

**Taking Stock Seriously:
Equity Market Performance, Government Policy, and Financial Globalization**

Layna Mosley
Assistant Professor
Department of Political Science
University of North Carolina, Chapel Hill
361 Hamilton Hall, CB 3265
Chapel Hill, NC 27599-3265
mosley@unc.edu

David Andrew Singer
Assistant Professor
Department of Political Science
Massachusetts Institute of Technology
E53-489
77 Massachusetts Avenue
Cambridge, MA 02139
dasinger@mit.edu

November 2006

An earlier version of this paper was presented at the 2006 American Political Science Association Annual Meeting, Philadelphia, PA. We thank Jon Bischof and Joe Weinberg for research assistance.

Abstract

How do government policies and institutions affect equity market performance across countries? We argue that the specific characteristics of equity investments suggest a positive association between stock market valuations and levels of transparency and market liquidity, and no association with fiscal deficits or surpluses. We explore the linkages between these variables and a variety of economic and political controls on national aggregate price-to-earnings ratios for a sample of 31 countries from 1984 to 2004. We then move to a parallel empirical analysis of sovereign bond interest rates to explore how investors' concerns might vary across financial assets. We find that investors across these two asset classes share certain preferences, but diverge in areas such as fiscal policy, inflation, and other macroeconomic conditions. The findings suggest that the political forces of economic globalization should be disaggregated by financial asset class, as investors' concerns vary markedly as a function of asset characteristics.

Introduction

How do government policies and institutions affect equity market performance across countries? This question is gaining urgency as stock markets become broader and deeper in the developed and developing worlds. In 2004, global stock market capitalization stood at \$37.2 trillion, compared to global GDP of \$41.3 trillion. While this was slightly less than global commercial bank assets (\$57.3 trillion), it markedly exceeds the total size of outstanding public debt securities, which stood at \$23.1 trillion.¹ The bulk of total stock market capitalization represents developed-country equity markets, but less developed country (LDC) markets—which accounted for 14 percent of total capitalization in 2004—are quickly gaining ground. Some emerging market countries, such as Malaysia, Singapore, and South Africa, have total stock market capitalizations that exceed their respective GDPs. Equity markets provide a useful mechanism for governments to raise capital through the sale of state-owned enterprises, and thereby lessen their reliance on sovereign debt. Moreover, equity markets enhance corporate efficiency, spur innovation, and provide a valuable source of capital for long-term economic development (Lavelle 2004). In short, it is clear that equities constitute an increasingly important capital market in the world economy. However, we currently know very little about how government policy choices and political institutions influence equity investors' decisions.

The growth of global financial markets since the early 1990s has attracted attention from both scholars and pundits. A large literature in political science, public policy, and economics considers the ways in which the increased openness of trade and financial markets might affect national economic outcomes and government policymaking. While some scholars take a more restrained view, others argue that economic globalization generates a “golden straightjacket” for governments. At the extreme, global markets become masters of governments, eviscerating the authority of national states. Along these lines, Susan Strange maintains that, “where states were once

the masters of markets, now it is the markets which, on many crucial issues, are the masters over the governments of states.”² In the realm of capital markets, investors’ capacity for exit, and the political voice it confers, is central to such accounts. While capital market openness provides governments with greater access to capital, it also subjects them to external (market) discipline (Obstfeld and Taylor 2004). Governments must sell their policies not only to domestic voters, but also to international investors. Because investors can respond swiftly and severely to actual or expected policy outcomes, governments must consider financial market participants’ preferences when selecting policies. This logic suggests that, as financial openness increases, governments’ capacity to spend and tax, and the more general ability to pursue divergent policies, should diminish markedly.

Yet much of the work on the impact of economic globalization generally, and financial globalization specifically, ignores the fact that nations are integrated differently into the global economy. Some have high levels of trade openness, but lower levels of capital market openness (Garrett 2000). High trade openness may present governments with one set of pressures, while high capital market openness may expose them to a different – and perhaps contradictory – set of demands (see Rodrik 1997). Likewise, nations are integrated into the global financial system in different ways, relying on different types of capital flows and asset markets (e.g., equities, bonds, bank loans, direct investment). For example, in 2004 the ratio of sovereign bond investment to equity investment was 0.19 for South Africa, 0.47 for Malaysia, and 1.93 for Hungary.³ Different types of investors will have different preferences and concerns regarding asset allocation and public policies. For instance, investors in equities may react negatively to certain policy outcomes, while investors in sovereign bonds may perceive these outcomes positively. Alternatively, political institutions such as democracy and veto points may affect some types of assets significantly, but have little impact on others. Our analyses of the impact of financial openness on government policies must acknowledge this variety among global capitalists.

Along these lines, Maxfield (1997) provides one of the few explicit treatments of the diversity of investors in global capital markets. In her study of central bank independence in the developing world, she considers how different types of asset holders (FDI, equity, bank loans, and sovereign bonds) would respond to changes in monetary institutions, given the liquidity of their assets and the ways in which government policies affect their returns. As Maxfield's study illustrates, government policies can affect assets differently. For instance, bondholders may dislike expansionary fiscal policies, while direct investors and equity market participants will appreciate the effects of such policies on aggregate demand and on human capital formation (Santiso 2003).

Moreover, assessing the existence and extent of heterogeneity in global capital markets provides insight into the ways in which governments and their citizens are affected by financial globalization. If a country relies heavily on foreign direct investment (FDI) rather than on sovereign lending or bank financing, it may face few pressures to reduce public spending (see Jensen 2006). On the other hand, if a government relies heavily on the bond market to finance its expenditures, but has a relatively low level of stock market capitalization, it may face greater pressures for fiscal and monetary tightening (Mosley 2003). Finally, if a country relies on various types of financial inflows, as most do, then we might imagine that asset holders will have diverse preferences over public policy.⁴

Our first contribution is to explain the linkages between equity market outcomes and national government policies, which have been largely neglected in the literature on financial globalization. Our second advance is to consider how investors' concerns might vary across financial assets, with an empirical focus on equity and sovereign bond markets. By analyzing equity and sovereign bond markets, we can compare the impact of government policymaking on the holders of investments with similar degrees of liquidity but different payoff and risk structures.

While political economists recently have explored the linkages between policies and institutions, on the one hand, and financial markets, on the other, this work has largely overlooked the possible influence of equity market investors. For instance, scholars have investigated the political correlates of interest rate premiums in government bond markets (Mosley 2003, Saiegh 2005, Wibbels 2006); the impact of political events and institutions on foreign exchange markets (Bernhard and Leblang 2002, Freeman et al 2000, Moore and Mukherjee 2006) and on currency crises (Leblang 2002, Leblang and Bernhard 2000, Leblang and Satyanath 2006); and the political correlates of foreign direct investment flows (e.g., Jensen 2006, Li 2006, Li and Resnick 2006).

The few extant analyses of stock markets and politics tend to focus on one or two countries, or on sectoral variation within a particular market, rather than on the determinants of national-level market outcomes in a broader cross-country context. For instance, Leblang and Mukherjee (2005) consider the impact of government partisanship and elections on stock market outcomes in the United States and Great Britain (also see Herron 2000, Roberts 1990). In a broader study, McGillivray (2003) considers the impact of partisan changes and electoral institutions on stock market outcomes in fourteen advanced democracies. Her analyses, however, focus largely on sectoral level variation, arguing that shifts in political constellations change investors' expectations regarding which industries will benefit from industrial and trade policies. Indeed, McGillivray is less interested in equity market outcomes *per se* than in using such outcomes (stock price dispersion, specifically) as a proxy for the expectations of economic actors regarding political decisions (also see Jensen and Schmith 2005). Similarly, Bernhard and Leblang (2006) consider the impact of politics and political uncertainty on daily market behavior in several advanced democracies. Unlike most analyses, theirs considers outcomes in multiple asset markets, including currencies, equities, and government bonds. Bernhard and Leblang's aim, however, is exploring the consequences of

discrete political events—such as elections and cabinet formations—on capital markets, rather than on explaining the broader impact of public policy and institutions on capital market outcomes.

In the next section, we discuss the politics of equity market performance, focusing in particular on the effects of government policies and institutions on market valuations. We then evaluate statistically the correlates of aggregate price-to-earnings ratios for a sample of 31 countries during the 1985-2004 period. Among the findings is that government fiscal balance is not associated with market valuations—a result that runs counter to the conventional notion of financial markets as a constraint on government profligacy. We also find that capital account openness, economic growth, and the relative size and depth of the stock market are positively associated with equity market valuations. Then, as an empirical assessment of the potential variation across asset types, we shift our focus to the sovereign bond market. We analyze the influence of these same factors—plus other relevant policies and control variables—on borrowing costs for the subset of the sample in which we have available data. Among the significant findings is that expansionary fiscal policy is a hindrance to sovereign borrowing, in contrast to its neutral effects on equity markets. In addition, institutional characteristics such as the level of democracy and the number of veto players have no appreciable association with bond market outcomes. We conclude by placing our findings in the context of the broader debate on the influence of globalization on public policy choices.

I. The Politics of Equity Market Performance

Stock market performance is increasingly a target of analysis by political scientists, because equity investors are highly sensitive to the effects of government policies and institutions on their investments (e.g., McGillivray 2003; Bernhard and Leblang 2006). Equity investments are generally very liquid (subject, of course, to national regulations and transaction costs), and the time horizons

of equity investors are often relatively short. As a result, changes in government policies can trigger a swift response. Government policies that enhance corporate earnings—either directly, through subsidies and regulatory inducements, or indirectly, by expanding the economy and triggering increased consumer demand—will be rewarded by higher stock prices and market valuations. Likewise, investors can quickly exercise their exit option if governments choose market-unfriendly policies, thereby causing downward pressure on stock prices and valuations. Stock markets, in short, are a valuable indicator of financial actors' preferences over government policy outcomes.

Changes in the price of a company's stock often reflect changes in expectations of future earnings. Price changes, however, are not the only performance metric for stock markets; indeed, they may be misleading when compared across countries. International systemic influences, such as natural disasters, terrorist incidents, or economic downturns in the U.S. and other major financial centers, can cause stock prices to move synchronously across countries. A prime example is the stock market crash of 1987, which began in New York but quickly cascaded to London, Tokyo, Hong Kong, and a number of other stock markets. An exclusive focus on stock prices overlooks the variation—or absence of variation—in the underlying valuation of the market relative to expected earnings.

A fitting alternative measure of performance is the ratio of the stock price to company earnings—or, in other words, the price that equity investors are willing to pay for an expected stream of profits. This valuation ratio varies significantly across countries. The United States, for example, has an average price-to-earnings ratio of 19 for listed shares (as of 2005), meaning that investors are willing to pay a price equivalent to corporate earnings per share multiplied by 19. In contrast, the comparable figure for Germany is approximately 12; for the Czech Republic, the ratio is 15.⁵ As with stock price changes, these ratios reflect investors' expectations about future earnings—but they also signal investors' preferences over variable government policy as well as

largely invariant institutional and political characteristics. Moreover, the variance of price-to-earnings ratios across countries remains clear even when national stock markets are hit simultaneously by global price shocks.

Which government policies and institutions are relevant for equity investors? To answer this question, it is helpful to analyze the characteristics of equity investment compared to other forms of investment, such as foreign direct investment and sovereign lending, which have a more developed empirical literature in political science. As mentioned above, equity investment is liquid and short-term, especially compared to the often immobile nature of FDI. Foreign direct investors fear the expropriation of their capital or the “creeping” expropriation of revenue streams, and therefore may refrain from investing in countries with insecure property rights or undemocratic political systems (Jensen 2003). They also are vulnerable to government policy changes of all sorts, since the ex-post illiquidity of their investments precludes the option of exiting the market (Jensen 2003; Li and Resnick 2003; Vernon 1971). Equity investors, however, are not especially vulnerable to expropriation, and in the absence of capital controls they can exercise their exit option if the government makes an unwanted shift in policy. However, equity investors—like FDI investors—are dependent on national legal systems for dispute settlement and shareholder protection, and thus should value the protections afforded by democratic regimes.

There are few similarities between the concerns of sovereign bond and equity investors, despite the fact that the same professional investors often are active in both types of markets. A sovereign bond is a financial instrument issued by a government that pays the bearer a fixed amount at a specified date. In contrast, equities have no maturity dates or other specific temporal dimension; indeed an equity security could remain valid indefinitely as an ownership interest in a corporation. As a result, equity investors have little concern over default or repayment, and their concerns about economic or sectoral conditions are not tied to a particular future date (Maxfield

1997). The temporal dimension of bonds—also known as “fixed income” securities—makes them vulnerable to the eroding effects of inflation, since the real value of the payoff at maturity depends on the prevailing price level; in contrast, equities provide variable returns that adjust for changes in the price level. Equity investors should therefore be far less sensitive to inflation, and to other economic policies that may generate inflation, including fiscal deficits, than bond investors. The contrast in the two markets can be seen almost daily in the pages of the financial press. Attempts by a country’s central bank to rein in inflation are rewarded in the bond market by higher bond prices (lower yields), since a decrease in inflation results in an increase in the real returns for bond holders. In the equity market, however, even a hint by the central bank of a hawkish position toward inflation results in a prompt decline in stock prices upon fears of a short-term economic contraction and greater corporate borrowing costs.

The preceding discussion suggests several hypotheses regarding the effects of government policies and institutions on national stock performance. First, given their low levels of concern with default, equity investors may well be indifferent toward fiscal policy outcomes. Under some conditions, and in contrast to bond investors, stock market participants may even be positively disposed toward fiscal expansion (Santiso 2003). Government spending, without corresponding taxation, provides a short-term stimulus for domestically based firms by boosting aggregate demand for goods and services. Fiscal deficits also signal the government’s willingness to use countercyclical policy in response to economic downturns, thereby leading to increased investor confidence in the stability – throughout the economic cycle – of corporate earnings. However, fiscal deficits are not a panacea for equity investors. In the medium and long term, fiscal imbalances can lead to higher interest rates and overall market inefficiencies. Deficits require an increase in the supply of government bonds, which could crowd out corporate borrowing. Moreover, the Mundell-Fleming model teaches us that in countries with floating exchange rates, the increase in aggregate demand

caused by a fiscal expansion is offset by an increase in the exchange rate, which reduces export earnings of domestic firms. Due to the competing effects of fiscal expansions, we do not expect to find an association between fiscal balance and stock market valuations.

Hypothesis A1: *Fiscal deficits or surpluses are not associated with national stock market valuations.*

While equity investors might be ambivalent toward fiscal policy, we expect them to respond to the more encompassing characteristics of the political environment, including the degree of transparency and accountability in the policymaking process. Equity investors are dependent on information of all kinds, including the status of the economy, the probability and direction of government policy change, and the business and marketing strategies of corporations. Investors rely on government filings, the press, companies' marketing materials, and business leaders themselves for this information. In short, investors depend on an open political environment to make informed decisions. In addition, equity investors are dependent on national legal systems for shareholder protection and corporate governance.⁶ We therefore expect investors to prefer the relative transparency and stronger legal protection of democracies compared to the opaqueness of authoritarian regimes (Rosendorff and Vreeland 2006).

Hypothesis A2: *The level of democracy is positively associated with stock market valuations.*

Moreover, unlike other forms of investment, equities are traded on national exchanges that differ from country to country. Indeed, there is tremendous variation in the size and depth of equity markets around the world, and these characteristics are likely to influence investors' allocation decisions. Equity positions that can be quickly liquidated in a mature, developed market might face substantial stickiness in a less mature, thinner market. The liquidity of an equity investment is in fact a function of national policy (namely controls on capital account transactions, discussed in the

controls section) as well as the size and depth of the national equity market. As liquidity declines, investors grow more cautious—and indeed their investments begin to look like more like FDI than “footloose” portfolio investments. We therefore expect investors to prefer the relative liquidity afforded by larger and deeper equity markets.

Hypothesis A3: *The liquidity of national equity markets is positively associated with market valuations.*

A final point pertains to policy stability. Market valuations reflect investor confidence in public companies’ earnings growth, and that confidence can be compromised in an environment of frequent policy change. For example, investor confidence will plummet if a country’s tax code, trade policies, or other economic policies can be modified with relative ease. The literature on FDI has shown a clear association between policy stability and FDI flows, for the obvious reason that direct investors cannot liquidate their investments *ex post* in response to changes in government policies (Jensen 2005). Unlike investors in FDI, equity investors generally have the ability to exit the market, and therefore might be less sensitive to government policy changes. On the other hand, given that our focus is on market valuations, it is possible that the price that investors are willing to pay for an expected stream of earnings will decline if government policies are deemed unstable. Given that theoretical arguments can be made in both directions, we do not offer a specific hypothesis on the impact of policy stability on market valuations. Instead, we reiterate the findings of the literature on veto players: countries with dispersed decision-making authority—namely, those with policymaking authority located in multiple branches of government, or with broad governing coalitions that render a wider consensus necessary for dramatic policy changes—are likely to provide a more stable policy environment than countries with few veto players. In the empirical section below, we provide an agnostic test of the impact of veto players on market valuations.

II. Correlates of Price-Earnings Ratios

In this section, we test these three hypotheses, and we gauge the impact of a number of important control variables on market valuations, using time series cross-sectional analyses. Our sample encompasses a panel of 31 developed and developing countries for the 1985-2004 period. The limited data availability for some of the covariates reduces the sample size to 469 observations. Sources for the data can be found in the appendix.

Dependent Variable

The dependent variable is the annual average price-to-earnings ratio (hereafter *P/E ratio*) for listed stocks in a national stock market. A typical P/E ratio is calculated by dividing a stock's current trading price by its earnings-per-share (EPS). The national aggregate P/E ratio used in our empirical analysis is value-weighted based on market capitalization; thus the P/E ratio of a stock whose market capitalization constitutes five percent of the total market will be weighted accordingly in the national average. The P/E ratio is prominent in the lexicon of stock investors, as it constitutes a straightforward valuation measure of a stock, sector, or entire market. A high P/E ratio indicates that investors believe a firm has strong growth opportunities, a favorable regulatory environment, stable earnings, and low risk of collapse or operational malfeasance. Similarly, a high national aggregate P/E ratio indicates an overall favorable growth environment for publicly traded companies.

The P/E ratio provides three main advantages over alternative measures of stock market performance. First, the P/E ratio is a measure of market *valuation*, not of market *returns*. Our empirical goal is to determine the ongoing influence of government policies and institutions on investors' purchasing decisions, rather than to gauge the stock market's rise or fall during a given time period. Valuations, in short, are not duration-specific. Thus, we can compare P/E ratios across countries at a particular point in time, and within countries over time. Second, the P/E ratio

measures investors' valuation of the stock market *relative* to market earnings, and therefore isolates the cross-national and over-time variation in investor confidence that might otherwise be lost in a measure of market returns. Consider the aggregate P/E ratios of two countries, one with a high P/E ratio, and one with a low P/E ratio. In a given year, it is possible for the two countries to experience the same overall market returns—say, ten percent—yet it would be a mistake to believe that investors have equal degrees of confidence in both markets. Finally, investors themselves use the language of valuation, rather than the language of price changes, when discussing their portfolio allocation decisions. Markets are “overvalued” or “undervalued” based on the ratio of prices to earnings, which do not necessarily track recent stock price changes.

Explanatory Variables

The existing literature on stock market performance tends to focus on variation across sectors or firms within a national market, or on cross-national stock market returns. Many studies rely on the Capital Asset Pricing Model (CAPM), which relates the expected return of an asset to the asset's riskiness, measured by the variance of the asset's historical rate of return relative to its asset class (Sharpe 1964; Lintner 1965). Empirically, the CAPM alone has demonstrated only modest success in explaining stock market returns, largely because of the importance of firm-level factors and other sources of risk that are not incorporated in the model (see Basu 1977). Moreover, when examining the aggregate P/E ratio of a national market compared to other national markets, it is not clear which baseline to use when calculating the market's “beta,” or relative degree of risk. Scholars have therefore attempted to use more sophisticated proxies for risk in their empirical analyses of market returns (e.g., Ferson and Harvey 1998). Studies that seek to explain stock market valuations, rather than returns, are rare; one exception is Lee and Ng (2004), who analyze the influence of corruption on P/E ratios in a cross-national analysis.

Given that our goal is to explain the influence of government policies and institutions on aggregate stock market valuations—rather than on the P/E ratios of particular firms or sectors—we focus on country-level attributes and macroeconomic conditions. Limited data availability precludes the inclusion of aggregate firm-level explanatory variables, such as research and development spending and firm size. However, we do include the dividend yield (the dividend as a percentage of share price), which is a key component in most stock market valuation models (see Lee and Ng 2004). Our explanatory variables can be divided into four categories: fiscal policy, political institutions, stock market characteristics (including dividend yield), and economic controls. We also discuss other possible control variables, such as partisan orientation and legal tradition, which are not included in the reported models.

Fiscal policy. We expect equity investors to respond favorably to expansionary fiscal policy at certain times, and negatively at other times. Expansionary fiscal policy increases aggregate demand and stabilizes (or enhances) corporate earnings, but in the longer run, it can cause inflation and macroeconomic instability. We include a measure of the government's *fiscal balance* as a percentage of GDP, with negative numbers indicating a government deficit. A negative coefficient for this variable would therefore indicate a positive relationship between fiscal deficits and market valuations. Our expectation is that this variable is not significantly associated with market valuation.

Political institutions. There are many aspects of the political environment that could conceivably influence the valuation of publicly traded companies. We focus on two encompassing variables which we believe are the most salient: the overall degree of transparency and accountability in the political system, and the overall stability of government policy. The first variable is captured by the Polity IV measure of regime characteristics (*polity*), which ranges from -10 (the most autocratic) to 10 (the most democratic). We expect investors to reward stock markets in more open political environments with higher valuations. The Polity IV measure also is a reasonable proxy for

the availability of information in a national market. Given that information costs are an important consideration for investors' portfolio allocation decisions (Mosley 2003), we expect greater transparency to correlate with higher stock valuations.

To capture the stability of government policy, we use Henisz's (2002) formula for measuring the *political constraints* in the political system. The construction of this variable begins by identifying the number of effective branches of government—including the executive, the legislative body or bodies, the judiciary, and any other subnational units—with veto power over policy change. This initial measure is modified to reflect whether these veto points are controlled by different political parties, and the degree of preference heterogeneity within each branch. In our sample, *Polity* and *Political Constraints* are highly correlated (0.70), because democratic regimes are more likely to have dispersed decision-making authority than autocratic regimes. As discussed below, only one of the two political institutions variables appears in any of the regression models.

Market characteristics. National stock markets vary in a number of dimensions, many of which are difficult, if not impossible, to quantify across a large sample of countries. However, three characteristics—the overall size of the market relative to the total world market, the size of the market relative to its own economy, and the dividend yield—should have a clear influence on investor behavior; these also have the benefit of being straightforward to measure. The first variable, *stockworld*, is the ratio of the total national market capitalization to the total world market capitalization. Larger markets offer greater degrees of liquidity and investment choice, and possibly lower transaction costs for trading and settlement. The second variable, *stockgdp*, is the ratio of the total national market capitalization to gross domestic product (GDP). This variable should capture the attractiveness of countries such as Singapore and Malaysia that have small stock markets relative to the world market capitalization, but extremely large markets relative to their own economies. Finally, an important component in most stock valuation models is the dividend yield—that is, the

dividend paid to the shareholder as a percentage of the stock's price. We use the market's total *dividend* as a percentage of total market capitalization. Stock markets with higher dividend yields should have correspondingly higher P/E ratios.

We also include the Chinn-Ito index of capital account openness, *kopen*, in which higher values indicate greater degrees of openness (Chinn and Ito forthcoming). This variable measures the extent of legal restrictions on cross-border financial transactions. It is based on the binary coding of restrictions in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*, and focuses on four dimensions of restrictions: the existence of multiple exchange rates, restrictions on the current and capital accounts (where the latter are measured as the proportion of the last five years without controls), and requirements to surrender export proceeds.⁷ The index has a mean of zero and ranges from -2.66 (full capital controls) to 2.66 (complete liberalization). It is reasonable to expect that capital account openness will be positively associated with market valuations, as investors will benefit from the liquidity and lower transaction costs of an open market.

Economic controls. Finally, we account for the general status of the macroeconomy by including several standard controls, including (logged) *GDP per capita*, annual *GDP growth*, annual *inflation*, and the annual change in the real effective exchange rate (*real exchange rate change*). All else equal, we expect higher valuations in more developed economies in which listed stocks are more likely to represent higher growth industries. The advanced industrialized countries are also more likely to have stronger prudential regulations and better infrastructure than developing countries. We also expect higher valuations when countries are experiencing economic expansion, as indicated by strong annual growth in GDP and real exchange rate appreciation, and lower valuations when inflation is high. Summary data on all variables included, as well as those included in the bond models in Section III, are found in Table 1.

Table 1: Summary Data

Variable	Mean	Standard Deviation	Minimum	Maximum
P/E Ratio	18.08	9.32	3.6	72.1
Fiscal Balance	-2.15	4.76	-20.3	15.6
StockWorld	0.03	0.07	0.00	0.38
StockGDP	0.66	0.53	0.02	3.11
Capital account openness	1.63	1.37	-1.75	2.62
Dividend Yield	2.66	1.32	0	12.50
Income per capita (Log)	9.53	0.87	6.77	10.55
GDP Growth	2.93	2.70	-7.36	12.28
Real Exchange Rate Change	0.00	0.06	-0.24	0.30
Polity	8.94	2.65	-2.00	10.00
Political Constraints	0.45	0.13	0.01	0.71
Benchmark Government Bond Rate	9.38	4.29	1.01	24.01
US Ten Year Bond Rate	7.65	2.64	4.01	13.92
Inflation	4.16	4.14	-1.39	26.03
Current Account Balance	-0.49	4.96	-16.14	29.18
Left Government (Exec.)	0.45	0.50	0	1

Results

We begin by estimating a model that includes the fiscal balance, market characteristics, and economic controls. We then add the additional political institutions variables—*Polity* and *political constraints*—in the second and third models, respectively. The model takes the following form:

$$\text{P/E RATIO} = \text{constant} + \text{FISCAL BALANCE} + \text{POLITICAL INSTITUTIONS} + \text{STOCKWORLD} + \text{STOCKGDP} + \text{DIVIDEND} + \text{KOPEN} + \text{GDP/C} + \text{GDP GROWTH} + \text{INFLATION} + \text{REER CHANGE} + \text{error}$$

“POLITICAL INSTITUTIONS” refers to *Polity* in the second model, and *Political Constraints* in the third model.

We employ OLS estimation with panel corrected standard errors, developed by Beck and Katz (1995; 2004) and widely used for cross sectional time series data, particularly when the number

of countries (N) exceeds the number of time periods (T). Our sample includes 31 developed and developing countries, and spans the period from 1985 to 2004. We assume first-order autocorrelation within panels (an AR1 process).⁸ In the reported models, we opt against using fixed effects, given the fact that fixed effects will be collinear with time-invariant, or largely time-invariant, regressors (Beck 2001).⁹ Since several important independent variables (e.g., Polity and Political Constraints) remain fairly constant across time, the inclusion of fixed effects would dilute greatly the implied importance of these variables. While random effects models do not suffer from this shortcoming, they do require the assumption that unit-specific errors do not correlate with the model's independent variables (see Hsiao 1986). This is, in our view, too strong an assumption for cross-sectional time series data. Our estimated models assume that the disturbances across panels are heteroskedastic (variance specific to each panel) and contemporaneously correlated.¹⁰

Table 2 reports the results for the three models of P/E ratios. The results offer strong support for our hypotheses regarding fiscal policy and equity market characteristics. As expected, fiscal balance is not a statistically significant correlate of P/E ratios. It is notable that the coefficient is negative in each model, indicating a positive relationship between fiscal *deficits* and P/E ratios. This result is consistent with the notion that expansionary fiscal policy (i.e., a decline in the fiscal balance) may yield short-term benefits for publicly traded companies. More importantly, we can conclude from the three models that fiscal balance is not a strong correlate of market valuations—a result that contradicts the conventional wisdom about financial markets as a generally constraining force on government fiscal policy.

Turning to market characteristics, we find strong support for our expectation that the size of the stock market—both relative to the world, and relative to the country's economy—has an important impact on P/E ratios. In both models, *stockpercent* and *stockgdp* are positive and statistically significant. Investors clearly value the liquidity and choice provided by the world's largest stock

markets, including those in the U.S., the U.K., and Japan. However, investors also gravitate toward equity markets that are large relative to the host country, such as the markets in Finland, Singapore and the Philippines. In addition, the results indicate that capital account openness has a positive and statistically significant association with P/E ratios. An increase in *kopen* by one standard deviation (1.37) is associated with an approximate one point increase in the P/E ratio. Our third market characteristic, the dividend yield, was statistically significant but negatively signed. This result runs counter to standard valuation models. It is possible that market dividends are picking up additional market characteristics that investors find unfavorable. For example, corporations may increase dividend payouts in order to prop up their share prices, implying that large dividends reflect poor growth prospects or increased risk. In our sample, there is a negative correlation (-0.26) between GDP per capita and dividend yield, indicating that emerging markets tend to have higher dividend yields than mature markets. Moreover, countries such as Japan and the Philippines have traditionally had very high P/E ratios—frequently in excess of 20 for the Philippines and in excess of 50 for Japan—coupled with very low dividends.

The results, however, do not support our hypotheses about political institutions. Surprisingly, *Polity* is not statistically significant in the second model, although it is positively signed. Thus, we cannot claim a relationship between democracy and equity market valuation. One explanation for this finding is that footloose equity investors do not face the “obsolescing bargain” of foreign direct investment, in which investors leave themselves vulnerable to changing property rights or other contractual abrogations due to the immobility of their investments (Vernon 1971). The potential for substantial investment returns in undemocratic financial entrêpôts such as Singapore and Malaysia may overshadow investors’ concerns about the relative opaqueness and weaker legal protections of authoritarian regimes. Another explanation for the finding for democracy pertains to selection bias. Many countries do not report sufficient data on equity markets

to the international financial institutions or private data collection bodies. Those countries that do report data are, by definition, relatively transparent (Rosendorff and Vreeland 2006). Thus, our sample may not have adequate variation in national transparency to obtain a statistically significant result for the level of democracy.

We were initially agnostic as to the effect of veto players on equity valuations. The relative liquidity of equity investment would suggest a diminished concern over future government policies, since investors could pull their funds in the event of an adverse policy turn. On the other hand, a capricious policy environment could translate into a relatively low market valuation, as equity investors ponder the impact of future government policies on corporate revenue streams. Indeed, the coefficient for political constraints is also not statistically significant. Thus, our analysis provides no support for an association between policy stability and market valuations.

Of the remaining economic controls, the only variable to receive some statistical support in the results is GDP growth. Investors react positively to expanding economies, and may be quick to withdraw funds from countries experiencing recessions and economic downturns. GDP growth varies widely in our sample, ranging from a low of -13 percent to a high of more than 19 percent. A one standard deviation increase in GDP growth (approximately 2.7 percent) is associated with an approximate 0.7 point increase in the P/E ratio.

Additional Controls and Robustness Checks

There are a number of additional controls whose inclusion in our models could be theoretically justified. Unfortunately, more fine-grained measures of fiscal policy, including the distribution of spending on subsidies, pensions, and human capital, are available for only a subset of the countries in our sample, and often for a very restricted time frame. Measures of corruption suffer from the same limitations.

Two control variables are widely available and deserve special mention. First, it often is argued that partisanship influences economic policymaking and investor confidence. In particular, right-leaning governments are considered more supportive of business than left-leaning governments. On this basis, we might expect an association between right parties and higher stock market valuations. On the other hand, right-leaning, nationalistic governments may be more inclined to subordinate domestic concerns to international economic imperatives, such as free trade and exchange rate stability. Such a bias could be harmful to domestic businesses, and could result in downward pressure on P/E ratios. Recent literature in international political economy is, in fact, largely ambiguous about the relationship between partisanship and the global economy (e.g., Broz and Frieden 2001, Simmons 1994). For example, left-leaning governments—which are often assumed to be anathema to financial market participants—might feel compelled to counteract the global market’s putative expectations of their policy agendas by enacting market-friendly policies. In the end, it seems that the relationship between partisanship and the global economy is an empirical question. We added several measures of partisanship in our model, including the partisan orientations of the legislature and of the executive, and the presence or absence of divided government. None was statistically significant.

Second, shareholder protection varies across countries, and investors might favor certain corporate governance structures and legal rules over others. For example, shareholders in different countries may have varying privileges, voting rights, and claims to assets in the event of bankruptcy. The universe of rules and regulations includes property rights protection, the quality of the judicial system, the concentration or dispersion of control over corporate decisions, and the composition and responsibilities of boards of directors. These rules were not written from scratch, but rather stem from a small number of legal traditions. Commercial law, in particular, emerges from either the British common law tradition or the Roman civil law tradition—including the French, German,

and Scandinavian legal systems (La Porta *et al* 1998). La Porta *et al* (1998) find that common law countries provide stronger shareholder protection than civil law countries. While countries within each tradition do not have identical shareholder protections, the traditions themselves provide a useful categorization. In our econometric analysis, we included a dummy variable to capture whether or not the country is of common law or civil law origin. Common law countries in the sample include Australia, Canada, Ireland, Malaysia, New Zealand, Singapore, South Africa, the United Kingdom, and the United States. In the three regression models, the dummy variable is statistically significant (at greater than 99 percent) but negatively signed, indicating that the common law tradition is associated with lower market valuations.¹¹ This is a provocative finding, especially in light of the findings in La Porta *et al*, but clearly more research—including the collection of a more detailed time-series data set on shareholder protection and corporate governance—is necessary before we can draw any firm conclusions.

To check for robustness, we re-estimated the baseline regression model with country fixed effects as a strategy to address the potential problem of omitted variable bias. The inclusion of country fixed effects implies that each country is given its own intercept in the regression analysis, and thus the focus of the analysis shifts to the association of the explanatory variables and market valuations within each country over time, rather than cross-nationally. The trade-off, however, is that our theoretically important time-invariant or sluggish variables, such as the level of democracy and political constraints, will no longer provide any useful information in the econometric analysis. The inclusion of country fixed effects does not change the substantive findings, with two exceptions: stock capitalization as a percentage of world capitalization loses statistical significance at conventional levels, and the log of GDP per capita becomes statistically significant and negative in sign. Interestingly, compared to the model without country fixed effects, capital account openness becomes significant at a higher confidence level (97 percent), and its coefficient increases in

magnitude (to approximately 0.85). Thus, countries that relax their restrictions on capital account transactions are rewarded with higher stock market valuations.

Finally, to ensure that our comparison of the correlates of equity valuation and sovereign bond rates is fair, we truncated the equity sample to match the bond analysis (discussed below), which is more constrained by data availability. The sample size declines by nearly 20 percent, but the substantive results are virtually unchanged.

Table 2: Correlates of Price-Earnings Ratios

Variable	Model 1	Model 2	Model 3
Fiscal Balance	-0.10 (0.09)	-0.08 (0.11)	-0.09 (0.10)
StockWorld	46.16*** (9.38)	45.91*** (9.49)	46.82*** (9.50)
StockGDP	3.50*** (0.82)	3.63*** (0.85)	3.51*** (0.83)
Capital Account Openness (KOPEN)	0.64* (0.39)	0.64* (0.40)	0.68* (0.41)
Dividend Yield	-2.28*** (0.30)	-2.27*** (0.30)	-2.24*** (0.30)
Income per capita (Log)	-0.38 (0.67)	-0.56 (0.71)	-0.54 (0.70)
GDP Growth	0.24* (0.13)	0.25* (0.13)	0.25* (0.13)
Real Exchange Rate Change	-2.39 (5.43)	-2.61 (5.41)	-2.67 (5.35)
Inflation	-0.15 (0.14)	-0.15 (0.14)	-0.14 (0.14)
Polity		0.14 (0.22)	
Political Constraints			2.98 (2.72)
Constant	22.54*** (6.86)	22.97*** (6.84)	22.57*** (6.83)
N. of country-years	469	469	469
N. of countries	31	31	31
R ²	0.37	0.36	0.36

Prais-Winsten regression coefficients; panel-corrected standard errors are in parentheses.

***p>.01; **p>.05, *p>.1

III. Comparing across Instruments: The Government Bond Market

Correlates of Benchmark Government Bond Rates

As we note in Section I, much of the previous work linking government policies and political institutions with financial market outcomes has focused – implicitly or explicitly – on the public debt market. These markets, in which government authorities sell bonds as a means of financing expenditures, investments, or fiscal deficits, often are assumed to be the segment of the capital market with the strongest association with government policy choices (e.g. Mosley 2003, Wibbels 2006).

Given that sovereign bond investors are interested in maximizing returns at a given level of investment risk, they will consider factors that affect default risk—that is, governments’ willingness and ability to repay their debts (Edwards 1986). Such factors might include government revenues and spending, fiscal balances, the nature of political institutions, and the possibility of political instability. Investors also are interested in the real return on government bonds, in their local currency, which leads to assessments of the rate of inflation and changes in the exchange rate during the term of the bond. In this respect, fiscal and monetary outcomes, shifts in government ideology and policy priorities, as well as economic institutions, may be relevant to asset allocation decisions among bond market investors. We also might expect that, when investing in developed nations, bond market investors assume default risk to be relatively low, and therefore focus largely on macro-policy outcomes, such as inflation rates and fiscal deficits. Indeed, previous research on the determinants of interest rates on long-term benchmark government bonds reveals that the inflation rate, the U.S. long-term interest rate, the current account balance, and, to a lesser degree, the government budget balance, the partisanship of government, and the occurrence of national elections are significant correlates of bond rates (e.g., Mosley 2003).

Ideally, we would investigate not only how the determinants of government bond rates compare with those of equity market valuations, but also how bond market behavior varies between developed and emerging markets.¹² Including emerging market nations in statistical analyses raises issues of data availability: not only are key independent variables more often unavailable for developing nations, but comparability across the dependent variable (the interest rate on benchmark government bonds) often is difficult to achieve. Developing country debt frequently is structured differently than OECD benchmark government bonds, in terms of currency denomination (foreign, rather than domestic) and in terms of maturity (1, 3 or 5 years, rather than the benchmark 10). Moreover, secondary markets for developing country debt often are shallower (lower liquidity) than those for OECD securities. For these reasons, then, our sample is limited to those country-years that include data on benchmark government bonds; most of these are developed—or “recently emerged”—nations.

Hypotheses and Control Variables

Extant literature suggests a variety of factors that may influence pricing in the government bond market. These include inflation, the current account balance, government budget deficits, and the real exchange rate, as well as elections, government ideology, and data transparency. Because financial globalization is a multifaceted process (Burgoon 2001, Santiso 2003), government policies and institutions may have distinct influences on different types of investors. How does the impact of government policy vary across types of financial instruments, in this case, between equities and bonds?

We expect that, while policy outcomes and political institutions may matter to both equity and bond investors, different factors will be important to each; additionally, the same factor may affect different asset markets in different ways. In part, this reflects the fact that what drives

performance (price-earnings ratios or bond yields) varies across markets. For instance, in equity markets, both “top down” (economy-wide and global) and “bottom-up” (sector-specific and firm-specific) factors can play an important role. In the government bond market, however, the assets on offer are more homogeneous (bonds from a variety of national governments, rather than shares of a variety of firms that differ in size, sector and in myriad other ways), so “top down” factors should play a more direct role for bond investors. This is not to say, of course, that policy and political institutions do not matter for equity investors; changes in sectoral regulations, for instance, will provoke equity market reactions. In general, though, equity markets and bond markets will differ in their key determinants, particularly where policy outcomes and political institutions are concerned:

Hypothesis B1: *Reflecting the heterogeneity of portfolio capital markets, the significant determinants of bond market interest rates will be different from those of equity market valuations.*

In addition, we expect that particular indicators—accounting for fiscal and monetary policy outcomes—will be associated with interest rates on government bonds. These include the rate of inflation, the government budget balance, and a country’s current account balance.

Hypothesis B2: *As in previous studies, nations characterized by higher rates of inflation and deteriorations in the real exchange rate will pay higher interest rates, while those with larger fiscal surpluses (smaller fiscal deficits) and current account surpluses (smaller current account deficits) will pay lower rates of interest.*

Recent research suggests that government fiscal balances affect market assessments of government bonds. Along these lines, observers frequently argue that financial internationalization generates downward pressures on fiscal deficits, and that higher levels of financial openness are associated with smaller government budget deficits (e.g. Garrett 1998, Obstfeld and Taylor 2004, Simmons 1999). Bond market participants tend to dislike government budget deficits because they worry about the effect of sustained deficits on the government’s ability to repay its debt (default risk) and, more importantly, because they worry that an accumulation of debt will create incentives for

governments to inflate away their nominal liabilities (Maxfield 1997). Current and anticipated inflation also should be important determinants of long-term interest rates, given the linkage between nominal interest rates, inflation rates, and real interest rates. Inflation reduces nominal returns, thereby increasing the risk premiums charged to governments.

For similar reasons, exchange rate movements sometimes are correlated with government bond rates. Benchmark bonds are denominated in the currency of the issuing government, while investors often are located in (and measure returns in the currencies of) other nations. As a result, asset pricing decisions reflect currency as well as an inflation risk: if the real exchange rate is expected to deteriorate, a larger interest rate premium will be charged to compensate for the currency depreciation.

Additionally, the current account balance may be an important correlate of government bond rates, again capturing exchange rate, and possibly inflation, risk. A smaller (more negative) current account balance should be associated with higher rates on government bonds. Under floating exchange rates, a current account deficit can be rectified via capital inflows (the capital account) or via exchange rate depreciation. The former implies a rise in interest rates, to attract investment; the latter implies an improvement in the trade balance, as well as a higher risk of currency depreciation for investors. Via both mechanisms, a smaller current account balance places upward pressure on interest rates (Mosley 2003).

Moreover, our analyses include several political variables, both those that were significant in the models of price-earnings ratios in Section II, and those that have been identified in previous work as significant correlates of government bond rates. While we do not report all of these models, we do include results that test the importance of veto players and left government ideology. The latter may be important to market participants, *if* government ideology serves as a reliable signal of government macroeconomic policies. For instance, left governments should pay higher risk

premiums if they tend to preside over inflationary eras with high fiscal deficits (Garrett 1998, Kurzer 1993; also see Leblang and Bernhard 2000). On the other hand, if government partisanship provides little information about economic policy outcomes, there is little reason to expect that left governments will pay significantly higher interest rates than right governments.

Furthermore, our analyses include various controls. First, we include a measure of the interest rates on United States long-term government bonds.¹³ Past work suggests that, because asset allocation depends on country-specific as well as global influences (“pull” and “push” factors), world market rates are significantly and positively associated with national government bond interest rates (IMF 2003, Wibbels 2006). For instance, an increase in the rates of US Treasury securities tends to generate an increase in interest rates on Brazilian, Canadian and Mexican government bonds. Given the size and importance of the US government securities market, this measure proxies for world interest rates; as a result, the remaining variance in our model captures spreads among countries, rather than nominal rates on benchmark government bonds. We expect US long term rates to be positively and strongly associated with government bond rates.

The second control variable is the openness of a country’s markets to international capital, *lopen*. High international capital mobility could have two opposing effects on government bond rates. On the one hand, increased capital mobility provides a greater capacity for exit for market participants and, therefore, an increased ability to punish governments for unsuitable policy outcomes. On the other hand, increased capital mobility provides governments with a larger pool of capital from which to borrow. Rather than borrow funds only from domestic savings, governments and private individuals may borrow from any holder of capital (Simmons 1999). The positive effect of capital mobility should reduce interest rates, so that higher levels of legal capital market openness might also be associated with lower interest rate levels. Lastly, as in the price-earnings models in Section II, we control for the relative wealth of the economy, using the natural log of income per

capita. This measure allows us to consider whether, as some past work suggests, poorer nations (“emerging” or “recently emerged”) pay higher interest rates, as a result of their higher perceived default risk.

Empirical Results

We test the two hypotheses above for a maximum of 27 countries during the 1980-2004 period. Because we are interested specifically in the determinants of government bond market outcomes—as opposed to interest rate outcomes in the economy more generally—we employ benchmark government bond rates as the dependent variable. This variable captures the nominal rate of interest paid on long-term (ten year), domestic currency-denominated bonds. As such, our dependent variable captures the borrowing costs of governments; it also is a significant influence on the cost of borrowing for private actors in the domestic economy. Our sample selection is based on data availability of the independent and dependent variables, with availability of the dependent variable perhaps posing the greatest limitation. Using benchmark bond rates ensures comparability across our observations, but it also limits the scope of our analysis. While we hope to compare the impact of various factors not only across financial instruments, but also across types of countries, the present analysis focuses on developed and “recently emerged” democracies, given our data constraints. As in Section II, we estimate the models using OLS with panel corrected standard errors and first-order autocorrelation (ar1) within panels.

Table 3 reports results from three models of government bond market rates. These models include similar independent variables as the price-earnings models, to allow for comparison of the statistical and substantive significance of various factors. Model 1 includes the policy outcomes and control variables described above. As expected, countries with higher rates of inflation pay higher interest rates when their governments borrow; a one standard deviation increase in the rate of inflation is associated with a 1.54 percent rise in the government bond rate.

Similarly, governments with larger government budget surpluses pay lower rates of interest, while those with larger fiscal deficits (smaller surpluses) pay higher rates of interest.¹⁴ When a government's fiscal balance worsens by one standard deviation (4.6 percent of GDP), its government bond rate increases by 0.35 percent. While the implied effect of fiscal policy is substantively smaller than that of inflation, both results suggest that macroeconomic policy outcomes are important to the asset pricing and allocation decisions among government bond market participants. Moreover, these results stand in sharp contrast to those for equity market valuations: the results in Table 2 hint that overall monetary and fiscal policy outcomes are of little import to equity market performance. In fact, when fiscal outcomes are significant correlates of P/E ratios (as in the first column of Table 2), the effect is in the opposite direction.

We might also expect that these outcomes differ from what matters to direct investors. For instance, while bond market investors may react against government budget deficits, direct investors may prefer increases in some types of government expenditures, such as infrastructure and human capital formation, because these increase an investment location's productive capacity (Jensen 2006). The two remaining macroeconomic policy indicators – the real exchange rate and the current account balance – are not significantly associated with government bond rates. In both cases, this could reflect the ability of market participants to ameliorate exchange rate risk through hedging – for example, through buying local currencies at pre-announced rates on the forward market.

Turning to control variables, US interest rates are a significant influence: as expected, when US rates rise, rates on other government bonds increase. Additionally, the impact of capital account openness is consistently negative and significant: countries that are more integrated into global capital markets may face more pressures from those markets, but they also benefit from easier access to funds. The results imply that, when capital account openness increases by one standard deviation, government bond rates fall by 0.8 percent. Finally, the level of economic development

(income per capita) also is associated with lower rates of interest: even once we control for various economic indicators, wealthier countries pay less to borrow than do poorer ones (within, of course, a relatively wealthy sample of countries). An increase in income per capita by one standard deviation is associated with a decrease of 0.62 percent in government bond rates. This result may reflect greater concerns about information quality and transparency, or about the general risk of default on government debt, in less developed countries (e.g. in the 1980s and 1990s, the “emerging European” countries of Greece and Portugal).

Table 3: Correlates of Government Bond Rates¹⁵

Variable	Model 1	Model 2	Model 3
US Ten Year Bond	0.41*** (0.08)	0.49*** (0.08)	0.49*** (0.08)
Inflation	0.32*** (0.03)	0.31*** (0.03)	0.31*** (0.03)
Real Exchange Rate Change	-0.97 (0.82)	-0.54 (0.85)	-0.48 (0.84)
Current Account Balance (% GDP)	-0.01 (0.02)	0.04 (0.04)	0.03 (0.03)
Fiscal Balance	-0.08** (0.03)	-0.09** (0.04)	-0.09*** (0.03)
Capital Account Openness	-0.64*** (0.15)	-0.54*** (0.17)	-0.50*** (0.17)
Income per Capita (log)	-0.89** (0.45)	-1.94*** (0.56)	-1.88*** (0.53)
Left Ideology (Chief Executive)		0.25 (0.16)	0.26 (0.16)
Democracy (Polity)		0.23 (0.23)	
Political Constraints			1.64* (0.88)
Constant	13.53*** (4.21)	20.84*** (5.06)	21.67*** (4.81)
N. of country-years	503	461	464
N. of countries	26	23	23
R ²	0.74	0.78	0.78

Standard errors are in parentheses.

***p>.01; **p>.05, *p>.1

Model 2 adds two political variables to Model 1: the ideology of the chief executive and the *polity* measure of democracy. As in the price-earnings ratio models, democracy is not a significant predictor of financial market outcomes.¹⁶ In the case of government bonds, this may be the result of already controlling for key economic indicators (such as inflation), or due to the relatively low variability of the *polity* measure within the bond market sample. In the case of government ideology, left governments do not experience systematic penalties in the bond market (nor are right governments systematically rewarded). If we use legislative rather than executive ideology, the variable remains positive (implying higher government bond rates for nations with left-leaning legislatures), and it begins to approach, but does not reach, a 90% level of confidence. In Model 2, the substantive results on other regressors remain.

In the third model, we include another measure of political institutions – the degree of political constraints on a country’s chief executive. In contrast with the price-earnings analyses, in which this variable is not statistically significant, the bond market results suggest that countries with higher numbers of veto players pay higher government bond rates, all else equal. While a higher number of veto players might increase policy stability in a way that is pleasing to equity or foreign direct investors, it could also promote logrolling (and greater spending) on fiscal policy (Alesina et al 1997), generating concerns about future inflation and default risk on the part of bond market investors.

As a check for robustness, we estimated each of the models in Table 3 using country fixed effects. As we mention above, fixed effects models address problems of omitted variables (important country-level characteristics), but they tend to downplay the impact of time-invariant or slowly-changing regressors. In the bond market models, the use of fixed effects does not change the statistical significance or substantive direction of impact of any of the results. We also check the

robustness of the bond market results to the occurrence of national elections in a given year. In contrast to Mosley (2003, 2006), country-years in which parliamentary elections occur are not characterized by statistically different rates on government bonds, nor are country-years with either type (parliamentary or presidential) of election.¹⁷

Among a sample of relatively high-income nations, then, we find that the indicators most salient to the pricing of government bonds are macroeconomic ones – inflation and government fiscal balances – as well as world market conditions (measured by the US interest rate), the degree of capital market openness, and a country's level of wealth. These results confirm many of the findings of past research in this area, as well as some of the expectations stated in Hypothesis B2, using data that adds more recent years (to 2004) to the analyses. At the same time, the only political institution that is a significant predictor of government bond rates is the veto players measure. More importantly, and providing support for Hypothesis B1, is the fact the results from the bond market models reveal important differences across portfolio capital markets. Indicators that are significant correlates of price-earnings ratios are not necessarily significant correlates of government bond rates, and vice versa.

IV. Conclusion

The extant literature on the linkages between globalization and domestic politics has paid scant attention to the diverse ways in which countries are integrated into the world economy. By assuming that financial markets impose a unified influence on government policies, prior studies have overlooked the stark variation in the preferences of investors across different types of financial assets. In this paper, we argue that equity investors are becoming an increasingly influential force in the global economy, and that their preferences diverge from those of other financial actors in important ways. To illustrate this divergence, we present empirical analyses of the political and

institutional determinants of equity and sovereign bond market performance across a range of countries. Among the most interesting findings is that market valuations are not significantly associated with government fiscal surpluses. Indeed, the negative coefficients in our results hint that investors might respond favorably to government deficits, most likely due to the salutary effects of fiscal expansions and countercyclical demand management on corporate balance sheets. In contrast, sovereign bond investors respond negatively to countries with fiscal imbalances, since deficits often go hand in hand with inflation and increased default risk. On the other hand, both types of investors share a strong preference for capital account openness, while appearing indifferent toward the government's partisan orientation. The similar degree of liquidity for both investments most likely accounts for this finding.

Given that countries are integrated into the global financial system in different ways, these findings lead to the question of how government policymakers might reconcile the competing interests of different types of financial investors. If equity markets are indifferent to, or even benefit from, fiscal imbalances, but bond markets react against them, how does a government that is attentive to market pressures behave? While this question is beyond the scope of this paper, we offer a few tentative answers which can serve as hypotheses for future research. First, the relative economic importance (as a percentage of the overall economy, or as a proportion of capital inflows) of different types of assets—from bonds and equities to bank loans and direct investment—will certainly condition the character and extent of financial market influence on government policy. Equity markets are still relatively underdeveloped in many LDCs, and bank loans are still the financing method of choice for corporations in many advanced industrialized countries. Thus, banks and other financial investors are likely to overshadow equity investors in terms of influence on government policymaking. However, the process of disintermediation—in which corporations bypass banks and other intermediaries in favor of securities markets—is accelerating throughout the

global economy, and for some countries, equity markets already constitute the dominant market for capital. The pendulum of policy influence may swing toward equity investors as disintermediation continues unabated. Second, we might ask about the *political* status of various types of asset holders within a country. While accounts of financial globalization treat investors as an external influence, some key asset holders are based domestically and can exert influence through “voice” as well as “exit” (Hirschman 1970). Even when key investors are foreign-based, they may be able to lobby for certain policies through their connections with domestic economic actors. Moreover, when a higher proportion of a nation’s citizens have assets in the national equity or bond market (for instance, in locations where a greater proportion of retirement savings is privately- rather than publicly-held and provided), the interests of domestic voters may align with those of foreign-based asset holders in the same market.

A more specific question pertains to the channels of influence for equity investors. How could an investor’s threat of exit from the stock market cause a change in government policy? The causal mechanism is not as simple as it is in the sovereign bond market, in which the government suffers higher borrowing costs—and presumably constraints on its spending decisions—when bond investors disapprove of government policy. Changes in the equity and bond markets, however, both can cause a wide-scale increase in the cost of capital for firms in the economy. Sovereign bond rates often serve as a benchmark for bank lending and corporate bond rates. In the stock market, lower valuations translate into a greater cost (and lower financial return) of equity issuance for private corporations, which in turn can prove detrimental to economic growth, employment, and innovation. Elected officials or authoritarian leaders might have incentives to ameliorate these conditions, particularly when equity issues constitute an important source of capital for publicly traded firms, and may therefore reexamine the policy choices to which equity investors responded negatively. Moreover, corporations are the source of campaign contributions and other forms of

political support, and they themselves are likely to lobby for government policies that bolster the performance of their listed shares. It is no surprise that publicly traded companies are vocal in their support for lower taxes, loose monetary policy, and fiscal stabilizers for the national economy.

Financial globalization, then, may have a variety of effects on national economies and on government policy-making. Our analyses suggest that these effects will vary both cross-nationally and over time, as a function of countries' involvement in different types of capital markets.

The central research question about economic globalization is no longer “does globalization influence policy,” but “how does globalization influence policy?” Considering the determinants of equity market valuations, and comparing those determinants with behavior in the government bond market, constitute one step toward answering this question. To further address this issue, researchers should consider how still other types of financial instruments, such as bank loans and direct investment, might react to – and therefore influence – nations' institutional and policy choices.

Data Appendix

Benchmark Government Bond Rate: Yield on ten-year, local currency-denominated government bond. Source: Global Financial Data.

Capital Account Openness (KOPEN): Index of capital account openness compiled from the IMF's Annual Reports on Capital Exchange Restrictions. Lower scores represent more severe restrictions on the payment and receipt of capital. The index is calculated such that the series mean is zero.

Source: Chinn-Ito Financial Openness Measure

(http://www.ssc.wisc.edu/~mchinn/kopen_2004.xls)

Current Account Balance: balance on current account, as percentage of gross domestic product.

Source: World Bank, *World Development Indicators*.

Federalism: Dichotomous indicator, coded 1 if “independent sub-federal entities (states, provinces, regions)...impose substantive constraints on national fiscal policy as indicated in *The Statesmen's Yearbook* or *The Political Handbook of the World*. Source: Witold Henisz, Political Constraint

(POLCON) Index Database, http://www-management.wharton.upenn.edu/henisz/vti_bin/shtml.dll/POLCON/ContactInfo.html

Fiscal Balance: Budget deficit/surplus as a percentage of GDP. Source: International Monetary Fund, *World Economic Outlook*, April 2006 (for 26 industrialized nations). Additional observations are calculated using *World Economic Outlook* data on GDP and International Monetary Fund data (International Financial Statistics database) on total budget deficit or surplus.

GDP growth: annual rate of change in gross domestic product per capita. Source: World Bank, *World Development Indicators*.

Inflation: annual rate of change in consumer prices. Source: World Bank, *World Development Indicators*.

Left ideology: ideology of the executive branch. Original coding (EXECRLC) has three categories, left, right and center. Variable is recoded as a dichotomous indicator of left government (left=1, center or right=0). Similarly, left legislative coding is based on the LGOVRLC, which codes the partisan orientation of the largest legislative party; again, this variable is recoded as a dichotomous indicator of left government (left=1, center or right=0). Source: the Database of Political Institutions (DPI 2004),

<http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:20649465~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html>, and based on Beck et al 2001.

Log GDP/capita: natural logarithm of gross domestic product per capita. Source (for GDP/capita): World Bank, *World Development Indicators*.

P/E Ratio: Aggregate price to earnings ratio for financial sector firms. Source: Datastream.

Polity: Twenty-one point scale of autocracy and democracy (ranges from -10 to 10). Source: Polity database, <http://www.cidcm.umd.edu/inscr/polity/>

Political Constraints: political constraints variable, “PolconIII,” from Witold 2002. See http://www-management.wharton.upenn.edu/henisz/POLCON/CODEBOOK_2005.doc

Real Exchange Rate Change: annual percentage change in the real exchange rate. Source: real exchange rate index from the World Bank, *World Development Indicators*.

StockGDP: Stock market capitalization as a percentage of GDP. Source: World Bank Financial Structure Database.

Stock World: National stock market capitalization as a percentage of total world stock market capitalization. Source: Global Financial Data.

US Ten Year Bond Rate: Benchmark Government Bond Rate for United States Treasury bonds. Source: Global Financial Data.

Table 4: Countries in Sample

Argentina*	Japan
Australia	Malaysia
Austria	Netherlands
Belgium	New Zealand
Canada	Norway
Chile*	Philippines
Colombia*	Poland
Czech Republic	Portugal
Denmark	Singapore
Finland	South Africa
France	Spain
Germany	Sweden
Greece	Switzerland
Ireland	United Kingdom
Israel*	United States
Italy	

* Denotes country in equity market sample only. Data unavailable for bond analysis.

References

Achen, Christopher H. 2000. "Why Lagged Dependent Variables Can Suppress the Explanatory Power of Other Independent Variables." Paper presented at the Annual Meeting of the Political Methodology Section of the American Political Science Association, July 20-22, UCLA.

Alesina, Alberto and Nouriel Roubini, with Gerald Cohen. 1997. *Political Cycles and the Macroeconomy*. (Cambridge: MIT Press).

Armijo Leslie Ann. ed. 1999. *Financial Globalization and Democracy in Emerging Markets*. New York: St. Martin's Press.

Basu, S. 1977. "Investment Performance of Common Stocks In Relation to Their Price-Earnings Ratios: A Test of the Efficient Market Hypothesis," *Journal of Finance* 32, 3: 663-682.

Beck, Neal and Jonathan Katz. 1995. "What to do (and not to do) with time-series cross-section data." *American Political Science Review*, 89, 634-647.

_____. 2004. "Time series cross section issues: dynamics, 2004." Working Paper, New York University and California Institute of Technology.

Beck, Thorsten, George Clarke, Alberto Groff, Philip Keefer, and Patrick Walsh, 2001. "New tools in comparative political economy: The Database of Political Institutions." 15:1, 165-176 (September), *World Bank Economic Review*.

Bernhard, William and David Leblang. 2006. *Democratic Processes and Asset Markets*. New York: Cambridge University Press.

_____. 2002. "Democratic Processes and Political Risk: Evidence from Foreign Exchange Markets," *American Journal of Political Science* 46:316-333.

Broz, J. Lawrence and Jeffrey Frieden. 2001. "The Political Economy of International Monetary Relations," *Annual Review of Political Science* 4:317-343.

Brune, Nancy and Alexandra Guisinger. 2006. "The Diffusion of Capital Account Liberalization." Unpublished manuscript.

Burgoon, Brian. 2001. "Globalization and Welfare Compensation: Disentangling the Ties that Bind," *International Organization* 55 (3): 509-551.

Cerny, Philip G. 1999. "Globalization and Erosion of Democracy." *European Journal of Political Research* 36: 1-26.

Chinn, Menzie and Hiro Ito. Forthcoming. "What Matters for Financial Development: Capital Controls, Institutions, and Interactions," *Journal of Development Economics*.

Edwards, Sebastian. 1986. "The Pricing of Bonds and Bank Loans in International Markets." *European Economic Review* 30:565-589.

Freeman, John R., Jude C. Hays and Helmut Stix. 2000. "Democracy and Markets: The Case of Exchange Rates," *American Journal of Political Science* 44: 449-468.

Garrett, Geoffrey. 1998. *Partisan Politics in the Global Economy*. Cambridge: Cambridge University Press.

_____. 2000. "The Causes of Globalization." *Comparative Political Studies* 33: 941-991.

Helleiner, Eric. 1994. "Editorial: The World of Money: The Political Economy of International Capital Mobility." *Policy Sciences* 27: 295-298.

Henisz, Witold. 2000. "The Institutional Environment for Economic Growth." *Economics and Politics* 12, 1:1-31.

Henisz, Witold. 2002. "The Institutional Environment for Infrastructure Investment." *Industrial and Corporate Change* 11(2).

Herron, Michael C. 2000. "Estimating the Economic Impact of Political Party Competition in the 1992 British Election," *American Journal of Political Science* 44: 326-337.

Hirschman, Albert O. 1970. *Exit, Voice, and Loyalty*. Cambridge: Harvard University Press.

Hsiao, C. 1986. *Analysis of Panel Data*. New York: Cambridge University Press.

International Monetary Fund (IMF). 1998. *International Capital Markets: Developments, Prospects, and Key Policy Issues (September)*. Washington: International Monetary Fund.

IMF. 2003. *Global Financial Stability Report*. Washington: International Monetary Fund.

Jensen, Nathan. 2006. *Nation-States and the Multinational Corporation*. Princeton: Princeton University Press.

Jensen, Nathan and Fiona McGillivray. 2005. "Federal Institutions and Multinational Investors: Federalism, Government Credibility, and Foreign Direct Investment." *International Interactions* 31, 4:303-325.

Jensen, Nathan and Scott Schmith. 2005. "Market Responses to Politics: The Rise of Lula and the Decline of the Brazilian Stock Market." *Comparative Political Studies* 38, 10: 1245-1270.

Kurzer, Paulette. 1993. *Business and Banking in Europe*. Ithaca: Cornell University Press.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Schleifer, and Robert Vishny. 1998. "Law and Finance." *Journal of Political Economy* 106, 6:1113-1155.

Lavelle, Kathryn C. 2004. *The Politics of Equity Finance in Emerging Markets*. New York: Oxford University Press.

Leblang, David. 2002. "The Political Economy of Speculative Attacks in the Developing World," *International Studies Quarterly* 46:69-91.

_____ and William Bernhard. 2000. "Speculative Attacks in Industrial Democracies: The Role of Politics," *International Organization* 54: 291-324.

_____ and Bumba Mukherjee. 2005. "Government Partisanship, Elections and the Stock Market: Examining American and British Stock Returns, 1930-2000." *American Journal of Political Science* 49:781-803.

_____ and Shanker Satyanath. 2006. "Institutions, Expectations and Currency Crises." *International Organization* 60: 254-262.

Li, Quan. 2006. "Democracy, Autocracy, and Tax Incentives to Foreign Direct Investors: A Cross-National Analysis," *Journal of Politics* 68(1):62-74.

Li, Quan and Adam Resnick. 2003. "Reversal of Fortunes: Democracy, Property Rights and Foreign Direct Investment Inflows in Developing Countries," *International Organization* 57(1):1-37.

Lintner, John. 1965. "The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets," *Review of Economics and Statistics* 47:13-37.

Maxfield, Sylvia. 1997. *Gatekeepers of Growth: The International Political Economy of Central Banking in Developing Countries*. Princeton: Princeton University Press.

McGillivray, Fiona. 2003. "Redistributive Politics and Stock Price Dispersion." *British Journal of Political Science* 33: 367-395.

Mosley, Layna. 2003. *Global Capital and National Governments*. Cambridge: Cambridge University Press.

Mosley, Layna. 2006. "Constraints, Opportunities and Information: Financial Market-Government Relations around the World," in Pranab Bardhan, Samuel Bowles and Michael Wallerstein, eds., *Globalization and Egalitarian Redistribution*, pp. 87-112. Princeton: Princeton University Press.

Notermans, Ton. 2000. *Money, Markets and the State: Social Democratic Economic Policies since 1918*. Cambridge: Cambridge University Press.

Obstfeld, Maurice and Alan M. Taylor. 2004. *Global Capital Markets: Integration, Crisis, and Growth*. Cambridge: Cambridge University Press.

Roberts, Brian. 1990. "Political Institutions, Policy Expectations and the 1980 Election: A Financial Market Perspective," *American Journal of Political Science* 34: 289-310.

Rodden, Jonathan. 2004. "Comparative Federalism and Decentralization: On Meaning and Measurement," *Comparative Politics* 36, 4:481-500.

Rodrik, Dani. 1997. *Has Globalization Gone Too Far?* Washington: Institute for International Economics.

Rosendorff, B. Peter and James R. Vreeland. 2006. "Democracy and Data Dissemination: The Effect of Political Regime on Transparency." Paper presented at the 2006 Annual Meeting of the Midwest Political Science Association, Chicago, IL.

Saiegh, Sebastian. 2005. "Do Countries Have a 'Democratic Advantage?' Political Institutions, Multilateral Agencies, and Sovereign Borrowing." *Comparative Political Studies* 38(4): 366-387.

Santiso, Javier. 2003. *The Political Economy of Emerging Markets: Actors, Institutions and Financial Crises in Latin America*. New York: Palgrave Macmillan.

Shambaugh, George. 2004. "The Power of Money: Global Capital and Policy Choices in Developing Countries," *American Journal of Political Science* 48(2): 281-295.

Sharpe, William F. 1964. "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk," *Journal of Finance* 19:425-442.

Simmons, Beth A. 1994. *Who Adjusts? Domestic Sources of Foreign Economic Policy during the Interwar Years*. Princeton: Princeton University Press.

Simmons, Beth A. 1999. "The Internationalization of Capital." In *Continuity and Change in Contemporary Capitalism*, edited by Herbert Kitschelt, Peter Lange, Gary Marks, and John Stephens, pp. 36-69. Cambridge: Cambridge University Press.

Strange, Susan. 1996. *The Retreat of the State: The Diffusion of Power in the World Economy*. New York: Cambridge University Press.

Vernon, Raymond. 1971. *Sovereignty at Bay: The Multinational Spread of U.S. Enterprises*. New York: Basic Books.

Wibbels, Eric. 2006. "Dependency Revisited: International Markets, Business Cycles, and Social Spending in the Developing World." *International Organization* 60 (Spring), pp. 433-468.

¹ Information in this paragraph is taken from the International Monetary Fund, *Global Financial Stability Report: Market Developments and Issues* (April 2006), Statistical Appendix, Table 3 (p. 19). See <http://www.imf.org/external/pubs/ft/GFSR/2006/01/index.htm>.

² Strange 1996, p. 4; also see Helleiner 1994, Cerny 1999.

³ Data from World Development Indicators.

⁴ On varying investor preferences over exchange rate regimes in developing nations, see Shambaugh (2004).

⁵ Data from Thomson Datastream. Average price-to-earnings ratios are value-weighted according to market capitalization.

⁶ We return to this issue below, in Alternative Controls and Robustness Checks.

⁷ For a detailed description of this measure, see Chinn and Ito forthcoming. Other capital account openness indices exist (Quinn 1997, Brune and Guisinger 2006), but their coverage is more limited, and the Chinn-Ito index is highly correlated with these alternative measures.

⁸ Additionally, while some (e.g., Beck & Katz 2004) recommend the inclusion of a lagged dependent variable (LDV) in cross-sectional time series models, others (e.g., Achen 2000) warn against doing so. Such warnings are based on the fact that LDVs tend to dominate the regression equation, generating downwardly biased coefficient estimates on the explanatory variables, as well as on the atheoretical nature of the LDV. We therefore opt to use an AR(1) process, but no LDV.

⁹ We include fixed effects later as a robustness check; see Alternative Controls and Robustness Checks.

¹⁰ Our results are robust to changing this assumption, i.e., with only heteroskedastic disturbances (no contemporaneous correlation across panels).

¹¹ The statistical significance of the other coefficients remains unchanged.

¹² For arguments that default risk considerations are more salient in emerging markets, and that emerging markets generally have greater difficulties accessing global capital markets, see Armijo (1999), Mosley (2003), Santiso (2003), Wibbels (2006).

¹³ For this reason, the bond market models exclude observations from the United States. Including observations for the United States in the sample does not change statistical significance of our results.

¹⁴ In a model that also includes a measure of government expenditure (scaled to GDP) and the partisanship of the chief executive, there is a negative and significant association between government spending and interest rates on government bonds. That is, governments with larger public sectors pay *lower* interest rates when borrowing. Overall fiscal balances retain their negative sign, so that governments with budget surpluses pay lower rates, but governments with budget deficits are charged higher interest rates. The effects of other independent variables remain as in Model 1, in terms of signs and significances, and partisanship (of the executive or, alternatively, of the largest legislative party) is not associated with bond rates. This result offers some evidence that, while the size of the public sector is not of interest to those in equity markets, it does matter for government bond markets – albeit not in the direction that many observers would expect. This model, however, has a much smaller number of observations (n=114) than those reported in Table 3, because of data availability on the government expenditure measure.

¹⁵ The 26 countries are listed in Table 4. We exclude the United States because of the inclusion of the US long term interest rate as a control variable. Including the United States does not alter our results substantively.

¹⁶ For a review of the “democratic advantage” argument with respect to sovereign borrowing costs, see Saiegh (2005). On democracy, transparency and the government bond market, see Santiso (2003).

¹⁷ When a separate indicator of presidential elections is included in Model 3, it is statistically significant and positive, implying higher interest rates in those country-years. None of the other results change substantively or in terms of significance. Presidential elections are relatively rare in our sample, occurring in 23 country-years (compared with 136 country-years for legislative elections, or 150 country-years for either type of election).