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International variations in expected equity premia: Role of financial architecture and governance

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ABSTRACT

Estimates of ex-ante equity premia are important in planning investments in pension funds, life insurance pools, and for other long-term financial obligations or goals. However, while global cross-border investment positions and flows have been rising, there is little research on non-US ex-ante equity premia or on their determinants in a global setting. This paper uses data on a recent 8-year period from 33 countries and models simultaneously our estimate of the ex-ante equity premium as a dependent variable and our measure of financial architecture as an instrumental variable. We document that ex-ante equity premia are larger in countries that have a more bank-oriented financial architecture, are wealthier, and have better governance. These results are robust to alternative model specifications and estimation techniques. Given the importance of equity premia and financial architecture, these results should be of much interest to scholars, managers, regulators, and policy makers.

1. Introduction

Equity premia reflect the extra return over a safe investment required by equity investors and are an important estimate for developing funding plans for long term obligations like pension and retirement funds, social security obligations, medical and other obligations to current and ex-employees, life insurance pools, and for funding other long-term commitments. Further, in light of continuing demographic changes in most industrial countries resulting in a rising proportion of the elderly, such calculations are becoming ever more important. Given this importance of the ex-ante equity premium in long-term investment decisions and recent increases in cross-border investment, there is much interest in the determinants of cross-national variations in equity premia (e.g., Mishra and O'Brien, 2005; Hail and Leuz, 2006; Erbas and Mirakhor, 2007; Aggarwal and Goodell, 2008).

While some recent research (e.g., Hail and Leuz, 2006; Mishra and O'Brien, 2005; Harvey, 2004), examine the determinants of the *ex-post* cost of equity capital, and other papers examine the determinants of *ex post* equity premia (e.g., Shackman, 2006; Erbas and Mirakhor, 2007), there is little research on the nature of ex-ante equity premia in other than the major industrialized countries as most such research focuses on the US (except perhaps Aggarwal and Goodell, 2008). Overall, there is inadequate research on the cultural, legal and other determinants of national ex-ante equity premiums.

In general, the nature of ex-ante equity premia does not seem to be well understood. A seminal paper on the equity-premium, Mehra and Prescott (1985) find that the historical return on stocks has been too high in relation to the return on risk-free assets to be explained by the standard economic models of risk and return without invoking unreasonably high levels of risk aversion. The related question of the extent to which this puzzle varies internationally has received relatively little attention in the literature.

One factor that is likely to have an important influence on national equity premia is the nature of financial intermediation in a country. Prior work has examined the determinants of the international variations in financial architecture, the proportion of financial intermediation in a country undertaken through financial institutions such as banks versus the proportion undertaken

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through financial markets. Interestingly, it seems that both national variations in equity premia and in the structures of financial intermediation are determined by many similar socio-economic factors. Consequently, national variations in equity premia can be expected to influence national variations in the structure of financial intermediation and vice versa. For example, equity premia reflect the extra return over a safe investment required by investors in equity and, therefore, they can be expected to influence the relative attractions of investing in financial markets versus putting money in a bank, and therefore the nature of the mix between financial markets versus banks in a country. Similarly, equity premia can be expected to depend on the relative importance and development of markets for risky assets especially compared to safe alternatives such as bank deposits. But, prior literatures in these two areas seemed to have ignored each other and the possible endogeniety between these two variables.

There is some research on related topics. For example, Wu et al. (2009) evidence an association of market development (in the sense of support for new equity) and the ability of banks to extract rents. Berg and Kaserer (2010) model estimates of equity premia from credit-default swap (CDS) spreads. Bhamra et al. (2010) model credit risk within a model of asset pricing so as to price equity and debt within the same framework. Breuer et al. (2010) suggest an interdependency between market risk and credit risk. Purda (2008) examines the association of financing choices with respective firms' credit risk and finds for a small sample of developed markets that firms in bank-based systems are perceived as having lower credit risk (attributed to the monitoring effectiveness of banks). Purda (2008) also finds the significance of legal origin in determining credit ratings disappears when accounting for whether countries are bank-based or market-based.

Thus, while there is increasing attention in the literature to the relationship between credit risk and equity premia there is little prior research investigating whether equity premia are associated with financial architecture and other country characteristics. Further, to the best of our knowledge, there is little or no prior research that examines the association of national structure of financial intermediation with international variations in equity premia. This paper helps to fill these important gaps in the literature and contributes significantly to our understanding of the nature of ex-ante equity premia and its international determinants.

This paper accounts for the possibly endogenous relationship between financing architecture and ex-ante equity risk premia by using simultaneous equations estimates that include financial architecture as an instrumental variable along with a number of other relevant institutional, governance, and cultural factors. Specifically, this paper examines the nature of international variations in national ex-ante equity premia with a special emphasis on exploring the role of financial architecture. We use data from a recent 8-year period, 1996–2003, from 33 countries: Australia, Austria, Belgium, Brazil, Canada, Chile, Denmark, Finland, France, Germany, Greece, India, Indonesia, Ireland, Italy, Japan, Korea, Malaysia, Mexico, New Zealand, Norway, Philippines, Pakistan, Peru, Portugal, Singapore, South Africa, Spain, Sweden, Thailand, Turkey, the United Kingdom and the United States. This data set represents all of the countries for which the required data are available, and fortunately, these countries represent all significant equity markets globally.

We document that equity premia are larger in countries that have a more bank-oriented financial architecture, are wealthier, and have better governance, i.e., with greater control of corruption and better regulatory quality. These results are robust to alternative model specifications and estimation techniques. Given the importance of equity premia and financial architecture, these results should be of much interest to scholars, managers, regulators, and policy makers.

2. Ex-ante equity premia across the globe

2.1. Equity premium as measure of equity risk

Equity premia reflect the price of risk in equity investments and we can expect variations in the ex-ante equity premia across countries. Depending on national characteristics such as the nature of their institutional structures and their levels of financial development, countries may differ with regard to both the risks involved in equity investments and in the price of such risk. One way to think about this extra risk and its price is to think about how the supply and demand for equity investments may differ across countries; especially as most countries have less than perfect capital markets.

Ibbotson et al. (2006) suggest that because of many obstacles and limitations, the supply and demand for equity in markets may not respond to market forces as would be expected from a theoretical view of efficient markets.[1] For example, the supply of equity may be restricted as bureaucratic rules and regulations may deter the formation and market listing of corporate shares. Similarly, the demand for equity may be limited due to uncertain property rights and the unreliability of public information on potential investments. As the equity premium is the price of equity risk, it is determined by the balance between supply and demand for equity. In order to understand the nature and size of equity premia, it is important to account for the nature of equity demand and supply in actual, imperfect, markets.

While there are no perfect measures of national supply of equity, a number of variables could be used as indirect indicators. For example, stock market capitalization as a ratio of GDP is one such widely used measure. But this ratio by itself is an inadequate proxy because this measure will rise with valuation (as well as with new listings), and valuation is itself affected by supply. Other arguable measures of equity supply would include the number of shares listed per unit of population or the number of new shares listed. A more extensive evaluation of the level of development of an equity market might include R^2, the degree to which individual stocks move synchronously with the overall equity market in that country (Morck et al., 2000), or the degree to which market capitalization is concentrated in a few firms. Turner (2003) associates the development of nations' private bond markets with the quality of their local investor bases. Regulatory restrictions and lack of accounting standards can inhibit bond trading by institutional investors. So, if the quality of local bond markets in some measure reflects the narrowness of the local investor base, then the quality of the bond market might partially and indirectly determine the non-pecuniary (e.g., for control rights) demand for equity.

Similarly, the demand for equity returns is likely to be influenced by a great variety of factors that influence the risk level of equity and society's perceptions, tolerance, and appetite for equity risk. The nature of legal protection for investors, disclosure requirements, the level of social trust that a particular society believes can be placed in strangers, and the political stability of a country certainly are some additional factors that come to mind. Similarly, it is also reasonable that many social, cultural, legal and governance characteristics of a country might also affect the demand for equity. Ibbotson et al. (2006) suggest that the demand for equity return is also affected by concern for real returns as opposed to nominal returns (Moerman and van Dijk (2010) document that inflation risk is priced in international asset returns).

[1] Ibbotson et al. (2006) actually start with somewhat of an alternative view to the commonly held notion that prices in capital markets are set by the supply and demand for capital. Instead, they focus on the viewpoint of the supplier of capital (an investor) and suggest that there is a supply and demand for returns, as returns are priced in the marketplace.