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Sub-optimal international portfolio allocations and the cost of capital

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ABSTRACT

Finance theory suggests that the optimal international equity portfolio investment by home and foreign investors reduces the cost of capital through international risk sharing and capital market integration. However, the empirical evidence is inconsistent with theory as a number of studies show investors exhibit cross-country biases in their international portfolio investments, known as home and foreign biases. In this study we investigate the implications of home and foreign biases on the cost of capital. Using data from 44 countries over the period 2001–2014, we provide strong evidence that countries that experience higher home bias are associated with a higher cost of capital. Similarly, we also find that countries that are more favoured by foreign investors, relative to the theoretical predictions, are associated with a lower cost of capital.

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1. Introduction

The International Capital Asset Pricing Model (ICAPM) suggests that financial liberalization, which formally allows inward and outward international portfolio investments, should integrate the domestic capital market with world capital markets. Increasing market integration, driven by financial globalization, should reduce a country's cost of capital (see Errunza and Losq, 1985; Errunza and Miller, 2000).[1] Errunza (2001) notes that the essence of the inverse relation between cost of capital and market integration is the migration from local pricing and narrow shareholder base to global pricing and a more diversified international shareholder base enhancing international risk sharing. Further, Bekaert and Harvey (2003) suggest that when domestic capital market integrate with world capital markets; the volatility of world capital markets become more relevant relative to domestic capital market in the pricing of local securities. As the volatility of world capital market is lower than local capital market, cost of capital should be lower for a country which is more integrated with world capital markets.

Although there is a strong theoretical case for a resultant fall in cost of capital, Bekaert and Harvey (2003) note that despite formal financial liberalization, i.e. removal of direct legal restrictions, there can be significant indirect barriers (such as infor-

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[1] Cost of capital is an important input in capital budgeting evaluation of investment projects. Higher cost of capital leads to lower net present value undermining the acceptance possibilities of prospective projects. Such non-feasibility of investment projects, particularly owing to higher cost of capital, harms the prospects of making positive effects in the real economy leading to slower growth and lost employment opportunities.

mation asymmetry, political and financial policy risks, higher trading costs etc.) to international portfolio investments. Such indirect barriers deter investors from investing optimally across the global markets leading to market segmentation or only mild integration. In terms of optimality of portfolio allocation, the ICAPM prescribes that equity portfolio investors should hold a well-diversified world portfolio as the benchmark (see Solnik, 1974; Adler and Dumas, 1983; Lewis, 1999). However, in the presence of indirect barriers to international investments, world capital markets are, to some extent, segmented as equity portfolio investors in both the developed and emerging markets exhibit varying degrees of home and foreign biases in their international portfolio allocations.[2] Home bias relates to the phenomenon of sub-optimally higher home investments by domestic investors, i.e. over-weighting of the home market relative to the ICAPM benchmark. Similarly, foreign bias refers to the tendency of foreign investors to over or under allocate foreign markets compared to the ICAPM benchmark (for details on the difference between home and foreign bias, see Dahlquist et al., 2003; Chan et al., 2005 and this discussed further in Sections 3.2.1 and 3.2.2 of this paper).[3]

A number of studies theoretically and empirically provide evidence on the partial integration/segmentation of domestic capital markets from world capital markets, thereby inhibiting optimal international risk sharing (see Errunza and Losq, 1985; Stulz, 1999; Chaieb and Errunza, 2007). Clearly, drawing on evidence of sub-optimal international portfolio allocations and the varying degree of market integration/segmentation, we test the following two related hypotheses.

H1. Higher degree of home bias is associated with higher cost of capital.

H2. Higher degree of foreign bias is associated with lower cost of capital.

In other words, theory suggests that the higher degree of home bias, implying lower international risk sharing (i.e. lower integration with world capital markets), should be associated with a higher cost of capital. Similarly, economic reasoning also conjecture that higher levels of foreign bias, suggesting higher international risk sharing (i.e. higher integration with world capital markets), should be associated with a lower cost of capital.

Using five proxies of cost of capital and extensive robustness tests, our study provides a comprehensive investigation of how variations in sub-optimal international portfolio allocations (i.e. home and foreign bias) affect the cross-country cost of capital. In addition to using the two conventional proxies for cost of capital, i.e. dividend yield and historical risk premium, we also use the sovereign bond rating as an implied cost of capital, an expected country equity risk measure (see Jewel and Livingston, 1998; Damodaran, 2012), and finally in our robustness test we use Tobin's Q as an additional valuation proxy capturing the inverse feature of cost of capital. The use of multiple finance based proxies help address some of the limitations and sensitivities of accounting based implied cost of capital proxies. The cost of capital proxy variables account for country default risk and the use of these proxies offer new insights with regards to the implications of foreign and home bias on finance based cost of capital proxy variables.

Our study reports the following findings. First, the univariate figures of all cost of capital measures strongly suggest that developed countries exhibit lower cost of capital relative to their emerging market counterparts. This implies that compared to investments in emerging markets, investors apply significantly lower value of discount rates when evaluating projects in developed markets. Second, in terms of international risk sharing, portfolio investors in developed markets enjoy significant international risk sharing as reported by cross-country figures of home and foreign biases. Developed markets' portfolio investors exhibit significantly lower home bias relative to those in emerging markets. Similarly, foreign portfolio investors seem to prefer developed markets more in their cross-country equity portfolio allocations compared to emerging markets. More importantly, we supplement the literature by providing evidence that the phenomena of sub-optimal international allocations are not only observed in the aggregate and macro data (see Chan et al., 2005 and Bekaert and Wang, 2010) but also by individual global equity funds, which are managed by sophisticated managers with the sole purpose of optimal global diversification.

Finally, consistent with theory, our empirical analyses provide strong evidence that higher degree of home bias is associated with a higher cost of capital. This strongly indicates that countries which exhibit home bias in their international portfolio investments display lower degree of integration with world capital markets leading to higher cost of capital. Correspondingly, we also find that higher degree of foreign bias towards a host country (i.e. more favourable allocation by foreign investors) is related to a lower cost of capital benefiting from higher degree of market integration.

Our study makes two important contributions to the literature. First, existing studies predominantly examine the causes of home and foreign bias (see Chan et al., 2005; Gelos and Wei, 2005; Bekaert and Wang, 2010) investigating the implications of these biases. In this paper we investigate whether varying degrees of home and foreign biases have implications for cost of capital. The relevant literature is either based on event studies, investigating how cost of capital changes in the post financial liberalization period, or analyses the influence of depository receipts on cost of capital.[4] Similarly, a number of

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[2] See Bekaert et al. (2011) and Carrieri et al. (2013) for recent evidence on market segmentation. For evidence on causes of home and foreign/biases, see Lewis (1999), Chan et al. (2005), Bekaert and Wang (2010), Mishra (2014), Kim et al. (2015), and O'Hagan-Luff and Berrill (2015).

[3] In our study, higher home bias refers to greater home allocations relative to benchmark whereas higher foreign bias refers to higher foreign cross-country allocations relative to benchmark. Hence, higher home bias from domestic investors should lead to greater market segmentation but higher foreign bias from foreign investors should lead to greater market integration.

[4] For example, Kim and Singal (2000) and Chari and Henry (2004) show that the post financial liberalization cost of capital of the liberalized economy significantly decreases. Stulz (1999) and Henry (2000) also find similar results, suggesting that the reduction in cost of capital is driven by increased