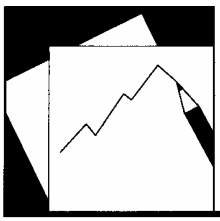
WP/05/167



IMF Working Paper

Finance in Lower-Income Countries: An Empirical Exploration

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INTERNATIONAL MONETARY FUND

 WP/05/167

IMF Working Paper

Research Department

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Authorized for distribution by Eswar Prasad

August 2005

Abstract

This paper considers how a comprehensive set of factors relates to financial sector performance in low-income countries (LICs). It finds that corruption and inflation are associated with a shallower and less efficient financial system, while legal origin and characteristics of the supervisory and regulatory framework have no significant relationship with performance. Moreover, better contract enforcement and information about borrowers are associated with more private sector credit. Some results are surprising. Countries with more foreign bank penetration seem to have shallower and not necessarily more efficient financial sectors, while a larger presence of state-owned banks is correlated with more bank deposits and lower overhead costs, even after controlling for market size and concentration. Although these relationships are robust, more research is needed to ascertain the direction of causality and identify channels of transmission before deriving policy implications.

JEL Classification Numbers: G21, O16

Keywords: Financial development; low income countries

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[1] Manzoor Gill, Naomi Griffin, and Wellian Wiranto provided expert research assistance. We would like to thank Simon Johnson, Arvind Subramanian, and IMF seminar participants for useful comments and discussions. We are also indebted to Laura Kodres, Marcos Rietti Souto, Paola Giuliano, and Marta Ruiz Arranz for allowing us to use data they patiently assembled.

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I. INTRODUCTION

Although complex, diversified, and low-cost financial systems are often considered a prerogative of advanced countries, some lower-income countries (LICs) manage to do much better than others developing and maintaining these.[2] Measures of depth and cost efficiency of banking systems vary greatly within this group (Figures 1-4). Furthermore, differences in income per capita (which are also substantial) explain only some of the variation (Figure 5). What explains the rest? This paper analyzes indicators of financial sector development and performance in LICs and relates them to a comprehensive set of potential explanatory variables.

What do we know so far? A large literature has drawn on aggregate and bank-level data to uncover the determinants of financial sector development and performance in broad cross-sections of countries. Institutions (broadly defined) have been identified as a key element in financial sector performance. Institutions, in turn, have been traced back to differences in legal origin (La Porta, and others, 1998), geographical conditions at the time of colonization (Acemoglu, Johnson, and Robinson, 2001), and cultural factors (Stulz and Williamson, 2003). Other studies have focused on the role of state banks (La Porta and others, 2002; Micco, Panizza, and Yañez, 2004), foreign banks (Claessens, Demirgüç-Kunt, Huizinga, 2001), and inflation (Boyd, Levine, and Smith, 2001). In addition, regulations restricting bank activities have been found to hinder financial sector performance, while those encouraging private sector monitoring of banks appear to help (Barth, Caprio, and Levine, 2004). Recent work has also uncovered that compliance with international standards of good regulation and supervision is associated with healthier banking systems (Das, Quintyn, and Chenard, 2004; Podpiera, 2004), and better creditor protection and information access increase credit to the private sector (Djankov, McLeish, and Shleifer, 2005).

Although research in this field has progressed enormously, our knowledge of the factors associated with financial sector development and performance in LICs is still sparse. In general, existing studies have either not looked at LICs or grouped them together with developed and middle-income countries. Using a broad sample increases degrees of freedom, but it may also introduce unwanted heterogeneity if the factors that explain financial sector performance differ across country groups.[3] From the point of view of designing a financial

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[2] For the purposes of this study, the group of lower-income countries includes those countries defined by the World Bank as low-income and lower-middle-income.

[3] When studies distinguish among countries at different level of development, they often find heterogeneity. For instance, in La Porta and others (2002) the negative effect of state ownership of banks on credit growth is no longer significant when the sample is restricted to developing countries. Das, Quintyn, and Chenard (2004) find that the positive effect of compliance with Basel Core Principles on soundness is stronger where institutions are better, i.e., in higher-income countries. Micco, Panizza, and Yañez (2004) find that state-owned

(continued…)

sector strategy in LICs, it may be more useful to understand why the financial sector in the Philippines—say—works better than its counterpart in Zambia rather than why Denmark is more financially developed than Sri Lanka.

In this paper, we re-examine the relationship between financial sector performance and many of the factors highlighted in the literature focusing exclusively on LICs. In addition, we try to be comprehensive, considering all possible correlates and searching for robust relationships. Performance is defined to include the depth of the banking system, both in terms of bank deposit generation and credit issued to the private sector, and cost-efficiency measures such as overhead costs and interest margins.[4] Ideally, we would have liked to study other performance measures as well, such as access (especially by the poor) or how much long-term lending is provided, but there is no cross-country database available on these dimensions. We would have also liked to analyze fragility, but good cross-country indicators of fragility are difficult to find.[5]

The explanatory variables considered include geographic characteristics (some of which are used as proxies for institutional quality), legal/colonial origin, political and macroeconomic factors, the structure of the banking system, and features of the regulatory and business environment. First, we look at bivariate correlations among these variables and the performance indicators, and then we examine multivariate correlations with specifications including a gradually expanding set of regressors. Introducing more variables in the specification helps reduce omitted variables concerns, but it inevitably results in the introduction of endogenous regressors. When possible, we try to mitigate the problem by measuring Right Hand Side (RHS) variables as long-term averages of years preceding those in which the Left Hans Side (LHS) variables are measured, but this does not allay all concerns. Accordingly, we do not purport to uncover causation, but simply aim at identifying robust correlations that indicate directions for future work.

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banks tend to have lower profitability and higher costs than their private counterparts, while the opposite is true for foreign banks. They also find that, in developing countries, the entry of foreign banks seem to make domestic banks more efficient.

[4] Data on nonbank financial institutions are sparse, but where information is available it indicates that these institutions remain marginal in most LICs . With some exceptions, securities markets are also of minor importance in LICs.

[5] Non-performing loans or loan-loss provisions are difficult to compare internationally, because rules for loan classification and provisioning vary considerably across countries, and so does enforcement of such rules. Alternatively, the incidence of banking crises in the past could be used as a measure of fragility. However, having experienced banking crises in the past is likely to affect many of the explanatory variables (particularly banking structure and regulation), so interpreting the results may be quite difficult.

To summarize the results, first we find considerable regional differences in performance. LICs in South and East Asia and in the Middle East and North Africa (MENA) are relatively more financially developed; Latin America is in the middle; and African countries and the transition economies are the least financially developed regions.[6] This pattern holds even after controlling for differences in per capita income.

Turning to the bivariate and multivariate correlation results, corruption and inflation are, not surprisingly, associated with a shallower and more inefficient financial system. In contrast, in LICs we find that legal origin has no significant bearing on financial sector performance. More foreign bank penetration is associated with a shallower financial sector and is not significantly associated with efficiency. This result may reflect the more cautious behavior of foreign banks when extending credit to the private sector in environments with high information asymmetries and contract-enforcement problems. The interpretation is ambiguous however, since foreign banks may be more likely to enter markets that are "underbanked". For instance, using bank-level data for several Latin American countries, Clarke and others (2005) show that, on average, foreign banks seem to lend less to informationaly opaque small businesses.[7] Perhaps surprisingly, banking systems with more state-owned banks appear to be better at deposit mobilization and have lower overhead costs.[8] This is consistent with the regional differences described above: South and East Asia and the Middle East and North Africa regions have more efficient and deeper banking systems and have more state-owned banks and a smaller foreign bank presence.

Finally, characteristics of the regulatory and supervisory system—such as disclosure requirements, auditing requirements, and supervisory powers to discipline banks—are not significantly related to financial performance in LICs.

The paper is structured as follows: Section II provides a description of the methodology. Section III contains an overview of the data. Section IV presents the main regression results. Section V concludes.

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[6] See Creane and others (2004) and Gelberd and Leite (1999) for regional studies of financial sector development in Middle East and North African (MENA) and sub-Saharan African countries, respectively.

[7] They also find significant differences between small and large foreign banks. In particular, large foreign banks seem to lend more to small businesses than domestic banks do.

[8] The first result is consistent with Dinger and von Hagen (2004), which, using the data for Central and Eastern European countries, shows that older public sector banks rely more on deposits as a source of financing.

II. METHODOLOGY

Since our focus is on lower-income countries, we restrict our analysis to the countries defined by the World Bank as low-income and lower-middle-income countries (Table A1).[9] This group is large and heterogeneous, both geographically and in terms of income per capita. It includes the poorest countries in the world as well as a few relatively sophisticated emerging markets, such as Russia, Brazil, and Thailand. The total number of countries is 89, but the sample used in the regressions is smaller and varies across specifications depending on availability of data. Three countries (China, Jordan, and Eritrea) are excluded from the regressions because they are outliers with respect to the depth variables

Because many of the explanatory variables we want to consider are not available in time series, we confine our investigation to cross-sectional correlations and regressions. In addition, we restrict attention to the banking system, which is where the bulk of financial activity in LICs is concentrated. Within the banking system, we focus on commercial banks, neglecting other types of banking institutions, such as development banks or microfinance institutions, because consistent data for these entities are not available.[10]

A. Dependent Variables

To measure financial sector performance, we focus on five indicators, which are also used as the dependent variables in our regressions. The deposit-to-GDP ratio measures the ability of banks to attract financial savings and provide a liquid store of value. The ratio of private sector credit to GDP captures the extent to which the private sector relies on banks to finance consumption, working capital, and investment. The third indicator is the loan-to-asset ratio, which measures the proportion of bank funds allocated to private sector loans rather than government securities, liquid reserves, foreign assets, or other assets. This is a measure of how much intermediation is performed by the banking system.

The last two indicators of financial performance are the ratio of overhead costs to total assets (OH) and the ratio of the net interest margin to interest-earning assets (NIM). They are alternative measures of the cost efficiency of the banking system. OH includes all costs incurred by banks except for the interest paid on liabilities, while NIM is the difference between interest earned on assets and interest paid on liabilities. Banking systems with high

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[9] As customary, we exclude very small countries, defined as countries with populations of less than one million.

[10] To measure private credit we use the IMF's *International Financial Statistics (IFS),* line 22d, which refers to deposit money banks. Data for other financial institutions in line 42d is available only for a small subset of countries. Several studies define private credit as the sum of 22d and 42d. This assumes that lending by other financial institutions is zero when it is not reported, which is not necessarily the case.

operating costs must earn high net interest margins to recover such costs, so NIM is used in the literature as a measure of efficiency.[11] However, margins can be high also when banks earn monopolistic profits. Conversely, the NIM may be low where banks take little or no risks, or when they are forced to lend to priority sectors at subsidized interest rates; in these cases, a low NIM may not indicate high efficiency. With this caveat, we will follow the literature and consider low net interest margins to be associated with a more efficient financial system.

Data to compute the depth indicators are obtained from *International Financial Statistics*, while the efficiency measures are computed from bank level data from Fitch's Bankscope database. Since we are interested in the efficiency of the financial sector as a whole, the ratios are constructed using country aggregates over all commercial banks available in the sample. Of course, we have to assume that the Bankscope sample is representative of the universe of banks. Country coverage is quite good, although less comprehensive than for depth.[12]

Summary statistics for all the depth and performance variables are in Table 2. Not surprisingly, there is a strong correlations among measures of financial depth. In addition, deeper financial systems tend to be more efficient, though the correlation is far from perfect and is not significantly different from zero for the loan-to-asset ratio.

B. Explanatory Variables

Economic theory and existing empirical research point to a very broad set of potential determinants of financial sector performance. We try to be as comprehensive as possible in our approach and consider all the relevant variables for which we can find information for LICs. We group potential explanatory variables into six categories, roughly ordered (based on theoretical considerations) from the most to the least exogenous to the banking system: the geographic and legal environment; the political environment; the macro economy; business environment; banking market structure; and regulation and supervision.[13]

Geography, endowments, and legal origin

The costs of providing financial services is likely to be affected by the geographic and institutional characteristics of the country. Among the former, the density of the rural

[11] For some banks, fee and commission income, which is excluded from NIM, is an important component of revenue.

[12] The results on efficiency are robust to excluding from the sample countries with less than five banks in the Bankscope database.

[13] See Table A.2 in the appendix for a detailed list of all the variables, summary statistics, and data sources.

population should capture geographical barriers to the delivery of financial services. A country's latitude might also affect financial development through its effects on institutions via the country's colonial history.

The law and finance literature, recently surveyed by Beck and Levine (2003), has emphasized the linkage between legal tradition, institutional characteristics (especially the protection of private property rights and the ability of the legal system to adapt to changes in the economic environment), and financial development. La Porta and others (1998) find countries with English legal origin to have deeper financial markets (measured by private credit to GDP and indicators of securities market depth) than other countries, while the French legal tradition appears to hinder financial development.

Another variable that might capture institutional features relevant to financial development is settlers' mortality. According to Acemoglu, Johnson, and Robinson (2001), in countries where geographic conditions discouraged settlement by Europeans, colonizers aimed mainly at extracting natural resources, and created institutions to suit that purpose. Such institutions were less conducive to business and financial development than those of settlement colonies. After independence, post-colonial governments did not alter the institutional landscape much, and institutions in "extractive" colonies continued to hinder financial development. Beck, Demirgüç-Kunt, and Levine (2003) find empirical evidence that settlers' mortality is negatively correlated with financial development, while Acemoglu and Johnson (2004) find that the effect goes through "property rights institutions" protecting citizens against the risk of expropriation.

Finally, ethnic fractionalization may also be a proxy for the exogenous determinants of institutions, under the theory that in more ethnically diverse countries consensus to support the provision of public goods, such as institutions, is difficult to achieve (Easterly and Levine, 1997).

Political environment

Even if deep determinants of institutions and geographical factors are favorable to financial development, political instability may be a deterrent. Political turmoil may bring macroeconomic instability and a deterioration in business conditions. Civil strife and outright war can destroy capital and infrastructure. Expropriation may follow revolutions or coups d'etat. In addition, corruption may increase the cost of doing business and create uncertainty about property rights. We use measures of political stability, internal conflict, military control of the government, and freedom from corruption to proxy for the political environment.

Macroeconomic variables

Theoretical models (Huybens and Smith, 1998, 1999) suggest that inflation may aggravate asymmetries of information in credit markets, reducing the real rate of return and the volume of credit. Consistent with these theories, Boyd, Levine, and Smith (2001) find inflation to be

negatively associated with measures of financial depth. This negative effect, however, peters out at relatively moderate rates of inflation (15 percent).

The fiscal situation may also affect financial sector performance. If there is a large fiscal deficit that cannot be financed through borrowing, the government might resort to both the inflation tax and financial repression (for instance, forcing banks to hold large unremunerated reserves). We use the fiscal balance as a regressor to capture this channel. The fiscal position may also influence financial development in other ways. The opportunity to invest in government securities, if these securities pay competitive interest rates, may give banks an attractive instrument to manage their liquidity as well as a relatively safe investment opportunity. Since data on stocks of domestic government debt are not available for most countries in our sample, we proxy government debt with interest payments on government debt from the Fund's World Economic Outlook (WEO) database.

In a number of LICs migrant remittances constitute a large financial flow. To the extent that they are intermediated through the formal financial system, they may spur financial development.

Bank ownership and market structure

Three variables capture aspects of bank ownership and market structure in our regressions: the market share of state banks, the market share of foreign banks, and market concentration (measured by the market share of the largest five banks).

There has been a long-standing debate on whether government ownership of banks plays a useful developmental role or is just an instrument for corruption and political patronage, leading to inefficiencies, misallocation of resources, and instability. In recent years, the latter view has gained increasing support, resulting in a trend toward privatization around the world. In LICs, however, bank privatization has been uneven, and state-owned banks remain dominant in several countries.[14] In a recent study, La Porta and others. (2002) find that government ownership of banks is negatively associated with financial development. Specifically, these authors regress growth in private credit between 1960 and 1995 on the share of bank assets held by state banks (measured in 1970), and obtain a negative and significant coefficient, suggesting that state ownership of banks is detrimental to financial development.

[14] Africa had the steepest reductions in state ownership of banks in the early 2000s. Clarke, Cull and Shirley (2003) review individual countries' experience with privatization. The results are mixed, and suggest that where bank performance did not improve after privatization, this was mainly for three reasons: (i) the stake retained by the government in the bank; (ii) the modalities of the privatization, and (iii) the origin of the buyer (foreign or not).

Another lively debate surrounds the desirability of entry by foreign banks in developing country markets.[15] Proponents of foreign banks claim that subsidiaries of large international banks can achieve better economies of scale and risk diversifications in small markets, introduce more advanced technology (especially risk management) and better supervision and regulation (since subsidiaries are regulated by the home country), and increase competition in cartelized markets. Critics point out that foreign banks lack the local market knowledge to lend to small and medium size borrowers and just serve the safest customers, such as multinational corporations or large domestic firms.[16] Domestic banks, unable to compete in the high quality market, may be forced to close down, leaving lower quality customers without credit. Another criticism is that foreign banks may withdraw from the market too quickly in periods of crisis.[17]

Concerning the relationship between bank ownership and efficiency, bank level data suggest that, in developing countries, foreign-owned banks have lower operating costs and higher profitability than private domestic banks, while state-owned banks have higher costs and lower profitability than the other two categories (Micco, Panizza, and Yañez, 2004). Foreign bank entry also seems to increases competition in developing countries, lowering interest margins and profitability (Claessens, Demirgüç-Kunt, and Huizinga, 2001; Micco, Panizza and Yañez, 2004)). A recent study of Latin America, however, finds the opposite to be true (Levy-Yeyati and Micco, 2003).

A third market structure characteristic is concentration. In canonical economic models, more market concentration should lead to oligopolistic behavior, resulting in higher prices and smaller output than perfect competition. From this perspective, more concentrated banking markets should be shallower. On the other hand, banking theories highlighting the role of banks as producers of information suggest that the opposite may be true: the expectation of enjoying ex post rents (thanks to limited competition) may encourage banks to produce more information and lend more ex ante, especially to more opaque clients, such as new firms, small firms, or firms with fewer tangible assets (Petersen and Rajan, 1995; Marquez, 2000).

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[15] See Agénor (2001) for a recent review of the issues.

[16] Using survey data on obstacles to investment, Clarke, Cull, and Martinez Peria (2004) find that foreign bank participation increases access to credit in developing countries. A study of lending to small and medium size enterprises in four Latin American countries concludes that foreign banks with a large presence in the country are more prone to lend to these firms (Clarke and others, 2005).

[17] For a case study of foreign bank behavior during crises, see Detragiache and Gupta (2004).

Investment climate indicators

It is widely acknowledged that "market infrastructure" is important to financial sector performance. We derive several measures of the quality of infrastructure from the World Bank Business Environment Survey (WBES). This database provides a comprehensive new set of measures of administrative and regulatory obstacles to business activity for a large group of countries. One advantage of these indicators is that they directly measure quantifiable aspects of the business environment, rather than reflecting broad judgments by market participants. Some of the indicators are directly related to banking, as they measure the cost of establishing collateral and recovering defaulted loans, and the availability of information on potential borrowers (through credit registries and other sources).

Supervisory and regulatory framework

The supervisory and regulatory framework is another key component of the financial sector infrastructure. This area has received increasing attention following the emerging market financial crises of the 1990s, which were attributed in part to gaps in financial supervision. Reflecting these concerns, beginning in 1999 the IMF and the World Bank have been devoting substantial resources to the evaluation of regulatory and supervisory frameworks and the dissemination of international best practices in the field through the Financial Sector Assessment Program (FSAP).

To study the relationship between regulation and supervision and financial depth, we rely on the 1999 version of the World Bank survey of bank regulators and supervisors, described by Barth and others (2001). Following the structure of the survey, we group system characteristics in six categories: restrictions on the scope of bank activities; disclosure requirements; the powers of supervisors to discipline banks; accounting standards; and auditing requirements. For each category, we identify survey questions that can be characterized as more stringent regulation, and code the answer as a zero if the regulation is absent and as a one if it is present. We then sum the values in each category and divide by the number of questions covered, so that we obtain an index that varies between zero and one.[18] A seventh dimension of the regulatory framework is the presence of an explicit deposit insurance scheme, a zero-one dummy.

[18] Barth and others (2004) follows a similar approach, but groups the survey information in somewhat different categories. For a sample including also more advanced countries, this paper finds that more stringent capital regulation, fewer restrictions on bank activity, and regulation fostering private sector monitoring of banks are associated with more financial development. Other features of regulation and supervision are found to be insignificant.

C. Empirical Model

To get a sense for the patterns in the data, we start by examining bivariate correlations among the five financial sector performance indicators and the explanatory variables. Then we estimate various multivariate regressions as follows: after controlling for the overall level of development through GDP per capita, we introduce in the regression the first category of variables (geography and legal). After examining various indicators, we move to the next group (the political variables) while keeping as controls in the regression variables from the first group that appear significant and robust (if any). We continue in this fashion until we examine all variables of interest. As degrees of freedom erode, we also replicate the regressions using more parsimonious specifications to gauge robustness. Finally, to simplify the presentation we use the same set of specifications for the first three indicators (deposits-to-GDP, private credit-to-GDP, and the loan-to-assets ratio). Slightly different specifications are used to study the determinants of OH and NIM. Notably, for efficiency measures we control for the size of the financial sector in order to control for scale effects.

The regressions are estimated using OLS with robust standard errors. All dependent variables are measured as averages over 1999-2001 to reduce the effects of short-term economic fluctuations. Whenever possible, we measure right hand side variables as averages over 1991-98 to reduce joint endogeneity problems. However, for some of the variables (for example, the business environment indicators), we only have observations contemporaneous to the indicators of performance.

III. Overview of Data

A. Regional Patterns

The largest share of the countries in our sample is in Sub-Saharan Africa (42 percent), followed by the transition countries of Europe and Central Asia (18 percent), East and South Asia (16 percent), Latin America and the Caribbean (15 percent), and the MENA region (9 percent). While there is considerable intra-regional variation in financial performance (Figures 1-4), on average banking systems in Asia and in MENA are deeper and more efficient. At the other extreme, financial development remains limited in most transition countries and in Africa, while Latin America is somewhere in the middle. In Latin America, however, a larger share of bank assets goes to finance the private sector compared with other regions.[19]

[19] These regional patterns are consistent with the study of the MENA region by Creane et al. (2004) and of Sub-Saharan Africa by Gelberd and Leite (1999). Creane and others (2004) looks at broad set of financial development indicators and find that MENA countries score better than most other developing countries (except East Asia). Gelberd and Leite (1999) show that in Sub-Saharan Africa indicators of financial depth have deteriorated somewhat since 1980, but that financial performance has improved along some dimensions, such as competition and the array of financial products available.

Several regional differences in the explanatory variables are worth noting (Table 1). For instance, state-owned banks hold the largest share of bank assets in the MENA region and in Asia, while Sub-Saharan Africa has the smallest presence of state banks and the largest presence of foreign banks. The quality of information about borrowers is the best in Latin America, while political risk and the risk of internal conflicts are highest in Sub-Saharan Africa and in transition countries.

The various performance indicators are all significantly correlated among one another, suggesting that banking systems that are more efficient are also better at deposit mobilization and intermediation to the private sector (Table 2). The strongest relationship between deposits and private credit (around 80 percent). Correlations between depth and efficiency measures, while significant, are not very strong, suggesting that it is important to distinguish between these two dimensions.

B. Bivariate Correlations

Several country characteristics are strongly correlated with depth and efficiency of the financial sector (Tables 3 and 4). Countries with a higher income per capita have a deeper financial sector and a lower interest margin, while there is no significant correlation with overhead costs. Political stability and inflation are also strongly correlated with depth and efficiency, while legal origin is not. Less concentrated banking systems are deeper and allocate a larger share of assets to private sector credit.

Surprisingly, countries with a larger share of bank assets held by state-owned banks seem to have a more efficient banking system and more bank deposits, but a lower loan-to-asset ratio. Conversely, countries with a greater foreign bank presence have shallower banking systems, both in terms of deposits and credit to the private sector. Among business environment indicators, credit information sharing is significantly positively correlated with depth and efficiency (as measured by net interest margins), and the speed of contract enforcement is positively correlated with credit to the private sector. Finally, regulation and supervision variables are not significantly correlated with the cross-section of financial depth.

IV. Results from Multivariate Regressions

A. Financial Depth

Table 5 contains the first set of regressions, in which we study how geographic and institutional features affect financial depth.[20] In each regression, we include GDP per capita and a dummy for transition countries as basic control variables. GDP per capita controls for

[20] To simplify the presentation, we postpone discussing the economic importance of the effects to the end of this section, when we arrive at a specification that includes most of the relevant variables.

any country characteristic associated with the level of development.[21] The transition dummy controls for the special circumstances of countries emerging from central planning, with little or no experience of market-based financial intermediation.[22] As expected, we find that countries with a more sparse rural population have a shallower banking sector; the effect is particularly pronounced for bank deposits. Another geographical variable, latitude, is not significant (results not reported).

Turning to institutions, in our sample of LICs there are no countries with German or Scandinavian legal origin. In addition, Soviet legal origin is captured by the transition dummy, so to test the legal origin theory we introduce only a dummy variable for French legal origin, while English legal origin is the residual category. This dummy has a negative coefficient in the deposits and private credit regressions, but the coefficient is not significant. In the loan/asset ratio regression, the coefficient of French legal origin is actually positive and (marginally) significant. This suggests that the theoretical predictions and the empirical findings of La Porta and others (1998) do not apply to LICs. As we shall see, legal origin variables continue to explain little as the specification is altered.[23]

In contrast, our regressions support the theory that settlers' mortality captures country characteristics strongly associated with financial development. When this variable is introduced in the regression, its coefficient is negative and strongly significant for both deposits and private credit. Moreover, rural density becomes insignificant, suggesting that settlers' mortality better captures fundamental country characteristics relevant to the financial development process. Unfortunately, this variable is available for only 52 countries. To avoid losing a substantial fraction of our sample, we exclude settlers' mortality from the benchmark specification. As a robustness test, we have replicated all the regressions for a smaller sample including settlers' mortality as a control, and find that the results reported in the rest of this section remain broadly unchanged.[24] Another proxy for the exogenous determinants of institutions, ethnic fractionalization, does not have any explanatory power.

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[21] The empirical relationship between financial depth and the level of development was first documented by Goldsmith (1969). To address concerns about the endogeneity of this variable, we have replicated all the regressions using GDP per capita in 1970 rather than the average over 1990-99. Although we lose several degrees of freedom, none of the results changes.

[22] The more advanced transition countries that had some elements of a market economy before the transition are not included in our sample because they are not LICs. For an overview of financial sector issues in transition economies, see for instance Bonin and Wachtel (2003) and De Nicolò and others (2003).

[23] This result holds also if we measure the dependent variable using the data in Djankov and others (2004) or Beck and others (2003).

[24] These results are available from the authors upon request.

Political instability and internal conflict are associated with a shallower financial system. An even clearer association is with an index of corruption: not surprisingly, more corrupt countries have lower bank deposits and less credit to the private sector. In addition, when corruption is controlled for, measures of political instability tend to lose significance (results not reported), so we keep the corruption index in the benchmark specification. The variables introduced so far explain about 40 percent of the variation in deposits and private credit, but only 10 percent of that in the loan-to-asset ratio.

Among the macroeconomic variables, inflation is negatively and significantly correlated with credit to the private sector and the loan-to-asset ratio, though not with deposits (Table 2).The performance of the regressions improves quite a bit when inflation is introduced; particularly, the R-squared of the loan-to-asset ratio regression now reaches 30 percent. If we allow for threshold effects at inflation above 15 percent, we find that disruptions to the credit market become more severe for higher levels of inflation, in contrast with the findings of Boyd, Levine, and Smith (2001).[25]

Another interpretation of the negative correlation between inflation and financial development is that it is driven by an omitted variable, the fiscal balance, as countries in a difficult fiscal position might resort to both inflation financing and financial repression. When we control for the fiscal balance, however, the relationship between inflation and bank credit remains unaltered (not reported). This suggests that an asymmetric information interpretation of such relationship may be more appropriate (Huybens and Smith, 1998, 1999). A proxy for domestic government borrowing, interest payments on government debt scaled by GDP, has a positive sign, but is not significant in this specification. Likewise, migrant remittances enter with the expected positive sign, but are not statistically significant.

Turning to bank ownership, consistent with the bivariate correlations, the share of bank assets controlled by the government is positively and significantly correlated with bank deposits and negatively but insignificantly correlated with private credit and the loan-to-asset ratio. This suggests that financial systems with more state banks are more successful at deposit mobilization, though they find it difficult to convert these funds into loans to the private sector. Since state banks are likely to be more prevalent where there are more obstacles to private sector development, causality is unlikely to go from deposit mobilization to the share of public banks. On the other hand, reverse causality may be responsible for the negative coefficient in the private credit and loan-to-asset ratio regressions. The coefficient of deposit mobilization, however, is no longer significant if a regional dummy (for Africa or Asia) is introduced, so this result may reflect unexplained regional differences.

[25] We also tested for threshold effects at very high level of inflation (above 100 percent), but did not find any. The volatility of inflation does not seem to be a significant determinant of financial depth.

The multivariate regressions also confirm the negative association between financial development and foreign bank penetration found in the bivariate correlations. Countries with a larger share of foreign banks have less deposits and less private sector credit. The coefficient of foreign banks is also negative in the loan-to-asset ratio regression, but is only significant (and marginally so) in some specifications.[26] However, the interpretation of this coefficient is ambiguous, as foreign banks may be more likely to enter markets that are "underbanked." Further research is necessary to identify the direction of causality in the relationship between foreign bank presence and financial depth.

Concentration—measured as the share of bank assets held by the largest five banks—is negatively correlated with private credit and the loan-to-asset ratio, suggesting that the predictions of standard economic theory are more relevant than information-based theories of banking. But the result does not seem to be robust to alternative measures of concentration.[27] Also, the share of bank assets controlled by the largest five banks may not be a good measure of concentration when comparing countries with large differences in the total number of banks, or where banks have local monopoly power.

All in all, market characteristics seem to be very important at explaining variation in financial depth measures. The R-squared of the regressions improve markedly when these variables are introduced.

Among the many business environment indicators in the WBES database, measures of the time required to enforce contracts, the availability of credit information, and coverage of credit registries have explanatory power in the financial depth regressions, particularly for private credit and the loan-to-asset ratio. This is true even after controlling for geographic, institutional, macroeconomic, and market structure characteristics. The signs indicate that better access to information and speedier enforcement of contracts are associated with deeper credit markets, as expected. Other business environment characteristics, including measures of the costs of establishing collateral, and starting or closing a business, do not seem to be significantly correlated with financial sector depth in our sample. As in the case of foreign banks, the direction of causality is ambiguous, as countries with more developed credit market may also have more incentives to modernize the judiciary, reduced legal delays, and introduce an efficient system of information sharing among banks.

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[26] If we introduce a dummy variable for South and East Asian countries, this dummy is positive and significant in the specifications excluding foreign bank penetration, but becomes insignificant once this variable is included in the regression.

[27] The coefficients become insignificant in some specifications when one uses the measure of concentration from Barth and others (2001) instead of the one from the World Bank financial structure database. The former is from a survey of regulators, while the latter is calculated from Bankscope (and is therefore affected by differences in sample coverage).

Finally, once other factors are controlled for, differences in the regulatory and supervisory framework do not add much explanatory power to the regressions. This remains true in more parsimonious specifications, in which regressors that are not significant are excluded. In the two cases in which the relationship is significant (stronger supervisory powers to discipline banks in the loan-to-assets ratio regression and auditing requirements in the deposit regression), more stringent requirements seem to reduce depth rather than increase it. This result is particularly interesting because the possible endogeneity of supervision and regulation should bias the coefficient in the positive direction, i.e., in more financially developed countries there should be more incentives to set up a strong supervisory and regulatory framework (Barth and others, 2003).

There are two, not mutually exclusive, interpretations of this finding. First, the crude indicators employed here may not adequately reflect the regulatory and supervisory framework, especially since they capture whether regulations are on the books rather than how they are implemented in practice. A second interpretation is that in LICs the obstacles to financial development are so pervasive that differences in regulation and supervision have only second order effects.

Another result is that the presence of an explicit deposit insurance scheme does not lead to more deposit mobilization in LICs; in fact, the coefficient of this variable is negative and marginally significant in the regression of bank deposits. This may be because deposit insurance is not fully credible in countries where the fiscal position is often precarious and political instability undermines government credibility. Deposit insurance may also increase the instability of the banking system in countries with a weak institutional environment (Demirgüç-Kunt and Detragiache, 2002). Instability, in turn, may deter depositors even if they are partially insured.[28]

B. Financial Sector Efficiency

To study the covariates of the two financial sector efficiency indicators, NIM and OH, we proceed along similar lines as in the previous section. First, we introduce in the regression the size of the economy (measured by the logarithm of GDP) to capture scale economies.[29] Indeed, banks seem to be more efficient in large economies. The next step is to introduce

[28] Using a sample including also developed countries, Cecchetti and Krause (2004) find that deposit insurance results in less credit provision to the private sector. These authors also find that legal origin variables have little explanatory power (as we do), and that more government ownership of banks is associated with less private credit (while we find no significant relationship). The paper includes a theoretical model of deposit insurance and financial development consistent with the empirical findings.

[29] GDP per capita and a dummy for transition countries are not significant, so they are omitted from the efficiency regressions.

geographic and institutional characteristics. These variables do not seem to have much explanatory power for bank efficiency. Even settlers' mortality, which was strongly negatively correlated with depth, is only marginally significant here. In contrast, the political environment has important effects on bank efficiency. Corruption is particularly detrimental, but so are political instability and political risk. More political instability may mean that it is harder to enforce property rights, that the bureaucracy is more inefficient, or that the regulatory framework is more uncertain, which may all translate into higher costs for banks.

Turning to the macroeconomic variables, not surprisingly inflation is associated with higher NIM and OH, consistent with theoretical papers suggesting that informational frictions increase with uncertainty (Huybens and others, 1998 and 1999). This continues to be the case after controlling for fiscal variables. So keeping inflation in check seems to have beneficial effects for financial sector performance both in terms of depth and efficiency.[30] Contrary to what we found for depth, however, the marginal effect of inflation seems to be more marked at lower rates of inflation.

Concerning bank ownership, foreign bank penetration has no significant relationship with efficiency, while countries with a larger presence of state banks have significantly lower OHs. This relationship, which also emerged from the bivariate correlations, is robust to altering the set of control variables and the sample. The correlation is also robust to controlling for the loan-to-asset ratio, so differences in the share of government assets in bank portfolios cannot explain it. In addition, if state banks are more prevalent in countries with more difficult conditions for private sector development, then reverse causality should bias the coefficient upwards not downwards. In contrast, La Porta and others (2002) find OH (measured in 1999) to be positively correlated with the share of state banks (measured in 1970), while Barth and others (2004) report a positive but insignificant relationship between OH and NIM and state bank penetration after controlling for legal origin and prudential supervision and regulation. These studies, however, use samples including both developing and developed countries, so the difference may arise because we are considering only LICs.

In a panel of bank level data, Micco, Panizza, and Yañez (2004) find that, after controlling for country and time fixed effects and for bank characteristics, state banks have higher overhead costs than private banks or foreign banks in developing countries and not in developed countries. How can these findings be reconciled with ours? Part of the explanation is that state banks are larger than private domestic banks, and larger banks are more efficient. If bank size is omitted in the regressions of Micco, Panizza, and Yañez, the coefficient of state banks is no longer significant. Another possibility may be that LICs with a smaller presence of state banks are countries that, having an especially inefficient state sector, were forced to privatize rapidly during the 1990s. If conditions in these countries make it particularly difficult for banks (including private banks) to operate efficiently, and these

[30] This is consistent with the results of Demirgüç-Kunt and others (2003) using bank level data.

conditions are omitted in our regressions, then the puzzle might be explained. Obviously, additional research is needed to interpret this finding.

The third variable capturing market structure is concentration. In our sample, concentration is positively correlated with efficiency, even after controlling for the overall size of the market, the business environment, and supervision and regulation.[31] In contrast, for a sample including also developed countries Demirgüç-Kunt and others (2003) find the relationship to be negative, though not statistically significant when features of the institutional and regulatory environment are included in the regression.[32] Less concentrated markets may be markets in which less efficient, marginal banks have not gone out of business even though technological changes would make consolidation beneficial. These banks may continue to operate because they have market power in local markets or in particular market segments, or because there are regulatory barriers to consolidation. This may results in more deposits and private credit but at the cost of higher overheads and interest margins.

Finally, there does not seem to be a robust link between efficiency and the business environment nor between efficiency and regulation and supervision. Regulatory indexes always enter with a positive sign, suggesting that tighter regulation tends to increase costs, but the coefficient is significant only for disclosure and accounting rules. Neither, however, is robust to changes in the specification. It should be pointed out that when these variables are introduced the sample size drops to about 40 countries, so there is not much information to draw inference from.

C. Magnitude of Effects

In presenting the results, we have emphasized the statistical significance of the coefficients of the various explanatory variables. An equally important question is the economic significance of the relationships studied. For illustrative purpose we have computed predicted changes in the dependent variables resulting from a one standard deviation increase in the value of each explanatory variable using the last specification in Table 5 (for depth) and Table 11 (for efficiency).

Reducing corruption yields large benefits, both in terms of bank deposits and private sector credit (Table 13). Lower inflation has a small effect on bank deposits, but a strong one on the loan-to-asset ratio of banks, which translates into a sizable increase in credit to the private sector. Increasing the share of state-owned banks has a rather small effect on deposit mobilization and a negative, somewhat large effect on the loan-to-asset ratio (although this coefficient is not statistically significant). On the other hand, reducing foreign bank

[31] This result is robust to using the measure of concentration in Barth and others (2003).

[32] Studies of the relationship between bank efficiency and bank consolidation in advanced countries find mixed results (Berger and others, 1999).

penetration affects favorably both deposits and private credit by a similar, sizable margin. Concentration, though statistically significant, has a small effect on financial depth, and the same is true for credit registry coverage.

Turning now to efficiency, an increase in the market share of the top five banks of one standard deviation (about 20 percentage points) leads to a reduction in OH of 0.9 percentage point and a decline in NIM of 1.83 percentage points. So the effect is much stronger on NIM than on cost efficiency. The magnitudes are a bit smaller for declines in inflation and smaller yet for changes in state bank penetration (about 0.7 percentage points for OH).

V. CONCLUSIONS

Cross-country studies have been used extensively to document the relationship between country characteristics and financial sector development and performance. In this paper, we have investigated whether the relationships identified in this literature continue to hold when we restrict the sample to include only LICs.

The results can be summarized as follows. On the one hand, consistent with the literature, high inflation, an instable and corrupt political environment, and high settlers' mortality (proxying colonial heritage) are associated with poor financial performance in LICs, as are high costs of enforcing contracts and limited information availability for creditors. On the other hand, French legal origin is not associated with less credit to the private sector, in contrast to the findings of the law and finance literature. Also, in contrast to the conventional wisdom, LICs with a large share of state banks have more efficient banking sectors. Having more state banks also appears to be associated with more deposit mobilization but a smaller share of credit allocated to the private sector, while a larger presence of foreign banks is associated with a shallower financial sector.[33] Finally, characteristics of the regulatory and supervisory environment are not significantly correlated with financial sector performance.

We take these findings as an indication that the determinants of financial sector performance in low-income countries may be different than those in more advanced countries. Thus, extrapolation of results and insight from the more advanced countries to LICs should be done with care.

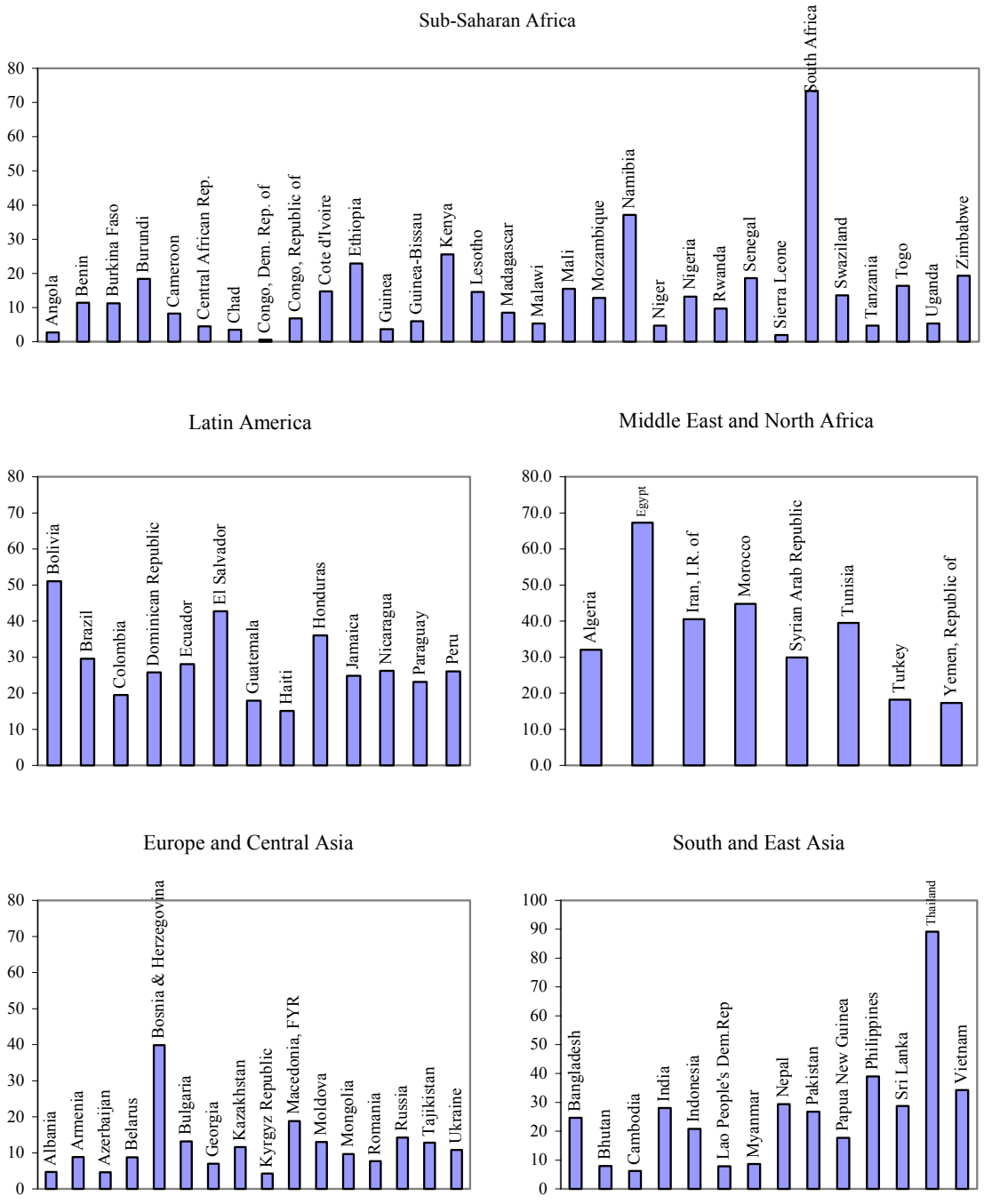
Although more comprehensive research targeted specifically to LICs, and with a possibly different methodology, is needed to investigate the direction of causality and which financial sector policies work in these countries, some policy lessons seem to emerge quite clearly from the cross-country regressions in this paper. First, political instability and corruption are an obstacle to financial development. Second, keeping inflation under control should improve bank efficiency and development. Third, efforts to strengthen prudential regulation

[33] The first result may reflect regional variations in the share of state banks, but the latter remains when regional differences are taken into account.

and supervision may not yield immediate benefits in LICs, perhaps because other obstacles are binding or because implementation is weak.

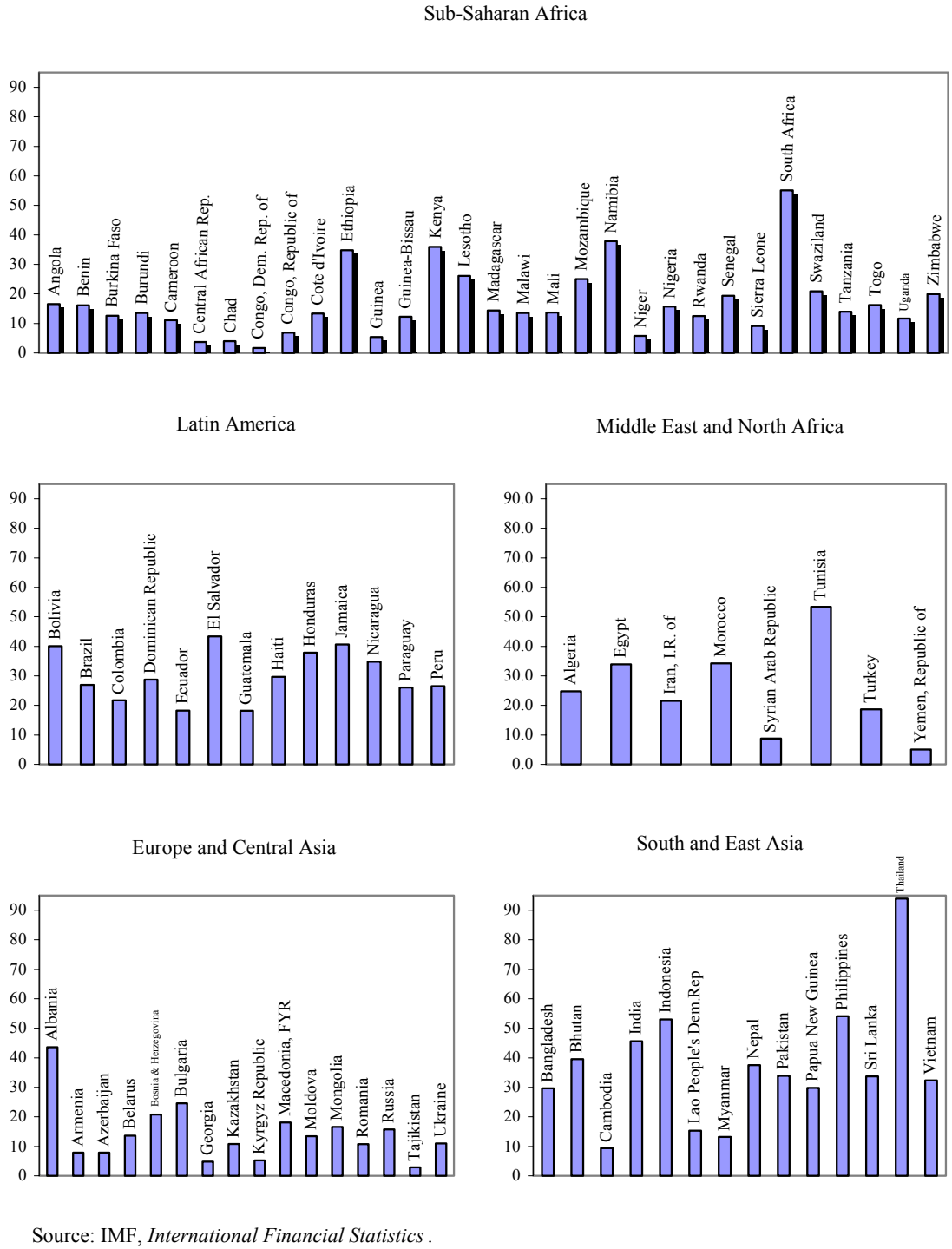
Other results are more difficult to interpret, because the direction of causality is ambiguous. We find that a significant presence of state-owned banks is associated with more cost efficiency, a result difficult to reconcile with evidence from individual bank data. Also, in contrast to existing studies—which tend to find inconclusive or favorable results on the benefits of foreign bank entry—in our data a larger foreign bank presence is robustly negatively correlated with financial depth.

Figure 1. Bank Deposits in LICs by Region
(Percent of GDP)



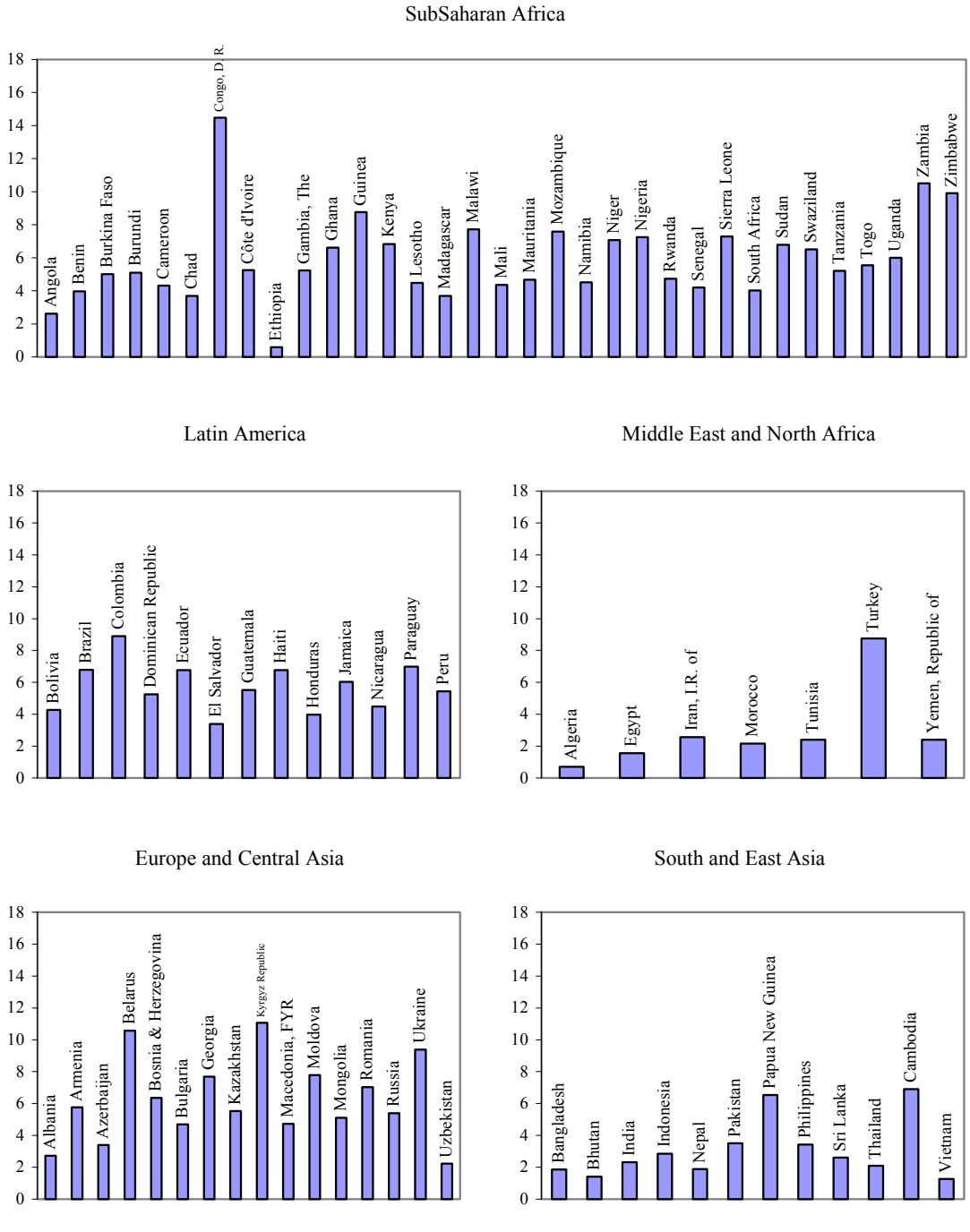
Source: IMF. *International Financial Statistics* .

Figure 2. Bank Credit to the Private Sector in LICs by Region
(Percent of GDP)



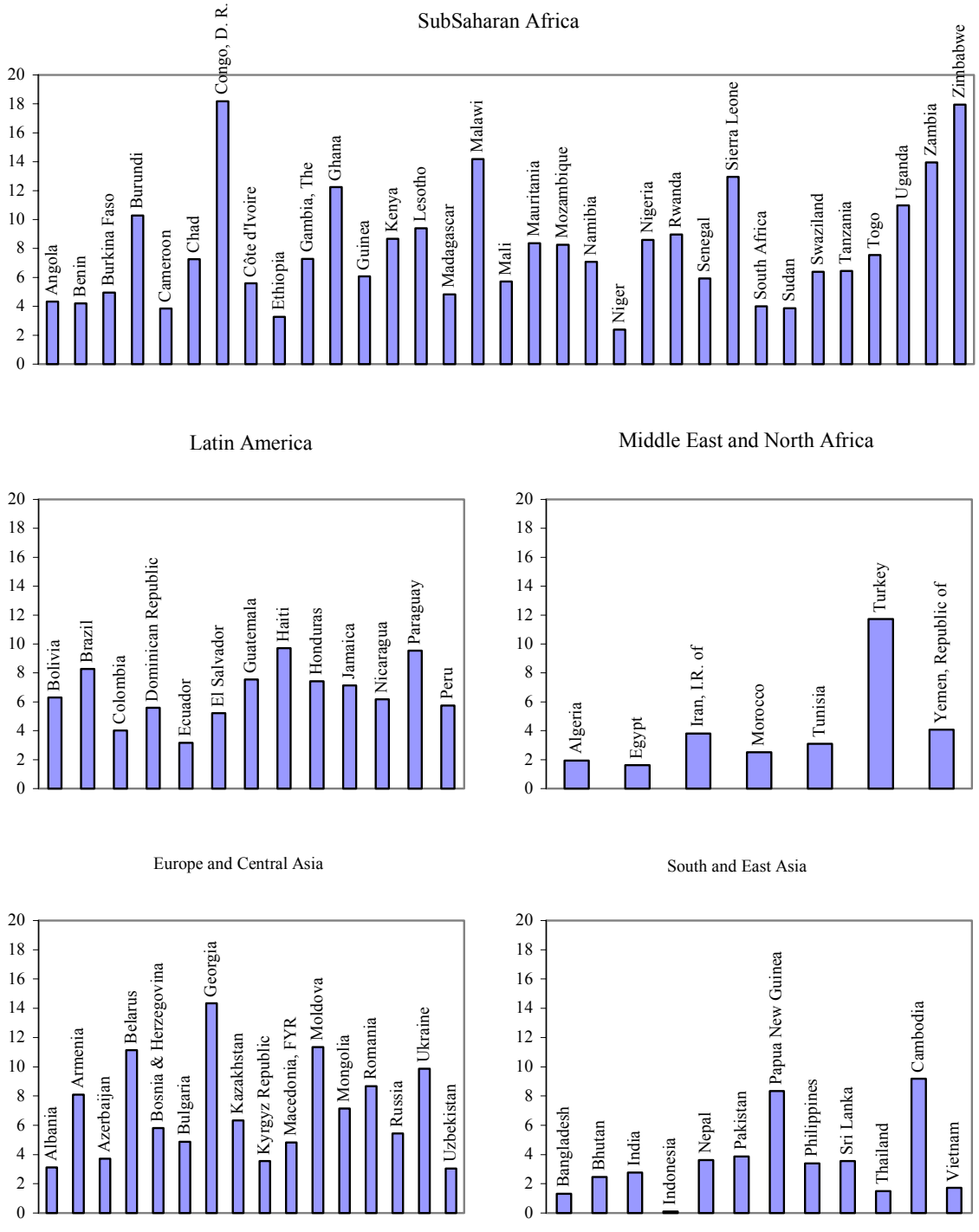
Source: IMF, *International Financial Statistics* .

Figure 3. Banking Sector Overhead Costs in LICs by Region
(Percent of assets)



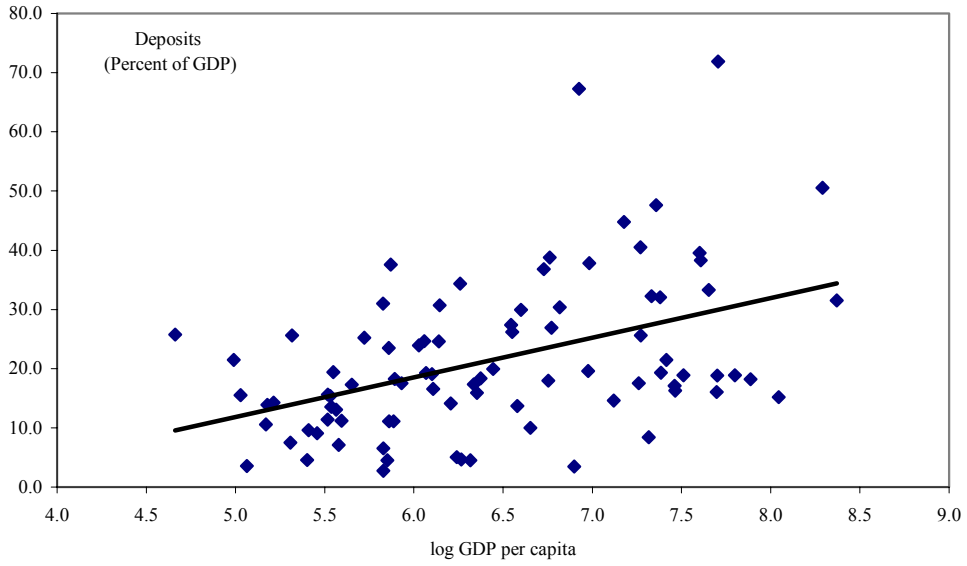
Source: Fitch, Bankscope database.

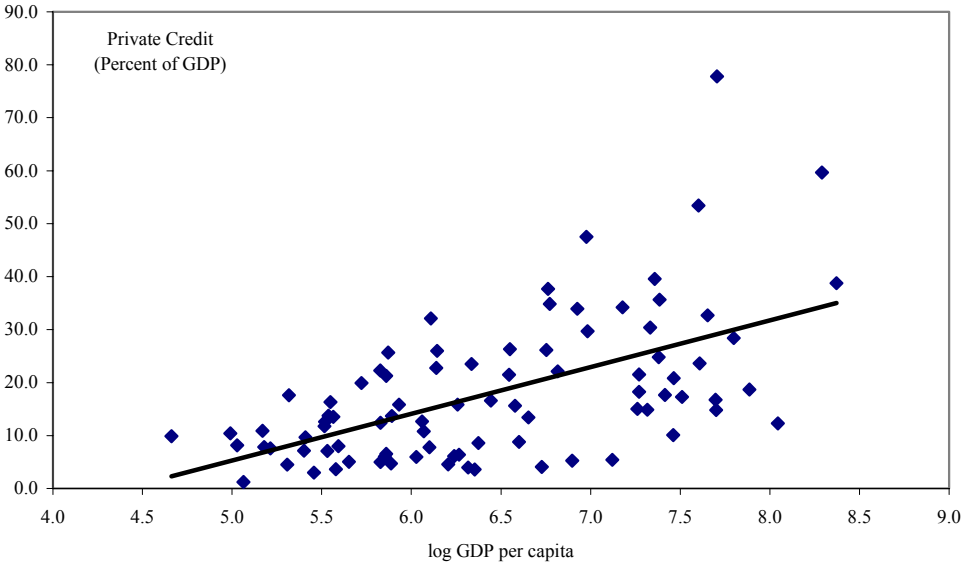
Figure 4. Banking System Net Interest Margin in LICs by Region
(Percent of interest earning assets)



Source: Fitch, Bankscope database.

Figure 5. Financial Sector Depth and GDP Per Capita





Source: IMF, *International Financial Statistics* ; and authors' calculations.

Table 1. Summary Statistics and Regional Means of Selected Explanatory Variables

	Full Sample	Latin America	Sub-Saharan Africa	MENA	Asia	Transition
Share of Public Banks						
Mean	0.38	0.38	0.22 ***	0.71 ***	0.58 **	0.34
Standard Deviation	0.31	0.15	0.25	0.31	0.33	0.32
p-value 1/		*0.98*	*0.00*	*0.00*	*0.02*	*0.53*
Share of Foreign Banks						
Mean	0.30	0.12 **	0.57 ***	0.16	0.08 **	0.15 **
Standard Deviation	0.33	0.15	0.35	0.23	0.11	0.19
p-value 1/		*0.04*	*0.00*	*0.27*	*0.02*	*0.05*
Concentration						
Mean	0.65	0.40 ***	0.77 ***	0.63	0.60	0.68
Standard Deviation	0.24	0.13	0.20	0.31	0.23	0.21
p-value 1/		*0.00*	*0.00*	*0.78*	*0.40*	*0.60*
Inflation						
Mean	109.79	103.69	80.62	23.34	11.44	341.35 ***
Standard Deviation	280.08	205.02	304.40	25.20	6.85	388.10
p-value 1/		*0.93*	*0.44*	*0.36*	*0.15*	*0.00*
Corruption						
Mean	-0.59	-0.57	-0.63	-0.39	-0.53	-0.69
Standard Deviation	0.42	0.32	0.45	0.47	0.52	0.27
p-value 1/		*0.85*	*0.49*	*0.14*	*0.54*	*0.25*
Credit Information						
Mean	2.20	4.31 ***	2.00	1.75	1.92	1.27 **
Standard Deviation	1.84	1.65	1.57	1.39	1.75	1.67
p-value 1/		*0.00*	*0.45*	*0.47*	*0.56*	*0.03*
Days to Enforce Contracts						
Mean	415.39	478.31	440.35	373.88	394.85	346.50
Standard Deviation	194.59	328.07	196.63	193.07	72.77	86.83
p-value 1/		*0.206*	*0.368*	*0.529*	*0.681*	*0.115*
Political Risk						
Mean	55.1627	58.25	51.32 **	57.49	55.56	63.33 *
Standard Deviation	10.57	8.51	12.00	11.22	6.12	4.74
p-value 1/		0.27	0.01	0.48	0.90	0.07
Internal Conflicts						
Mean	7.81	7.71	7.16 *	8.29	7.81	10.62 ***
Standard Deviation	2.24	1.77	2.22	2.49	2.12	1.14
p-value 1/		0.86	0.04	0.49	1.00	0.00

Notes: MENA denotes Middle East and North Africa. ***, **, *: significant, respectively at the 1 percent, 5 percent and 10 percent levels.

1/ Test of the difference between the sample and the regional means.

Table 2. Financial Sector Performance Indicators: Summary Statistics

	Deposits/GDP	Private Credit / GDP	Loans/ Assets	Net Interest Margin	Overhead
Number of observations	85	85	81	81	81
Mean	21.73	18.09	44.47	6.56	5.26
Sd	14.00	15.71	15.41	3.72	2.60
Min	2.24	0.86	8.73	0.10	0.58
Max	75.57	93.26	76.53	18.19	14.47

Cross-Correlations

	Deposits	Private Credit	Loan/Asset	Net Interest Margin	Overhead
Deposits	1				
Private credit	0.82***	1			
	0.00				
Loan/asset	0.17	0.59 ***	1		
	0.11	*0.00*			
Net interest margin	-0.43***	-0.34***	-0.18	1	
	0.00	*0.00*	0.11		
Overhead	-0.47***	-0.29**	-0.10	0.74***	1
	0.00	*0.01*	*0.38*	0.00	

Sources: IMF, *International Financial Statistics*; Bankscope.

Table 3. Financial Depth: Bivariate Correlations

	Deposits/GDP	Loans/GDP	Loan/Assets		Deposits/GDP	Loans/GDP	Loan/Assets
Income per capita	**0.42**	**0.49**	**0.28**	Remittances	0.13	-0.03	**-0.20**
	[0.0001]	[0]	[0.0099]		[0.2886]	[0.8161]	[0.0977]
Transition dummy	**-0.29**	**-0.22**	-0.04	Share of state banks	**0.30**	0.04	**-0.23**
	[0.0062]	[0.0435]	[0.7268]	Share of state banks	[0.0103]	[0.7142]	[0.0515]
Density of the rural population	**0.19**	0.05	-0.02	Share of foreign banks	**-0.30**	**-0.32**	-0.17
	[0.0796]	[0.6512]	[0.8849]		[0.0097]	[0.0066]	[0.1457]
French legal origin	0.05	0.07	0.16	Concentration	**-0.38**	**-0.47**	**-0.33**
	[0.6363]	[0.5275]	[0.1394]		[0.0009]	[0]	[0.0043]
Settlers' mortality	**-0.58**	**-0.58**	**-0.35**	Credit information	**0.28**	**0.48**	**0.46**
	[0.0000]	[0.0000]	[0.0098]		[0.0113]	[0]	[0]
Ethnic fractionalization	**-0.25**	**-0.20**	**-0.12**	Credit registry coverage	**0.26**	**0.39**	**0.32**
	[0.0201]	[0.0712]	[0.2577]		[0.0238]	[0.0005]	[0.0041]
Political stability	**0.43**	**0.44**	**0.30**	Contract enforcement time	0.15	**0.26**	0.18
	[0.0004]	[0.0003]	[0.0156]		[0.1789]	[0.0193]	[0.1024]
Internal stability	**0.28**	**0.27**	0.18	Disclosure requirements	0.19	0.16	-0.05
	[0.0256]	[0.033]	[0.1565]		[0.1436]	[0.2277]	[0.7323]
Lack of corruption	**0.49**	**0.47**	**0.18**	Disciplinary powers	0.21	0.09	**-0.23**
	[0]	[0]	[0.0894]		[0.1081]	[0.5105]	[0.0732]
Inflation	**-0.33**	**-0.37**	**-0.42**	Accounting requirements	-0.05	-0.05	-0.16
	[0.0025]	[0.0007]	[0.0001]		[0.715]	[0.7003]	[0.2172]
Interest on public debt	**0.20**	0.15	-0.10	Auditing requirements	-0.09	-0.02	-0.03
	[0.0714]	[0.1798]	[0.3667]		[0.487]	[0.8499]	[0.8374]
fiscal surplus	**0.24**	**0.29**	**0.20**	Deposit Insurance	-0.05	-0.01	0.02
	[0.0242]	[0.0064]	[0.0624]		[0.6672]	[0.9509]	[0.8778]

Note: p- values appear in brackets.

Table 4. Financial Sector Efficiency: Bivariate Correlations

	Overheads	Interest margin		Overheads	Interest margin
Income per capita	0.0808	**-0.1995**	Share of state banks	**-0.2974**	**-0.2218**
	[0.5061]	[0.0779]		[0.0179]	[0.067]
Transition dummy	**0.3663**	0.0309	Share of foreign banks	0.0214	0.1289
	[0.0017]	[0.7856]		[0.8659]	[0.2876]
Size	-0.2445	-0.2817	Concentration	-0.0802	-0.0659
	[0.0445]	[0.0125]		[0.5158]	[0.5794]
French legal origin	**-0.2769**	-0.1545	Credit registry coverage	-0.0869	-0.0063
	[0.0194]	[0.1711]		[0.488]	[0.9578]
Settlers' mortality			Credit information	-0.0924	**-0.2304**
				[0.4534]	[0.0453]
Lack of corruption	**-0.3312**	**-0.2737**	Collateral costs	0.0437	0.1615
	[0.0048]	[0.014]		[0.7356]	[0.1848]
Government stability	0.0408	-0.2031	Cost of starting a business	0.1729	**0.2899**
	[0.7547]	[0.1046]		[0.1554]	[0.0105]
Political stability	-0.037	-0.137	Auditing requirements	-0.0304	-0.145
	[0.777]	[0.2764]		[0.8321]	[0.2819]
Internal conflict	0.0076	-0.0247	Accounting requirements	-0.1424	0.1019
	[0.9538]	[0.8452]		[0.314]	[0.4465]
Inflation	**0.6001**	**0.3405**	Disclosure requirements	-0.1514	-0.0207
	[0]	[0.0024]		[0.2989]	[0.8818]
Interest on public debt	-0.0009	0.1521	Restrictions	-0.0024	-0.0453
	[0.994]	[0.1868]		[0.9866]	[0.7357]
Fiscal surplus	-0.0753	-0.125	Deposit Insurance	0.1957	0.1087
	[0.5357]	[0.2722]		[0.102]	[0.3373]

Note: p- values appear in brackets.

Table 5. Financial Depth: Geography, Institution, and Political Variables

	deposits	loans	loans/assets	deposits	loans	loans/assets	deposits	loans	loans/assets
Panel A-Geography and Legal Origin									
Transition economy	-9.58	-7.92	-3.17	-1.82	3.68	-0.25	-12.52	-9.64	1.95
	[3.11]***	[2.29]**	[0.56]	[0.29]	[0.34]	[0.02]	[2.78]***	[1.88]*	[0.30]
GDP per capita	10.05	10.42	5.67	5.14	6.34	4.3	10.06	10.43	5.48
	[4.61]***	[4.61]***	[2.90]***	[2.67]**	[3.43]***	[1.63]	[4.64]***	[4.61]***	[2.81]***
Density of rural pop	**6.01**	**3.67**	**1.34**	**3.92**	**-0.28**	**-1.81**	**5.51**	**3.38**	**2.21**
	[3.16]***	**[1.91]***	**[0.60]**	**[1.57]**	**[0.12]**	**[0.72]**	**[2.67]*****	**[1.69]***	**[0.98]**
Settlers' mortality				**-7.55**	**-7.13**	**-3.78**			
				[3.98]***	**[3.29]*****	**[1.78]***			
French legal origin							**-4.05**	**-2.37**	**7.17**
							[0.99]	**[0.55]**	**[1.67]***
Observations	84	84	86	51	51	52	84	84	86
R-squared	0.35	0.33	0.08	0.47	0.48	0.17	0.36	0.33	0.1
Panel B-Political Variables									
Transition economy	-7.8	-15.29	-15.94	-6.66	-14.28	-14.69	-8.9	-6.33	3.02
	[1.09]	[1.71]*	[1.47]	[0.96]	[1.67]	[1.41]	[1.99]*	[1.27]	[0.48]
GDP per capita	9.09	10.34	6.11	7.76	9.04	5.12	7.95	8.5	4.78
	[3.71]***	[3.96]***	[2.60]**	[2.90]***	[3.37]***	[1.94]*	[3.59]***	[3.82]***	[2.27]**
Density of rural pop	5.96	3.04	1.58	5.49	2.59	1.15	5.39	3.26	2.15
	[2.49]**	[1.16]	[0.53]	[2.31]**	[1.01]	[0.39]	[2.86]***	[1.84]*	[0.94]
French legal origin	-2.54	-4.24	4	-2.65	-4.31	3.66	-2.43	-0.89	7.63
	[0.53]	[0.86]	[0.91]	[0.56]	[0.89]	[0.85]	[0.60]	[0.22]	[1.93]*
Internal conflict	**1.58**	**1.48**	**1.45**						
	[2.35]**	**[1.98]***	**[1.10]**						
Political risk				**0.44**	**0.42**	**0.34**			
				[2.42]**	**[2.42]****	**[1.34]**			
Corruption							**11.62**	**10.61**	**3.58**
							[3.28]***	**[2.02]****	**[0.52]**
Observations	61	61	63	61	61	63	84	84	86
R-squared	0.32	0.38	0.22	0.32	0.38	0.22	0.42	0.38	0.11

Notes: Robust *t* statistics in brackets. Regressions include a constant, which is not reported.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6. Financial Depth: Macroeconomic Variables

	deposits_gdp	loans_gdp	loans_assets	deposits_gdp	loans_gdp	loans_assets	deposits_gdp	loans_gdp	loans_assets
Transition economy	-7.12	-7.2	0.41	-3.45	-3.51	0.39	-9.61	-11.49	-5.71
	[1.61]	[1.62]	[0.08]	[0.84]	[0.85]	[0.07]	[1.82]*	[2.65]**	[0.93]
GDP per capita	8.35	9.22	6.11	6.33	7.26	5.99	7.72	8.48	5.59
	[3.62]***	[4.11]***	[3.05]***	[3.84]***	[4.59]***	[2.84]***	[3.01]***	[3.89]***	[2.97]***
Density of rural pop	4.99	1.08	-2.15	4.75	0.94	-2.15	3.12	-0.65	-3.19
	[2.44]**	[0.57]	[0.98]	[2.38]**	[0.50]	[0.95]	[1.23]	[0.33]	[1.31]
French legal origin	-2.67	-2.71	3.74	0.48	0.55	3.85	-4.51	-5.42	-0.06
	[0.62]	[0.66]	[1.07]	[0.14]	[0.17]	[1.03]	[0.87]	[1.14]	[0.02]
Corruption	10.17	7.54	-1.46	12	9.06	-1.21	9.79	12.28	4.92
	[2.76]***	[1.47]	[0.24]	[3.43]***	[1.84]*	[0.19]	[2.19]**	[2.85]***	[1.06]
Inflation	**-2.54**	**-4.74**	**-7.92**	**-1.81**	**-4**	**-7.79**	**-2.88**	**-5.04**	**-7.07**
	[1.64]	**[3.06]*****	**[4.56]*****	**[1.52]**	**[3.23]*****	**[4.40]*****	**[1.38]**	**[2.59]****	**[3.65]*****
Interest on public debt				**0.59**	**0.63**	**-0.13**			
				[0.84]	**[1.11]**	**[0.24]**			
Migrant remittances							**1.38**	**0.04**	**-0.57**
							[1.43]	**[0.04]**	**[0.46]**
Observations	81	81	82	79	79	80	71	71	71
R-squared	0.45	0.48	0.29	0.45	0.48	0.29	0.43	0.53	0.31

Notes: Robust *t* statistics in brackets. Regressions include a constant, which is not reported.
* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 7. Financial Depth: Bank Ownership and Concentration

	deposits_gdp	loans_gdp	loans_assets	deposits_gdp	loans_gdp	loans_assets	deposits_gdp	loans_gdp	loans_assets
Transition economy	-3.75	-3.75	-0.65	-3.57	-4.11	-0.57	-2.46	-1.18	2.76
	[0.96]	[0.82]	[0.10]	[0.87]	[0.94]	[0.09]	[0.64]	[0.28]	[0.45]
GDP per capita	5.96	8.04	6.88	3.97	5.9	5.49	1.27	0.78	1.25
	[3.08]***	[3.90]***	[2.57]**	[1.91]*	[2.48]**	[1.83]*	[0.54]	[0.40]	[0.42]
Density of rural pop	3.67	1.61	0.59	3.45	0.29	-1.82	3.08	-0.28	-2.23
	[1.65]	[0.79]	[0.19]	[1.53]	[0.15]	[0.65]	[1.35]	[0.15]	[0.80]
French legal origin	1.31	0.7	3.56	2.05	1.05	2.63	4.06	2.2	0.01
	[0.39]	[0.19]	[0.81]	[0.61]	[0.31]	[0.66]	[1.20]	[0.62]	[0.00]
Corruption	9.48	6.6	-3.95	11.08	8.69	-2.33	15.78	19.86	8.82
	[2.51]**	[1.24]	[0.56]	[2.78]***	[1.30]	[0.28]	[3.23]***	[4.36]***	[1.45]
Inflation	-3.01	-4.36	-5.81	-3.11	-5.08	-7.69	-3.15	-5.01	-8.24
	[2.10]**	[2.69]***	[2.71]***	[2.09]**	[2.97]***	[3.49]***	[2.06]**	[3.15]***	[3.98]***
Interest on public debt	1.05	1.01	-0.16	1.29	1.16	-0.25	1.19	0.63	-1.13
	[1.72]*	[1.71]*	[0.24]	[2.41]**	[2.35]**	[0.43]	[2.16]**	[1.41]	[1.80]*
State banks	**11.82**	**-0.76**	**-12.12**	**7.23**	**-3.91**	**-12.27**	**7.87**	**-2.86**	**-11.6**
	[3.18]***	**[0.15]**	**[1.45]**	**[2.10]****	**[0.75]**	**[1.69]***	**[2.34]****	**[0.61]**	**[1.80]***
Foreign banks				**-11.6**	**-13.5**	**-10.02**	**-15.99**	**-17.1**	**-8.15**
				[2.55]**	**[2.84]*****	**[1.78]***	**[3.84]*****	**[3.70]*****	**[1.56]**
Concentration							**-0.93**	**-14.93**	**-27.25**
							[0.14]	**[2.13]****	**[2.24]****
Observations	68	68	69	65	65	66	61	61	61
R-squared	0.55	0.48	0.26	0.58	0.56	0.35	0.62	0.68	0.49

Notes: Robust *t* statistics in brackets. Regressions include a constant, which is not reported.
* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 8. Financial Depth and Business Environment

	deposits_gdp	loans_gdp	loans_assets	deposits_gdp	loans_gdp	loans_assets	deposits_gdp	loans_gdp	loans_assets
Transition economy	-2.52	-0.75	2.91	-2.72	-1.37	2.68	-2.53	-0.74	7.11
	[0.55]	[0.16]	[0.44]	[0.61]	[0.27]	[0.37]	[0.55]	[0.14]	[1.13]
GDP per capita	0.65	0.48	0.22	0.85	1.15	1.15	0.35	-0.2	-1.09
	[0.24]	[0.24]	[0.07]	[0.32]	[0.51]	[0.34]	[0.12]	[0.09]	[0.33]
Density of rural pop	2.69	-0.7	-3.3	3.04	0.27	-2.04	2.64	-0.73	-1.97
	[1.07]	[0.36]	[1.15]	[1.26]	[0.13]	[0.67]	[1.08]	[0.43]	[0.69]
French legal origin	3.96	0.19	-3.24	4.44	2.15	0.26	2.43	-2.36	-4.29
	[0.97]	[0.04]	[0.80]	[1.17]	[0.52]	[0.06]	[0.53]	[0.58]	[0.83]
Corruption	15.71	18.45	6.56	15.21	17.95	7.9	15.81	19.45	10.44
	[2.93]***	[3.99]***	[1.03]	[2.78]***	[3.86]***	[1.18]	[2.88]***	[4.51]***	[1.84]*
Inflation	-3.19	-5.52	-9.02	-2.94	-4.83	-8.08	-3.4	-5.74	-8.99
	[1.93]*	[3.24]***	[4.38]***	[1.85]*	[3.05]***	[3.80]***	[2.04]**	[3.48]***	[4.36]***
Interest on public debt	1.27	0.73	-0.92	1.26	0.65	-1.08	1.35	0.91	-0.51
	[2.19]**	[1.38]	[1.50]	[2.21]**	[1.42]	[1.56]	[2.33]**	[2.21]**	[0.75]
State banks	8.2	-1.41	-9.2	7.54	-3.32	-11.89	6.83	-4.73	-17.27
	[2.32]**	[0.30]	[1.52]	[2.15]**	[0.69]	[1.85]*	[1.77]*	[0.97]	[3.33]***
Foreign banks	-17.45	-16.48	-8.88	-17.9	-17.56	-9.26	-17.9	-17.28	-6.52
	[3.26]***	[3.10]***	[1.46]	[3.60]***	[3.45]***	[1.35]	[3.62]***	[3.06]***	[1.07]
Concentration	0.44	-11.98	-21.13	0.45	-13.71	-26.27	2.55	-9.45	-31.14
	[0.06]	[1.44]	[1.70]*	[0.06]	[1.72]*	[1.88]*	[0.28]	[1.13]	[2.98]***
Creditor information	**0.37**	**1.53**	**2.62**						
	[0.46]	**[1.92]***	**[2.81]*****						
Enforcement time				**202.99**	**453.1**	**264.47**			
				[1.51]	**[3.40]*****	**[1.38]**			
Credit registry							**0.05**	**0.12**	**0.11**
							[1.23]	**[3.21]*****	**[2.03]****
Observations	58	58	58	59	59	59	56	56	56
R-squared	0.61	0.69	0.56	0.62	0.68	0.49	0.62	0.73	0.58

Notes: Robust *t* statistics in brackets. Regressions include a constant, which is not reported.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 9. Supervision and Regulation

	deposits_gdp	loans_gdp	loans_assets	deposits_gdp	loans_gdp	loans_assets	deposits_gdp	loans_gdp	loans_assets
Panel A									
Transition economy	-1	-4.91	-7.13	3	-2.31	-5.17	0.18	-1.75	-0.89
	[0.15]	[0.86]	[1.05]	[0.45]	[0.41]	[0.95]	[0.03]	[0.33]	[0.15]
GDP per capita	1.02	2.78	1.47	0.13	2.49	2.2	1.31	3.01	1.08
	[0.37]	[1.01]	[0.42]	[0.04]	[0.87]	[0.68]	[0.48]	[1.15]	[0.31]
Density of rural pop	3.42	0.28	-0.69	3.53	0.25	-1.67	2.59	-0.22	-0.83
	[1.06]	[0.12]	[0.22]	[1.47]	[0.10]	[0.58]	[0.98]	[0.09]	[0.28]
French legal origin	2.69	1.74	-4.15	4.68	2.32	-3.97	2.09	1.28	-1.43
	[0.63]	[0.42]	[0.88]	[1.17]	[0.54]	[0.82]	[0.52]	[0.34]	[0.30]
Corruption	19.26	20.6	8.09	19.77	20.03	4.53	17.14	19.01	7.13
	[3.61]***	[3.43]***	[1.22]	[4.03]***	[3.68]***	[0.70]	[3.37]***	[3.63]***	[1.09]
Inflation	-3.95	-4.73	-6.4	-4	-4.68	-6.91	-4.86	-5.73	-6.71
	[1.73]*	[2.29]**	[2.73]**	[1.99]*	[2.36]**	[3.01]***	[2.50]**	[2.49]**	[2.66]**
Interest on public debt	5.26	-11.13	-16.92	5.87	-9.97	-16.01	8.93	-8.02	-18.35
	[1.02]	[1.54]	[2.16]**	[1.27]	[1.76]*	[2.43]**	[1.81]*	[1.32]	[2.45]**
State banks	1.55	1.22	-0.9	1.08	0.99	-0.64	1.13	0.78	-0.9
	[2.21]**	[1.97]*	[1.01]	[1.88]*	[1.68]	[0.99]	[1.65]	[1.33]	[1.06]
Foreign banks	-22.02	-24.39	-2.62	-16.7	-21.7	-8.5	-20.4	-23.12	-4.82
	[3.12]***	[3.84]***	[0.39]	[2.91]***	[3.51]***	[1.66]	[3.65]***	[3.90]***	[0.72]
Concentration	-1.22	-11.36	-37.02	-2.58	-10.56	-32.34	-2.27	-12.64	-34.64
	[0.14]	[1.10]	[3.20]***	[0.31]	[1.11]	[3.49]***	[0.27]	[1.31]	[3.29]***
Accounting							**2.4**	**5.38**	**1.63**
							[0.45]	**[1.20]**	**[0.29]**
Discipline				**13.68**	**1.42**	**-17.05**			
				[1.97]*	**[0.21]**	**[2.23]****			
Disclosure	**-15.93**	**-17.21**	**-25.45**						
	[0.96]	**[1.22]**	**[1.77]***						
Observations	44	44	44	47	47	47	47	47	47
R-squared	0.68	0.73	0.61	0.71	0.71	0.62	0.68	0.72	0.57

Notes: Robust *t* statistics in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 9. Supervision and Regulation (concluded)

	deposits_gdp	loans_gdp	loans_assets	deposits_gdp	loans_gdp	loans_assets	deposits_gdp	loans_gdp	loans_assets
Panel B									
Transition economy	-3.08	-0.53	4.95	-2.02	-3.32	-0.75	-2.76	-1.33	2.77
	[0.72]	[0.11]	[0.85]	[0.37]	[0.64]	[0.12]	[0.73]	[0.32]	[0.45]
GDP per capita	2.12	1.11	-0.58	1.01	2.59	1.41	0.92	0.61	1.27
	[0.78]	[0.45]	[0.17]	[0.41]	[0.97]	[0.40]	[0.39]	[0.30]	[0.42]
Density of rural pop	3.3	0.18	-0.79	1.56	-0.39	-1.48	2.91	-0.37	-2.22
	[1.25]	[0.09]	[0.26]	[0.53]	[0.14]	[0.46]	[1.31]	[0.19]	[0.79]
French legal origin	2.85	1.01	-1.47	4.14	2.66	-2.18	4.04	2.19	0.01
	[0.82]	[0.28]	[0.34]	[1.04]	[0.63]	[0.42]	[1.23]	[0.63]	[0.00]
Corruption	15.4	21.28	10.76	17.56	19.69	6.05	16.16	20.05	8.8
	[2.93]***	[4.34]***	[1.60]	[3.62]***	[3.59]***	[0.92]	[3.32]***	[4.25]***	[1.42]
Inflation	-3.73	-5.43	-7.93	-4.7	-4.86	-6.72	-2.95	-4.91	-8.25
	[2.29]**	[3.02]***	[3.58]***	[2.61]**	[2.46]**	[2.66]**	[2.06]**	[3.17]***	[3.94]***
Interest on public debt	7.08	-7.43	-17.52	8.55	-9.47	-17.74	6.67	-3.46	-11.53
	[1.52]	[1.33]	[2.55]**	[1.79]*	[1.53]	[2.42]**	[1.99]*	[0.71]	[1.77]*
State banks	1.23	0.84	-1.01	1.51	1.11	-0.91	1.23	0.65	-1.13
	[2.00]*	[1.66]	[1.40]	[2.38]**	[1.90]*	[1.13]	[2.16]**	[1.44]	[1.76]*
Foreign banks	-18.99	-22.2	-6.45	-20.79	-22.26	-3.25	-17.14	-17.67	-8.09
	[3.75]***	[4.17]***	[0.96]	[3.99]***	[3.85]***	[0.49]	[4.08]***	[3.62]***	[1.50]
Concentration	-0.17	-14.41	-37.4	2.98	-9.04	-37.17	-1.71	-15.32	-27.21
	[0.02]	[1.69]*	[3.80]***	[0.31]	[0.86]	[3.48]***	[0.26]	[2.22]**	[2.23]**
Restrictions bank activity	**0.34**	**-2.63**	**-0.76**						
	[0.09]	**[0.78]**	**[0.14]**						
Audit requirements				**-15.66**	**-6.3**	**-0.54**			
				[1.81]*	**[0.60]**	**[0.05]**			
Deposit insurance							**-4.43**	**-2.23**	**0.24**
							[1.75]*	**[0.86]**	**[0.06]**
Observations	54	54	54	46	46	46	61	61	61
R-squared	0.65	0.7	0.54	0.7	0.72	0.58	0.64	0.68	0.49

Notes: Robust *t* statistics in brackets.
* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 10. Efficiency: Geography, Legal Origin, and Political Variables

	OH	NIM	OH	NIM	OH	NIM	OH	NIM
Panel A								
Size (logGDP)	-0.103	-0.584***	0.135	-0.562*	-0.067	-0.552***	-0.051	-0.530**
	[0.61]	[2.86]	[0.55]	[1.98]	[0.40]	[2.76]	[0.31]	[2.64]
Log Settler mortality			0.846**	0.621				
			[2.55]	[1.48]				
Rural density					0.001	-0.001	0.001	-0.001
					[1.20]	[0.98]	[1.53]	[0.83]
French legal origin							-0.183	-0.686
							[0.34]	[0.85]
Transition							1.393*	0.444
							[1.83]	[0.40]
Observations	80	80	49	49	76	76	76	76
R-squared	0.01	0.08	0.1	0.19	0.02	0.11	0.1	0.13
Panel B								
Size (logGDP)	-0.054	-0.517**	-0.145	-0.650***	-0.122	-0.638***	-0.174	-0.677***
	[0.31]	[2.50]	[0.81]	[2.93]	[0.64]	[2.78]	[0.95]	[2.89]
French Legal origin	-0.521	-1.346	-0.334	-1.442	-0.479	-1.565	-0.484	-1.559
	[0.91]	[1.51]	[0.51]	[1.41]	[0.70]	[1.48]	[0.70]	[1.47]
Transition	0.849	-0.441	16.455***	30.014***	1.222	0.236	1.163	0.141
	[1.10]	[0.37]	[3.05]	[4.05]	[1.26]	[0.18]	[1.15]	[0.10]
Corruption	**-2.335*** [3.09]**	**-2.653** [2.44]**						
Government stability			**-1.010** [2.37]**	**-1.002* [1.78]**				
Political risk					**-0.088* [1.73]**	**-0.067 [0.86]**		
Internal conflict							**-0.307 [1.16]**	**-0.199 [0.59]**
Observations	80	80	66	66	66	66	66	66
R-squared	0.18	0.18	0.15	0.2	0.11	0.16	0.07	0.15

Notes: Robust *t* statistics in brackets. Regressions include a constant, which is not reported.
* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 11. Bank Efficiency: Macroeconomic Variables and Market Structure

	OH	NIM	OH	NIM	OH	NIM	OH	NIM	OH	NIM
Size	-0.129	-0.660***	-0.131	-0.676***	-0.019	-0.552***	0.051	-0.488**	-0.149	-1.059***
	[0.79]	[3.62]	[0.79]	[3.62]	[0.12]	[2.71]	[0.26]	[2.02]	[0.52]	[3.27]
Corruption	-1.848***	-1.674*	-1.850***	-1.693*	-1.335***	-0.797	-1.275***	-0.466	-1.230**	0.259
	[3.01]	[1.71]	[3.00]	[1.70]	[3.19]	[0.88]	[2.94]	[0.50]	[2.21]	[0.32]
Log inflation	**0.541****	**0.725****	**0.543****	**0.749****	**0.614*****	**0.831*****	**0.658*****	**0.890*****	**0.717*****	**1.015*****
	[2.29]	**[2.46]**	**[2.22]**	**[2.48]**	**[2.81]**	**[3.04]**	**[3.03]**	**[3.34]**	**[3.51]**	**[4.21]**
Fiscal balance			**0.004**	**0.044**						
			[0.04]	**[0.31]**						
State banks					**-2.700*****	**-1.662**	**-2.475*****	**-1.756**	**-2.218*****	**-1**
					[3.80]	**[1.51]**	**[3.36]**	**[1.51]**	**[3.04]**	**[0.82]**
Foreign banks							**0.899**	**0.264**	**1.487**	**0.814**
							[1.16]	**[0.20]**	**[1.50]**	**[0.60]**
Concentration									**-3.799*****	**-7.661*****
									[2.93]	**[3.63]**
Observations	78	78	78	78	68	68	66	66	62	62
R-squared	0.24	0.23	0.24	0.23	0.34	0.22	0.35	0.22	0.41	0.37

Notes: Robust t statistics in brackets. Regressions include a constant, which is not reported.
* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 12. Bank Efficiency, Business Environment, and Supervision and Regulation

	OH	NIM	OH	NIM	OH	NIM	OH	NIM	OH	NIM	OH	NIM	OH	NIM	OH	NIM
Size (GDP)	-0.157	-1.010***	-0.193	-1.095***	-0.107	-0.962***	-0.019	-0.876**	-0.019	-0.828**	-0.102	-0.853**	-0.433	-1.121***	-0.114	-1.009***
	[0.54]	[3.33]	[0.65]	[3.17]	[0.35]	[3.04]	[0.06]	[2.54]	[0.06]	[2.62]	[0.30]	[2.52]	[1.55]	[2.74]	[0.39]	[3.03]
Corruption	-0.976	0.931	-1.174*	0.214	-1.289**	0.038	-1.480**	0.404	-1.392**	0.414	-1.555**	0.248	-0.975*	0.641	-1.266**	0.207
	[1.62]	[0.95]	[1.92]	[0.24]	[2.03]	[0.04]	[2.21]	[0.49]	[2.31]	[0.53]	[2.54]	[0.31]	[1.89]	[0.79]	[2.24]	[0.24]
Inflation	0.802***	1.061***	0.680***	0.962***	0.733***	0.998***	0.646***	0.919***	0.585***	0.845***	0.764***	0.936***	0.645***	0.884***	0.687***	0.971***
	[3.78]	[4.02]	[3.04]	[3.29]	[3.42]	[3.89]	[2.89]	[3.96]	[2.77]	[3.97]	[3.45]	[3.72]	[2.96]	[3.86]	[3.28]	[4.02]
Public banks	-2.358***	-1.632	-2.008**	-0.809	-2.390***	-2.088*	-2.181**	-0.655	-2.176**	-0.639	-2.223**	-1.123	-1.931*	-0.37	-2.103***	-0.835
	[2.94]	[1.27]	[2.40]	[0.59]	[2.98]	[1.71]	[2.28]	[0.49]	[2.29]	[0.49]	[2.12]	[0.80]	[1.96]	[0.25]	[2.83]	[0.69]
Foreign banks	1.598	0.825	1.396	0.695	1.482	0.762	1.423	0.994	1.22	0.825	1.361	0.387	0.462	0.379	1.643	1.037
	[1.54]	[0.59]	[1.25]	[0.43]	[1.28]	[0.45]	[1.09]	[0.59]	[0.96]	[0.53]	[1.03]	[0.24]	[0.38]	[0.23]	[1.56]	[0.75]
Concentration	-4.365**	-8.924***	-4.264***	-7.711***	-4.427***	-8.495***	-3.800**	-8.584***	-3.437**	-8.171***	-2.862*	-7.640***	-3.884**	-8.331***	-3.595***	-7.369***
	[2.61]	[3.22]	[2.95]	[3.29]	[2.86]	[3.60]	[2.48]	[3.84]	[2.23]	[4.00]	[1.98]	[3.36]	[2.50]	[4.09]	[2.84]	[3.38]
Credit information	**-0.144**	**-0.534***														
	[0.92]	**[1.94]**														
Credit registry coverage			**0.004**	**0.005**												
			[0.09]	**[0.06]**												
Collateral costs					**0.005**	**-0.001**										
					[0.54]	**[0.08]**										
Audit requirements							**0.678**	**0.968**								
							[0.37]	**[0.46]**								
Accounting requirements									**0.425**	**0.774**						
									[0.63]	**[0.95]**						
Disclosure requirements											**5.383****	**3.226**				
											[2.58]	**[0.95]**				
Overall restrictions													**1.121**	**1.835**		
													[0.97]	**[0.92]**		
Deposit insurance															**0.66**	**0.944**
															[1.12]	**[0.97]**
Observations	59	59	58	58	56	56	47	47	48	48	45	45	47	47	62	62
R-squared	0.45	0.43	0.41	0.37	0.42	0.4	0.37	0.36	0.35	0.36	0.42	0.35	0.4	0.36	0.42	0.38

Notes: Robust *t* statistics in brackets.
* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 13. Economic Importance of Effects

		Depth			Efficiency	
		deposits_gdp	loans_gdp	loans_assets	OH	NIM
Corruption	coefficient	*15.81*	*19.45*	10.44	*-0.123*	0.257
	S.D.	*0.42*	*0.42*	0.42	*0.42*	0.42
	effect	***6.58***	***8.09***	**4.35**	***-0.05***	**0.11**
Inflation	coefficient	*-3.4*	*-5.74*	*-8.99*	*0.717*	*1.015*
	S.D.	*1.10*	*1.10*	*1.10*	*1.10*	*1.10*
	effect	***-3.74***	***-6.31***	***-9.88***	***0.79***	***1.12***
Interest on public debt	coefficient	*1.35*	*0.91*	-0.51		
	S.D.	*2.45*	*2.45*	2.45		
	effect	***3.31***	***2.23***	**-1.25**		
State banks	coefficient	*6.83*	-4.73	*-17.27*	*-2.218*	-1
	S.D.	*0.31*	0.31	*0.31*	*0.31*	0.31
	effect	***2.10***	**-1.45**	***-5.31***	***-0.68***	**-0.31**
Foreign banks	coefficient	*-17.9*	*-17.28*	-6.52	1.487	0.814
	S.D.	*0.30*	*0.30*	0.30	0.30	0.30
	effect	***-5.29***	***-5.10***	**-1.93**	**0.44**	**0.24**
Concentration	coefficient	*2.55*	*-9.45*	-31.14	*-3.799*	*-7.661*
	S.D.	*0.24*	*0.24*	0.24	*0.24*	*0.24*
	effect	***0.61***	***-2.26***	**-7.44**	***-0.91***	***-1.83***
Credit registry	coefficient	0.05	*0.12*	*0.11*		
	S.D.	1.84	*1.84*	*1.84*		
	effect	**0.09**	***0.22***	***0.20***		
Observations		56	56	56	62	62
R-squared		0.62	0.73	0.58	0.41	0.37

Note: Coefficients that are statistically significant at least 10 percent are in italics.

Data Appendix

Table A1. Low-Income and Lower Middle-Income Countries 1/

Albania	Liberia
Algeria	Macedonia, former Yugoslav Republic of
Angola	Madagascar
Armenia	Malawi
Azerbaijan	Mali
Bangladesh	Mauritania
Belarus	Moldova
Benin	Mongolia
Bhutan	Morocco
Bolivia	Mozambique
Bosnia and Herzegovina	Myanmar
Brazil	Namibia
Bulgaria	Nepal
Burkina Faso	Nicaragua
Burundi	Niger
Cambodia	Nigeria
Cameroon	Pakistan
Central African Rep.	Papua New Guinea
Chad	Paraguay
Colombia	Peru
Congo, Dem. Rep. of	Philippines
Congo, Republic of	Romania
Côte d'Ivoire	Russia
Dominican Republic	Rwanda
Ecuador	Senegal
Egypt	Sierra Leone
El Salvador	South Africa
Ethiopia	Sri Lanka
Gambia, The	Sudan
Georgia	Swaziland
Ghana	Syrian Arab Republic
Guatemala	Tajikistan
Guinea	Tanzania
Guinea-Bissau	Thailand
Haiti	Togo
Honduras	Tunisia
India	Turkey
Indonesia	Uganda
Iran, I.R. of	Ukraine
Jamaica	Uzbekistan
Kazakhstan	Vietnam
Kenya	Yemen, Republic of
Kyrgyz Republic	Zambia
Lao People's Dem. Rep.	Zimbabwe
Lesotho	

Source: World Bank.

1/ Countries with population of less than one million are excluded.

Table A2. Data Sources

Variable	Time Period	Obs	Mean	Std. Dev.	Min	Max	Data Sources
GDP per capita (logs)	Average 1991-98	87	6.4	0.9	4.4	8.4	World Bank, WDI
Geographic and legal environment							
English legal origin (dummy)		90	0.3	0.5	0.0	1.0	La Porta et al. (2002)
French legal origin (dummy)		90	0.5	0.5	0.0	1.0	La Porta et al. (2002)
Settlers' mortality		54	5.1	1.0	2.7	8.0	Acemoglu, Johnson, and Robinson (2001)
Latitude		90	0.2	0.2	0.0	0.7	La Porta et al. (2002)
Density of rural population		89	360.6	321.1	23.1	1928.7	WDI
Political environment							
Lack of corruption		90	-0.6	0.4	-1.6	0.9	Kaufmann, Kraay et al. (2003)
Internal stability	Average 1991-93	66	7.8	2.2	2.0	11.6	International Country Risk Guide
Political stability	Average 1991-94	66	55.2	10.6	24.6	71.4	International Country Risk Guide
Lack of military in the government	Average 1991-95	66	2.8	1.5	0.3	6.0	International Country Risk Guide
Ethnic fractionalization		89	0.5	0.2	0.0	0.9	Alesina et al. (2003)
Macroeconomic variables							
Inflation (in logs)	Average 1991-98	84	2.8	1.1	1.2	6.2	IFS
Workers' remittances (percent of GDP)	Average 1991-98	72	3.5	6.3	0.0	45.3	Giuliano-Ruiz Arranz (2005)
Interest on public debt (percent of GDP)	Average 1991-98	85	3.1	2.5	0.0	11.6	IFS
Government balance (percent of GDP)	Average 1991-98	87	-4.3	3.2	-15.0	2.8	IFS
Market structure							
State-Owned Bank Assets	1995 and 2000-04	59	45.2	30.7	0.0	100.0	La Porta et al. (2002) and FSAPs
Foreign Bank Assets	Average 1991-98	73	29.5	33.4	0.0	100.0	Kodres and Rietti Souto
Concentration	1998-99	75	65.3	23.9	21.7	100.0	WB, Financial Structure Database, Barth, Caprio, Levine, and FSAPs

Table A2. Data Sources (concluded)

Variable	Time Period	Obs	Mean	Std. Dev.	Min	Max	Data Sources
Business environment							
Days to enforce a contract		82	415.4	194.6	27.0	1459.0	World Bank
Procedures to enforce a contract		82	33.8	11.2	14.0	58.0	World Bank
Cost of enforcement (% debt)		82	35.5	36.5	8.5	256.8	World Bank
Procedures to start a business		82	11.0	2.8	5.0	19.0	World Bank
Days to start a business		82	59.9	42.0	9.0	203.0	World Bank
Cost of starting a business (% GNI per capita		82	124.6	193.1	6.7	1268.4	World Bank
Minimum capita (%GDP per capita)		82	227.8	628.4	0.0	5053.9	World Bank
Cost of collateral (% GNI per capita)		74	24.6	33.0	0.0	155.9	World Bank
Legal rights of creditors		75	4.3	1.7	0.0	9.0	World Bank
Credit information index		81	2.2	1.8	0.0	6.0	World Bank
Coverage of credit registries		78	15.4	37.6	0.0	198.0	World Bank
Coverage of private credit bureaus		81	48.0	141.6	0.0	823.0	World Bank
Time to close a business (years)		78	3.7	1.8	1.0	10.0	World Bank
Cost of closing business		78	16.9	15.6	1.0	76.0	World Bank
Recovery rate after default		82	20.8	14.7	0.0	63.5	World Bank
Procedures to recover credit		79	6.9	3.0	2.0	21.0	World Bank
Days to recover		79	87.2	85.3	2.0	382.0	World Bank
Cost of recovery (percent of property price)		79	8.6	7.0	0.2	34.0	World Bank
Cost of enforcement (% of credit)		82	35.5	36.5	8.5	256.8	World Bank
Procedures to recover credit		82	11.0	2.8	5.0	19.0	World Bank
Supervision and Regulation							
Restrictions to bank activity	1998-99	70	0.75	0.40	0.00	1.67	Barth, Caprio, Levine (2003)
Auditing requirements	1998-99	70	0.81	0.20	0.38	1.00	Barth, Caprio, Levine (2003)
Asset diversification requirements	1998-99	43	0.26	0.44	0.00	1.00	Barth, Caprio, Levine (2003)
Disclosure requirements	1998-99	68	0.61	0.15	0.14	0.86	Barth, Caprio, Levine (2003)
Supervisors' disciplinary powers	1998-99	70	0.65	0.30	0.00	1.00	Barth, Caprio, Levine (2003)
Accounting requirements	1998-99	62	0.87	0.38	0.00	1.00	Barth, Caprio, Levine (2003)
Deposit insurance	1998-99				0.0	1.0	Barth, Caprio, Levine (2003)

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