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The growth in equity market size and trading activity: An international study

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Abstract

This paper presents new evidence on the role of macroeconomic and institutional factors in equity market development and on the sources of equity market growth. Using panel data on 33 countries, I find that development of financial intermediaries and trade openness are positively associated with equity market size, and that development of financial intermediaries is also positively associated with the level of activity in equity markets. Government consumption is negatively associated with equity market activity. I construct a direct estimate of the effect of institutional factors on equity market development that compares a country's actual level of development to a hypothetical "best-practice" country having the same macroeconomic fundamentals as the original country. I show that the level of equity market development of an average country is around 30% below its maximum potential. There are wide differences in institutional characteristics across countries and over time, and Canada, the United States, and Singapore possess the most shareholder-friendly institutional frameworks that foster larger and more active equity markets. It appears that institutional improvements and changes in financial technology have provided the major impetus for the phenomenal expansion of global equity markets.

JEL classification: G15; international financial markets; G18; government policy and regulation; C11; Bayesian analysis; C15; statistical simulation methods
Keywords: Laws and institutions; Value traded; Turnover; Stochastic frontier; Bayesian inference

1. Introduction

Stock markets around the world have experienced phenomenal expansion over the past 30 years. According to Datastream, the aggregate market capitalization of all national equity

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markets has grown from less than US$1 trillion in 1974 to over US$17 trillion by the end of 1997, and the corresponding annual equity turnover is US$3.4 billion in 1974 and US$11 trillion in 1997.

Some countries appear to possess both larger and more active equity markets than others, such as the United Kingdom and the United States. Others appear to have either large and illiquid stock markets such as Jordan, or active but small stock markets such as Germany. Apparently, none of the latter two cases are ideal from a country developmental point of view, and thus it is important to simultaneously examine what factors determine the extent of a country's equity market size and activity.

The process of growth in national equity market size and trading activity is still imperfectly understood. One view points to improved macroeconomic and financial fundamentals as the source of the growth. Others, more skeptical of efficiently functioning markets, suggest that the legal and institutional environment of a country matters for the size and extent of a country's capital markets (La Porta et al., 1997, 1998). If this is so, how effective are legal and institutional factors in bringing countries to their "best-practice" potential? And is a country's institutional framework structured optimally? So far, the literature has not come up with an exact metric on the role of laws and institutions in affecting national equity market development.

In this paper I adopt the stochastic frontier modeling approach to investigate the sources of equity market growth in size and trading activity and to provide a direct estimate of the effect of laws and institutions on equity market development. The stochastic frontier model captures the very simple intuition, that for a given level of macroeconomic conditions a country with an efficient institutional framework is associated with larger and more active stock markets.[1] With fully efficient laws and institutions, a country can be observed to be associated with the frictionless neoclassical level of equity market size (trading activity). Imperfect laws and institutions would prevent a country's equity market from reaching its frictionless maximum capacity: they force the actual level of equity market size (trading activity) to be below, but never above, the frictionless neoclassical level of market size (trading activity). In reality, governments often subsidize activities, especially equity markets, as a point of pride. This suggests that at some point in time a country might have larger (and/or more active) equity markets than would be created under frictionless markets with efficient institutions. This possibility is captured by the standard two-sided error in the stochastic frontier model.

In this paper, I show how the "best-practice" potential for each country can be estimated in a panel data setting. Specifically, under the stochastic frontier model, a country's equity market size (trading activity) is specified as a linear function of its macroeconomic fundamentals as in a usual regression framework (i.e., the location of the frontier). However, there is a one-sided error term (in addition to the normal error term) in the regression which captures the gap between the actual level of equity market size (trading activity) and its frictionless counterpart if the country possessed the most efficient institutional framework. This gap (i.e., the shortfall from the frontier) can be viewed as a measure of the effect of a country's institutional characteristics on its equity market development, insofar as the frictionless benchmark represents the maximum level of development that would result if there were no institutional impediment.

Another useful insight from the stochastic frontier model is that it allows for the decomposition of the change in equity market size (trading activity) into three types of change: macroeconomic

[1] According to Stulz (2001), legal, regulatory, and policy factors influence the effectiveness with which the overall financial system channels capital to productive ends. Under an efficient institutional framework, the financial system is better utilized and thus better developed.