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# International portfolio choice and political instability risk: A multi-objective approach

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ABSTRACT

The benefits derived from international portfolio diversification into foreign nations (including the less developed countries) are well documented, yet this practice is discouraged due to market imperfections such as political instability. In practice, nations may be differentiated further by many aspects, such as border controls or political and social trends, which constrain private transactions and financial decisions. This paper attempts to examine (1) whether the home asset bias in a portfolio holding is associated with higher political instability risk, and (2) to what extent international diversification among stocks, in the presence of such risk, outperforms domestic stock portfolios. Using alternative instability risk proxies in the context of a discrete-time version of mean–variance framework, we corroborate the impact of this type of risk on international portfolio investment decisions.



## 1. Introduction

Despite the demonstrated benefits and gains of international equity diversification, investors still find it easier to be close to their domestic markets while disregarding international prospects. Whereas the gains from international portfolio diversification into foreign nations, including the less developed countries, are well documented, the practice is discouraged due to foreign risk and market imperfections caused by political instability. In practice, nations may be further differentiated by other aspects, such as taxes, border controls, and political and social trends that constrain private transactions and financial decisions. The purpose of this study is to examine whether the equity home bias—from U.S. investors' perspective—in portfolio holdings is in fact associated with higher political instability risk, evidenced by lack of transparency and higher levels of corruption. In this study we attempt to address and improve the equity home bias literature's explanation of how the investor allocates her portfolio given its variability and the existence of various types of risk. How do we model such a problem if we want to add other types of risk? What are we learning from this modeling effort from a practical perspective? The research raises further questions to assist practitioners and academics when tackling other aspects of this issue.

The contribution of this study lies in its examination of the impact of instability risk measured by the corruption perception index (CPI) on the composition of international portfolio construction under a discrete-time version of Markowitz's mean–variance portfolio selection problem. This is achieved by effectively comparing potential impacts of corruption and providing a possible explanation for the equity home bias puzzle. It is a natural extension of international diversification analysis to add the political instability risk when considering international portfolio management. The essay attempts to address the following three questions to establish its main contributions: (1) To what extent does international diversification among stocks, in the presence of political instability risk, outperform domestic stock portfolios?[1] (2) What is the impact of instability risk on international stock portfolio diversification when replaced by two possible measures (corruption perception index/CPI and instability governance indicator, the latter term used interchangeably with Stability Estimate of Governance/SEG)? (3) Under these circumstances, does the quadratic programming optimization suffice in the modeling effort to derive the optimal investment proportions that minimize the portfolio variance for a given rate of return?

The pioneering work in the mean–variance theory was presented by Markowitz (1952), Markowitz (2003), and Tobin (1985). Later, Sharpe (1964) and Lintner (1965) introduced the

[1] Political risk is a measure of instability, which covers a range of overlapping factors. Corruption is the single most important factor (one of many contributing to political instability and economic decline Brewer, 1983). It increases economic inequality and capital flight, and that reduces investment and productivity and eventually leads to political decline and the risk of high levels of systemic instability. Unfortunately, corruption is an important factor in understanding political risk in emerging markets, and is a key factor that many international portfolio managers have not included in their assessment of opportunities (not included in the political stability index, policy foundations index, or institutional strength index Zonis et al., 2003).

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Capital Asset Pricing Model (CAPM), which was built on the foundation of the mean–variance theory. The logic behind this correlation is that identification of the efficient frontier of risky assets with the risk-free asset is provided by the mean–variance theory. A number of ex-post studies have looked at the gains of international diversification, including into the less developed countries. Thus, there are plenty of risk-reduction opportunities for international portfolio diversification by holding assets abroad.[2] Errunza and Rosenberg (1982) stressed the importance of including corporate securities (assets) of less developed countries in international portfolios. Using the variance of returns to investment in stocks as a measure of risk, the authors showed that internationally diverse portfolios of such country indexes dominated a U.S. stock index over the considered period. Also, they discussed the reasons behind the gap between perceived evidence and actual experience, where investors tend to prefer exclusively the securities of the developed world while ignoring other international opportunities. They discovered the existence of investment barriers in less developed countries, such as lack of information, differences in capital controls and accounting standards, political instability, and taxation policies. They outlined some procedural shortcomings, which are due first to the definition of risk as the variance of the ex-post rates of return, ignoring other types of risk, such as operating risk, political risk of expropriation, confiscation, or terrorism; and second, to the use of past exchange rates to estimate the exchange risk.[3]

Levy and Lerman (1988) note that the observed bias of investors toward their domestic stocks is due to various barriers to international investment, which may be caused by the lack of information, discriminatory taxes, restrictions on funds flows, or simply fear of expropriation. However, Levy and Lerman (1988) do not examine the international portfolio choice for the investor in the presence of fear and other country-specific risks. In another study, Errunza (1983) discussed the obstacles that should not be ignored, such as currency risk, capital flow restrictions, and information availability. Home asset bias runs counter to the strand of literature; it is noticeable when investors tend to invest in assets from their own country. This tendency to invest in local assets exists in many different markets, including stock and bond markets and real estate.[4] Lewis (1999) suggests that stock-market integration may still be restricted by home bias in equity portfolios displayed by many investors. She defines equity home bias as individuals who *hold too little* of their wealth in foreign assets. Her essay examines three explanations for equity home bias and consumption home bias, stating:"... *if the costs of acquiring and/or holding foreign equities are sufficiently high, then investors may be induced to keep their savings at home. The costs of international diversification include international taxes, informational costs, and other barriers to trade equity*". Lewis pointed out that home bias could be explained by diversification costs that may exceed the gains, which are possible if the costs are extremely high, thereby discouraging an efficient domestic investor from international diversification. Then author concluded that costs decline over time and there is no reason to suggest that the costs exceed the gains.

Here, we suggest that unexpected costs as measured by political instability risk could exceed gains, which would entice home bias behavior, notably in the case of diversification that includes emerging or developing countries, as some past studies have suggested (e.g. Errunza and Rosenberg, 1982). In another explanation of the equity bias, Lewis (1999) looked at empirical mismeasurement as the possible reason and outlined how the gains from international diversification have been calculated based on the measurement of the historical means and variances. We argue that the mean and standard deviations of returns are not the most critical elements of interest to international investors. For example, political risk assessment was always one of the challenges that international investors faced (e.g. Bourguignon and Boussema, 2004; Damodaran, 2003).

Chan et al. (2005) found home and foreign biases in mutual fund equity from 26 developed and developing countries. They underscore the importance of stock market development and familiarity of investors as major determinants of the domestic bias, while economic development, capital controls, and tax system have significant impact on foreign bias. They define domestic bias as the degree to which investors overweight home markets, while foreign bias reflects the degree to which investors underweight or overweight foreign markets.[5] We augment this conjecture by adding political risk in the modeling and measurement context to show that it does matter to the investor. This implies that if there is mismeasurement behind equity home bias, it could be caused by ignoring other relevant risks in the modeling framework, in addition to the degree of uncertainty in the estimates of the mean returns and variances (as discussed by other studies, e.g. Gorman and Jorgensen, 2002). In line with Lewis (1999) we note that home equity bias is a multifaceted phenomenon (see also Uppal, 1992) and it is prevalent across many countries, even in those with high political instability. However, in the present study we undertake investment strategy and assess diversification benefits from US investor perspective. Yet, from the perspective of an investor in an unstable country where we may witness a home equity bias, we find that other explanations such that the one provided by Chan et al. (2005) may be useful in which they show that importance of stock market development and familiarity are major determinants of the domestic home bias; therefore in those nations one may argue that even if it is optimal to invest in foreign assets (foreign bias) it will not be possible to do so. For instance, in some developing and emerging nations (e.g. some Asian and North African countries) access to developed stock markets is restricted by many factors including currency and movement of capital restrictions. Thus, we deem that our conjecture which is developed from a U.S. perspective in line with past studies (e.g., Aggarwal et al., 2005; Leuz et al., 2009) provides additional explanation of the home equity bias.The merit of our contribution is that political risks *do explain some* of the observable home equity bias, though other possible restrictions can take effect and limit access to foreign markets for investors in those nations with few shareholder rights or poor shareholder protection for example a recent study by Aggarwal et al. (2011) show that institutional investors from countries with strong shareholder protection affect not only which corporate governance mechanisms are in place, but also outcomes; also the study shows that shareholder rights in the country where the firm is located can also influence the role that institutional investors play.

The present paper is organized as follows: Section 2 presents the classical mean–variance framework, while Section 3 presents various mathematical quadratic and multi-objective models in the presence of instability risk for generating decision allocation of low risk across a set of countries. Also, different solution

[2] Many national economies are dominated by only a few industries, and stock markets retain a distinctive national character and are only loosely linked to other markets. It is easy to find examples of national markets with firms concentrated in a few industries. Oil and construction companies dominate the economies of Saudi Arabia and its Persian Gulf neighbors. The economies of Brazil and Indonesia are similarly dependent on their natural resources. Stock markets in these countries reflect international commodity prices and hence the fortunes of the local economy.

[3] Solnik (1974) concluded that international diversification is attractive whether exchange rate changes are hedged or uncovered (see Jorion, 1989).

[4] For a survey of this issue, readers are referred to Uppal (1992) and Lewis (1999).

[5] For example, an investor who holds more of her wealth in her home country exhibits a high level of home bias, but if she invests her wealth between two foreign countries such that she allocates more into a specific foreign country, say country *X*, vis-à-vis another foreign country, say country *Y*, then she exhibits no domestic bias, only foreign biases, overweighting *X* and underweighting *Y*.