Abstract: Essays on Portfolio Flows

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The research flows primarily from my experiences as a foreign portfolio investor investing in India and South East Asia. As a newly minted investor following my MBA, I was eager to apply all the theoretical and practical knowledge earned through my degree classes in the field. However, it didn't take too long for me to realize that academic learning and financial modeling using fundamental understanding is not the only ingredient to successful investing - as important it is to keep ears on the ground to know what others are thinking and talking about.

This one peculiarity that became apparent to me very fast was the constant need of the investors to know what the people in the market were thinking and doing. There were regular talks and chats through the day as markets opened and closed. If there was one feature that could always be found open on all the investors/traders desk, it was Bloomberg chat, exchanging views on markets and stocks they were interested in or investing. Daily, if not multiple times a day, calls to other people in

the fraternity was as common. These communication channels were also the first port of call when any untoward or new information/news came in related to stocks one is invested in or was thinking of investing, forming their views on the impact in discussion with each other. If we were to just look at the amount of time spent by these investors interacting and talking to each other, it would be difficult to argue that their views and opinions didn't intermingle and affected each other's decisions, or that a single investor's choices are free of influences from what others are doing.

The impact of such constant interaction between the market participants and their dependency on each other's views became more apparent on a wider scale through the Global Financial Crisis (GFC) of 2008. The peculiarity and the extent of crisis ensured that there were some very uncharacteristic and unconventional responses in policies around the world. While unusual, these policies had a good grounding in theory with certain expected reactions. However the same did not achieve economic impact to the extent desired, especially in short run. While there are several reasons attributed towards some of these variances from theory (e.g., bank transmission failure), what intrigues the most is the response of investors and market participants to these policy responses.

The policy responses, expected to affect the market participants quickly, especially steps related to liquidity release, were significantly muted or, in some cases, almost non-existent. The effect was so different from expected that the market participants while showing surprise on the market-wide response, themselves kept on responding in the fashion similar to what others and the market at large were doing. This extent of contrarian response of market, despite strong policy measures, was fairly surprising, pushing the market lower than the economic condition should have warranted, visible from a fast turnaround once the bottom was reached and the market took an up-tick very quickly

after the phase of the muted response. It almost seemed that the market had its own inertia which was dampening the effect of policy tools.

At an intuitive level, this inertia seemed to be generating from investors themselves who were unwilling to bet against the direction of the market at large, depending more on what others were doing and talking (i.e., selling, keep selling) than on the future or current impact of policy tools. Catchphrases such as "it's foolish to catch a falling knife" and "Wait till the bottom is reached and the market turns" gained strong currency in talks and chats of the traders, robbing markets of any support levels that could have materialized with policy response and support. The dependability of investors on each other and behavior of each other was very apparently higher than their dependability on policy tools or economic conditions, even in countries such as India which was economically and geographically well shielded from the ongoing crisis.

Watching foreign portfolio investors - arguably considered amongst the savviest investors in the street, undoubtedly amongst the most educated ones having high ranking degrees and backgrounds - looking at each other, effectively herding together, in deciding where to invest and how to invest made a strong mark on me. If these investors can depict herd behavior, I was not in doubt that herding is an essential aspect of financial investing and trading.

Incidentally, the high liquid nature and foreign investing setup of foreign portfolio investors also make for a good base for studying herding characteristics of investors. The liquid nature leads to higher frequency of decision making, thus generating more data points that are required for the empirical study of such herd behavior. At the same time, working in foreign markets increases the

uncertainties related to quality and quantity of information available, in turn increasing the tendency of the investors to be dependent on each other and leaving them more susceptible to herd behavior.

Foreign portfolio flows themselves have gained high relative importance in today's world. The progressive relaxation of capital controls since the early 1990s combined with increased globalization and technology integration has almost lead the world to start resembling a single market, especially when looked through the lens of cross-border flows moving around the globe. The effects and importance of such capital flows get more pronounced in the case of foreign portfolio flows owing to them being the most liquid of all the cross-border capital flows. This liquid character lends the flows a mercurial and volatile nature of quick in and quick out, making them the most difficult of all flows to be actively managed.

While generally, such liquid nature doesn't pose much of a problem for recipient economics, a strong pull out can, and does, become problematic in foreign exchange management as also in leading to significant corrections in stock markets which can have a cascading effect across asset prices in the economy. This can be especially so in emerging economies where foreign portfolio flows forms a relatively large part of daily turnover in stock markets (25% for India). These factors came to a major pass during the GFC of 2008 when foreign portfolio flows became one of the main transmission mechanism of the crisis across the world, especially to the emerging economies. With the last decade following the GFC of 2008 seeing a new capital order characterized by massive liquidity flows across asset markets world over, such problems have further exacerbated, increasing the need to understand the hows and whys of these flows.

It is with the above background that we explore Foreign Portfolio Flows, with a special focus on herd behavior as depicted by them, in this thesis through three essays. Through this thesis, we have tried to understand the mechanism of foreign portfolio flows as applicable to emerging market economies like India. We start the thesis with traditional approach to determining the key financial and economic factors that determine the quantum of the flows. The results are elaborated in the first essay (Chapter 2) of the thesis and it is found that expectations of fed fund rates along with market momentum are the key variables which determines foreign portfolio flows to India through the study period. Essentially market performance in India and US, along with US monetary policy expectations, determine the amount of capital that is received by India rather than domestic, or even foreign, economic variables and conditions. The results are very characteristic of the new world capital order that we find the world in preceding and following the Global Financial Crisis of 2008. Strong liquidity injection inculcated by Fed following the crisis, which came in the back of already easy monetary policy post the dot-com crisis seems to have taken away economic variables as a determining factor for foreign portfolio flows, aided more so by their own inherent liquid nature.

That long held factors such as uncovered interest rate parity, interest rate differential, risk diversification etc., can give away to new factors such as fed monetary policy expectations as major determinant of investment by foreign investors, indicate that the flows may be determined more by what investor community at large take as an important factor in a given time frame. Keynes [1937] highlighted that such conventional judgments of a time are formed by investors undertaking investment by looking at each other in response to facing uncertainties inherent to investment and decision making. We take the theoretical exploration of this tendency of investors to herd with each other in the second essay

(Chapter 3) of the thesis. We explore the existing literature on herd behavior noting the shortcomings of the existing model of herding as well as providing the framework of Hard and Soft herding to distinguish the two different approaches taken in literature for understanding the phenomena. We also explore some examples of soft herding, including the occurrence of coordinated cross-border capital flows across the world. Capital flows, irrespective of asset class and geography, seem to flow in coordination to each other. This commonality might indicate that the coordinated behavior may be emanating from their common nature of being foreign. Indeed, investing in the foreign land has structurally more uncertainty compared to other forms of investment, with investors having to handle domestic and foreign variables along with differing quality and quantity of information available. And if we keep with Keynes [1937] proposition that investors herd in response to facing uncertainty, foreign investors should have a higher propensity to herd, providing an explanation for coordinated cross-border capital flows observed across asset classes and geography.

We follow the theoretical exploration of herding, and its link to foreign capital flows, by an empirical analysis of herd behavior as depicted by foreign portfolio investors investing in India in our third essay (Chapter 4) of the thesis. We use well-accepted LSV herding measure calculated on daily trading data at stick level of foreign portfolio investors active in India to test for the presence of herding. The herding measure is then regressed on information and liquidity measures to determine the type of herding being depicted. In keeping with our earlier stipulation that foreign investors are susceptible to herding, we find that they show a good amount of herding and the herding is intentional in nature, i.e. the herding is more related to investors grouping with each other while investing rather than because of receiving similar information.

We end the thesis with the conclusion that foreign investors have a high propensity to herd, in fact they can be understood to form a substantial evidence that herding is one of the basic nature of investors and the behavior acts up more when investors are faced with higher uncertainties. In the current global scenario which is faced with new and untested economic conditions and policy measures lending several new uncertainties that investors face, such herd behavior needs to be well taken in account by policymakers to better understands the consequences that might arise out of their policy steps. This is more so in case of liquid cross-border flows such as portfolio flows which are already considered fickle by nature. The emerging market economies further should take note of expecting such behavior as for them such portfolio flows account for a good percentage of their market turnover and can act as an active conduit of foreign changes making a "spillover" and affecting domestic market.