more open capital accounts experience a greater reduction in consumption growth volatility after equity market openings. The results hold for both total and idiosyncratic consumption growth volatility. They also find that financial liberalizations are associated with declines in the ratio of consumption growth volatility to GDP growth volatility, suggesting improved risk sharing. Their results are weaker for liberalizing emerging markets but they never observe a significant increase in real volatility.

Finally, regarding a research on capital control, Chu (2004) studies a plausible connection among rational speculators, exchange rate volatility and capital controls. Additionally, Krugman (1999) asserts that there should be controls on international capital movements to avoid currency volatilities from speculative activities. He shows that capital controls depend on types of shocks and the risk preference of rational speculators.

If only current account shocks occur, an increase in risk preference of rational speculators will decrease the conditional variance of exchange rates. In this case, the best policy is to let capitals freely move in the world. If only interest rate shocks occur, the conditional variance of the exchange rate is monotonically increasing in the risk preference of rational speculators. Under such circumstance, the controls over international capital movements indeed decrease the exchange rate volatility. When both current account and capital account shocks occur, then, if speculators are more risky, capital controls decrease exchange-rate volatility. However, if speculators are less risky, free capital movements can temper the exchange rates response to transitory shocks.

4- The Model

The main attempt of this paper is to examine the relationship between financial liberalization and volatilities of several macroeconomic variables. Indeed, we raise the question whether financial liberalization causes growth, exchange rate and import price volatilities, while these changes might have a synchronized relationship.

As discussed previously, a simultaneous equation system is specified including three regressions of growth volatility, exchange rate volatility, and pass-through (import price) volatility:

$$StdGGDP_{it} = \alpha_0 + \alpha_1 StdINV GDP_{it} + \alpha_2 StdM 2GDP_{it} + \alpha_3 StdExch_{it} + \alpha_4 De Jure + \alpha_5 StddGGDP_{it} + \alpha_6 INF_{it} + \mu_{1it} + u_{1it} \quad (1)$$

$$StdExch_{it} = \beta_0 + \beta_1 StdGDC_{it} + \beta_2 StdM 2FR_{it} + \beta_3 De Jure + \beta_4 StdGGDP_{it} + \beta_5 INF_{it} + \beta_6 StdIVI + \mu_{2it} + u_{2it} \quad (2)$$

$$StdIVI_{it} = \gamma_0 + \gamma_1 StdCPI_{it} + \gamma_2 De Jure + \gamma_3 StdRGDP_{it} + \gamma_4 StdExch_{it} + \mu_{3it} + u_{3it} \quad (3)$$

Where, equation (1) is the regression defined for economic growth volatility. Variables included are defined as follows:

$StdGGDP_{it}$: Economic growth volatility of country i in time t , which is the dependent variable.

$StdINV GDP_{it}$: Volatility of Investment share to GDP of country i in time t .

$StdM 2GDP_{it}$: Volatility of the ratio of broad money (M_2) to GDP of country i in time t .

$StdExch_{it}$: Exchange rate volatility of country i in time t , which is an endogenous variable in the model.

$De Jure$: A formal index of capital control that can be a proxy for financial liberalization affecting growth volatility, as discussed previously.

$StddGGDP_{it}$: Lagged variable of economic growth volatility, in which the current growth volatility is expected to be affected by its previous volatilities (Bekeart et al. 2006).

INF_{it} : Inflation rate of country i in time t , which is a main determinant of growth volatility as shown in the literature (Ghura, 1995)

Equation (2) explains exchange rate volatility ($StdExch_{it}$) by several variables. $StdGDC_{it}$: Volatility of domestic credit growth, which indicates the rate of internal financial institutions being faced with moral hazard resulting in further exchange rate volatility (Williamson and Mahar, 1998).

$StdM2FR_{it}$: Volatility in ratio of broad money (M2) to GDP. This variable evaluates in which extent banking commitments support exchange reserves of a country's international transactions. Therefore, fluctuation in this variable leads to a higher rate of volatility in the country's currency value (Diamond and Rajan, 2000).

De Jure : Formal capital control index, standing for de jure capital liberalization which effects exchange rate volatility, as discussed in the previous section.

$StdGGDP_{it}$: Volatility of country's growth rate, which is assumed to increase simultaneously exchange rate volatility of country i in time t .

INF_{it} : Inflation rate of country i in time t . Inflation is a major determinant of the exchange rate volatility, as indicated by the literature that there is a causality relationship between high inflation and exchange rate fluctuations (Kohli, 2001).

$StdIV$: Volatility of import price index denoting a price feedback effect of pass-through on exchange rate volatility. This volatility states a change in composition of imports and exports generates a fluctuation in foreign exchange market resulting in more volatility of exchange rate (Lafleche, 1996).

The last equation of our model (Equation 3) denotes the specification of pass-through (import price) volatility ($StdIVI_{it}$), where $StdCPI_{it}$ denotes volatility of consumer price index, while it is expected to affect the pass-through volatility because there is a direct relationship between domestic and import prices changes (McCarty, 2000).

80/ Effects of Financial Liberalization on Macroeconomic Volatilities...

De Jure is again used as a proxy for financial liberalization. As previously explained, financial liberalization affects exchange market causing volatility in exchange rates. Now, a change in currency value of a country causes inflationary expectations of prices (Hufner and Schroder, 2002). Therefore, pass-through seems to be fluctuated by financial liberalization and exchange rate volatility (*StdExch*).

Additionally, real GDP volatility (*StdRGDP*) is assumed to affect exchange rate pass-through. An increase in GDP volatility raises risks of exchange rates, emerging fluctuations in import demand and price. A change in GDP can be considered as an income effect on pass-through.

5- Empirical Results

Results have been obtained by estimating the simultaneous panel regression model. The data for all variables contain cross-section observations of 43 selected developing countries over the period 1996-2005. The required data have been collected from international resources: IMF's International Financial Statistics (IFS-CD ROM, 2008), IMF's Annual Report on Exchange Restrictions (AEAER, 1997-2006) and the World Development Indicators (WDI- CD ROM, 2008).

As previously explained, capital control is considered as a proxy for financial liberalization, since the available data on capital control are obtained from the IMF's annual reports including a set of agreements and restrictions on financial markets.

Each equation of the simultaneous system is estimated by the generalized two stage least squares (G2SLS) based on random effects in which some of the explanatory variables are no longer exogenous.

Tables (1), (2) and (3) summarize the empirical results of the model in which equations of economic growth volatility, exchange rate volatility and pass through volatility have been estimated by using simultaneous panel regression approaches, respectively. Firstly, the results shown in Table (1) imply the fact that the coefficient of the capital control is expectedly positive and significant, that is, the more control on capital flows, the more volatility in economic growth of all countries under consideration should be faced with. It means, on the contrary, financial liberalization reduces volatilities of growth in such countries as expected.

According to this table, except for the volatility of broad money to the GDP which is not significant, other variables such as volatilities in exchange rate, the ratio of investment to GDP and inflation have had expectedly significant effects on growth volatility.

Table 1: Estimated Results of the Economic Growth Volatility Equation

Variable	G2SLS Random-Effects IV Regression			
	Coefficient	Z-Statistic	Pr> z [*]	Wald Test ^{**}
<i>StdExch</i>	0.263	3.08	0.002	305.58 (Pr> chi2=0.00)
<i>StdINVGDP</i>	0.194	2.45	0.014	
<i>StdM2GDP</i>	-0.054	-1.28	0.200	
<i>StdGGDP</i>	0.340	7.67	0.000	
<i>INF</i>	0.009	8.79	0.000	
<i>De Jure</i>	0.271	2.70	0.007	

*This column shows probability of null hypotheses acceptance of each coefficient.

** This statistic is used to show the significant of the whole regression.

As the results in Table 1 show, higher risks in variables like exchange rate and investment lead to higher volatility in economic growth in the selected developing countries. Inflation rate also has such effect on growth. These effects are expected because of the existent inefficiency in economic structures and financial institutions. Beside, the volatility of growth is affected significantly by the previous fluctuated growth behavior, due to the significant coefficient of the lagged $StdGGDP_{it}$.

Table 2 draws such expected effects on exchange rate volatility arising from fluctuations in economic growth, domestic credits and inflation. However, capital control index (*De Jure*) proxied for financial liberalization has a negative and significant effect on exchange rate volatility. More specially, financial liberalization increases risks of the exchange rate instability. In the literature, some authors like Corsetti et al. (1991) support this result as a short-run effect on exchange rate, while it is adjustable in the long-run. In addition, because of different trade policies and heterogeneity in trade liberalization, volatility in import price index leads to less volatility in exchange rate, which can be considered as a short-run effect.

Table 2: Estimated Results of the Exchange Rate Volatility Equation

<i>G2SLS Random-Effects IV Regression</i>				
<i>Variable</i>	<i>Coefficient</i>	<i>Z-Statistic</i>	<i>Pr> z *</i>	<i>Wald Test**</i>
<i>StdGGDP</i>	0.061	2.02	0.043	174.50 (Pr> chi2=0.00)
<i>StdIVI</i>	-0.246	-3.18	0.001	
<i>StdGDC</i>	0.963	3.75	0.000	
<i>StdM2FR</i>	-0.099	-1.33	0.185	
<i>INF</i>	0.0037	6.22	0.000	
<i>De Jure</i>	-0.104	-1.81	0.070	

*This column shows probability of null hypotheses acceptance of each coefficient.

** This statistic is used to show the significant of the whole regression.

According to Table 3, although fluctuations of real GDP and consumer price index *StdCPI* increase volatility of exchange rate pass-through, capital control and exchange rate volatility have inverse effects on pass-through volatilities. That is, financial policies in developing countries are still directed to control price volatilities.

Table 3: Estimated Results of the Exchange Rate Pass-Through Volatility Equation

<i>G2SLS Random-Effects IV Regression</i>				
<i>Variable</i>	<i>Coefficient</i>	<i>Z-Statistic</i>	<i>Pr> z *</i>	<i>Wald Test**</i>
<i>StdRGDP</i>	1.655	3.53	0.000	44.82 (Pr> chi2=0.00)
<i>StdRExch</i>	-1.837	-3.12	0.002	
<i>StdCPI</i>	0.602	4.91	0.000	
<i>De Jure</i>	-0.612	-2.61	0.009	

*This column shows probability of null hypotheses acceptance.

** This statistic is used to show the significance of the whole regression.

6- Conclusion

Although the financial liberalization process is needed to be fully implemented by developing countries in the era of globalization, it might generate volatile effects on economic indicators. This development has been shown in this study through observing volatilities in growth, exchange rate and exchange rate pass-through in many selected developing countries. In

addition, by a lack in the literature, this paper showed that such emerged volatilities arising from liberalization affect concurrently each other during the studied period. The implication is that developing countries have to endure such imposed and negative effects if they implement liberalizing strategies during their transition periods.

Volatile changes resulting possibly from various liberalizations might involve other economic indicators as developing economies become globally more integrated to the world economy in which it is necessary to be examined by future studies.

References

- 1- Bekaert, G., and R. Harvey (2005), "Does Financial Liberalization Spur Growth?" *Journal of Financial Economics*, Vol. 77, pp. 3-55.
- 2- Bekaert, G., R. Harvey, and C. Lundblad (2006), "Growth Volatility and Financial Liberalization," *Journal of International Money and Finance*, Vol. 25, pp. 370-403.
- 3- Chacholiades, M. (1982), "International Monetary Theory and Policy" MacGraw-Hill Press, Tokyo, Japan.
- 4- Chu Mei-Lie., (2004), "Capital Control, Speculation and Exchange Rate Volatility" Department of Economics, National Chengchi University.
- 5- Corsetti, G., and N. Roubini (1990) "Exchange Rate Volatility in Integrating Capital Markets" *NBER Working Paper*, No. 3570.
- 6- Cundo, J., J. G., Biscarri, F. P. Gracia (2006), "Changes in the Dynamic Behavior of Emerging Market Volatility: Revisiting the Effects of Financial Liberalization" *Emerging Markets Review*, Vol. 7, pp. 261-278.
- 7- Devereux, M., E. Charles, and S. Peter (2003), "Exchange Rate Pass-through When Nominal Prices are Set in Advance" *NBER, Working Paper*, No. 9543.
- 8- Diamond, W. and G. Rajan (2000), "Banks, Short Term Debt and Financial Crises: Theory, Policy Implications and Applications" *NBER Working Paper*.
- 9- Eichengreen, B. (2003) "Capital Flows and Crises" The MIT Press.
- 10- Gavin, M., and R. Hausmann. (1996), "The Root of Banking Crises: The Macroeconomic Context" in Ricardo Hausmann, and Liliana Rojas-Suare, eds., *Banking Crises in Latin America*, Washington DC, Inter-American Development Bank.
- 11- Gelb, A. H. (1989). "Financial Policies, Growth, and Efficiency" *World Bank Working Paper* No. 202.

84/ Effects of Financial Liberalization on Macroeconomic Volatilities...

- 12- Goldstein, M. and P. Turner (1996), "Banking Crises In Emerging Economies: Origins and Policy Options" BIS Economic Papers No. 46, Bank for International Settlements.
- 13- Ghura, D. (1995), "Effects of Macroeconomic Policies on Income Growth, Inflation, and Output Growth in Sub- Saharan Africa," *Journal of policy Modeling*, Vol. 17, pp. 367-395.
- 14- Harvey, C. and G. Bekaert (1998), "Capital Markets: an Engine for Economic Growth" *Journal of World Affairs* Vol. 5, pp. 33-53.
- 15- Hufner F. P. and M. Schroder (2002), "Exchange Rate Pass-Through to Consumer Prices: A European Perspective" *ZEW Working Paper*, No. 02.
- 16- Ito, H. (2006), "Financial Development and Financial Liberalization in Asia: Thresholds, Institutions and the Sequence of Liberalization" *The North American Journal of Economics and Finance*.
- 17- Jung, W. S. (1986), "Financial Development and Economic Growth: International Evidence" *Economic Development and Cultural Change*, pp. 333-346.
- 18- Kohli, R. (2001), "Capital Flows and their Macroeconomic Effects in India" *IMF Working Paper*, No. 192.
- 19- Kose, M. A., and P. M. Terrones, (2003), "Financial Integration and Macroeconomic Volatility" *IMF Working Paper*, pp. 119-142.
- 20- Laflech, T. (1996), "The Impact of Exchange Rate Movements on Consumer Prices", *Bank of Canada Review*, pp. 21-32.
- 21- Mc Carthy, J. (2000), "Pass- Through of Exchange Rates and Import Prices to Domestic Inflation in Some Industrialized Economies" *Manuscript*, Federal Reserve Bank of New York.
- 22- Mishkin, F. (2005) "Is Financial Globalization Beneficial?" *NBER Working Paper* No. 11891.
- 23- Rajan, R., and L. Zingales (2003), "Saving Capitalism from the Capitalists: Unleashing the Power of Financial Markets to Create Wealth and Spread Opportunity" New York: Crown Business.
- 24- Rose, A. (1996), "Exchange Rate Volatility, Monetary Policy, and Capital Mobility: Empirical Evidence on the Holy Trinity" *NBER Working Paper* No. 4630.
- 25- Williamson, J., and M. Mahar (1998), "A Survey of Financial Liberalization" *Essays in International Finance*, No. 211.