Togetherness: The Increase in Global Stock Market Correlations

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Abstract: We develop a theoretical framework in order to investigate the link between two recent trends: (i) the rise in cross-country stock market correlations over the past three decades, and (ii) the increase in global foreign direct investment (FDI) positions over the same period. Our objective is twofold: first, we investigate empirically the channel through which the rise in global stock market correlations is associated with the observed increase in global FDI. Second, we develop a two-country stochastic asset pricing model with multinational firms that allows us to quantify the extent to which the recent rise in global FDI can account for the observed increase in cross-country stock market comovement. Calibrating three versions of the model (financial autarky, incomplete markets and complete markets) to the US and the rest-of-the-world, we find that a permanent inrcease in FDI positions, as observed from mid 1990s to mid 2000s, leads to substantial increase in cross-country stock market comovements. Increases in FDI alone can account for approximately one third of the observed increase in stock market correlations. We also discuss the role of portfolio diversification and, more generally, asset market integration.

Summary: Historically, the correlation between international stock markets had been fairly low, providing significant diversification benefits. However, this pattern started to change in the mid-1990s. Over the past two decades, international stock markets have steadily become more correlated. During the period mid-1990s to late 2000s, we observe some very sharp increases in correlations of major stock markets, often at the scale of almost threefold increases, from around 30% to 80% or more. This is a well-documented fact, but not much is known about the factors that have contributed to this increase. In this paper we establish a relationship between the rise in cross-country stock market correlations and the increase in FDI positions in the last thirty years, both empirically and theoretically. The increase in stock marker correlations observed in the data very clearly coincides with a sharp increase in FDI positions among big developed economies that took place between mid 1990s to mid 2000s. This positive relationship between stock market correlations and FDI is still present even when controlling for other potential determining factors such as trade, the business cycle, monetary policy, etc.

Our theoretical framework is rich enough to provide a meaningful calibrated asset pricing model of the US economy versus the rest of the world, yet parsimonious enough to be able to disentangle the channels that matter for the comovements of the two stock markets. There are two key elements of the model that are important for establishing the link between FDI and stock markets: first the multinational firms, that engage in foreign direct investment, and second the presence of intangible (technology) capital in the production functions of the firms. With these two in place, we show that the comovement of investment drives to a large extent the comovement in stock prices. In our benchmark calibration, FDI was found to generate approximately one third of the observed rise in stock market comovement. We also show that the level of financial market completeness can be an important determinant of the level of stock price correlations, indicating that an improvement in asset market trade opportunities could potentially explain some of the additional unexplained increase. However, we have argued that, at least in the context of our model, increased portfolio diversification alone cannot help in explaining stock market correlations increases.

Research Progress: The research is partly funded by the British Academy, under the Newton Advanced Fellowship scheme, for the period Oct 2017 to Sep 2020. We effectively started working on this project at the start for 2018. We have now completed a good working draft of the paper, which we will present at the EEA-ESEM meeting in Aug 2019, MMF annual meeting in Sep 2019, and in some scheduled invited seminars in the coming year. We expect to finalise and submit the draft for publication at the end of the year.

Current Research Outputs: The most recent draft can be found here: https://drive.google.com/file/d/1vYzRxfjkF_m1KpP956TLc2TCij0KOdzE/view

Conference and Seminar Presentations: Presented at the internal Macro Workshop at Faculty of Economics (Jun 2019). Scheduled to present at the following conferences EEA-ESEM 2019 (Aug 2019), MMF 2019 (Sep 2019), Cambridge-Lausanne CERF meeting (Sep 2019), ASSA (Jan 2020). Scheduled invited seminars: Toulouse (Dec 2019).