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Financial Interdependence Versus Contagion in Stock Markets

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ABSTRACT *Reducing financial risk and managing portfolio to reap maximum returns has always been an interesting area of study. International diversification of funds does help the investors to get the maximum out of their investment. If the international markets are integrated, then there would not arise much benefits of diversification. The objective of the present study is to complement the existing literature on the various definitions suggested by different researchers, to help investors understand where to invest.*

KEYWORDS : Financial interdependence, contagion, stock markets, financial markets

INTRODUCTION

The wave of globalization introduced in India since the early years of the past decade has swept away the age-old economic architecture replacing it by a new one whose very existence is based on wider-most economic interlinkage. In the contemporary scenario, the activities in the financial markets and their relationships with the real sector have assumed significant importance. Since the inception of the financial sector reforms in the beginning of 1990's, the implementation of various reform measures including a number of structural and institutional changes in the different segments of the financial markets, particularly since 1997, have brought about a dramatic change in the financial architecture of the economy (Tripathi & Sethi, 2010). The capital market in India, which was lying as a dormant segment of the financial system, has undergone metamorphic transformation with the establishment of Securities and Exchange Board of India (SEBI) in 1992. The magnitude of growth has been rapid and vivid in terms of fund mobilized, the turnover on the stock exchanges, amount of market capitalization and the expansion of investor population. In order to tackle effectively the problems associated with the massive growth, the regulatory framework of the capital market was strengthened and streamlined. Improvement in infrastructure, adoption of state-of-art technologies and streamlining of the regulatory framework has upgraded the Indian stock market to the international standards.

The last two decades have witnessed rapid international capital mobility in the form of both direct and indirect investments with increased globalization and transparency in the working of financial markets. This phenomenon is a result of increasing interaction of the world economies, both developing and developed (Chen, Lobo and Wong, 2005; Shapiro & Varian, 2013).The liberalization of capital markets and the increasing variety of financial instruments and advances in information technology have contributed to international diversification of portfolios. Grubel (1968) initiated work on the study of relationship among various stock markets and the benefits from international portfolio diversification. Such linkages have serious implications for portfolio diversification as well as macroeconomic policies of the countries concerned. Investors who buy shares in foreign as well as domestic companies seek to reduce market risk and reap rewards through global diversification. Such diversification will benefit as long as the markets are not perfectly correlated. Studies conducted in the last decade suggest that the returns in the international markets through international diversification have reduced as markets are becoming integrated with each other (Srivastava, 2007).

To understand further the dynamics of portfolio diversification through investment in different markets, the need is to examine whether markets are interdependent on each other or not. Transmission of shocks from one country to another has been given different terminologies by different authors. Thus, the objective of the present study is to examine various terms coined by different researchers on interdependence and contagion in financial markets.

PRESENT STATE OF ART

To discuss further, a clear distinction between interdependence and contagion is important to understand the propagation mechanism of shock from one country to another. Taking examples from the past events, the propagation of shock during 1998 from Russia to Brazil would be termed as contagion. The two economies do not share common fundamentals and there are no direct trade linkages between them. Both of them are located in differentgeographic regions bearing different economic structures. Further, during the tranquil period, any shock to the Russian economy does not have any significant impact on the markets of Brazil. Considering the example of the U.S and Canada, which have similar market structures, apart from sharing the same geographical region and have strong trade linkages. The two economies are inter-linked during tranquil times and hence, a large negative shock to the U.S. economy will easily get transmitted to Canada. In this case, the transmission of a large shock from the U.S. to the Canadian economy should not be termed as contagion as the two economies are interdependent on each other during quiet periods too. The cross market linkages between the two economies exist during the tranquil period and hence, the transmission of shock is a continuation of the cross market linkage between the U.S. and Canada.

Transmission of shocks from crisis originating country to other countries may be due to common fundamentals shared by them. This spillover effect of negative shocks might happen during stable periods also suggesting that the countries were interdependent on each other (Calvo and Reinhart, 1996, Pristker, 2000, Chiang et. al. 2007).

Another set of researchers suggested that the co- movements between the countries might be due to factors other than fundamentals. The transmission of shocks might be due to irrational factors like herding behavior (Tan et al., 2008; Zhou & Lai, 2009; Chiang & Zheng, 2010), financial panic, loss of confidence of investors etc (Jeanne & Masson, 2000; Claessens et al. 2001).

According to Edwards (2008), contagion is the transfer of information from one country to another over and above ex- ante expectations. This means that the investors and other stakeholders have some expectations of propagation of shocks from one country to another; any information transfer or reaction over and above expected is termed as contagion.

Kaminsky et al. (2003) called the phenomenon of decline in stock prices, fall in the economic output, devaluation of currencies, and scarcity of capital flows in the international as well as domestic markets as "fast and furious" contagion after the financial turmoil across East Asia in 1997.

Another definition of contagion proposed by Bekeart et al. 2005, "correlation is over and above what one would expect from economic fundamentals". This means that the macro economic variables are expected to carry contagion effect to other parts of the world. The increase in correlation which cannot be defined due to change in the fundamentals is termed as contagion by the authors. Based on this definition, Baele & Inghelbrecht, (2010) developed a two- factor model with factors as regional and global market shocks. They examined the procedure for a set of 14 European countries for last 3 decades, i.e. 1970-2000 and did not find any evidence of contagion.

Another definition which is widely used and accepted by many was suggested by Forbes and Rigobon, 2002. The definition is widely acceptable as it talks about change in correlation between the countries. To assess whether there exists contagion between countries, correlation between the two countries has to be worked out. If there is a significant increase in the correlation between any two countries from the pre- crisis period to the post – crisis period; there exists contagion between the two countries. However, if the level of correlation between the two countries under study remains the same when compared between pre- crisis (quiet) and post- crisis period; then it is termed as interdependence. Thus, interdependence between countries is when the level of correlation between two countries remains same; i.e. the countries were always dependent on each other and the shocks to one do not impact the macro-economic variables or financial health of the other country.

This further means that the countries have strong linkages or share similar fundamentals and macro- economic conditions. In order to differentiate the above definition from rest of the pre-conceptions on contagion, it was proposed to utilize the phrase "shift- contagion". This phrase was suggested by Forbes and Rigobon (2001) suggesting that contagion arises only when there is a significant shift in the cross-market linkages. The definition also doesn't discuss anything about how this shift would occur as cross- market linkages can be measured by various statistics, such as shift in the correlation in asset returns or transmission of shocks or volatility, etc. Considering the example of Russian crisis, the impact of the fall in the Russian ruble on the Polish zloty will be considered as shift contagion only if there was a significant increase in the correlation between the two currencies post the Russian crisis. This definition of contagion is very useful and appeals intuitively as it provides a method to test contagion; i.e. by testing correlation between any two countries before and after a shock to one of the countries.

CONCLUSION

The definition of contagion given by Forbes and Rigobon is widely accepted by researchers as this definition further focuses on investment strategy of international portfolio managers. Generally, shocks are country specific and therefore, the stock market of each country should display low correlations. Portfolio risk should apparently reduce due to international portfolio diversification, further increasing the returns. If, after a negative shock to an economy, the shock gets transmitted to other economies, it would reduce the portfolio returns; thus defeating the very purpose of international diversification. Thus, this definition clearly focuses on the magnitude of impact of country specific crisis from crisis originating country to other countries. A less stringent definition would not be able to address this issue.

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