State Bureaucratic Performance and the Corporation

Victor Nee
Cornell University

&

Sonja Opper
Lund University

November 2006

Abstract

Recent research on financial market development has focused on the nature of the legal system. The law-and-finance literature, however, exclusively focuses on the abuse of management power as a major cause of shareholder expropriation. The role of the administrative capability of the state in providing and guaranteeing the institutional foundations for securities development is thereby overlooked. The characteristic feature of bureaucracy is predictable, calculable and methodical performance. Our analysis of the linkage between state bureaucratic performance and financial market development confirms our hypothesis that arm's length finance not only needs a reliable legal environment, but also bureaucratic effectiveness. (1) We provide evidence that state bureaucratic performance plays a crucial role in determining financial market development; (2) We find that legal origin plays an indirect role, as it affects the financial market development through the bureaucratic channel, but it does not exert a direct and independent effect.

Bureaucracy and Financial Markets

Modern economic growth is driven by large-scale corporate enterprises with the capacity for self-sustaining investments in technological innovation and factor productivity. In spite of the central role of corporations in the global economy, conditions of corporate and financial market development are not yet well understood. Why do some industrialized countries such as Switzerland have market capitalization rates of more than 200% of GDP, while other industrial economies such as Italy stagnate at less than 40%? And why are some of the newly industrialized countries able to rely so heavily on external funding, while so many developing countries are unable to institute financial markets?

Recent economic explanation of financial market and corporate development has focused on the incentive structure of shareholders and creditors. This principal-agent approach interprets the problem facing financial market development as arising from incomplete contracts between shareholders and management. The core dilemma is that monitoring of managers would involve considerable agency costs. As the risk of shareholder expropriation cannot be resolved through corporate governance structures internal to the firm (Hart 1995), law and finance scholars argue that corporations and financial market development depend on effective legal protection of shareholders and creditors (Shleifer and Vishny 1997).

The underlying logic of the law and finance literature is as simple as appealing: Corporate laws provide shareholder protection against insider expropriation and thereby

reduce agency costs that are naturally connected with a separation of ownership and control. In essence, appropriate minority shareholder protection is a precondition of ownership separation and enables the development of securities markets. Scope and effectiveness of legal protection of investments in corporations by shareholders indeed varies considerably across countries (Levy 1983; Rydquist 1987; Mayer 1990; Edwards and Fischer 1994; Boycko, Shleifer, Vishny 1993).

A series of papers focuses attention on the nature of the legal system (La Porta et al 1997, 1998, 1999, 2000), contrasting two broad families of commercial law: legal origin in either English common-law or in Roman civil-law tradition, which includes the French, German and Scandinavian legal systems. In their seminal paper, La Porta et al. (1997) find that shareholder protection across these four broad families of law—French civil-law, English common-law, German- and Scandinavian civil law—differ widely and have a significant effect on the ability of businesses to fund investments through external sources. Comparative studies of English, French, German and Scandinavian systems of corporate law extended the view that legal system origin is closely correlated with the extent of shareholder protection in empirical analyses of financial markets (Demirguc-Kunt and Maksimovic 1998).

However appealing the law-and-finance perspective may be, the theory did not remain without criticism.[1] Most importantly, the historical development of national stock markets does not conform well to the claim that increasing shareholder protection drives financial market development. Market capitalization of the US stock market for instance, already reached 80% of GDP in the late 1920s, when security regulation was almost absent. In spite of a wave of new securities laws and amendments specifying rules on

[1] For a comprehensive overview refer to Fligstein and Choo 2005.

voting rights, proxy contests (Holding Company Act 1935), and insider trading (section 14 of the 1934 Securities Exchange Act), the market remained within its earlier high of 80% of GDP until the mid 1970s. The subordinate role of legal protection seems to be confirmed by the pattern of historical security market developments worldwide. In Amsterdam, home of the world's first stock market and stock company (the East India Company founded in 1602), formal shareholder rights were largely absent and much of the financial transactions were even prohibited by law. Securities trading relied on self-interest and self-enforcement (Stringham 2003). By the 1630s the Netherlands was already "a highly commercialized country with well-developed and innovative financial markets and a large population of sophisticated traders" (Garber 2001:23). Nonetheless, the Amsterdam Stock Exchange Association was not founded before 1851 to organize and regulate share trading. Similarly, the London Stock Exchange, did not receive its first codified rule book before 1812, while organized securities trading had started as early as 1698 and Brussels stock exchange worked for more than 100 years up to 1935 with minimal regulation.

The observed pattern is widespread: the inception of securities markets worldwide was usually not accompanied or even preceded by respective formal rules protecting shareholder rights. Company stocks were traded informally and transactions were treated as gentlemen agreements, often conducted in local coffee houses or open market places. For the 20th century, Rajan and Zingales (2003) confirm for a panel of 24 countries that in spite of a general increase of legal shareholder protection most countries were financially more developed in 1913 than in 1980. Moreover, they find that common-law countries were financially not more developed than civil law countries. In 1913, for instance,

France's stock market was far more developed than the US stock market (0.78 market capitalization vs. 0.39). Evidently the law-and-finance model does not accord well with the history of financial market development. While it may well provide a partial answer on cross-country variation of financial market development, fixed factors as legal system origin lack the ability to explain the rise and fall of financial markets.

The law and finance literature's emphasis on legal protection of shareholder rights overlooks the workings of a deeper institutional mechanism. Our approach builds on the fact that development of modern corporations and arm's length finance requires an institutional environment in which trust is not dependent on strength of personal ties, but more importantly on confidence of economic actors—individuals and firms—in the predictability and calculability of the state bureaucracy in enforcing contracts, protecting property rights and facilitating markets (Weber [1922] 1978; North 1981; Olson 2000; Fligstein 2001)**.** Weber ([1922] 1978) observed that predictable and methodical organizational action underlies complex transactions in markets and large-scale production in modern capitalist economies: "Today, it is primarily the capitalist market economy which demands that the official business of public administration be discharged precisely, unambiguously, continuously, and with as much speed as possible (p.974).

Methodical and predictable bureaucratic performance in support of markets facilitates capital accounting and calculable risk-taking and hence, the development of large-scale capitalist enterprises. In this sense, the state plays a crucial role in providing and guaranteeing the institutional environment for securities development and the separation of ownership and control (Fligstein 1990). As Berle and Means (1968: xxvii) wrote, "Corporations are essentially political constructs…[They] derive their profits

partly indeed from their own operations, but partly also from their market position and increasingly from techniques resulting from state expenditures of taxpayers' money…..[W]ithout its activity, the enterprise, if it could exist at all, would be or would have been compelled to spend money and effort to create position, maintain access to market, and build technical development it currently takes for granted."

The historical account of stock trading seems to be broadly in line with our focus on the state. Whether the old commodities markets of Bruges, Venice, Genoa, or Pisa, or the early stock markets in Amsterdam, Brussels or London, they all developed in an atmosphere of reliable and supportive public governance, which was trusted by merchants, traders and investors. Take alone the development of the world's first stock company, the East India Corporation founded in 1602, in the Golden Age of Amsterdam. While legal protection and reliable courts were absent, citizens trusted their local governments as a strong and supportive power for business development (Prak 2005). As a consequence, economic growth and trade development seemed predictable and even the time-consuming voyages of the East India Corporation (some voyages took 10 to 15 years to wind up) did not seem too risky to receive broad investor support (Gelderblom and Junker 2004). The popularity of stock investments increased rapidly; by 1668 the East India Corporation already had 20,000 employees and over the course of 120 years average dividends on the original capital surpassed 20% annually. In Amsterdam in the 17th century, development of efficient short- and long-term capital markets was linked to the sound commercial policies and reputation of local government (North and Thomas 1973: 138-145). The semi-autonomous city government of early modern Europe contributed to the development of financial markets; "these units were 'governments of

the merchants, by the merchants, and for the merchants'" (Landes 1998: 36). Country case studies of the 20th century show that securities markets and owner separation typically develop when the state-firm interface is characterized by routinely performed, calculable, impersonal and rule-based transactions; in contrast, owner-management and family-owned firms prevail in the context of highly personalized and relationship-based state structures (Whitley 1999).

To examine the association between state bureaucratic performance and corporate development, we first explain why rational-legal public administration strengthens the state's effectiveness in producing, motivating and sustaining institutional elements favorable to the development of modern corporations (Greif 2005). Following, we use the World Bank Governance data set to test our hypothesis positing a positive connection between state bureaucratic effectiveness and the development of financial markets.

A State-Bureaucratic Explanation of Financial Market Development

Our model extends earlier studies supporting the crucial role of state bureaucratic performance for economic growth and development. Several studies have confirmed a linkage between various measures of government quality and economic growth (Wade 1990; Mauro 1999; Keefer and Knack 1995). Others have – inspired by Weber's analysis of bureaucracy - more closely explored the relations between distinct organizational features of public administration and economic development (Evans 1995; Evans and Rauch 1999). Some have assumed that the transmission mechanism between institutional qualities and economic development lies in the emergence of financial markets (Olson et

al. 2000), but a direct analysis of linkages between bureaucratic performance and financial market and corporate development has not been undertaken.

The essential feature of bureaucracy is that, as a formal, rationally organized institutional arrangement, its pattern of activity is integrated to the purpose and mission of the organization (Merton 1940). As a rule-governed hierarchy, bureaucracy is structured according to offices and a status system in which authority and obligations are specified and limited by formal rules. Accordingly, the bureaucrat's power to control resides in the office, and not in the person charged with performing the role. A bureaucrat's actions are perceived as legitimate if they occur within the framework of the formal rules governing the bureaucracy. This lends a quality of formality to the bureaucrat's behavior, which facilitates the smooth operation of a hierarchy in which formal rules integrate bureaucratic action to maximize ready calculability of mutual expectations and behavior. Because the bureaucrat's authority is defined and limited by the formal rules of the organization, subordinates gain a degree of autonomy from superiors. Moreover, formal rules contribute to administrative objectivity and hence restrain arbitrary and impulsive action.

Key institutional elements which contribute to predictability and calculability of bureaucracies are: Being rule-governed, such bureaucracy entails transparency in division of administrative duties which are inherent to the particular office. Each office is assigned a differentiated set of general rules specifying control and sanctions. The recruitment of bureaucrats is not by election, but by appointment according to technical qualifications which are metered by formal, impersonal procedures, generally by examinations. Reliance on formal education and civil service examinations in the recruitment and

promotion of bureaucrats makes for more competent civil servants. Bureaucratic office usually involves life-long tenure to maximize security of employment. Reliance on merit-based procedures for promotion, incremental salaries, life-long tenure, and pensions helps ensure that the bureaucrat is committed to performance of official duties with minimal interference from extraneous pressures. Predictable and rewarding long-term careers enhance the quality of the bureaucracy in providing a structure of incentives that strengthens the corporate coherence of bureaucratic office-holding and reinforces the internalization of norms of professionalism. Merit-based promotions and conformity with norms of professionalism provide disincentives to corruption and incentives for honest behavior (Evans 1995; Evans and Rauch 1999). These institutional elements account for bureaucracy's technical efficiency, especially the premium placed on precision, speed, expert control, continuity, discretion and optimal returns on input.

The pressure for methodical, prudent and rule-governed action in bureaucracies gives rise to an unusual degree of conformity among bureaucrats (Merton 1940; Stinchcombe 1965; Wilson 1989). Incentive theory sheds light on how rigid compliance to the rule-book and pressure for conformity solve problems of adverse selection, moral hazards and incomplete contracting in government agencies. In this view, officials are motivated not so much by monetary incentives, but by interest in building reputation with the view to future promotion and career mobility. High ability officials demonstrate their ability through bureaucratic performance that emits visible signals of the official's capabilities. This in turn reinforces conformity to norms of professionalism since "lower ability officials are then forced to do the same in order not to reveal they are low ability, while they still have a chance of being perceived as having high ability if they are lucky

in the mission" (Tirole 1994:13). The reliability of long-term commitments arising from such pressure for conformity to norms of professionalism among bureaucrats contributes to the effectiveness of bureaucracy in reducing uncertainty and therein the institutional environment facilitating the calculability of risk-taking.

To highlight the linkage between bureaucratic performance and financial market development, let us consider two central bureaucratic tasks – (1) public good provision and (2) rule enforcement, which both constitute preconditions of corporate development and arm's length finance (Rajan and Zingales 2003).

A central role of government in providing an institutional foundation for modern capitalism is to provide in a routine and reliable manner essential public goods in return for tax revenue (North 1981; Wilson 1989; Barro 1991; Nee 2000; Rodrik et al. 2004). The effectiveness of government bureaucracy can be readily inferred by examining its ability to deliver public goods. Rauch (1995) for instance confirmed a linkage between bureaucratic qualities and infrastructure provision for U.S. cities during the first two decades of the 20th century. The lack of routine public good provision would cause a high degree of insecurity. Bargaining costs accrue if firm representatives try to secure a minimum provision of public infrastructure and services through lobbying and personalized transactions with state representatives. Long-term-planning is impeded and expected agency costs of securities investments increase. While arm's length finance becomes unattractive due to high agency costs, family-owned firms often flourish within such business environments. In developing economies, entrepreneurs overcome deficiencies in public good provision through their personal networks. For example, network ties between firms and political actors gained particular fungibility in the early

stages of China's market transition, where *guanxi* with government officials became a critical factor for business success (Nee 1992; Xin and Pearce 1996). At the same time, however, investor trust in owning securities remained minimal due to the strong and often unpredictable state-firm relations.

A second component of state bureaucratic performance is its technical capability for enforcement of rules governing market institutions (Rajan and Zingales 2003). This quality of a public administration enhances the effectiveness of bureaucracy and is reflected in the credibility of a state's commitment to long-term goals and policies, despite change in the composition of political leadership. Stable commitment to long-term goals and policies reduces uncertainty and increases calculability of government regulatory action. Commitment to rule-governed action maximizes social welfare by lowering the risk of state capture (Tirole 1994). In this sense, bureaucratic effectiveness critically affects the management's ability to plan for new investments, reduces the need for clientelization of state-firm relations and eventually contains the risk for weak management decisions. As a consequence the inclination to invest increases and promotes the development of arm's length finance.

Several mechanisms embedded in bureaucratic performance increase calculability and thereby facilitate long-term corporate planning and external finance:

Predictability and credibility of decision. The prevalence of predictable bureaucratic decisions is a core condition for medium and long-term corporate planning. In making plans regarding investment, innovation, expansion and so on, managers and shareholders need assurance that existing laws and regulations will be applied in a calculable and predictable manner. Extended leeway in bureaucratic decision-making,

and personalized rather than impersonal power structures may easily result in unpredictable outcomes. What for example, if licenses for a newly developed drug are not granted, although all formal requirements are fulfilled? What if marketing strategies are not approved, although they are in accordance with valid market regulations? What if imports of crucial input factors are suddenly forbidden or custom clearance is deferred or even denied? Quite obviously, insufficient calculability of rule enforcement incurs undue risks to firms and shareholders.

Timely delivery of bureaucratic decisions. Effective bureaucracies provide dependable guidelines for ready access to the responsible bureaucrats and decision-makers, standardized approval procedures and routine delivery of decisions. Empirical research confirms that timely delivery of bureaucratic decisions and lean bureaucratic procedures are critical features of a firm's business environment. Bureaucratic delays, for instance, essentially cause periods of insecure rights; such uncertainty can impose high costs on corporations. Typical examples are delays in applications for licenses, and for patents and property registration. Bureaucratic delays in these areas are by no means trivial and may turn into severe business impediments. A cross-country comparison reveals that bureaucratic standards indeed vary by a great margin. While for instance property registration takes just one day in Norway, it takes on average 965 days in Croatia (World Development Indicators 2004). Such delays can eventually impede investment projects, and critically affect a firm's market position. Similarly, delays in patent applications incur the risk of losing all development costs if a competitor is quicker to achieve patent protection. Foreign managers asked to assess recent improvements in the protection of intellectual property rights in China frequently raise

strong concerns about the unusually long application period, in which innovations remain legally unprotected. Hence, delays in bureaucratic decisions pose relatively high external risks which lower profit expectations and thereby may impede or at least hamper external fund-raising.

Fairness of bureaucratic decisions: Bureaucracy at its best assures equity and fair treatment of all actors without regard of the person. In this sense, state bureaucratic effectiveness also extends to the quality of a market economy's regulatory structure. As an institutional innovation, rational-legal bureaucracy expanded the state's organizational capacity to uphold a broad and secure set of individual rights and maintain open markets through routine application of rationalized formal rules (Olson 2001). State bureaucracies' performance also directly affects the performance of market-based corporate governance mechanisms, such as the market for managers, the take-over market and the product market (Hart 1995). Without effective and fair regulation, competitive pressure can be reduced, leading to weak external corporate governance.

In sum, the crucial role of state bureaucratic performance stems from its function to construct an institutional environment which affects the overall level of transaction costs evident in ease of calculability of risks in profit-making opportunities for economic actors. The lower the quality of bureaucratic effectiveness, the higher the level of uncertainty faced by economic actors, the less calculability in both short and long-term planning for risk-taking. Hence, *the institutional environment needed for the external finance of corporations depend on the quality of the state's bureaucratic performance* (hereafter, the bureaucratic performance hypothesis).

We should emphasize that bureaucratic effectiveness is not to be understood as a lean and non-interventionist government. Interventionist governments may still have effective bureaucracies delivering timely and rule-based services, which provide beneficial conditions for corporate development. For instance, several of the East Asian developmental states have clearly been interventionist, but interventions have been executed by reliable and rule-compliant bureaucracies. Evans (1995) underscores the positive effects of the state's direct involvement in corporate strategizing and decision-making in Japan. He calls attention to Japan's Ministry of International Trade and Industry (MITI) to illustrate how a highly disciplined elite state bureaucratic organization can motivate and guide firm development, with bureaucrats directly involved in the strategic decisions of firms.

Empirical Test

World Bank Governance Database

To investigate the impact of state bureaucratic performance, we use data from the *World Bank Governance Database* (Kaufman et al. 2005), which provides aggregate indicators from 31 different sources measuring 6 dimensions of public governance for the period of 1996 to 2004. Additional variables stem from the *World Development Indicators Database* (World Bank). Overall we have compiled data for 56 countries with national stock markets. We follow the common practice of not including transition economies since stock market development in these new market economies is only a recent phenomenon.

Dependent Variables

We use two different measures to assess the size of financial markets. Our main measure is the ratio of stock market capitalization to GDP (henceforth called market capitalization) to assess the breadth of stock markets. In order to soften short-term variations due to price fluctuations, we apply a 3-year average of the years 2001-2003. In our sample, market capitalization ranges from a low of 2.68% for Bangladesh to 212.16% for Switzerland, with a mean value of 57% (Table 1). In addition, we use the number of listed firms relative to the country's population as an alternative indicator for cross-country comparisons of stock market development and market breadth (La Porta et al. 1997; Claessens et al. 2000). In our sample, the total of domestic firms ranges from 1.21 per capita (million) for Ghana to 197.40 for Cyprus, with a mean value of 26.7 (Table 1). In order to assess the extent to which domestic firms are competitive in a global setting, we calculate the proportion of a country's total number of listed firms, which is listed in the Forbes 2000 index.

Independent Variable

We employ the indicator from the *Governance Database* of "government effectiveness" hereafter bureaucratic effectiveness since it is in fact a measure of the state's bureaucratic performance (Kaufman et al. 2005). It provides the closest measure of our concept of bureaucratic performance as being composed of (1) quality of public service provision and (2) competence of bureaucracy in terms of rule enforcement. Dimensions integrated into the effectiveness indicator are bureaucratic delays, administrative and technical skills of the civil service, government senior-level turnover

rates, public goods provision, and the quality of public administration. The indicator incorporates specific dimensions of bureaucracy, including organizational features—competence of civil servants and independence of the civil service from political pressures—also measured by the Weberianness scale of Evans and Rauch (1999). Bureaucratic effectiveness, however, goes beyond the Weberianness scale as it also incorporates measures of the quality of public services and state bureaucracy. The only loosely coupled underlying conceptual idea of both indicators is confirmed by a comparatively weak correlation of only 0.49. Index values of bureaucratic effectiveness range from -2.5 to 2.5, whereas higher values indicate higher bureaucratic quality.

As an aggregate indicator estimated through an unobserved component model[2], bureaucratic effectiveness provides a broad-based assessment of the state's capacity to provide a supportive business environment and promises to offer a more informative measurement than any specific indicator possibly could. First of all, the indicator is based on a large number of separate data sources, including international organizations, government organizations, NGOs, universities and commercial consultancies. Secondly, the indicator builds on both objective and perceptions-based measures, thereby relying on the full range of assessments. Bureaucratic effectiveness is therefore likely to capture the underlying concepts of rationalization of state bureaucracy and bureaucratic performance. In contrast, reliance on one or a few proxies would only capture one specific dimension of the underlying concept. And thirdly, the different data sources employ a variety of different respondents ranging from foreign experts and country analysts to individuals and national firms, thereby mitigating the risk of response and perceptional biases. The

[2] The model estimates the observed data as a linear function of the unobserved common component, while a disturbance term captures perception errors and sampling variations. For a more detailed discussion of the estimation procedure refer to Kaufman et al. 2005.

World Bank governance indicator therefore currently provides the least noisy signal of the underlying notion of governance quality.

For our analysis, we constructed average values for an eight year time period from 1996 to 2004, as we assume that short-term changes in bureaucratic quality will not cause immediate adjustments of the financial market breadth and firm development. Instead, bureaucracies' reputation-building typically takes a considerable time. At the same time, we contain the risk of simultaneity bias. Theoretically, there is some reason to believe that institutional quality not only affects financial market development, but could also be driven by an increasing demand for good governance formulated by strong players in the financial market. This assumption, however, seems to enjoy diminishing support. Kaufman et al. (2005) provide evidence that there is no clear trend in global averages of institutional quality. If anything, there is rather evidence of a deterioration worldwide, which would suggest that there is no strong causal channel operating from wealth generation to the quality of institutions.

Across our 56 sample countries, average values for bureaucratic effectiveness range from minus 1.144 for Nigeria to a maximum value of 2.426 for the Netherlands, with a mean value of 0.79. Table 1 presents country data arranged in country groups of common legal origin. Average values indicate that Scandinavian-origin countries score by far the highest, with mean values of bureaucratic effectiveness as high as 1.97. Second follow German-origin countries, with 1.55. English-origin countries score slightly higher than French-origin countries, which score the worst with a mean value of 0.54. This suggests that bureaucratic quality is not simply a different signal of a specific legal-origin

type. The correlation coefficient for bureaucratic effectiveness and legal system origin is actually quite small, with -0.08 (see appendix 1).

Table 1 seems to provide some casual evidence for a close connection between bureaucratic performance and corporate development. Only 27 countries across the world are listed in Forbes 2000, and the mean value among these for bureaucratic effectiveness (1.30) is significantly higher than in the total sample. Similarly, market capitalization and firms per population are on average larger among these countries than for the full sample (see Appendix 1). Also, the Netherlands as the number one performer in terms of bureaucratic quality ranks number one, with 18.03% of its firms also being represented in the Forbes 2000-index.

Bureaucratic effectiveness is of course not a truly exogenous variable but is determined by some underlying, yet not well understood determinants. However, it is not the focus of our research to understand the deeper causes of bureaucratic quality, but to highlight the linkage between bureaucratic performance and financial market development.

Control Variables

To isolate the impact of bureaucratic effectiveness on the development of financial markets, we further include a set of control variables. Following the law and finance literature, we include legal origin. La Porta et al. (1997; 1998) gave evidence that English-origin countries enjoy the highest level of shareholder protection against expropriation by insiders and thereby offer entrepreneurs better terms of external finance. Securities are valued higher and capital markets are broader in the sense of stronger

demand for equity finance. To control for this legal-system effect we include a dummy variable controlling for English-origin legal systems.[3]

In addition, the size of the economy may have some impact on the development perspectives of domestic firms and financial markets. The theory is that economies of scale might actually drive the development of financial markets. To control for the size effect we include log (GDP).[4] Furthermore, we control for the country's geographical location, as earlier work suggests it may help to explain financial market development (Beck and Levine 2004). Latitude specifies in absolute terms the distance to the equator and serves as a proxy for the country's natural endowments and disease environments (Acemoglu et al. 2001).[5]

Table 1

Before we move on to our benchmark model, it is useful to first look at the simple bivariate relationships between bureaucratic effectiveness and the three dependent variables measuring dimensions of financial market development. Figure 1 presents the scatterplots. Although the relationship between bureaucratic performance and the national proportion of firms listed in Forbes 2000 becomes quite loose, all plots show the

[3] We also ran all our regressions with three dummies indicating legal system origin (i.e. French-origin, German-origin, and Scandinavian-origin). All our results were confirmed.

[4] Following La Porta et al. (1997), we also experimented with GDP growth over the last two decades as an additional control variable. However, neither the explanatory power of our model increases, nor are coefficient and significance of our bureaucracy performance indicators affected.

[5] Furthermore we experimented with a whole set of additional controls including annual GDP growth, secondary schooling (Rauch & Evans 2000) and trade openness (Rajan & Zingales 2003). Estimates for bureaucratic performance remain significant, but the overall explanatory power of our model decreases.

expected positive relation between bureaucratic quality and financial market development.

Figure 1

Regression Analysis

For purpose of comparison, we essentially follow the regression technique and model-specification chosen in the seminal paper on law and finance by La Porta et al. (1997). While La Porta et al use a sample of 49 countries, our panel is slightly larger with 56 countries including developing and industrialized countries. Following La Porta et al. (1997) we apply a cross-section OLS-analysis. Our aim is to replicate the research design employed in the law and finance literature. A cross-sectional design is also consonant with the Weberian origin of our bureaucratic performance hypothesis. Weber posited causal interdependence of bureaucracy and modern capitalism. Rational-legal bureaucracy was a key institutional precondition in Weber's theory of the rise of rational capitalism in the West (Collins 1980), but once established, the capital accounting of large-scale capitalist enterprises needs "complete calculability of the functioning of public administration and the legal order" (Weber 1978, cited in Swedberg 1998:63). Causal interconnectedness between rationalized bureaucracy and large-scale capitalist enterprise is assumed in the sociological organizational literature since Weber's seminal study in *Economy and Society* (Meyer and Rowan 1977; DiMaggio and Powell 1991). In other words, causality moves in both directions; hence a cross-sectional design is suitable to test the bureaucratic performance hypothesis. Table 2 presents a series of OLS-

regressions on our measures of financial market development on various controls and the quality of state bureaucratic performance, as measured by bureaucratic effectiveness. For purpose of comparison, we also estimate the base model without bureaucratic quality measures.

Models I and II present the effects on market capitalization to GDP. The result of Model II is consistent with our hypothesis that bureaucratic effectiveness is an important determinant of financial market development. State bureaucratic effectiveness is not only positive and significant at the 1-percent level; the slope coefficient also indicates a particularly strong influence on the degree of market capitalization. A one standard deviation change of bureaucratic effectiveness causes a 0.78 standard deviation change of market capitalization. Bangladesh, the country with the lowest market capitalization in our sample, for instance, could – everything else being equal – increase its market capitalization rate from 2.68% to 37.62%, with an increase of bureaucratic effectiveness by one standard deviation (from -0.558 to 0.432). Overall, bureaucratic effectiveness explains as much as 27% of the cross country variation in market capitalization (the adjusted R^2 jumps from 18% for the base model to 45%).

Regressions on listed firms in relation to the total population confirm our findings on market capitalization. In model IV, bureaucratic effectiveness again turns out to significantly (at the 1% level) influence the number of listed firms. A one standard deviation increase of bureaucratic effectiveness is connected with a 0.66 standard deviation increase of listed firms relative to population. That is, all things being equal, if Ghana could increase bureaucratic effectiveness from -0.056 to 0.934, the number of listed firms relative to population would increase from 1.21 to 25.92. Again, the

explanatory power of the model including bureaucratic effectiveness surpasses the benchmark law and finance model by a great margin, with adjusted R^2 of 32% as compared to 14%.

Table 2

Finally, our estimates on the national representation in the Forbes-2000 index (model VI) support the hypothesis that high bureaucratic quality provides fertile grounds for globally competitive firms. State bureaucratic effectiveness exerts a significant positive but smaller influence (at the 5%-level). A one standard deviation increase in bureaucratic effectiveness increases the Forbes-representation only by 0.23, lifting for instance 0.01% of Bangladesh's listed firms into the Forbes-Index, if bureaucratic effectiveness increases from -0.558 to 0.432. The overall explanatory power of our model, however, still increases slightly compared with the base model.

As to the control variables of our model, the estimated effects of legal-system origin deserve particular attention. In contrast to the common notion that English-system origin supports financial market development, it loses its significantly positive impact once bureaucratic effectiveness is included in the model. In one case, our estimates even show a significant negative impact of legal-system origin (model VI). From this one might infer that agency costs due to management malfeasance (and the respective legal protection) are indeed a lesser concern of shareholders, while state bureaucratic performance plays a stronger role in containing agency costs of ownership separation. At

this point we could only hypothesize possible explanations. We will, however, come back to this point in our robustness checks (see table 6).

A comparison of the explanatory power of our base models and models including bureaucratic effectiveness suggests that the crucial effect of bureaucratic qualities lies in the support of overall financial market deepening, which may subsequently provide the conditions to develop into globally competitive corporations.

Robustness Checks

We perform checks on the robustness of our findings along five dimensions. First of all, we respond to potential criticism against the chosen measure of bureaucratic quality and employ alternative indicators of bureaucracy. Then, we investigate whether the results of our benchmark model are caused by outliers. Furthermore, we explore the impact of country development; in addition we experiment with a different model specification to separate the underlying concept of bureaucratic performance from possibly related, but not identical concepts. Finally we employ instruments in order to deal with the potential (though limited) risk of reverse causality.

Measuring bureaucratic effectiveness is necessarily a highly disputable endeavor, as “the government suffers from not having any clearcut measure of efficiency like accounting” (Tullock [1965]2005: 348). It follows that any measurement concept will be disputable and reflects to some extent political or ideological positions. While most indicators still show significant overlap in their coverage and are indeed highly correlated, they could still cause critical variations of our regression results.

In order to respond to possible criticism against the use of principal component scores, we re-estimate our benchmark-model with three alternative bureaucracy indicators. First of all, we use the bureaucracy index provided by the International Country Risk Guide (ICRG), which is a widely accepted indicator in the institutional growth literature (Knack and Keefer 1995; Rauch and Evans 2000; Olson et al. 2000). Then we include the Bureaucracy-index compiled by the International Management Institute for the World Competitiveness Yearbook (IMD), which mainly relies on expert opinions delivered from CEOs.[6] In order to further explore the appropriateness of the underlying concept of bureaucracy we employ the Weberianness' indicator constructed by Evans and Rauch (1999), which is – in contrast to other indicators – exclusively based on distinct organizational features of state bureaucracies (i.e. meritocracy based recruitment and predictable career paths), but does not include the "quality of production" of public administrations. It will therefore help to determine whether securities market development is mainly connected with distinct organizational features of the state bureaucracy, or is actually associated with the provision of specific state services. Due to varying data availability the sample size varies accordingly.

Regression results presented in table 3 allow two major findings. First of all, findings of our benchmark model are clearly confirmed for ICRG- and IMD-indices. A second point worthwhile noting is the weak explanatory power of the Weberianness-scale. Weberianness only is statistically significant in one case (column VI), while the

[6] It is worthwhile noting that both indices were criticized for validity problems, as expert opinions on bureaucratic quality might be easily tainted by economic performance (Evans and Rauch 1999). Hence, good bureaucratic ratings might be expected for high-performing countries, while bad ratings might be suspected for low-performing countries. To assess such a risk we have calculated the correlation coefficients between ICRG, IMD and annual growth rates of gross domestic product, but found negative correlation coefficients (ICRG: -0.47; IMD: -0.22). We can therefore rule out that ICRG and IMD are simply reflections of an optimistic business outlook.

Weberianness-model consistently yields a weaker explanatory power than the other measures. This finding suggests, consistent with our hypotheses, that it is actually the quality of bureaucratic output and performance that helps to contain agency costs and supports financial market development. However, as the Weberianness index only incorporates two distinct features of state organizations (meritocracy based recruitment and long-term career paths), we cannot rule out, that other structural components could promote financial market development.

Table 3

Our scatterplots have illustrated that all financial outcome variables include a couple of extreme values, which could possibly distort our overall estimation results. We have therefore re-estimated all regressions excluding extreme outliers. That is, for our regression on market capitalization we excluded Switzerland; for the regression on listed firms in relation to population we excluded Cyprus and Iceland, and for our estimates on the determinants of firm representation in the Forbes 2000 index we excluded the Netherlands and Italy. All our regressions confirmed the findings in our benchmark model presented in table 2. The level of significance was maintained in each of the cases and only the values of the estimated slope coefficients varied slightly. We can therefore rule out that the results of our benchmark model are driven by outlier values (regression results are available from the authors).

Due to the heterogeneity of our sample countries, one might suspect that significant positive effects of bureaucratic quality result from the rather strong variation between developed and underdeveloped economies included in our sample. In order to verify whether bureaucratic qualities still play a decisive role in the developed world, we re-estimate our model for a sub-sample of developed countries. As a benchmark, we included those countries which have at least one company ranked in the Forbes-2000 index. This reduces our second sample to a total number of 27 relatively developed countries. In comparison with the original sample, the mean market capitalization increases from 56% to 84%, and the mean of bureaucratic effectiveness increases from 0.78 to 1.30 (std. dev. 0.85) (see Appendix 1). Table 4 presents our results, which confirm the previous estimates. Once again we find significant and positive effects of bureaucratic quality on financial market and the development of large-scale corporate enterprises. For our regression on listed firms, for instance, the Adj. R^2 of model III is 4%, and jumps to 45% (Model IV) under the inclusion of bureaucratic effectiveness. For the more developed countries, a one-standard deviation increase in bureaucratic effectiveness even causes a 0.75 standard deviation increase of listed firms relative to population. That is, an increase of bureaucratic effectiveness of 0.85 points causes an increase by 23.6 firms per population. The comparatively stronger Adj. R^2 of bureaucratic effectiveness as compared to the full sample (Table 2, Model II) suggests that bureaucratic effectiveness is getting more rather than less important in more developed countries. This finding is consistent with our assumption that particularly the modern corporation depends to a large extent on the existence of an effective bureaucracy as a crucial counterpart.

A final remark on the role of legal system origin: The smaller panel confirms our earlier findings on the subordinate role of English-origin legal systems, once bureaucratic performance is included. Under inclusion of bureaucratic effectiveness, legal-system origin has in none of our estimates a positive effect; in one case it even turns significantly negative (Model VI). These estimates further confirm that legal system origin loses its direct impact on financial and corporate development the higher the economic development and institutional quality.

Table 4

We also further specified the underlying concept of our model. Theoretically, bureaucratic effectiveness might simply mirror the existence of efficient and growth-promoting shareholder rights. If this were the case, our results would merely reflect the positive effects of security laws implemented and enforced by effective governments. In order to separate our bureaucratic measure from the provision of appropriate security laws, we further extend our model by two more control variables, both widely-used proxies of shareholder protection: the Anti-Director Rights-Index (ADR) and a dummy indicating whether the securities law specifies "one-share-one vote." Our data come from La Porta et al. (1997). As their dataset differs from our own sample, the inclusion of these variables reduces our sample to 42 countries.

Table 5 presents the estimates. Even after inclusion of specific shareholder rights, bureaucratic effectiveness still has a significant positive impact on market capitalization and the number of national corporations. Only in the Forbes-model (Model VI) does

bureaucratic effectiveness turn insignificant at conventional levels, though the slope coefficient still has the expected sign. In none of our three estimates including measures of bureaucratic performance, shareholder rights exert the assumed positive effects on financial market development. In one case the impact of anti-director rights even gets significantly negative (column VI).[7] We take these findings as an indication that it is particularly bureaucratic performance that provides shareholders with the necessary institutional security enabling arm's length finance of the modern corporation.

Table 5

Our inferences made so far may to some extent suffer from the fact that our measures of bureaucratic performance are not truly exogenous. Thus, bureaucratic performance might be influenced by omitted factors that also influence our outcome variables. If such an unobserved factor actually determines both explanatory and outcome variables, our estimates would be biased and inconsistent. One approach to deal with this endogeneity issue and to eliminate the omitted-variables bias is to apply instruments that are correlated with the explanatory but not the outcome variables.[8]

---

[7] Theoretically, the additional inclusion of an indicator assessing rule of law would be ideal, as security-measures only depict *de jure* legislation but not the quality of law enforcement. High correlations with bureaucratic effectiveness would, however, lead to inaccuracies due to multi-collinearity. Including it nonetheless does not eliminate the significance of bureaucratic effectiveness.

[8] Good instruments should not only satisfy the condition of strong correlation with the explanatory variables while having no direct effect on the outcome variable beyond its effect on the endogenous regressor; they should also "come from detailed knowledge of the economic mechanism and institutions determining the regressor of interest" (Angrist and Krueger 2001). However, theory-building and research on the causal mechanisms explaining the quality of bureaucratic performance are still in their infancy. Only few reliable findings have been produced in recent years. While La Porta et al. (1999) found that religion has some explanatory power on the quality of government as measured by specific concepts such as corruption and public goods provision, it did not qualify as a valid instrument. Similarly, we had to rule out social protests as a valid instrument. For other common

Country size, as measured by log area, provides a valid instrument. While theory and empirical evidence are not conclusive whether large country size yields positive or negative effects on bureaucratic performance, country size is increasingly perceived as a determinant of policy choices. On the one hand, small countries may benefit from smaller heterogeneity and may find it easier to respond effectively to citizens' preferences; on the other hand, large countries may benefit from economies of scale for public goods provision as long as the administrative territory does not overextend (Alesina and Spolaore 2005).[9] Our correlation tests show a significant correlation of log(territory) with bureaucratic effectiveness (-0.24). As there is also no direct effect from territory on market capitalization, country surface qualifies as a technically appropriate and theoretically/empirically well founded instrument.

Table 6

Table 6 presents our results, which confirm our benchmark model (table 2). Only for the Forbes model (III), the level of significance of our bureaucratic performance variable drops slightly below conventional levels, but coefficients are still significant at the 15% level. The value of slope coefficients increases consistently over all estimations. The Hausmann-test confirms that our earlier OLS-estimates were actually consistent.

---

indicators such as ethnolinguistic fractionalization and language heterogeneity, which are both correlated with bureaucratic effectiveness, the direction of causality is not entirely beyond doubt.

[9] Economic history provides ample examples on the close relation between territorial expansion and governance. To the extreme, the excessive expansion of states led to the demise of state power; Chinese dynasties collapsed when the empire's administrative reach was overextended, and France's territorial expansion in the sixteenth and seventeenth century hampered economic development as political administration became inefficient.

As to our control variables, English legal origin remains insignificant in all second stage regressions; in one case (III) it is again significantly negative. Also latitude is consistently insignificant, while it was significant in our OLS-benchmark model (Table 2). Hence, both control variables do not exert an independent and direct effect on corporate and financial market development. The first stage results reported in table 6 show that both control variables affect financial market and corporate development through their impact on bureaucratic performance. Our estimates on legal-origin are consistent with previous work by La Porta et al (1999), who found a strong influence of legal system origin on diverse measures of government performance. This would suggest that development-effects of legal-system origin rather stem from its effect on the bureaucratic quality than from any direct causal linkages between legal system and shareholder protection. The impact of legal system origin on bureaucratic quality, however, seems plausible as distinct legal systems work as rough proxies for the traditional political orientation of governments and colonial heritage (La Porta et al. 1999). While the English common law tradition aims at limiting the power of the sovereign, French civil law was built to be a powerful tool to further the power of the state. Historically shaped bureaucratic structures and efficiency of public service provision will most likely mirror these broad political orientations.[10]

[10] Diagnostic tests do not suggest that our estimates might suffer from weak instruments. The F-statistic for all first-stage regressions are well above the threshold of 10 suggested by Staiger and Stock (1997). Our two-stage LS results are confirmed in our extended model specification including anti-director rights and one-share-one-vote as additional independent variables. Estimation results are available upon request from the authors.

Conclusion

Institutional analysis of financial markets and corporate development has so far almost exclusively focused on the specific role of legal tradition and the impact of distinct shareholder rights. While we agree that rule of law and legal rights play a crucial role in solving corporate governance issues stemming from the separation of ownership and control, we believe that this focus overlooks an important complement of financial market and corporate development: the state. It is the quality of the state bureaucracy that emerges as a crucial determinant of the quality of the state-firm interface. Without effective bureaucratic performance, corporations lack a host of preconditions necessary for corporate growth and financial market development.

Our analysis of the linkage between bureaucratic performance and corporate development confirms the hypothesis that arm's length finance not only needs a reliable legal environment, but also a well-functioning bureaucracy characterized by calculable high-fidelity performance. Our analysis yields two major findings: (1) With three out of four bureaucracy indices strongly supporting the bureaucratic effectiveness hypothesis, we provide evidence for a close linkage between bureaucracy and finance. As with all indices, one concern remains of course. At this point, we cannot distinguish, whether it is the combination of distinct components of bureaucratic tasks or whether our results are driven by a distinct component of bureaucratic performance. However, the identification of specific bureaucratic products or qualities was clearly beyond the aim of our contribution, which mainly tried to reveal a general connection between bureaucratic performance and financial market development. Further research is needed to reveal the exact underlying mechanics. (2) We find that under inclusion of bureaucratic

performance, legal origin emphasized by economists contributing to the law and finance theory plays only an indirect role in determining financial development, as it affects the financial market development through the bureaucratic channel.

Our findings invite some practical policy advice. In light of the crucial role of bureaucratic performance, it is questionable whether privatization and restructuring of state-owned firms into joint-stock firms may provide a viable and growth-promoting strategy, if minimum standards of bureaucratic quality are not yet satisfied. The problem is particularly critical for transition and developing economies, which often lack the respective bureaucratic qualities necessary for financial market and corporate development. Romania, for instance, has nowadays about 4500 listed firms, whereas market capitalization does not even reach 10%. The task for policy advisors would therefore be to take into account whether countries have the bureaucratic capacity to provide the necessary institutional environment for corporate development. It is not by accident that many of the countries of the East Asian growth economies relied in their early development stages on family-owned firms rather than on the Western-style modern corporation. Family firms with their intense network of personal ties across business and state hierarchies are much more prone to survive than larger firms, if the state-firm interface is not structured by transparent, impartial and impersonal relations (Whitley 1999).

Similarly, lingering financial markets and lagging corporate development might simply reflect the poor status of overall bureaucratic performance, which impedes good management and thereby renders ownership separation as too costly. Cures are therefore not only to be sought in the financial market sphere, as specified by new rules of

corporate governance such as shareholder rights and changes in board compositions. On a national basis, it might well also involve broader reforms that help improve overall bureaucratic performance.

References:

Acemoglu, Daron, Simon Johnson and James A. Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation", *American Economic Review*, 91(5):1369-1401.

Alesina, Alberto and Enrico Spolaore. 2005. *The Size of Nations.* Harvard: MIT Press. 2nd ed.

Angrist, Joshua D. and Alan B. Krueger (2001). "Instrumental Variables and the Search for Identification: From Supply and Demand to Natural Experiments", National Bureau of Economic Research, Working Paper 8456.

Barro, Robert. 1991. *Determinants of Economic Growth: A Cross-Country Empirical Study.* Cambridge, MA: The MIT Press.

Bebchuk, L. and Mark Roe. 1999. "A Theory of Path Dependence in Corporate Ownership and Governance", *Stanford Law Review*, 52:127-170.

Beck, Thorsten and Ross Levine. 2004. "Stock Markets, Banks, and Economic Growth: Panel Evidence". *Journal of Banking and Finance*. 28(3): 423-442.

Berle, Adolf A. and Gardiner C. Means. [1968] 2005. *The Modern Corporation & Private Property*. News Brunswick and London: Transaction Press.

Boycko, Maxim, Andre Shleifer, and Robert W. Vishny. 1996. "A Theory of Privatization." Paish lecture, *Economic Journal* 106: 309-319.

Collins, Randall. 1980. "Weber's Last Theory of Capitalism: A Systematization." *American Sociological Review* 45:925-942.

Demirgüc-Kunt, Asli and Ross Levine. 1996. "Stock Market Development and Financial Intermediaries: Stylized Facts". *World Bank Economic Review*, 10:291-321.

DiMaggio, Paul J., and Walter W. Powell. 1983. “The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields.” *American Sociological Review* 48:147-160.

Edwards, Jeremy, and Klaus Fisher. 1994. *Banks, Finance and Investment in West Germany since 1970*. Cambridge: Cambridge University Press.\

Evans, Peter. 1995. *Embedded Autonomy: States and Industrial Transformation*. Princeton: Princeton University Press.

Evans, Peter, and James E. Rauch. 1999. “Bureaucracy and Growth: A Cross-National Analysis of the Effects of ‘Weberian’ State Structures on Economic Growth.” *American Sociological Review* 64: 748-765.

Fligstein, Neil. 1990. *The Transformation of Corporate Control.* Cambridge, MA: Harvard University Press.

_____. 2001. *Architecture of Markets: An Economic Sociology of Twentieth-First-Century Capitalist Societies*. Princeton: Princeton University Press.

Fligstein, Neil and Jennifer Choo. 2005. “Law and Corporate Governance“, *Annual Review of Law and Social Science,* 1:61-84.

Garber, Peter M. (2001). *Famous First Bubbles. The Fundamentals of Early Manias.* Cambridge, MA: MIT Press.

Gelderblom, Oscar and Joost Kunker (2004). “Completing a Financial Revolution: the Finance of the Dutch East India Trade and the Rise of the Amsterdam Capital Market 1595 1612.” *The Journal of Economic History*, 64(3)_641-671.

Greif, Avner. 2005. *Institutions and the Path to the Modern Economy: Lessons from Medieval Trade.* Cambridge: Cambridge University Press.

Hart, Oliver. 1995. “Corporate Governance: Some Theory and Implications.” *The Economic Journal* 105 (May): 678-689.

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2005. “Governance Matters IV: Governance Indicators for 1996-2004”, WPS3630, The World Bank, Washington D.C.

Knack, Steve and Philip Keefer. 1995. “Institutions and Economic Performance: Cross-country Tests Using Alternative Institutional Measures.” *Economics and Politics*, 7:207-227.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. 1997. “Legal Determinants of External Finance.” *The Journal of Finance* LII (3): 1131-1150.

_____. 1998. “Law and Finance.” *Journal of Political Economy* 106 (6): 1113-1155.

_____. 1999. The Quality of Government. *Journal of Law, Economics, & Organization*, 15(1)**:** 222-279.

_____. 2000. “Investor Protection and Corporate Governance.” *Journal of Financial Economics*, 58:3-27.

Landes, David S. 1998. *The Wealth and Poverty of Nations*. New York: W.W. Norton Company:

Levy, Haim. 1983. “Economic Evaluation of Voting Power of Common Stock.” *Journal of Finance* 38 (March): 79-93.

Mauro, Paolo. 1995. “Corruption and Growth”, *Quarterly Journal of Economics* 110:681-712.

Mayer, Colin. 1990. “Financial Systems, Corporate Finance, and Economic Development.” In R.G. Hubbard, ed., *Asymmetric Information, Corporate Fiannce, and Investment.* Chicago: University of Chicago Press.

Merton, Robert K. 1940. “Bureaucratic Structure and Personality.” *Social Forces* 17:560-568.

Meyer, John W., and Brian Rowan. 1977. “Institutinalized Organizations: Formal Structure as Myth and Ceremoney.” *American Journal of Sociology* 83:340-363.

Nee, Victor. 1992. “The Organizational Dynamics of Market Transition: Hybrid Forms, Property Rights, and Mixed Economy in China.” *Administrative Science Quarterly* 37: 1-27.

_____. 2000. “The Role of the State in Making a Market Economy.” *Journal of Institutional and Theoretical Economics* 156:64-88.

North, Douglass C. 1981. *Structure and Change in Economic History.* Cambridge: Cambridge University Press.

North, Douglass C., and Robert Paul Thomas. 1973. *The Rise of the Western World: A New Economic History.* Cambridge: Cambridge University Press.

Olson Jr., Mancur. 2000. *Power and Prosperity: Outgrowing Communist and Capitalist Dictatorships.* New York: Basic Books.

Olson Jr., Mancur, Naveen Sarna and Anand V. Swamy. 2000. “Governance and Growth: A Simple Hypothesis Explaining Cross-country Differences in Productivity Growth”, *Public Choice* 102: 341-34.

Prak, Maarten. 2005. The Dutch Republic in the Seventeenth Century. The Golden Age. Cambridge: Cambridge University Press.

Rajan, Raghuram G. and Luigi Zingales. (2003). “The Great Reversals: The Politics of Financial Development in the Twentieth Century”, *Journal of Financial Economics* 69: 5-50.

Rauch, James E. 1995. “Bureaucracy, Infrastructure, and Economic Growth: Evidence from U.S. Cities During the Progressive Era”, American Economic review, 85(4): 968-979.

Rauch, James E. and Peter B. Evans. 2000. “Bureaucratic Structure and Bureaucratic Performance in Less Developed Countries”, *Journal of Public Economics* 75: 49-71.

Rodrik, Dani, Arvind Subramanian, Francesco Trebbi. 2004. “Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development.” *Journal of Economic Growth* 9:131-165.

Roe, Mark J. 2003. *Political Determinants of Corporate Governance. Political Context, Corporate Impact. Oxford*: Oxford University Press.

Rydquist, Kristian. “Empirical Investigation of the Voting Premium.” Working Paper No. 35. Evanston, III.: Northwestern University.

Shleifer, Andrei, and Robert W. Vishny. 1997. “A Survey of Corporate Governance.” *The Journal of Finance* 52 (2): 737-783.

Staiger, D. and J.H. Stock (1997). “Instrumental Variables Regression with Weak Instruments”, *Econometrica* 65, 557-586.

Stinchcombe, Arthur. 1965. “Social Structure and Organizations.” Pp.142-93 in *Handbook of Organizations*, ed., James March (Chicago: Rand McNally).

Stringham, Edward. 2003. “The Extralegal Development of Securities Trading in Seventheenth-Century Amsterdam.” *The Quarterly Review of Economics and Finance*, 43: 321-344.

Swedberg, Richard. 1998. *Max Weber and the Idea of Economic Sociology*. Princeton: Princeton University Press.

Tirole, Jean. 1994. “The Internal Organization of Government.” Oxford Economic Papers 46, 1-29

Tullock, Gordon. [1965] 2005. *Bureaucracy*. Indianapolis: Liberty Fund.

Wade, Robert. 1990. *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization*. Princeton: Princeton University Press.

Weber, Max. [1904-1905] 1992. *The Protestant Ethic and the Spirit of Capitalism.* London: Routledge

_____. [1922] 1978. *Economy and Society.* Berkeley: University of California Press.

Whitley, Richard. 1999. *Divergent Capitalisms. The Social Structuring and Change of Business Systems*. Oxford: Oxford University Press.

Wilson, James Q. 1989. *Bureaucracy: What Government Agencies Do and Why They Do It.* New York: Basic Books.

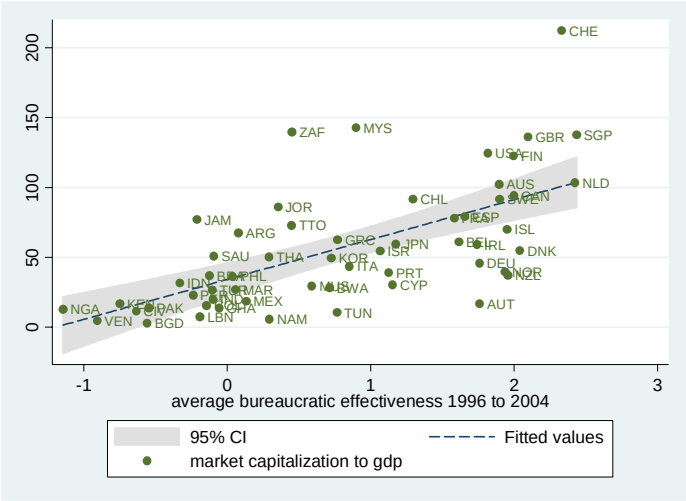
Xin, Katherine R. and Jone L. Pearce. 1996. “Guanxi: Connections as Substitutes for Formal Institutional Support.” *Academy of Management Journal*, 39(6):1641-1658.

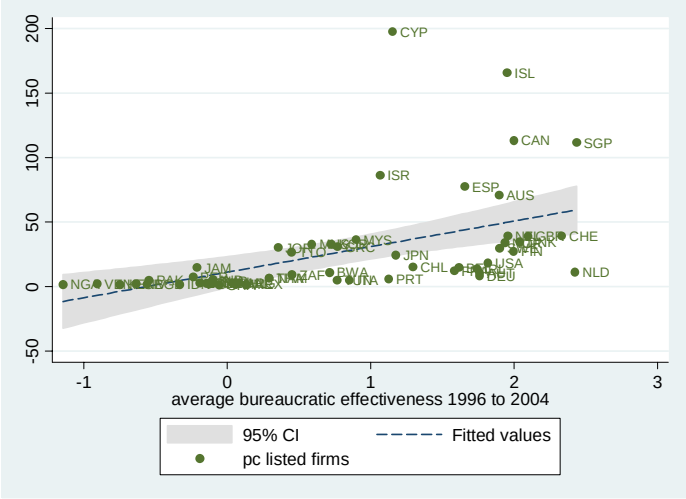
Tab. 1: Core Variables

	Market Capitalization (average 2001-2003)	**Listed firms per 1 million people** (2004)	**Total of national Forbes 2000 listed firms/total of national firms (%)** 2004	**Bureaucratic Effectiveness** (average 1996 to 2004)
Australia	102.15	70.67	2.70	1.896
Bangladesh	2.68	1.78	0.00	-0.558
Botswana	28.36	11.04	0.00	0.714
Canada	94.39	113.12	1.87	2.000
Cyprus	30.39	197.40	0.00	1.154
Ghana	13.62	1.21	0.00	-0.056
India	31.71	5.30	0.53	-0.100
Ireland	59.31	13.78	0.00	1.742
Israel	54.32	86.10	0.00	1.066
Jamaica	76.90	14.77	0.00	-0.210
Kenya	16.69	1.59	0.00	-0.750
Malaysia	142.61	36.21	1.56	0.898
Namibia	5.85	6.47	0.00	0.296
New Zealand	37.33	39.15	0.00	1.956
Nigeria	12.75	1.46	0.00	-1.144
Pakistan	13.77	4.72	0.00	-0.546
Saudia Arabia	50.95	3.11	0.00	-0.092
Singapore	137.52	111.76	2.74	2.436
South Africa	139.61	9.30	4.23	0.452
Thailand	50.27	6.53	3.21	0.292
Trinidad a. Tobago	72.81	26.72	0.00	0.448
United Kingdom	136.19	38.95	6.06	2.098
United States	124.57	18.21	13.58	1.818
English origin mean	***74.45***	***40.43***	***1.63***	***0.722***
Austria	16.61	10.63	0.00	1.762
Germany	45.73	8.29	9.21	1.760
Japan	59.44	24.42	10.46	1.178
Korea	49.38	32.62	2.62	0.726
Switzerland	212.16	39.32	12.80	2.334
German origin mean	*76.66*	*23.06*	*7.02*	*1.55*
Argentina	67.48	2.83	0.00	0.078
Belgium	60.89	14.64	7.89	1.616
Brazil	37.05	2.08	5.17	-0.124
Chile	91.72	15.22	0.00	1.296
Columbia	15.43	2.56	0.00	-0.144
Cote d'Ivoire	11.40	2.26	0.00	-0.634
France	77.79	12.10	8.57	1.584
Greece	62.51	30.73	3.54	0.770
Indonesia	19.88	1.55	0.00	-0.330
Italy	43.49	4.70	16.61	0.854
Jordan	86.07	30.32	0.00	0.354
Lebanon	7.52	2.89	0.00	-0.190
Marocco	26.95	1.76	0.00	0.058
Mauritius	29.39	32.79	0.00	0.590
Mexico	18.62	1.55	11.32	0.132
Netherlands	103.60	11.28	18.03	2.426
Peru	22.83	7.26	0.00	-0.238
Philippines	36.28	2.87	0.00	0.038
Portugal	38.90	5.65	0.00	1.126
Spain	79.04	77.64	9.40	1.658
Tunisia	10.45	4.64	0.00	0.766

Turkey	26.59	4.02	3.87	-0.104
Venezuela	4.50	2.10	0.00	-0.906
French origin mean	***45.89***	***15.47***	***3.17***	***0.536***
Denmark	54.86	34.69	5.35	2.042
Finland	122.61	27.26	10.56	1.998
Iceland	69.78	165.51	0.00	1.952
Norway	39.62	34.21	0.00	1.936
Sweden	91.58	29.46	10.60	1.900
Scandinavian origin mean	***75.69***	***58.22***	***5.30***	***1.966***

Figure 1: Scatterplots (with 95% confidence interval) of financial market measures and bureaucratic effectiveness





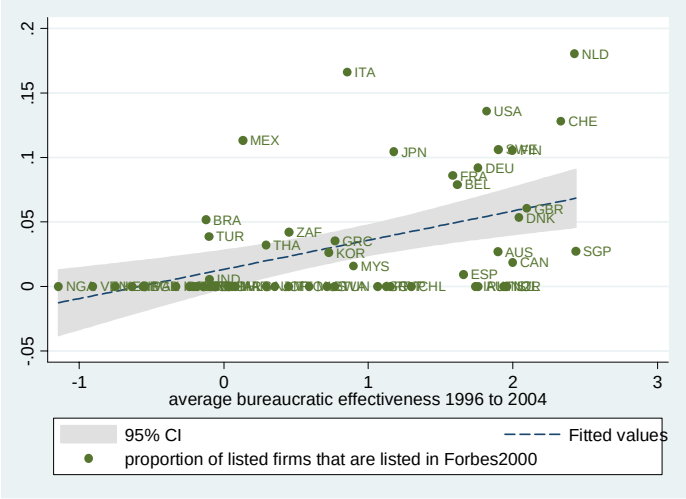


Table 2: Ordinary Least Square Regression: Financial Development and Bureaucratic performance, 56 countries

	Market Capitalization		**Listed firms per 1 million people**		**Total of national Forbes 2000 listed firms/total of national firms (%)**	
	I	II	III	IV	V	VI
Log(GDP)	7.467*** *(2.421)*	4.481** *(2.215)*	-4.918 *(4.001)*	-6.552 *(4.129)*	0.013*** *(0.003)*	0.013*** *(0.002)*
Latitude	0.668* *(0.336)*	-0.731** *(0.309)*	0.939** *(0.437)*	-0.106 *(-0.389)*	0.0005 *(0.0003)*	-0.0002 *(0.0002)*
English-origin legal system	21.765** *(9.950)*	11.117 *(9.119)*	22.982** *(10.741)*	14.712 *(9.46)*	-0.010 *(0.008)*	-0.015* *(0.009)*
Bureaucratic Effectiveness[a]		34.862*** *(6.447)*		26.645*** *(4.572)*		0.012** *(0.006)*
Intercept	-60.300** *(24.931)*	-4.642 *(26.051)*	45.495 *(37.500)*	79.003* *(40.671)*	-0.139*** *(0.026)*	-0.128*** *(0.028)*
Adj. R-square	0.180	0.445	0.135	0.321	0.411	0.435

White's Heteroskedasticity-consistent standard errors are given in brackets.
An asterisk denotes statistical significance at the 10% level; two at the 5% level; three at the 1 percent level.
[a]: For market capitalization and listed firm per population we use the average of bureaucratic effectiveness for 1996-2002.

Table 3: OLS-estimates with alternative Bureaucracy Indicators

	Market Capitalization			**Listed firms per 1 million people**			**Total of national Forbes 2000 listed firms/total of national firms (%)**		
	I	II	III	IV	V	VI	VII	VIII	IX
Log(GDP)	3.596 *(2.927)*	9.376* *(3.936)*	3.776 *(6.872)*	-8.761* *(4.484)*	-4.762 *(5.883)*	-1.423 *(3.833)*	0.0135*** *(0.002)*	0.026*** *(0.003)*	0.013* *(0.006)*
Latitude	-0.378 *(0.430)*	-0.198 *(0.382)*	-0.050 *(0.647)*	-0.235 *(0.356)*	0.156 *(0.384)*	0.075 *(0.440)*	0.0002 *(0.0003)*	0.0001 *(0.0002)*	0.00 *(0.00)*
English-origin legal system	7.560 *(11.828)*	10.333 *(18.494)*	*14.224* *(17.475)*	7.627 *(8.316)*	14.229 *(13.506)*	20.663 *(16.489)*	-0.014 *(0.009)*	-0.038** *(0.013)*	-0.011 *(0.012)*
ICRG	28.367*** *(9.026)*			33.419*** *(8.009)*			0.008 *(0.005)*		
IMD		19.378*** *(5.690)*			12.680*** *(3.985)*			0.012*** (0.003)	
Weberianness			3.955 *(3.319)*			4.347* *(1.91)*			0.001 *(0.001)*
Intercept	-59.757 *(29.015)*	-110.290 *(54.689)*	-32.116 *(69.300)*	34.587 *(37.751)*	34.811 *(66.742)*	-8.686 *(37.893)*	-0.152 *(0.028)*	-0.328*** *(0.049)*	-0.146** *(0.066)*
Number of observations	55	35	23	55	35	23	55	35	23
Adj. R-square	0.29	0.34	0.00	0.38	0.34	0.21	0.41	0.45	0.22

White's Heteroskedasticity-consistent standard errors are given in brackets.
An asterisk denotes statistical significance at the 10% level; two at the 5% level; three at the 1 percent level.

Table 4: Ordinary Least Square Regression: Financial Development and Bureaucratic Performance, 27 Forbes-2000 countries

	Market Capitalization		**Listed firms per 1 million people**		**Total of national Forbes 2000 listed firms/total of national firms (%)**	
	I	II	III	IV	V	VI
Log(GDP)	-9.135 *(6.288)*	-7.529 *(5.403)*	-4.489 *(3.786)*	-3.305 *(3.110)*	0.012* *(0.006)*	0.013* *(0.006)*
Latitude	0.967* *(0.465)*	-0.334 *(0.568)*	0.282 *(0.445)*	-0.677* *(0.331)*	0.0006 *(0.0004)*	-0.00001 *(0.0004)*
English-origin legal system	50.068** *(16.244)*	28.523 *(17.898)*	27.644 *(16.520)*	11.753 *(14.177)*	-0.034 *(0.018)*	-0.044** *(0.019)*
Bureaucratic Effectiveness[a]		37.225*** *(12.132)*		27.454*** *(5.084)*		0.017* *(0.009)*
Intercept	148.806 *(87.607)*	136.124* *(72.244)*	68.509 *(59.729)*	59.156 *(44.080)*	-0.105 *(0.078)*	-0.114 *(0.074)*
Adj. R-square	0.13	0.46	0.048	0.454	0.260	0.292

White's Heteroskedasticity-consistent standard errors are given in brackets.
An asterisk denotes statistical significance at the 10% level; two at the 5% level; three at the 1 percent level.
[a]: For market capitalization and listed firm per population we use the average of bureaucratic effectiveness for 1996-2002.

Table 5: Ordinary Least Square Regression: Financial Development, Bureaucratic effectiveness and Regulatory Quality, 42 countries

	Market Capitalization		**Listed firms per 1 million people**		**Total of national Forbes 2000 listed firms/total of national firms (%)**	
	I	II	III	IV	V	VI
Log(GDP)	1.429 *(4.274)*	0.166 *(3.876))*	-1.305 *(2.759)*	-1.889 *(2.383)*	0.019*** *(0.004)*	0.019*** *(0.004)*
Latitude	-0.351 *(0.409)*	-0.710* *(0.383)*	-0.437 *(0.302)*	-0.603** *(0.231)*	-0.0001 *(0.0003)*	0.0001 *(0.0003)*
English-origin legal system	12.479 *(11.874)*	9.418 *(10.672)*	15.090 *(9.390)*	13.676 *(8.706)*	0.004 (0.013)	0.003 *(0.015)*
ADR	4.274 *(5.768)*	-0.074 (5.841)	2.034 (2.516)	0.025 *(2.128)*	-0.014*** *(0.005)*	-0.015** *(0.005)*
One share one vote	31.315 *(7.896)*	-31.262 (25.700)	23.109*** *(5.695)*	-5.805 *(7.698)*	0.011* *(0.006)*	-0.003 *(0.021)*
Bureaucratic Effectiveness[a]		63.377** (27.378)		29.284*** *(8.841)*		0.014 *(0.021)*
Intercept	18.210 *(52.486)*	49.156 *(48.391)*	25.498 *(35.628)*	39.798 *(30.830)*	-0.182*** *(0.050)*	-0.175*** *(0.053)*
Adj. R-square	0.266	0.416	0.361	0.436	0.462	0.454

White's Heteroskedasticity-consistent standard errors are given in brackets.
An asterisk denotes statistical significance at the 10% level; two at the 5% level; three at the 1 percent level.
[a]: For market capitalization and listed firm per population we use the average of bureaucratic effectiveness for 1996-2002.

Table 6: Two-Stage Least Square Estimates: Financial Development, Bureaucratic Effectiveness, 56 countries

	Market Capitalization	**Listed firms per 1 million people**	**Total of national Forbes 2000 listed firms/total of national firms (%)**
	I	II	III
Panel A. Second-stage			
Log(GDP)	4.288* *(2.377)*	-7.009 *(4.230)*	0.012*** *(0.003)*
Latitude	-0.826 *(0.497)*	-0.322 *(0.731)*	-0.0005 *(0.0007)*
English-origin legal system	9.431 *(9.783)*	13.109 *(9.513)*	-0.019* *(0.011)*
Bureaucratic Effectiveness[a]	36.603*** *(11.855)*	32.062** (15.064)	0.026 (0.017)
Intercept	-0.133 *(30.396)*	87.485* *(45.617)*	-0.106*** *(0.036)*
Adj. R-square	0.4432	0.3123	0.3964
Panel B. First Stage for Endogenous Variable (bureaucratic effectiveness)			
logGDP		0.189*** *(0.057)*	
Latitude		0.035*** *(0.005)*	
English-origin legal system		0.332* *(0.175)*	
Log(territory)		*-0.173**** (0.047)	
Intercept		-0.477 (0.638)	
F-Statistic		22.76	
Adj. R-square		0.6128	

Estimates with robust standard errors.
Instrumented: bureaucratic effectiveness
Instruments: loggdp, latitude, origin, logarea:
[a]: For market capitalization and listed firm per population we use the average of bureaucratic effectiveness for 1996-2002.

APPENDIX 1:

Correlation Matrix (56 countries)

Variable	Minimum	Maximum	Mean	Std. Dev.	M.Cap / GDP	Listed firms	Forbes	Log(GDP)	Latitude	English origin
Market cap /GDP	2.68	212.16	56.70	44.19						
Listed Firms	1.21	197.49	26.77	39.85	0.31					
Forbes	0.00	0.18	0.03	0.05	0.47	-0.09				
Log(GDP)	8.22	16.15	11.63	1.79	0.36	-0.08	0.62			
Latitude	1	64	31.61	17.23	0.30	0.25	0.42	0.38		
English Origin	0	1	0.41		0.11	0.19	-0.22	-0.17	-0.31	
Bureaucratic effect.	-1.14	2.44	0.78	0.99	0.64	0.49	0.47	0.39	0.71	-0.08

Correlation Matrix (27 countries)

Variable	Minimum	Maximum	Mean	Std. Dev.	M.Cap / GDP	Listed firms	Forbes	Log(GDP)	Latitude	English origin
Market cap /GDP	18.62	212.16	84.17	47.00						
Listed Firms	1.55	113.12	30.60	31.49	0.41					
Forbes	0.005	0.18	0.07	0.05	0.12	-0.42				
Log(GDP)	11.44	16.15	13.03	1.21	-0.17	-0.15	0.37			
Latitude	2	60	37.60	16.46	0.03	-0.10	0.44	0.25		
English Origin	0	1	0.36		0.36	0.36	-0.45	-0.03	-0.49	
Bureaucratic effect.	-0.12	2.44	1.30	0.85	0.62	0.55	0.32	0.07	0.50	0.01