An Examination of Home Advantage (Bias) Argument in the Indian Financial Markets: Domestic Financial Institutional Investors (DFIIs) Vis-a-Vis Foreign Institutional Investors (FIIs)

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Abstract

In this paper we examine if Domestic Financial Institutional Investors (DFIIs) have any home advantage (Bias) compared to Foreign Institutional Investors (FIIs) for both the equity and debt segments of the Indian capital market. We find that both the DFIIs and FIIs follow a positive feedback trading mechanism chasing stock market returns. However, FIIs seem to be reacting faster compared to DFIIs in the case of the equity market. This may be owing to the fact that the former have international expertise and greater resources and play a dominant role in this segment of capital market as shown by their share in the trading volume. In contrast, the DFIIs lead the market returns which in turn attract the FIIs thus, supporting home advantage (bias) argument. Interestingly, the DFIIs unlike in the equity market, play a more important role in debt market trading activities. Our results point at greater debt market inefficiency in the Indian context which may be a reflection of the relatively underdeveloped nature of this market.

Key Words: Home advantage (bias), Domestic Financial Institutional Investors, Foreign Institutional Investors, Market returns, Equity market, Debt Market.

JEL Classifications: G100, G140

1. Introduction

Since the fortunes of different nations do not always move together, investors can diversify their portfolios by holding assets in different countries. The benefits of international diversification have been recognized for decades. In spite of this, most investors hold nearly all of their wealth in domestic assets. Much of the international finance literature emphasize that foreign investors are different from domestic investors. A stylized fact of the international finance literature is the existence of the home bias[1]. With the home bias, investors overweight the domestic market in their portfolios. Despite the dramatic increase in cross-border equity and bond transactions over the last 20 years, the home bias has not disappeared. A number of attempts have been made to explain the home bias. One recurring theme in the literature is that foreign investors are less well informed about domestic securities than domestic investors, so that they are at a disadvantage trading and holding these securities[2]. Recently, the informational disadvantage of foreign investors has been used as the foundation for models that attempt to explain the contagion nature of financial markets across world. Foreign and domestic investors have positions in a national stock market based on their past private information signals, past public signals and the information about the private signals received by others that they are able to glean from the price in noisy rational expectations equilibrium. Given these portfolio positions, a public signal leads investors to revise their previous positions. The less well informed (i.e. foreign) investors revise the means of their distributions by more than better- informed (i.e. local) investors. This implies that if the public signal conveys good news about the payoff on the domestic market portfolio, foreign investors increase their assessment of the expected payoff faster than better informed domestic investors do; as a result price rises to clear the market, and the less well informed foreign investors purchase more of the domestic market portfolio from the better informed domestic investors; the reverse occurs if the news is bad and the price fall (Brennan and Cao 1997). Usually foreign institutional investors have access to both international expertise and talent and have considerable local resources. It is therefore not obvious that foreign institutional investors should be at a disadvantage relative to domestic institutional investors. Grinblatt and Keloharju (2000) and Seasholes (2000) even argue that as a result of their better access to expertise and talent, foreign institutions should be smarter than local institutions. Using daily data for the 16 largest Finnish stocks, Grinblatt and Keloharju (2000) find that over a two-year period foreigners and domestic financial corporations buy more stocks that perform well over the next 120 trading days than domestic individual investors, but their sample period is too short for them to conduct a study of holding period returns. Seasholes (2000) finds that foreign investors buy (sell) ahead of good (bad) earnings announcements in Taiwan while local investors do the opposite. These findings therefore, are consistent with better information and greater sophistication on the part of foreign investors. However, evidence on the performance of foreign investors is mixed. For instance, Kang and Stulz (1997) using annual data for 18 years find no evidence that foreign investors outperform domestic investors in Japan.

Since 1990/91, the Government of India embarked on liberalization and economic reforms with a view to bring about rapid and substantial economic growth and move towards globalization of the economy. These broad based economic reforms were recommended by the report of the High level Committee on the Balance of Payments (Govt. of India, 1993). One of the recommendations was to shift the composition of external flows to non debt creating flows. As a result, FIIs (Foreign Institutional Investors) were allowed

to invest in Indian debt and equity markets since September 1992, though FIIs investment in shares and debentures began only in January 1993. Prior to 1992 only Non Residents Indians (NRIs) and Overseas Corporate Bodies (OCBs) could undertake portfolio investment in India.

There are two categories of FIIs registered in India; Normal FII (70:30 route) where total investment in equity and equity related instruments cannot be less than 70% of the aggregate of all investment and 100 % debt FII where 100 percent of the investment has to be made in the debt security. The FIIs on their own behalf cannot invest more than 10 percent of the total issued capital of an Indian company and investment on behalf of each sub account can not exceed 10% of the total issued capital of an Indian company. The sub account is generally the underlying fund on whose behalf the FIIs invest. For the sub accounts registered under foreign companies / individual categories the investment limit is 5% of the issued capital. The FII flows have to follow the guidelines and the policies of both the SEBI (Securities and Exchange Board of India) and the RBI (Reserve bank of India) in India. The SEBI FII regulations and RBI policies are amended and modified periodically as the domestic and international scenarios change. In this paper, we make an attempt to investigate if domestic financial institutional investors (DFIs) have a home advantage (bias) over foreign institutional investors (FIIs) using a data set of Indian equity market and Indian debt market from April 2001 to September 2006.   We compare domestic financial institutional investment (DFI is proxied by mutual fund cash flows) and foreign institutional investment (FII). Such a comparison is important because in emerging markets, local institutional investors are not as important as they are in developed markets and their actions may at times be affected by political considerations. Foreign institutional investors could do well compared to domestic institutions simply because the local institutions are underdeveloped, do not have access to valuable information that some domestic institutions have , or may even be trading to fulfill political objectives.

The paper is organized as follows. In Section 2 we sketch a brief review of literature and testable hypotheses.   Section 3 provides data details and their sources. Estimation results of home advantage (bias) in equity market are discussed in Section 4. Section 5 gives empirical findings of home advantage (bias) in debt market. A summary of the findings and major conclusions are described in Section 6.

2   Review of literature and Testable Hypotheses

The international CAPM of Frankel (1982) provides a utility-maximization model of international asset diversification. The international CAPM implies that the total portfolio risk can be reduced by holding foreign assets whose returns are negatively correlated with the returns of the home country assets. This suggests that the cross-border equity holdings are (i) negatively related to the degree of correlation between the home and foreign assets (ii) positively related to the returns of the foreign assets. A new school of thought on the home bias puzzle focuses on the information-based explanations. Using a simple model of investor preference and behaviour, French and Poterba (1991) demonstrate that information asymmetry can generate the same observed portfolio patterns as if the investors expect the domestic equity returns to be several hundred basis points higher than the returns in the foreign markets. Gehrig (1993) models the information asymmetry between domestic and foreign assets by using a model where investors observe noisy signals of firms' returns with different degrees of precision. Domestic bias arises from better investor information about domestic stocks and the high risk associated with foreign investments. Hasan

and Simaan (2000) derive the premium that an investor is willing to pay to buy the full information of the mean return vector and show that rational investors would prefer home country demonstrated portfolios over diversified portfolios if the variability of estimation errors far exceeds the variability of the mean return vector.

On the empirical side, the findings of Frankel and Schmukler (2000) from country mutual fund data support the hypothesis of asymmetric information, according to which the holders of the underlying assets have more information about local assets than country fund share holders. Similarly, using data on foreign stock ownership in Japan, Kang and Stulz (1997) find that foreign investors overweight shares of firms whose information are more readily available. These firms include large firms in the manufacturing industries and firms with good accounting performance etc.. They find that there is no evidence that foreign ownership is related to the expected returns. Moreover, Portes and Rey (1999) show that the gravity model explains the cross-border equity flows remarkably well as distance serves as a good proxy for information cost. However, Tesar and Werner (1995) suggest that transaction costs are unlikely to be an explanation for home bias. The reason is that a higher transaction cost on foreign investment should lead to lower turnover rates on the foreign components of the asset portfolios, but they find that the portfolio turnover rates are much higher for foreign than domestic assets. Their finding is influential but controversial. Warnock (2001) suggests that this under-weighted but overtraded puzzle in foreign equities could be due to the intrinsic problems in estimating the cross-border holdings (a stock measure) based on the capital flow data (a flow measure).

In the background of the above review we frame the following hypotheses;

- The Indian Equity market provides home advantage (bias) to DFIs vis-a-vis FIIs.
- The home advantage (bias) argument does work in the Indian debt market.

3   Data and their Sources

To study the presence of home advantage (bias) in equity and debt segment of Indian capital market, we have used two types of data, one pertaining to equity market and the other to debt market in India.   We take data from the websites of SEBI (Statutory Regulator of the Indian capital market since 1992, www.sebi.gov.in) and BSE (Bombay Stock Exchange, oldest and second largest stock exchange in India which is in existence since 1875, www.bseindia.com). Both sources are the most authentic information provider in India.   We have analyzed two categories of investors; the first being investment by domestic financial institutional investors (DFIs) proxied by mutual fund investment and the second being the investment by foreign institutional investors (FIIs)[4]. Mutual fund investment is taken as a proxy for domestic financial institutional investment (DFI) because of its growing importance in the Indian stock market capturing about 30 percent of total domestic institutional investment in India. Further, our analysis includes all the FII (Foreign Institutional Investment) flows rather than one subset of FII flows as the data for each subset of FII is not publicly available in India.

Monthly mutual fund data and monthly FII data in equity and debt are taken from the SEBI website. We take two major indices one being BSE Sensex and the second is i-Sec sovereign Bond index (i-bex) (from website of Industrial Credit and Investment Corporation of India, **www.icicisecurities.com).** BSE Sensex is used as equity index and i-bex is used as bond index. BSE Sensex is an obvious choice as it is considered the pulse of the Indian stock market and MFs and FIIs do actively trade in shares of the companies that are listed in this index. i-bex is a bond index that act as a metric to measure the performance of the government securities market (in India corporate debt market is still undeveloped). Launched in 1994, it has emerged as the preferred benchmark across all classes of market participants. Recommended by Association of Mutual Funds in India (AMFI), the index is used by fund managers to measure market performance, benchmark the performance of their portfolios, and also as a tool for quantifying risks in the sovereign bond market. It measures the total and principal returns of the respective maturity segments. It has also been extensively used by academia in India as a bond market proxy.

The price series have been converted into monthly percentage return series so that they are compatible for further research. Returns are defined as follows.

$$R_t = \ln (P_t/P_{t-1}) *100$$

Where,
R_t = Returns (total returns including dividends) at time period t.
P_t, P_{t-1} = closing value of the stock price index at time t, t-1, respectively.

The implicit yield on the 91 day treasury bills are employed as a measure of short term Indian interest rates as per the common practice in investment literature. The data source for T-bills yields is the RBI website (www.rbi.org.in)

Before 2003, FII flows in debt were negligible. Due to the non-availability of FII data in debt time span of the part of the study relating to FII flows in debt market is Jan. 2003- Sept.2006. In order to compare the results of equity market and debt market with respect to home advantage (bias), the total study period of equity market is divided into two sub periods as follows:

(a) Jan 2001-Dec.2002.
(b) Jan 2003-Dec. 2006.

4   Evaluating the Home Advantage (bias) for Indian Equity Market

We take two forms of foreign institutional investment viz. FII inflows (gross purchases) and FII outflows (gross sales) and two forms of domestic financial institutional investment proxied by mutual fund investment viz. MF inflows (gross purchases) and MF outflows (gross sales) and examine their relationship with selected variables viz. return on BSE Sensex (equity market index), i-bex (represent bond market index) and short term interest rates (represented by 91 day TB rates) for equity market and bond market segments of the Indian capital market. Before testing the relationship between FII flows/ MF flows

and selected variables, stationary of all the variables is tested using Augmented Dickey Fuller test. The calculated t-values of all selected variables at different lags exceeds the critical values for 1%, 5% and 10% significance levels.

Hence, we reject the null hypothesis of a unit root and conclude that all selected variables are stationary. Next we conduct Granger Linear causality test in order to select the ordering of variables. Granger causality results are discussed into two categories, in first category results of FII and other variables are shown (Table -1, Panel-A), in second category results of MF and other variables are reported (Table-1, Panel- B). In Table-1, Panel A and Panel B, we report results only for total period (2001-2006) because we find no significant differences in results for two sub-periods.

Category-1 FII Flows and selected variables

Return on BSE Sensex causes FII inflows (gross purchases) but no cause and effect relationship have been found between return on BSE Sensex and FII outflows. We find that a two-way cause and effect relationship is present between FII inflows and short term interest rates and FII outflows and short term interest rates. Further, we find no cause and effect relationship between return on BSE Sensex and short term interest rates. In sum, BSE Sensex causes FII inflows, which in turn causes short term interest rates but in case of the latter, this relationship is two way.

Category-2 MF Investment and selected variables

Return on BSE Sensex causes both MF inflows and MF outflows. In addition we find two way cause and effect relationship exist between MF inflows and short term interest rates and MF outflows and short term interest rates. The bilateral causality between FII/DFI flows and short term interest rates in case of Indian equity market may be owing to the fact that active equity buying by these institutions reduces the demand pressure on money and debt market side. This leads to an erosion in the values of fixed income instruments and causes interest rates to go up. Interestingly, FIIs tend to follow an aggregate investment strategy in India (i.e. simultaneous buying and selling of securities, see Sehga and Tripathi 2006-07). Hence, it is relevant to keep FII purchases (inflows) and sales (outflows) as a separate variable in the study as Net FII flows may be very small on many occasions and lead to misleading results.

Further, FII inflows cause MF inflows and as two-way causality seem to be present between FII outflows and MF outflows.

We find that BSE returns determine FII flows and MF flows while the FII flows seem to propel investment by domestic institutional investors (in our case proxied by MF investment). Thus, we can infer that there is no visible home advantage to domestic institutional investors. On the contrary, domestic institutional investors seem to be late in reacting to market movements compared to foreign institutional investors. Many explanations for home or local bias rely on information asymmetry; investors know more about their home assets and therefore invest more in home assets. Our results imply that informational advantage, if any, enjoyed by domestic institutional investors is more than outweighed by the superiors' security valuation and market timing skills of foreign institutional investors. The increasing flow of FII flows in recent time period also documented our results. The results may also have policy implications. In a

country like India, if policy makers wish to raise foreign investor's activity level and thereby enhance liquidity and development of domestic stock market, they should consider measures to improve transparency, reduce insider trading, and communicate to foreign press information relevant to the financial markets.

5   Evaluating Home Advantage (bias) for Indian Debt Market

The MFs have hitherto been the major player in the debt segment of the Indian capital market. However, this was changed in the pattern of participation in 2005-06. MFs were also active in the equity market for the greater part of the year. FIIs investment in debt segment was negative in all months in 2005-06. The total net investment in this segment in 2005-06 declined by Rs.7334 crores mainly due to firming up of the yield rate of G-Sec across the entire maturity spectrum.

The methodology used in investigating home advantage (bias) in equity market has also been followed in the debt segment. First of all, we employ ADF (Augmented Dickey Fuller test) to test the stationary of variables. Then, we conduct Granger Linear causality test. Granger causality results are discussed into two categories, first related to FII and second related to MF (Table-2, Panel A and Panel B).

Category-1 FII flows and selected variables

There seems to be no cause and effect relationship between FII flows and i-bex (our bond market index). Nor there seem to be any relationship between FII flows and short term interest rates (Table -2, Panel A).

Category-2 MF investment and selected variables

In contrast to FII flows, MF flows seem to determine bond index returns, while short tern interest rates do not exhibit any relationship with domestic institutional flows. Our results indicate that the domestic financial investors seem to have home advantage in debt market compared to foreign institutional investors whose investment behaviour seems to be independent of market returns.

In sum, our results are stronger and clearer for the equity market than for the debt market. This may be owing to the fact that the Indian debt market is comparatively less developed. Equity market trading volume is 80% greater than that of debt market trading volume. Development of domestic corporate debt market in India is constrained by a number of factors such as low issuance leading to illiquidity in the secondary market, narrow investor base, inadequate credit assessment skills, and high costs of issuance, lack of transparency in trades, non standardized instruments, comprehensive regulatory framework and underdevelopment of securitization products. The market suffers from deficiencies in products, participants and institutional framework. There is a need to take necessary steps to remove its sluggishness and encourage individual investment including those by FIIs.

We also get a different picture for the two market settings while the equity market returns seem to attract both FIIs and DFIs implying a positive feedback mechanism. The former seems to react faster than the later thus, negating the home advantage argument. On the other hand, domestic financial institutions

appear to drive bond market returns while the FIIs do not seem to be affected by market movements thus, signaling a comparative home advantage for the former. These results probably are explained by the fact that, while FIIs play a relatively more important role in the equity market as they account for 68% of the total investment, the DFIs dominate the debt market by accounting for about 74% of total investment. The low activity of FIIs in the debt market may be due to the reasons cited earlier about the state of development of this component of the capital market.

6. Summary and Conclusions

Despite the increase in cross border equity and bond transactions over the last 20 years, the home advantage (bias) argument has not disappeared. A number of attempts has been made to explain the home (bias) advantage. In this paper we examined the presence of home advantage, if any, to domestic financial institutional investors (DFIs) vis a vis foreign institutional investors (FIIs) both in equity and debt market segments of the Indian capital market. BSE Sensex and i-bex are used as equity market index and debt market index respectively. There is no consensus among the research scholars about the existence of home advantage (bias). Some document that foreign investors are at a disadvantage trading and holding foreign securities since they have less information about foreign markets and institutional settings (see Frankel and Schmukler, (2000), Kang and Stulz (1997)), while others support the view that foreign institutional investors can never be at a disadvantage trading relative to domestic institutional investors as they have better international expertise and talent and have considerable   local resources (See Brennan Cao (1997), Seasholes (2000), Grinblatt and Keloharju (2000)).

However, in the Indian context our results are stronger and clearer for the equity market than for the debt market. This may be owing to the fact that Indian debt market is comparatively less developed. Equity market trading volume is 80% greater than that of debt market trading volume. Development of domestic corporate debt market in India is constrained by a number of factors such as low issuance leading to illiquidity in the secondary market, narrow investor base, inadequate credit assessment skills, and high costs of issuance, lack of transparency in trades, non standardized instruments, comprehensive regulatory framework and underdevelopment of securitization products. The market suffers from deficiencies in products, participants and institutional framework.

In addition we find different results for these two segments of the Indian capital market. Both DFIs and FIIs seem to be attracted by equity market returns, thereby acknowledging positive feedback trading strategy but the latter seems to react faster than the former and thus negating the home advantage argument. These findings can be explained in light of the fact that FIIs have access to both international expertise and talent and have considerable local resources.

On the other hand, DFIs appear to drive bond market returns while the FIIs do not seem to be affected by market movements thus signaling a comparative home advantage for the former. These results probably are explained by the fact that, while FIIs play a relatively more important role in the equity market as they account for 68% of the total investment, the DFIs dominate the debt market by accounting for about 74% of total investment.

Notes

1. See French and Poterba (1991), Cooper and Kaplanis (1998), Tesar and Werner (1995), and Kang and Stulz (1997).
2. See Brennan and Cao (1997) for example.
3. See Calvo and Mendoza (2000).
4. Information about other components of DFIs such as Venture funds, other corporate bodies is not available on SEBI website and hence has been excluded from the study.
5. BSE Sensex is calculated on a free float market capitalization weighted methodology of 30 components stocks representing large, well established and financially sound companies that account for 48 percent of total market capitalization and about 74 percent of trading activity of Bombay Stock Exchange. It is constructed on the lines of Standard&Poor's-500, USA.

Table 1. Results for Granger Linear Causality test for Indian Equity Market (2001-2006)	
Panel A: FIIs and other variables	
Null hypotheses	F-Statistics
	(2001-06)
FII inflows does not granger cause return on BSE	0.09
return on BSE does not granger cause FII inflows	11.35*
FII inflows does not grange cause interest rates	6.23*
interest rates does not granger cause FII inflows	6.9*
FII outflows does not granger cause return on BSE Sensex	0.43
return on BSE Sensex does not granger cause FII outflows	0.7
FII outflows does not granger cause interest rates	3.94*
interest rates does not granger cause FII out flows	5.76*
return on BSE does not granger cause interest rates	0.17
interest rates does not granger cause return on BSE	0.07
Panel B. MF investment (DFIs) and other variables	
MF inflows does not granger cause return on BSE	1.29
return on BSE does not granger cause MF inflows	4.67*
MF inflows does not grange cause interest rates	13.13*
interest rates does not granger cause MF inflows	5.46*

MF outflows does not granger cause return on BSE Sensex	0.22
return on BSE Sensex does not granger cause MF outflows	11.11*
MF outflows does not granger cause interest rates	15.58*
interest rates does not granger cause MF out flows	14.41*
FII inflows does not granger cause MF inflows	8.75*
MF inflows does not granger cause FII inflows	2.84
FII outflows does not granger cause MF outflows	9.59*
MF outflows does not granger cause FII outflows	7.52*
* Significant at 5% level	

Table-2. Results for Granger Linear Causality test for Indian Debt Market (2003-2006)	
Panel-A: FIIs and other variables	
Null hypotheses	F-Statistics
FII inflows does not grange cause i-bex	1.34
i-bex does not granger cause FII inflows	.81
FII inflows does not granger cause interest rates	.68
Interest rates does not granger cause FII inflows	1.45
FII outflows does not granger cause i-bex	2.06
i-bex does not granger cause FII outflows	0.142
FII outlows does not granger cause interest rates	2.40
interest rates does not granger cause FII out flows	1.24
Panel- B: MF investment (DFIs) and other variables	
ll hypotheses	F-Statistics
MF inflows does not granger cause i-bex	5.35*
i-bex does not granger cause MF inflows	0.63
MF inflows does not grange cause interest rates	2.07
interest rates does not granger cause MF inflows	0.001
MF outflows does not granger cause i-bex	4.29*
i-bex does not granger cause MF outflows	2.28
MF outflows does not granger cause interest rates	0.68
interest rates does not granger cause MF out flows	0.006
MF inflows does not granger cause FII inflows	2.67*
FII inflows does not granger cause MF inflows	0.76
*Significant at 5% level	

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