



WP/07/203

IMF Working Paper

Financial Deepening in
Sub-Saharan Africa:
Empirical Evidence on the Role of
Creditor Rights Protection and
Information Sharing

Calvin McDonald and Liliana Schumacher

IMF Working Paper

African Department

**Financial Deepening in Sub-Saharan Africa:
Empirical Evidence on the Role of Creditor Rights Protection and Information Sharing**

Prepared by Calvin McDonald and Liliana Schumacher¹

August 2007

Abstract

This Working Paper should not be reported as representing the views of the IMF.

The views expressed in this Working Paper are those of the authors and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the authors and are published to elicit comments and to further debate.

This paper investigates the role of creditor rights and information sharing in explaining why some financial markets in sub-Saharan Africa have remained shallow. The paper finds that while financial liberalization and macroeconomic stability promote financial deepening, they are not enough. For countries with similar financial liberalization efforts, those with stronger legal institutions and information sharing have deeper financial development. This result is consistent with a growing body of research for other regions of the world. The main policy implications are that (1) creditor rights legislation should be reinforced, the law reformed, and efficient property registries established; and (2) governments should sponsor credit bureaus where private bureaus might not be commercially viable.

JEL Classification Numbers: G21; O16

Keywords: Financial deepening, creditor rights, information sharing

Author's E-Mail Address: CMcDonald@imf.org; LSchumacher@imf.org

¹ We are grateful for suggestions received from colleagues during an African Department seminar. We also thank African Department desk officers for their help in putting together the database on financial sector liberalization on which the analysis in the paper is based.

Contents

	Page
I. Introduction	3
II. Growth, Financial Development, and Legal Institutions	4
III. Sub-Saharan African Financial Sectors	6
IV. Methodology	7
V. Results	10
VI. Conclusions and Policy Implications.....	11
 Tables	
1. Sub-Saharan Africa: Financial Development Bank Credit to the Private Sector to GDP Ratio.....	7
2. Sub-Saharan African Countries: Financial Development Bank Credit to the Private Sector to GDP Ratio (Percent).....	18
3. Sub-Saharan Countries: Financial Liberalization Index	19
4. Sub-Saharan African Countries: Creditor Rights and Rule of Law.....	20
5. Sub-Saharan African Countries: Information Sharing.....	21
6. Correlation Matrix Among Financial Development, Legal and Macroeconomic Variables.....	22
7. Financial Development and Legal Variables Dependent Variable: Credit to the Private Sector to GDP	23
 Figures	
1. Sub-Saharan African Countries: Credit to the Private Sector-to-GDP Ratios.....	13
2. Sub-Saharan African Countries: GDP per Capita.....	14
3. Sub-Saharan African Countries: Inflation	15
4. Sub-Saharan African Countries: Fiscal Deficits	16
5. Sub-Saharan Africa: Financial Liberalization Index	17
6. Sub-Saharan African Countries: Correlations Between Financial Deepening and Legal Variables	24
 References.....	 25

I. INTRODUCTION

One of the most important challenges for Sub-Saharan African (SSA) countries is to put themselves on a path of sustained growth while alleviating poverty and improving social indicators. This challenge has found concrete expression in the eight Millennium Development Goals (MDGs) for 2015, which range from halving extreme poverty to halting the spread of HIV/AIDS and providing universal primary education.

A large body of research has found consistent evidence that, after controlling for causality, financial development contributes to economic growth. There is also evidence that financial development can reduce income inequality by raising the income of the poor.

During the 1980s and early 1990s, to promote financial development many SSA countries undertook financial sector reforms such as liberalizing interest rates, phasing out directed credit, adopting indirect instruments of monetary policy, restructuring banks, and improving banking supervision. However, these reforms have largely failed to deliver the expected results. Financial sectors in SSA countries are among the shallowest in the world.

Recent research suggests that insufficient legal protection of creditor rights and information asymmetries about borrowers' ability and willingness to repay debts could explain why some financial markets remain shallow. This paper explores that hypothesis with panel data for a sample of 37 SSA countries between 1983 and 2004.

The paper is organized as follows: Section 2 briefly reviews the literature on the relationships between growth and finance and between the legal system (such as creditor rights and information-sharing institutions) and financial development. Section 3 describes the state of the financial sector in SSA countries and identifies those where financial reforms were implemented and the extent of those reforms. Section 4 explains the methodology and data; Section 5 presents the results; and Section 6 discusses their policy implications.

We found a strong correlation between legal institutions and financial development. While financial liberalization and macroeconomic stability promote deeper financial markets, when financial liberalization efforts are similar, those countries with stronger creditor rights and information sharing have deeper financial systems.

The main policy implications of these findings are that

1. Protecting creditor rights should be given a higher priority in financial sector reforms. That means not only firming up legislation at national and regional levels, but also creating efficient property registries, promoting land surveys, and reforming the courts.
2. Governments should seek to sponsor credit registries where private credit bureaus do not seem to be commercially viable. Credit bureaus should acquire as much

information on repayment behavior as is feasible, including records on paying rent and utility bills and transactions with micro lending institutions.

II. GROWTH, FINANCIAL DEVELOPMENT, AND LEGAL INSTITUTIONS²

A fast-growing literature has found a clear link between financial development and growth. Countries with better-functioning financial institutions and markets grow faster. King and Levine (1993) reported that financial development, proxied by several measures of financial deepness (such as bank liabilities and bank credit), predicted long-run economic growth, capital accumulation, and productivity increases for a sample of 77 countries for 1960–89. The results tended to hold for smaller samples of countries. Omitting SSA countries did not significantly alter the results. Levine and Zevros (1998) used indices of stock market development to measure the finance-growth link and found that whether a financial system is bank-based or equity-based does not seem to matter much. To rule out simultaneity bias, Levine, Loayaza, and Beck (2000) dealt directly with the issue of causality by using instrumental variables in cross-country studies of growth. They concluded that there is a very strong connection between growth and the exogenous component of financial development.

Although the relationship between growth and financial development has been found to be strong, the channels by which financial development causes growth are still under discussion. Levine (2005) identifies some functions that financial intermediaries have traditionally performed that improve welfare: production of ex ante information about possible investments; monitoring of investments and implementation of corporate governance; diversification and management of risks, including liquidity risk; mobilization and pooling of savings; and facilitation of exchange of goods and services. He concludes that, to the extent that each of these functions may influence savings and investment decisions, they can also influence economic growth. However, exactly how services provided by financial intermediaries influence growth is not well understood.

Recent research has also looked at the relationship between financial development and income distribution but has come to no agreement about its nature. Some theories claim that, by reducing information and transaction costs and thus allowing more entrepreneurs to obtain financing, financial development improves the allocation of capital, exerting a particularly large impact on the poor. Others argue that it is primarily the rich and politically connected who benefit from improvements in the financial system. Greenwood and Jovanovic (1990) show how the interaction of financial and economic development can give rise to an inverted U-shaped curve of income inequality and financial development: in the early stages of financial development only a few relatively wealthy individuals have access to financial markets and hence higher return projects. With aggregate economic growth, more people can afford to join the formal financial system, which has positive ramifications for economic

² For a comprehensive overview, see Levine (2005).

growth. With sufficient economic success, everyone participates in the financial system and enjoys the full range of benefits.

Beck, Demirguc-Kunt, and Levine (2004) examined whether the level of financial intermediation influences the growth rate of Gini coefficients of income inequality, the growth rate of the income of the poorest quintile of society, and the fraction of the population living in poverty. They found that finance has a very large positive impact on the poor, reducing income inequality. Even when controlling for the growth rate of real per capita GDP, with higher levels of financial intermediation Gini coefficients fall more rapidly, the income of the poorest quintile grows faster than the national average, and the percentage of the population living on less than one or two dollars a day falls faster.

If financial development is good for growth and probably reduces income inequality, a crucial question for countries that need to grow fast, such as those in sub-Saharan Africa, is how to ensure that all obstacles to financial intermediation have been eliminated. Recent studies³ have focused on the links between financial development and the legal institutions that can facilitate credit contracts, exploring the nature of those contracts based on the power theory of credit, information theories of credit, and the legal origin of institutions (e.g., French or English). These theories are complementary rather than alternative; they explain how legal institutions could boost financial intermediation and facilitate access to credit for a larger number of customers, some with new and small projects.

The power theory of credit emphasizes that financial institutions would be more willing to extend credit if, in case of default, they could easily enforce contracts by forcing repayment or seizing collateral. The amount of credit in a country would then depend to some extent on the existence of legislation that protects creditor rights and on the quality of procedures that lead to repayment.

For the information theories of credit, the amount of credit to firms and individuals would be larger if financial institutions could better predict the probability of repayment by their potential customers. Consequently, the more banks know about the credit history of prospective borrowers, the deeper credit markets would be. For this reason public or private credit registries that collect and provide broad information to financial institutions on the repayment history of potential clients is crucial for deepening credit markets.

Legal origin also has implications for financial developments. Beck, Demirguc-Kunt, and Levine (2002) identified a political and an adaptability channel through which legal origin affects credit markets. The political channel depends on the balance between state power and private property rights. For example, civil law that promotes institutions that favor state power over private property rights would tend to have adverse implications for the growth of

³ La Porta and others (1998).

credit markets. The adaptability channel recognizes that legal traditions differ in their ability to evolve with changing conditions. It has been argued, for instance, that common law traditions evolve efficiently because judges respond case by case to changing conditions. Both channels imply that countries whose law is French in origin should have on average substantially slower financial development than British common law countries.

The empirical evidence supports this institutional approach. Djankov, McLiesh, and Shleifer (2005) found from data for 149 countries that, after controlling for macroeconomic factors like GDP growth, inflation, and fiscal imbalances, legal institutions have made a clear contribution to the development of financial markets. Similar findings were reported by Galindo and Micco (2001) in cross-sectional regressions of Latin American countries. This paper contributes to the empirical work by providing evidence on the importance of institutions for financial development in SSA countries.

III. SUB-SAHARAN AFRICAN FINANCIAL SECTORS

Financial sectors in SSA countries are among the least developed in the world. To some extent this can be blamed on misguided policies of the past that encouraged substantial political interference in the operation of financial institutions. Historically, SSA countries placed significant emphasis on building and protecting the real sector, and most countries believed they could reach their development objectives through selective credit allocation.

As economic and financial conditions were deteriorating in the late 1980s and early 1990s, SSA countries embarked on a policy of dismantling controls. These reforms usually included (1) granting central banks more autonomy to conduct monetary policy; (2) liberalizing interest rates and eliminating administrative allocation of credit; (3) transitioning from direct to indirect monetary policy implementation; (4) restructuring banks to restore their solvency; and (5) improving infrastructure, especially bank supervision. Steps were also taken to liberalize the external current and capital accounts.⁴

While the pace of reform has varied and some restrictions remain in place in some countries, progress in liberalizing financial markets has been substantial throughout SSA.⁵ However, financial intermediation is still low, and by some measures has even declined. For example, between the early 1980s and the end of 2004, the simple SSA average of private sector bank credit to GDP fell from 15.6 percent to 15.1. Excluding 15 countries whose financial sectors showed signs of sustained development during this period, the average private sector credit to GDP ratio declined from 17.2 percent in the early 1980s to 8.7 percent by the end of 2004.⁶

⁴ For a review of reforms during the 1980s and 1990s, see Mehran and others (1998).

⁵ For example, there are still interest rate controls in countries belonging to the Central Africa Economic and Monetary Community (CEMAC).

⁶ As shown in the far right two columns, these ratios are consistent with an apparent improvement between 1990–99 and 2000–04, as reported in Gulde, Pattillo, and Christensen (2006).

This is all the more striking considering that during this period efforts to liberalize the financial sector were combined with greater discipline in implementing monetary policy, which in most SSA countries pushed down inflation outcomes and lowered fiscal deficits (Figures 1–4).⁷

**Table 1. Sub-Saharan Africa. Financial Development
Bank credit to the private sector to GDP ratio (Percent) ¹**

	1983-87	1993-97	2000-04	1990-99	2000-04
All SSA countries	15.6	13.2	15.1	13.7	15.1
Twelve top performers	13.7	21.6	29.8	21.1	29.8
Three countries with recent improvement	10.0	8.9	13.5	10.0	13.5
Remaining SSA countries	17.2	9.7	8.7	10.7	8.7

¹ For each group, the indicator is the simple average of countries in the group.

Source: IMF, *International Financial Statistics*.

The hypothesis of this paper is that, while the financial liberalization reforms of the late 1980s and early 1990s were necessary, they were not sufficient; the countries where financial sectors deepened are those with solid legal institutions⁸.

IV. METHODOLOGY

We estimated the impact of legal institutions and financial liberalization reforms on financial development by using panel data of 37 SSA countries and three data points, constructed as averages: 1983–87, 1993–97, and 2000–04.⁹ Not all the information needed was available for all countries for all three periods, so our panel is unbalanced. Comparison of fit among regressions may therefore not be correct because the regressions may cover different countries. We chose this approach—rather than a balanced panel of countries for which all information was available for all three periods—because we were less interested in goodness of fit and more interested in understanding the explanatory powers of specific variables by using all available information.

Financial development is a complex process. It involves the transformation of financial intermediaries in both financial and capital markets, including commercial and investment

⁷ During the discussion of a preliminary version of this paper in an IMF African Department seminar, it was suggested that low credit growth in the 1990s could have been the outcome of the aggressive intensification of supervision that followed previous periods of regulatory weakness. If this point were confirmed, it would be necessary to reassess the optimal combination of prudential requirements and credit growth to support economic activity. Credit might also have been reduced because of the write-off of bad loans originating in direct lending to selected sectors or given by banks with extensive state participation.

⁸ Most of the fifteen best performers are countries with stronger legal institutions (Table 4).

⁹ Since an index of financial liberalization was available only for 1987 and 1997, the data points were chosen around those dates. The early to mid-1980s can also be seen as prereform years; the mid-1990s correspond with a period of rapid financial sector liberalization in SSA. The last period, the early 2000s, is generally considered the one in which most SSA countries made substantial progress in stabilizing their economies.

banks, insurance companies, and pension funds. For purposes of empirical work, however, financial development has typically been measured by a banking indicator of financial depth, such as the ratio to GDP of bank credit to the private sector. Bank credit is a feature of both developed and less developed financial markets and thus provides the continuity required for measurement. We followed this approach in this paper.

The evolution of this ratio for all SSA countries over the three periods is shown in Table 2 where countries were separated into three groups: 12 countries for which financial depth increased in a sustained way; 3 countries for which the ratio decreased in 1993–1997 and then recovered to levels above those of the 1980s; and 29 countries for which the ratio systematically decreased over the three periods. Among the top performers we find both middle-income countries, such as Cape Verde, Mauritius, and South Africa, and low-income countries, such as Burundi, Ethiopia, and Ghana. Some countries show more progress than others. Burundi, for example, started with a very low ratio of 4.5 percent in the early 1980s and by 2000–04 the ratio had gone up to 22 percent. Some countries in this group, like Rwanda, suffered internal conflicts during this period. In the 1990s internal conflicts also clearly affected financial intermediation in Mali, although it recovered soon afterwards. Among the worst performers are Cameroon and Côte d’Ivoire, countries that in the early 1980s had some of the largest and deepest financial systems.

The financial liberalization index was constructed by Gelbard and Leite (1999) for 1987 and 1997. We extended the index to 2004 using a survey conducted in the IMF African Department (Table 3). The index is based on the aggregation of answers to the following five questions:

- Are interest rates liberalized?
- How many years have real lending interest rates been positive?
- How many years have real deposit rates been positive?
- Is there a significant informal financial sector?
- Are there selective credit controls or other directed credit allocation mechanisms?

Questions that could be responded to by yes received a score of 100 and by no 0 points. Other answers were converted to an equivalent value on a scale of 0–100. The index is the summation of the points obtained in each question. As Figure 5 makes clear, most SSA countries made significant progress in liberalizing their financial systems during the periods under study.

The legal variables representing creditor legal rights and information sharing were taken from Doing Business, the well-known database started by the World Bank in 2004. The index on creditor legal rights measures the degree to which collateral and bankruptcy laws facilitate lending. The index includes three aspects relevant to legal rights in bankruptcy and seven relevant to collateral law. A score of 1 is assigned for each feature. On average SSA countries score 4.3 out of 10; 19 countries are below the mean.

Since the creditor rights granted in legal codes are useless if judicial decisions are affected by long and costly procedures or by bribes or political influence, we used two additional measures of creditor rights for each country: the efficiency of judicial procedures, and the prevalence of the rule of law. Efficiency was measured by the cost of enforcing a contract, as reported by Doing Business. The rule of law is proxied by the Corruption Perception Index prepared by Transparency International. Following Galindo and Micco (2001), we constructed two effective creditor rights indices. The first combines the creditor rights index with the cost of enforcing contracts. The second combines the index with the Corruption Perception Index¹⁰ (Table 4).

Establishing a credit registry, public or private, is an important step toward information sharing, but it is not enough. The amount of information collected (information coverage) as well as the percentage of the population covered (population coverage) are also relevant. Doing Business measures both. Information coverage is also measured by an index that assigns a score of 1 for each of six pieces of information.¹¹

During the period under study 14 SSA countries had no credit registry at all, and most credit registries in the other SSA countries had insufficient information coverage, as shown by an average score of 2.5 out of 6 for those that did have a credit registry, and population coverage of 7.5 percent on average (Table 5). Moreover, the means mask profound differences in how data are collected in different countries. While in Namibia and Botswana the credit bureau covered over 30 percent of the population and in South Africa over 60 percent, in the other SSA countries that had a credit registry, information was collected on no more than 4.3 percent of the population. Moreover, credit bureaus usually covered transactions with banks but not with micro lending institutions. This might be considered a vicious cycle: because people do not have access to banks, they cannot have a credit history. However, there could be a payment history for a larger fraction of the population if information on rent and utility payments and on transactions with micro lenders were systematically reported.

Data for the legal variables have only been available since 2004.¹² For purposes of this paper, we assumed no variation over the three periods under analysis. The legal variables could thus not be used to explain differences between periods for each country, but they can explain why, after controlling for more favorable macroeconomic conditions and financial liberalization efforts, some countries made progress while others did not.

¹⁰ For both effective creditor rights indices we used a linear combination of equal weights.

¹¹ The six pieces of information are: (i) Both positive and negative credit information (for example on payment history, number and kinds of accounts, number and frequency of payments and any collections or bankruptcies) are distributed. (ii) Data on both firms and individuals are distributed. (iii) Data from retailers, trade creditors, or utilities as well as financial institutions are distributed. (iv) More than two years of historical data are distributed. (v) Data on all loans above 1 percent of income per capita are distributed. (vi) By law, borrowers have the right to access their data.

¹² The exception is the Corruption Perception Index, available annually since 1997.

To control for macroeconomic impact, our variables included inflation, the fiscal deficit to GDP ratio, and GDP per capita growth. Inflation is relevant because financial intermediation is based on savings. Higher inflation introduces uncertainty into the trade-off of present versus future consumption, and, thus, this would lead to lower savings. The fiscal deficit controls for the impact of the government's financial activities on credit markets. For example, higher fiscal deficits can crowd out private credit. Alternatively, fiscal deficits may complement or be irrelevant to private credit if banks lend to the government because there is a lack of opportunities in the private sector. That could certainly happen if, because of lack of adequate information or weak creditor rights, banks perceive private borrowers' risk to be so high that private clients are credit-rationed. The evidence that SSA banking systems are prone to excess liquidity (Gulde, Pattillo, and Christensen, 2006) suggests that the second explanation is more likely. The rate of growth of GDP per capita controls for the political instability in many SSA countries over the past two decades, especially the civil wars that in several countries led to dramatic reductions in the standard of living.

Except for the index of financial liberalization, the legal variables, and the corruption index, the sources of all variables used in this paper are *International Financial Statistics*, the *World Economic Outlook*, and the World Bank World Development Indicators database.

V. RESULTS

Table 6 and Figure 6 examine simple correlation coefficients between financial development, the legal variables, and the control macroeconomic variables. All the correlations related to legal variables show the appropriate signs: financial development is positively correlated with the strength of creditor rights, the existence and coverage of credit bureaus, and the prevalence of the rule of law; and is negatively correlated with the cost of enforcing contracts. Financial development is also positively correlated with the financial liberalization index and, as expected, is negatively correlated with inflation. There is no clear relationship between financial development and the fiscal deficit, which suggests the absence of crowding-out effects.

Table 7 presents alternative specifications of the panel data. The results, quite striking, can be summarized as follows:

- Financial liberalization has promoted deeper financial markets in SSA countries. In almost all the specifications, and after controlling for macroeconomic factors, the coefficient of the financial liberalization index is positive and significant.
- In countries with similar financial liberalization efforts, those with better legal institutions have on average outperformed the others. They have achieved this by reducing information asymmetries, by honoring the rule of law, and by having relatively more efficient judicial systems. The legal variables coefficients are significant and hold the expected sign.

- Countries whose legal systems are inspired by French institutions seem to have been less successful on average in promoting financial development.
- For the macroeconomic variables the coefficients for inflation are in most regressions negative and significant, suggesting that the sustained reduction in inflation achieved in most SSA countries over the last two decades has helped to promote credit to the private sector.
- As suggested by the excess liquidity observed in SSA banks, fiscal deficits do not seem to have been an obstacle to financial deepening in the recent past.

VI. CONCLUSIONS AND POLICY IMPLICATIONS

This paper sought to answer the following question: Why is it that despite substantial financial liberalization and progress toward macroeconomic stability, financial deepening remains elusive in SSA countries? The main conclusion is that while financial liberalization and macroeconomic stability promote financial deepening, they are not enough. Legal institutions and information sharing matter. For countries that have taken similar financial liberalization measures, those that have stronger legal institutions and share more information have more financial depth. This result for SSA is consistent with a growing body of research for other regions of the world, such as Latin America.

The main policy implication is that protection of creditor rights in SSA deserves more attention. This is one area where reform, though much needed, has been lacking. Creditor rights in SSA are inadequate in terms of both regulation and its enforcement.

Strengthening creditor rights is, however, complex. First, it requires changes to legislation governing debt collection and collateral. In some cases reforms may have both regional and national dimensions that should be addressed. For example, the uniform commercial acts enacted by the Organization for the Harmonization of African Business Laws (OHADA), apply to matters like debt collection, collateral, and bankruptcy in most francophone African countries, but the necessary procedures are specified by domestic legislation. For countries that are part of monetary unions, regulations related to some forms of financial crimes and corruption, such as money-laundering, are issued by regional bodies. Reform efforts should look at flaws and gaps in both national and regional legislation.

The institutional infrastructure should also be revised to make collateralized loans more generally available. For example, the ability to register property efficiently would help to build financial markets, because banks prefer land and buildings as collateral (they are difficult to move or hide) and the availability of collateral is crucial for bank willingness to grant credit. In turn, to register a property, its boundaries have to be determined and for this, cadastres and land surveys should be promoted. Good legislation on debt recovery depends on efficient property registration and land surveying in both cities and countryside.

The reform of the courts, which is also vital, has educational and ethical dimensions. Banks in Africa usually complain that judges are not knowledgeable about commercial law, and

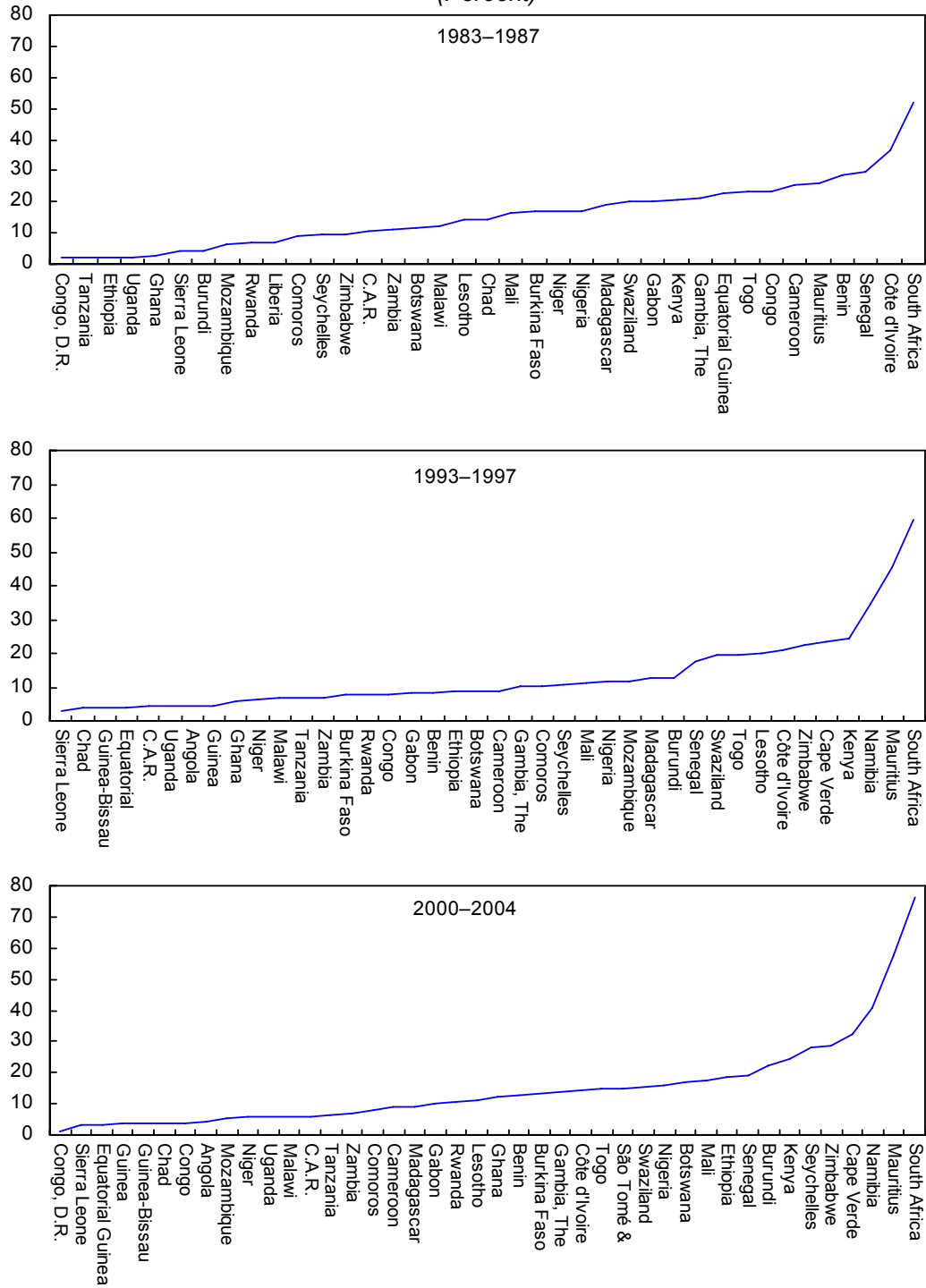
they are influenced by interests that have nothing to do with justice. The lack of knowledge is to some extent related to the fact that most national schools of law focus only on national regulations and do not teach regional law. Consequently, one way to promote knowledge of the law is to create scholarships for law students to attend courses in regional centers.

A knowledgeable judge is less likely to be influenced by undue interests. However, ethical behavior should also be ensured by the creation of professional bodies that can set ethical rules and enforce disciplinary measures when the rules are violated. Inspection services and the publication of court decisions are also priorities for judicial reform.

Loan and other formal banking sector services are jeopardized by the existence of informal finance mechanisms. Informal finance should be discouraged because it functions outside the supervisory framework that ensures that only those who comply with the requirements to become bankers (the “fit and proper tests”) could deal with the savings of the population. One way to prevent further disintermediation is to apply anti-money-laundering regulations, which in many countries apply only to the formal banking sector, to the informal financial sector.

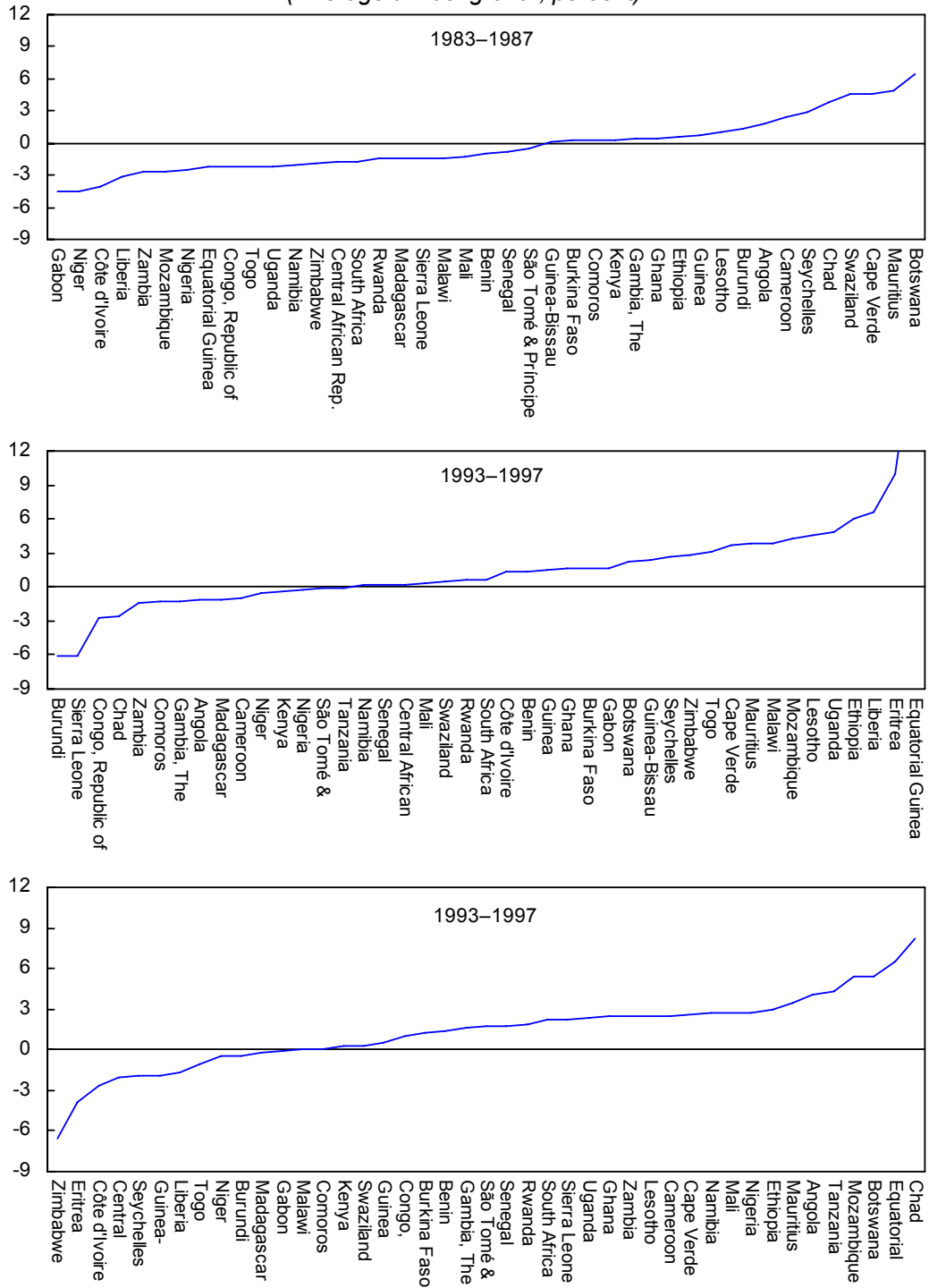
SSA countries should also increase the sharing of information in credit markets. One major constraint here is that in many countries setting up private credit bureaus is not considered commercially viable. Some countries, however, have found that having the government or central bank set up public registries can be extremely productive. Once they are established and coverage is increased, it may be possible to turn them over to the private sector. Bilateral and multilateral partners can step up their assistance for such registries. Credit bureaus should cover as much information as possible on the repayment profile of customers, including information on payments of utilities services, rent, and loans made by micro lending institutions.

Figure 1. Sub-Saharan African Countries:
Credit to the Private Sector-to-GDP Ratios
(Percent)



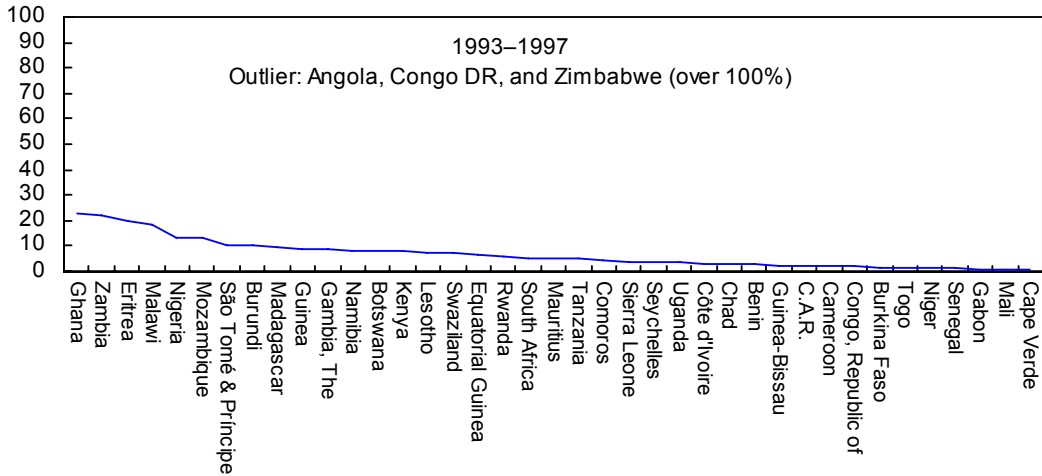
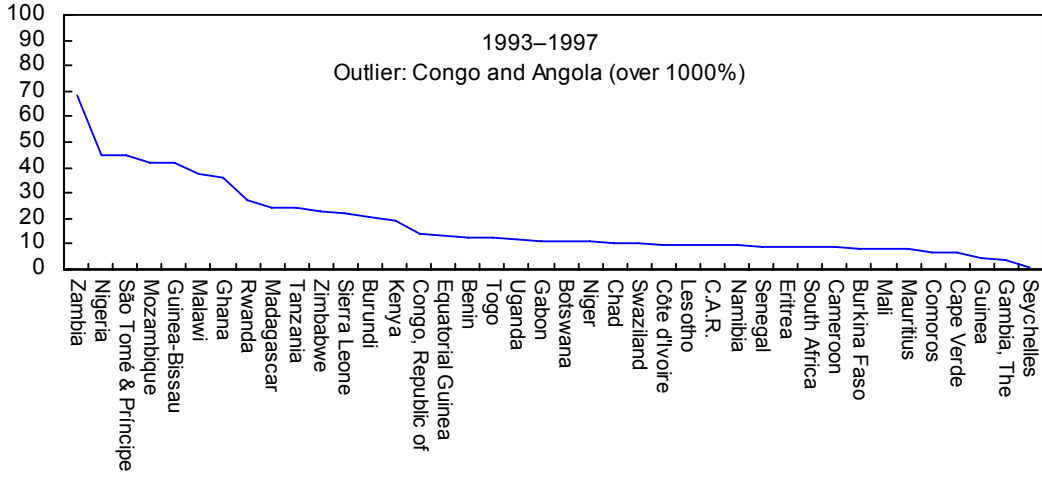
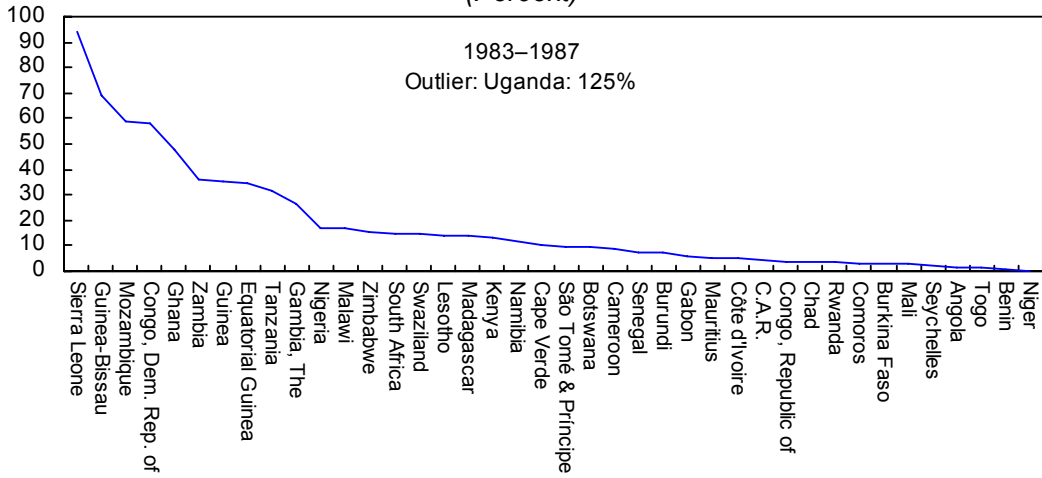
Source: IMF, *International Financial Statistics*.

Figure 2. Sub-Saharan African Countries.
GDP per Capita
(Average annual growth, percent)



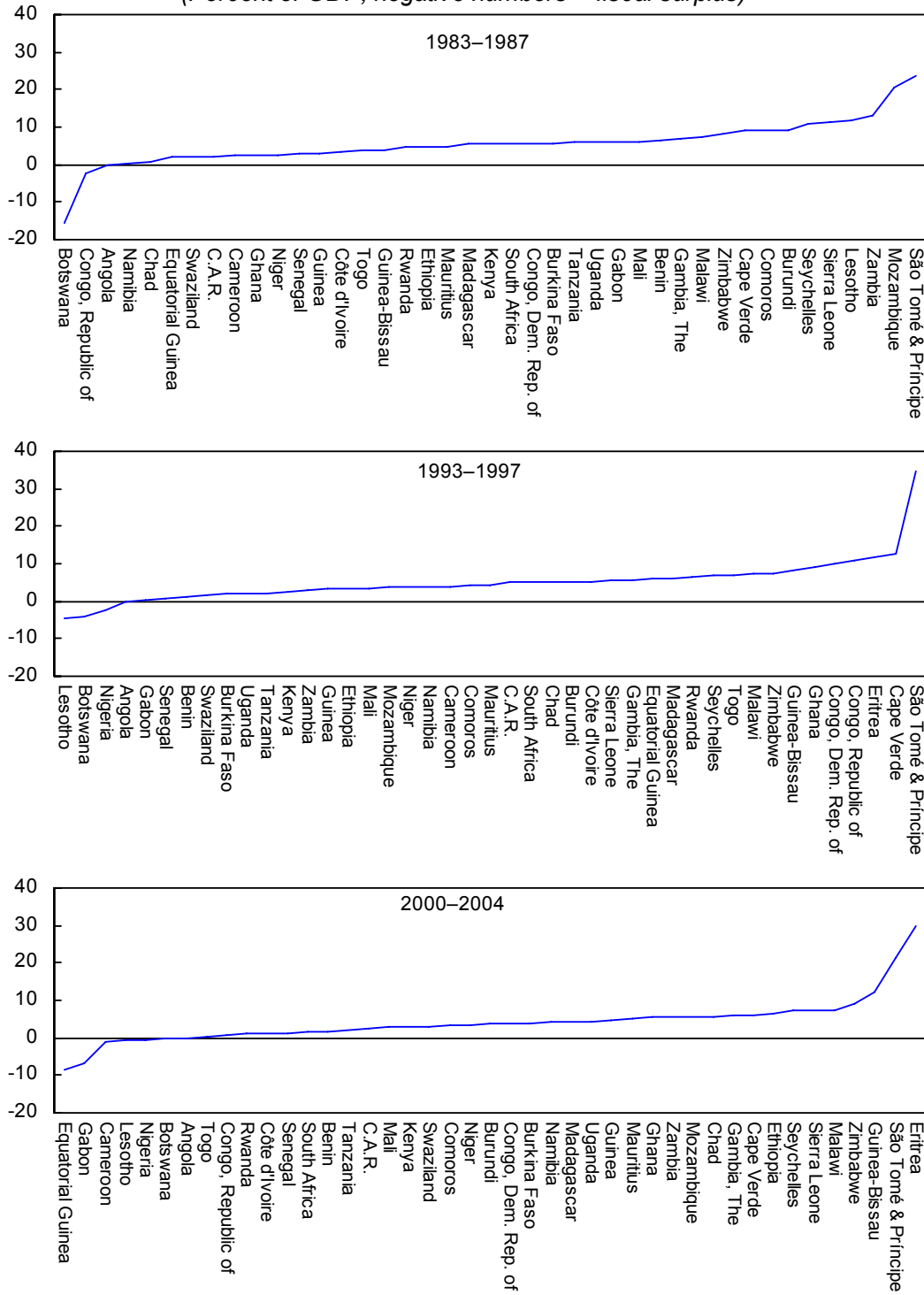
Source: World Bank, *World Development Indicators*.

Figure 3. Sub-Saharan African Countries:
Inflation
(Percent)



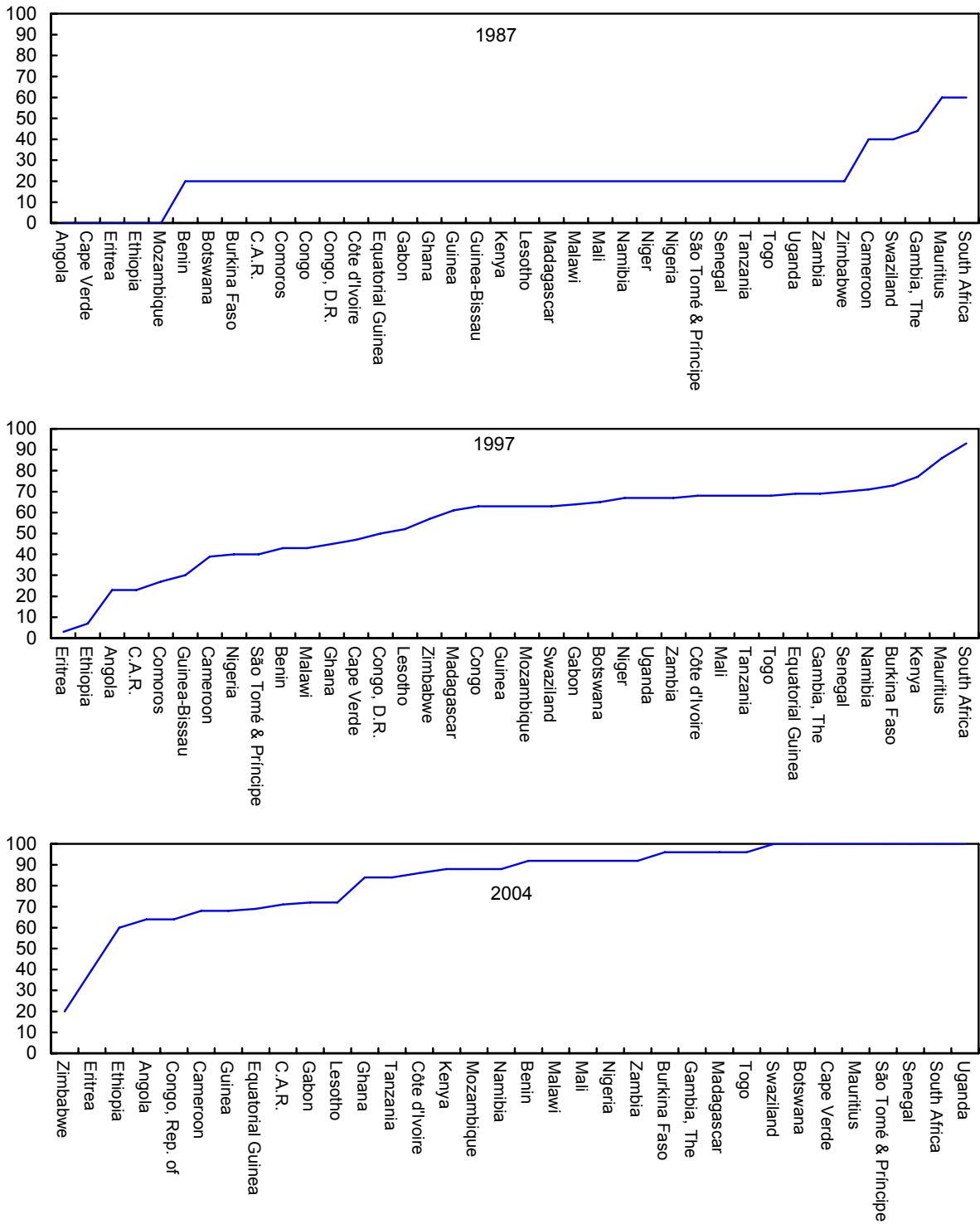
Source: IMF, *World Economic Outlook*.

Figure 4. Sub-Saharan African Countries:
Fiscal Deficits
(Percent of GDP, negative numbers = fiscal surplus)



Source: IMF, *World Economic Outlook*.

Figure 5. Sub-Saharan Africa:
Financial Liberalization Index



Source: Gelbard and Leite (1999) and this paper's authors.

**Table 2. Sub-Saharan African Countries. Financial Development
Bank Credit to the Private Sector to GDP Ratio (Percent)**

	1983-87	1993-97	2000-04
1. Top performers			
Burundi	4.5	12.6	22.1
Cape Verde	...	23.3	32.4
Ethiopia	2.1	8.6	18.5
Ghana	2.6	5.9	12.4
Kenya	20.7	24.4	24.2
Mauritius	26.0	45.2	57.8
Namibia	...	34.7	40.9
Rwanda	7.0	7.9	10.5
Seychelles	9.7	10.9	28.0
South Africa	51.9	59.4	76.1
Uganda	2.3	4.4	5.6
Zimbabwe	9.8	22.5	28.7
Simple average	13.7	21.6	29.8
2. Countries with recent improvements			
Botswana	11.4	8.7	16.7
Mali	16.5	11.2	17.5
Tanzania	2.1	6.8	6.4
Simple average	10.0	8.9	13.5
3. Other SSA Countries			
Angola	...	4.5	4.2
Benin	28.7	8.1	12.5
Burkina Faso	16.8	7.7	13.0
Cameroon	25.7	8.9	8.8
C.A.R.	10.4	4.3	5.7
Chad	14.5	3.9	3.8
Comoros	9.2	10.1	7.9
Congo	23.5	8.0	3.9
Congo, D.R.	1.9	n.a.	0.9
Côte d'Ivoire	36.5	20.9	14.3
Equatorial Guinea	22.9	4.0	3.1
Eritrea	...	...	...
Gabon	20.1	8.1	10.2
Gambia, The	21.1	10.1	13.9
Guinea	n.a.	4.6	3.5
Guinea-Bissau	n.a.	4.0	3.5
Lesotho	14.3	19.9	11.1
Liberia	7.1	...	...
Madagascar	18.9	12.5	8.8
Malawi	12.1	6.7	5.7
Mozambique	6.2	11.7	5.4
Niger	16.8	6.2	5.6
Nigeria	16.8	11.5	15.8
São Tomé & Príncipe	...	...	15.1
Senegal	29.8	17.8	19.2
Sierra Leone	4.3	2.9	3.0
Swaziland	19.9	19.3	15.3
Togo	23.2	19.4	15.0
Zambia	11.2	7.0	7.1
Simple average	17.2	9.7	8.7

Source: IMF, *International Financial Statistics*.

Table 3: Sub-Saharan Countries: Financial Liberalization Index

	1987	1997	2004
Angola	0	23	64
Benin	20	43	92
Botswana	20	65	100
Burkina Faso	20	73	96
Burundi	...	...	...
Cameroon	40	39	68
Cape Verde	0	47	100
C.A.R.	20	23	71
Chad	...	...	...
Comoros	20	27	...
Congo	20	63	64
Congo, D.R.	20	50	...
Côte d'Ivoire	20	68	86
Equatorial Guinea	20	69	69
Eritrea	0	3	40
Ethiopia	0	7	60
Gabon	20	64	72
Gambia, The	44	69	96
Ghana	20	45	84
Guinea	20	63	68
Guinea-Bissau	20	30	...
Kenya	20	77	88
Lesotho	20	52	72
Liberia	...	...	...
Madagascar	20	61	96
Malawi	20	43	92
Mali	20	68	92
Mauritius	60	86	100
Mozambique	0	63	88
Namibia	20	71	88
Niger	20	67	...
Nigeria	20	40	92
Rwanda	...	...	...
São Tomé & Príncipe	20	40	100
Senegal	20	70	100
Seychelles	...	...	...
Sierra Leone	...	...	...
South Africa	60	93	100
Swaziland	40	63	100
Tanzania	20	68	84
Togo	20	68	96
Uganda	20	67	100
Zambia	20	67	92
Zimbabwe	20	57	20
Simple average	21	55	83

Source: Gelbard and Leite (1999) and authors' estimates for 2004.

Table 4. Sub-Saharan African Countries: Creditor Rights and Rule of Law

	Strength of Legal Rights Index 0-10	Enforcing Contract Cost (% of credit)	Rule of Law (Corruption Perception Index) 0-10	Effective Creditor Rights Index 1 ¹	Effective Creditor Rights Index 2 ²
Angola	3.0	11.2	2.0	6.0	2.5
Benin	4.0	29.6	3.0	5.5	3.5
Botswana	9.0	24.8	6.0	8.5	7.5
Burkina Faso	4.0	95.4	3.0	5.5	3.5
Burundi	2.0	32.5	2.0	4.5	2.0
Cameroon	4.0	36.4	2.0	5.5	3.0
Cape Verde	...	...	...	...	...
C.A.R.	3.0	72.2	...	3.0	...
Chad	3.0	54.9	2.0	4.0	2.5
Comoros	...	...	...	...	...
Congo	2.0	43.0	2.0	4.0	2.0
Congo, D.R.	3.0	256.8	2.0	1.5	2.5
Cote d'Ivoire	2.0	47.6	2.0	4.0	2.0
Equatorial Guinea	...	...	...	...	...
Eritrea	3.0	19.9	3.0	5.5	3.0
Ethiopia	5.0	14.8	3.0	7.0	4.0
Gabon	...	...	3.0	...	...
Gambia, The	...	...	3.0	...	...
Ghana	5.0	14.4	3.0	7.0	4.0
Guinea	2.0	27.6	...	5.0	...
Guinea-Bissau	...	...	...	...	...
Kenya	8.0	41.3	2.0	7.0	5.0
Lesotho	5.0	23.9	3.0	6.5	4.0
Liberia	...	...	2.0	...	...
Madagascar	4.0	22.8	3.0	6.0	3.5
Malawi	7.0	136.5	3.0	3.5	5.0
Mali	3.0	34.6	3.0	5.0	3.0
Mauritius	7.0	8.6	5.0	8.5	6.0
Mozambique	4.0	16.0	3.0	6.5	3.5
Namibia	5.0	28.3	5.0	6.5	5.0
Niger	4.0	42.0	2.0	5.0	3.0
Nigeria	7.0	37.2	1.0	7.0	4.0
Rwanda	1.0	43.2	...	3.5	...
São Tomé & Príncipe	...	69.5	...	...	...
Senegal	3.0	23.8	3.0	5.5	3.0
Seychelles	...	...	4.0	...	...
Sierra Leone	5.0	31.0	2.0	6.0	3.5
South Africa	5.0	11.5	5.0	7.0	5.0
Swaziland	...	...	3.0	...	...
Tanzania	5.0	35.3	2.0	6.0	3.5
Togo	2.0	24.3	...	5.0	...
Uganda	5.0	22.3	2.0	6.5	3.5
Zambia	6.0	28.7	3.0	7.0	4.5
Zimbabwe	7.0	19.1	3.0	7.5	5.0

Source: World Bank, *Doing Business 2006*; and authors' estimates.

¹ The effective creditor index 1 combines the strength of the legal rights index with the cost of enforcing contracts (measured as a percent of total credit amount).

² The effective creditor index 2 combines the strength of legal rights index with the rule of law index (or index of corruption perception).

Table 5. Sub-Saharan African Countries: Information Sharing

	Information Sharing		
	Depth of Credit Inf index (0-6)	Public Registry Coverage (% of adults)	Private Bureau Coverage (% of adults)
Angola	4	2.9	0.0
Benin	1	3.5	0.0
Botswana	5	0.0	30.8
Burkina Faso	1	1.9	0.0
Burundi	3	0.2	0.0
Cameroon	2	0.8	0.0
Cape Verde	...	...	...
C.A.R.	2	1.2	0.0
Chad	2	0.2	0.0
Comoros	...	...	...
Congo	2	2.3	0.0
Congo, D.R.	0	0.0	0.0
Côte d'Ivoire	1	3.0	0.0
Equatorial Guinea	...	...	...
Eritrea	0	0.0	0.0
Ethiopia	0	0.0	0.0
Gabon	...	...	...
Gambia, The	...	...	...
Ghana	0	0.0	0.0
Guinea	1	0.0	0.0
Guinea-Bissau	...	...	...
Kenya	5	0.0	0.1
Lesotho	0	0.0	0.0
Liberia	...	...	...
Madagascar	2	0.3	0.0
Malawi	0	0.0	0.0
Mali	1	2.3	0.0
Mauritius	0	0.0	0.0
Mozambique	4	0.8	0.0
Namibia	5	0.0	35.2
Niger	1	0.9	0.0
Nigeria	3	0.0	0.3
Rwanda	2	0.1	0.0
São Tomé & Príncipe	0	0.0	0.0
Senegal	1	4.3	0.0
Seychelles	...	...	...
Sierra Leone	0	0.0	0.0
South Africa	5	0.0	63.4
Swaziland	...	...	...
Tanzania	0	0.0	0.0
Togo	1	3.5	0.0
Uganda	0	0.0	0.0
Zambia	0	0.0	0.0
Zimbabwe	0	0.0	0.0

Source: World Bank, *Doing Business 2006*, and authors' estimates.

Table 6. Correlation Matrix Among Financial Development, Legal and Macroeconomic Variables

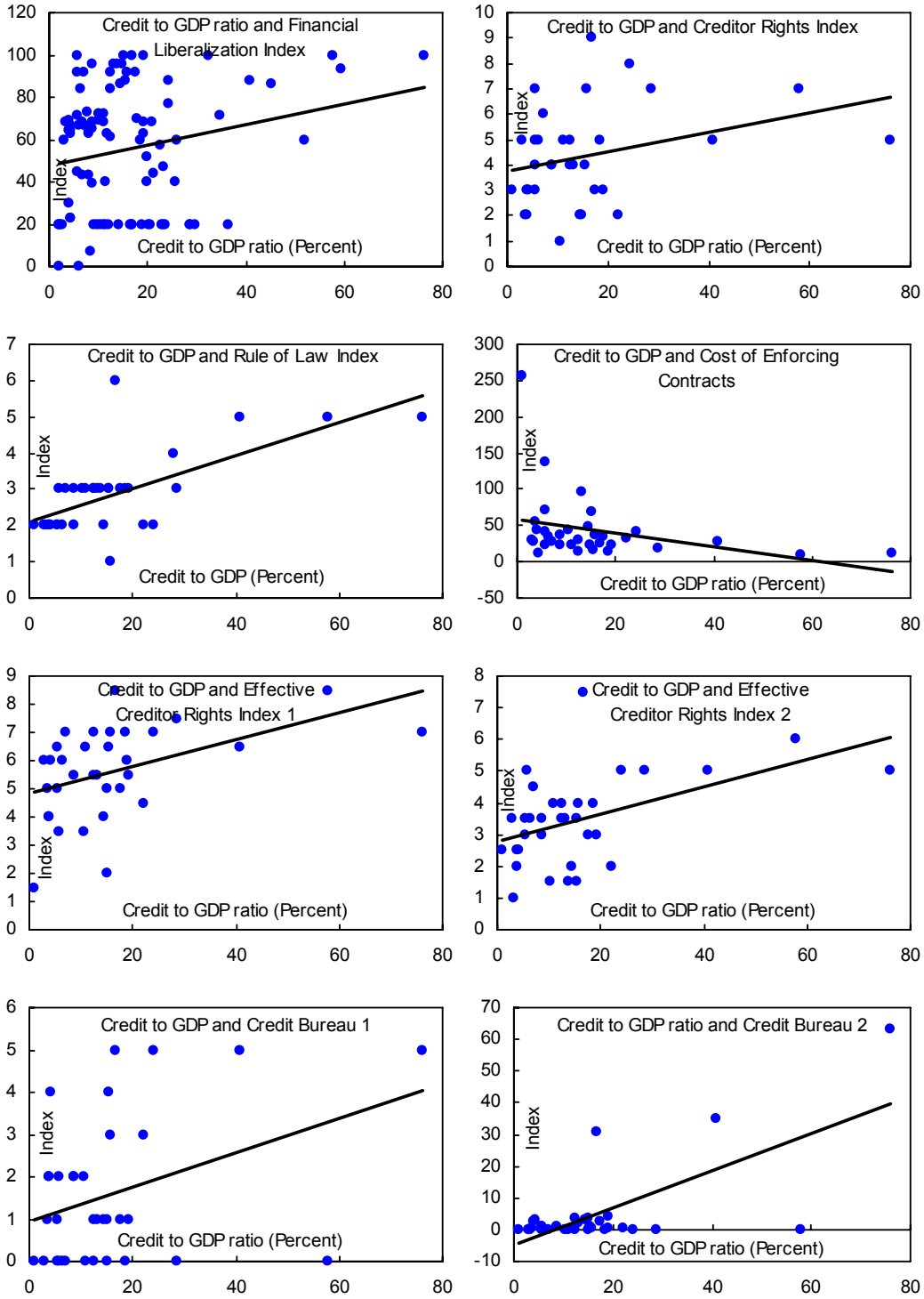
	Private Credit to GDP Ratio	1	Cost of Enforcing Contracts	Fiscal Deficit	Inflation	GDP Per Cap Growth	Financial Int. Index	Rule of Law	Credit Bureau 1	Credit Bureau 2	Creditor Rights Index	Effective Creditor Rights 2	Effective Creditor Rights 1
Private Credit to GDP Ratio	1												
Cost of Enforcing Contracts	-0.267341	1											
Fiscal Deficit	0.016102	-0.122987	1										
Inflation	-0.058788	-0.006307	-0.091323	1									
GDP pc	-0.034595	-0.094834	0.176408	-0.108038	1								
Financial Intermediation Index	0.2219	-0.060141	0.169529	0.024244	0.260984	1							
Rule of Law	0.515403	-0.22508	0.081928	-0.091224	0.148134	0.197537	1						
Credit Bureau 1	0.348183	-0.21741	0.333911	0.025091	0.030998	0.118106	0.30491	1					
Credit Bureau 2	0.643863	-0.161067	0.203384	-0.023811	0.061438	0.207919	0.683891	0.606754	1				
Credit Rights Index	0.17842	-0.096291	0.132982	-0.119899	0.187214	0.113397	0.41236	0.1344	0.211408	1			
Effective Creditor Rights 2	0.296929	-0.188531	0.082554	-0.09989	0.057245	0.125092	0.594329	0.27381	0.435928	0.912548	1		
Effective Creditor Rights 1	0.329909	-0.670612	0.317664	-0.087398	0.231485	0.117797	0.510169	0.238493	0.285303	0.69919	0.718063	1	

Table 7. Financial Development and Legal Variables
Dependent Variable: Credit to the Private Sector to GDP

	1	2	3	4	5	6	7	8	9	10
Log (1+inflation)	-4.67 (-1.52).	-5.57 (-1.78)*	-3.94 (-1.53)	-4.64 (-1.38)	-3.16 (-1.10).	-5.33 (-1.65)*	-4.82 (-1.53).	-4.46 (-1.41).	-4.41 (-1.46).	-5.54 (-1.84)*
Per capita GDP growth	-0.68 (-1.60).	-0.67 (-1.02).	-0.54 (-0.98).	-0.96 (-1.32).	-0.91 (-2.25)**	-0.92 (-1.35).	-1.41 (-2.02)**	-0.81 (-1.81)*	-0.91 (-2.10)**	-1.21 (-1.82)*
Fiscal deficit	0.16 (0.58).	0.35 (1.03).	0.39 (1.43).	0.15 (0.38).	0.24 (0.8).	0.10 (0.31).	0.16 (0.47).	0.20 (0.61).	0.10 (0.36).	0.39 (1.21).
Financial Liberalization Index	0.12 (2.42)***	0.09 (1.83)*	0.06 (1.27).	0.13 (2.31)**	0.09 (1.82)*	0.11 (2.05)**	0.13 (2.43)***	0.11 (2.08)**	0.11 (2.32)**	0.11 (2.10)**
Credit Bureau 1 (information coverage)		3.00 (3.40)***								2.53 (2.92)***
Credit Bureau 2 (population coverage)			0.64 (7.16)***							
Creditor Rights				1.15 (1.32).						
Rule of Law					6.28 (4.95)***					
Efficiency of the judiciary (Cost of enforcing contracts)						-0.10 (-2.49)***				
Effective creditor rights 1							3.27 (3.15)***			2.66 (2.64)***
Effective creditor rights 2								2.37 (2.36)**		
French origin									-5.57 (2.02)**	
Constant	10.67 (3.27)***	6.69 (1.77)*	9.58 (3.27)***	4.94 (0.86).	-5.89 (-1.24).	15.64 (3.83)***	-8.40 (-1.17).	3.15 (0.63).	13.90 (3.88)***	-8.53 (-1.25)
Cross-sections included	37	30	30	29	30	30	30	30	37	30
Total panel (unbalanced) observations	95	79	79	78	81	79	79	81	95	79
Adjusted R-squared	0.09	0.21	0.42	0.04	0.28	0.09	0.13	0.11	0.08	0.22
F-Statistics	2.21*	3.79***	12.42***	1.71	7.15***	2.62**	3.43***	2.94**	2.65**	4.58***

Notes: T-statistics in parenthesis. * indicates significance at the 10 percent level; ** indicates significance at the 5 percent level.
 *** indicates significance at the 1 percent level.

Figure 6. Sub-Saharan African Countries. Correlations Between Financial Deepening and Legal Variables



Source: IMF, *International Financial Statistics*; World Bank, *Doing Business 2006*; and authors' estimates.

References

- Beck, Thorsten, Asli Demirguc-Kunt, and Ross Levine, 2004, "Finance, Inequality and Poverty: Cross Country Evidence," photocopy (Washington: World Bank), discussed in Levine (2005).
- , 2002, "Law and Finance: Why Does Legal Origin Matter?" *Journal of Comparative Economics*, vol. 31, pp. 654–75.
- Djankov, Simeon, Caralee McLiesh, and Andrei Shleifer, 2005, "Private Credit in 129 Countries," NBER Working Paper 11078 (Cambridge, Massachusetts: National Bureau for Economic Research).
- Galindo, Arturo and Alejandro Micco, 2004, "Creditor Protection and Financial Markets: Empirical Evidence and Implications for Latin America," *Federal Reserve Bank of Atlanta Economic Review*, second quarter.
- , 2001, "Creditor Protection and Financial Cycles," IADB Working Paper # 443 (Washington: Inter-American Development Bank).
- Gelbard, Enrique, and Sergio Pereira Leite, 1999, "Measuring Financial Development in Sub-Saharan Africa," IMF Working Paper WP/99/105 (Washington: International Monetary Fund).
- Greenwood, Jeremy, and Boyan Jovanovic, 1990, "Financial Development, Growth and the Distribution of Income," *Journal of Political Economy*, Vol. 98, pp. 1076–1107.
- Gulde, Anne-Marie, Catherine Pattillo, and Jakob Christensen, 2006. *Sub-Saharan Africa: Financial Sector Challenges* (Washington: International Monetary Fund).
- King, Robert, and Ross Levine, 1993, "Finance and Growth: Schumpeter Might Be Right," *Quarterly Journal of Economics*, Vol. 108, pp. 717–38.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 1998, "Law and Finance," *Journal of Political Economy*, vol. 106, pp. 113–55.
- Levine, Ross, 2005, "Finance and Growth: Theory and Evidence," in *Handbook of Economic Growth*, ed. by Philippe Aghion and Steven Durlau (The Netherlands: Elsevier).
- , Normand Loayza, and Thorsten Beck, 2000, "Financial Intermediation and Growth: Causality and Causes," *Journal of Monetary Economics*, vol. 46, pp. 31–77.
- , and Sara Zervos, 1998, "Stock Markets, Banks and Economic Growth," *American Economic Review*, vol. 88, pp. 537–58.
- Mehran, Hassanali, Piero Ugolini, Jean P. Briffaux, George Iden, Tonny Lybek, Stephen Swaray, and Peter Hayward, 1998, "Financial Sector Development in Sub-Saharan African Countries," Occasional Paper 169 (Washington: International Monetary Fund).