

Opacity in Latin America

May 2001

The Economic Costs of Opacity in Mercosur
and Neighbouring Countries



Contents

Introduction	3
Opacity Index Scores for Mercosur and Regional Neighbours	4
The Costs of Opacity	5
Opacity and the Mystery of Capital	6
Opacity and the State of Financial Markets in Latin America	7
Inequality and Financial Depth in Latin America	8
Conclusion: The Political Economy of Opacity in Latin America	9
Risk and Uncertainty	10
Technical Appendix	11
Quantifying the O-Factor	11
Opacity and Financial Depth	11
Financial Depth and Inequality: Regression Results	12

For more information about the Opacity Index Project, or to express views about the contents of this report, visit www.opacityindex.com.

Authors, Contributors and Advisory Board

This report was prepared by Thomas W. Hall (Research Economist - International Finance, The Milken Institute, and Adjunct Professor of Economics, Graduate School of Business and Management, Pepperdine University), in co-operation with the following contributors:

Joel Kurtzman, Partner, PricewaterhouseCoopers

Carlo di Florio, Senior Manager, PricewaterhouseCoopers Global Risk Management Solutions Group

Max Henderson-Begg, Global Publishing Director, PricewaterhouseCoopers

Roger Lipsey, Global Editorial Director, PricewaterhouseCoopers

All participants in this challenging project are grateful to the following distinguished advisors:

Jimmy Carter (former President of the United States, Chairman of the Carter Center)

Peter Eigen (Chairman, Transparency International)

Frene Ginwala (Speaker of Parliament, South Africa)

Dr. Hall wishes to record that the views expressed here are individual and may not be shared by the organisations with which he is associated.

Introduction

Opacity is the lack of clear, accurate, formal, easily discernible, and widely accepted practices in the broad arena where business, finance, and government meet. The Opacity Index was conceived to bring the light of quantitative measurement to a topic about which ethical judgements have often dominated public and private discussion. The Opacity Index can be used to estimate how much certain behaviours and structures *cost* for governments as well as domestic and foreign businesses.

First released in January 2001, the Opacity Index estimates the extent to which five key factors contribute to, or diminish, the transparency of capital markets and the overall economic environments in the 35 countries surveyed (in future releases, the number of countries will increase). These factors are the level of perceived Corruption; the Legal system; Economic policy at the government level; Accounting and reporting standards; and the Regulatory regime. These five dimensions of opacity (creating, as indicated, the useful acronym CLEAR) are measured separately on the basis of survey interviews with bankers, equity analysts, chief financial officers, and PricewaterhouseCoopers in-country practitioners, and then integrated into a composite score, the O-Factor. For the calculations that generate the Index, see the appendix to this report.

Although research quantifying the effects of opacity is in its early stages, we now know that opacity deters international capital flows, levies what amounts to a hidden tax on investment, and raises the risk premium on sovereign bonds. Wherever there is opacity, there is reduced opportunity for growth and development, both at the corporate and at the national level.

The initial Opacity Index release included three of the four Mercosur members. It also developed O-Factors and related findings for six other Latin American economies.

A higher score on the Opacity Index indicates greater opacity; a lower score indicates greater transparency. In analytical work based on the Opacity Index, countries with the lowest scores serve as benchmarks against which the effects of opacity in other countries can be measured. In Latin America, Chile proved to be a benchmark country, not only regionally but also in the global context.

Opacity Index Scores for Mercosur and Regional Neighbours

In Exhibit 1, which presents data both for Mercosur countries in the study and for the six neighbouring countries, the Mercosur average is based only on Argentina, Brazil, and Uruguay.

Investigating the meaning of these numbers is not intended as a competitive exercise, pitting one country against another. In a relatively close-knit region where bonds of history, language, and culture are strong, neighbouring countries can learn from one another's strengths in the common pursuit of economic progress. Some journalists and other commentators have ranked the countries in the larger survey by O-Factor scores. This is a logical way to view the estimates, and in the course of this report we too draw comparisons. However, we urge users of the Opacity Index to keep in mind that comparison can shed light, while ranking—as if there were winners and losers in rigidly fixed positions—tends to create distance. Weaker scores suggest opportunities for positive change, while stronger scores confirm that certain national economies are relatively well managed in some or all of the CLEAR dimensions.

Exhibit 1 Scores for O-Factor and Components Mercosur and Regional Neighbours

Country	C	L	E	A	R	O-Factor
Argentina	56	63	68	49	67	61
Brazil	53	59	68	63	62	61
Uruguay	44	56	61	56	49	53
Mercosur Average	51	59	66	56	59	58
Chile	30	32	52	28	36	36
Colombia	48	66	77	55	55	60
Ecuador	60	72	78	68	62	68
Mexico	42	58	57	29	52	48
Peru	46	58	65	61	57	58
Venezuela	53	68	80	50	67	63

Among the Mercosur countries in the study, Uruguay is estimated to have the greatest transparency in all respects except in its corporate accounting and reporting practices. Argentina leads the three Mercosur countries in the latter areas. Looking beyond Mercosur, you will find a measure of what is possible in most of the scores achieved by Chile. Only with respect to government macroeconomic policy does the Opacity Index suggest that Chile, while relatively transparent, could continue striving to clarify its processes.

The Costs of Opacity

Do O-Factors have meaning in the real world? Exhibit 2 summarises our research to date on the costs of opacity. Like the Opacity Index itself, the numbers are estimates, in this case generated by statistical studies of publicly available data in conjunction with the Index. Estimates though they are, they indicate real and substantial costs incurred by investing businesses and governments—and ultimately by the citizens of a country—wherever opacity clouds the operations of capital markets and the overall economic environment.

Exhibit 2 The Costs of Opacity: Mercosur and Regional Neighbours

Country	O-Factor	Tax-Equivalent (%)	Opacity Risk Premium (%)	Estimated Deterred FDI (US\$ Millions)
Argentina	61	25	6.39	18,732
Brazil	61	25	6.45	40,261
Uruguay	53	19	4.52	176
Mercosur Average	58	23	5.79	—
Chile	36	5	0.03	0
Colombia	60	25	6.32	4,593
Ecuador	68	31	8.26	1,295
Mexico	48	15	3.08	8,554
Peru	58	23	5.63	2,363
Venezuela	63	27	7.12	6,988

Column 1 again arrays O-Factor scores for the Latin American countries included in the initial survey. The subsequent columns show the results of using these scores, in conjunction with other data, to estimate three different negative effects of opacity on capital markets. At www.opacityindex.com, you will find source publications that discuss the calculations underlying the data in columns 2 through 4.

In column 2 are estimates of the impact of opacity, viewed as if it levies a hidden surtax on corporate investments into a country and ongoing operations (foreign direct investment or FDI). For this calculation, Chile serves as the benchmark. Across the Mercosur countries in the study, it is clear that opacity exacts a considerable hidden tax. Among neighbouring countries in the study, Mexico shows the lowest “tax-equivalent” cost, at 15 percent.

In column 3 appear estimates of the additional risk premium required by investors purchasing the sovereign debt issued by governments in the region. As explained in the first release of the Opacity Index (January 2001) several qualifications must be kept in mind to align these numbers realistically with the actual interest rates of sovereign bonds. They point, nonetheless, toward a second substantial type of hidden cost exacted by opacity. Calculations based on the denomination of the bond as well as on the amount of hard currency reserves indicate that each point on the Opacity Index results in an extra risk premium demanded by investors.¹ For example, because Brazil’s level of opacity is 25 points higher than Chile’s, it is required to compensate investors by paying them an extra estimated 6.4 percent on its sovereign bonds.

In column 4 are estimates of the amounts of foreign direct investment that countries forego owing to opacity (again, refer to www.opacityindex.com for the full April 2001 release, where these data were first published). This calculation is based, in part, on the

¹ Previous research has estimated that for each O-Factor composite index point above the international benchmark, international investors demand a premium of 25.5 basis points, corresponding to .25 percentage points.

amount of FDI that the countries have been able to attract in the past. Chile again serves as the benchmark. The numbers answer, in effect, the following question: if a country can reduce its opacity to the low level of the benchmark country (holding constant the levels of opacity in all other countries), how great an increase in FDI can that country expect to receive? The amounts in many cases are surprisingly high, not only for Latin America but also in the larger global survey from which these numbers are drawn. Argentina, for example, foregoes something on the order of US\$18.7 billion in FDI (in 1999 prices), while Uruguay (a much smaller economy) foregoes an estimated US\$176 million.

Please note that the numbers in this column assume that opacity in other countries remains constant. Were opacity to decline to the benchmark level in every country around the world, the amount of extra FDI inflows would not actually increase to the levels indicated in the column because investors would diversify their commitments in response to a wider range of attractive options. One explanation for the large quantity of FDI into Chile and other benchmark countries is that international investors value and reward their relatively transparent environments.

To summarise the message of this table: opacity *decreases* the quantity and *increases* the costs of international capital flows such as foreign direct investment and sovereign bond issuances.²

Opacity and the Mystery of Capital

The Peruvian economist and government advisor, Hernando de Soto, recently shed a bright light on the economic impact of legal and regulatory opacity. In *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else* (Basic Books: New York, 2000), he argues that the legal and regulatory systems of many non-industrialised countries severely limit the accumulation of capital. The Opacity Index currently weights all five types of opacity equally to derive the composite O-Factor. De Soto writes, in effect, that the L and R components of CLEAR are the first places to look for powerful levers of change.

His argument criticises the *institutional* foundation—the foundation in law and regulation—of capital markets in developing countries and supports the approach in the Opacity Index studies. He has gathered evidence that structures and official processes in some countries are so flawed that they impede the accumulation and productive use of resources. De Soto's primary example is simple but sufficient to his purpose: the status of a house in many developing countries versus the status of an identical house in a Western country with an evolved rule of law and a more or less user-friendly regulatory and bureaucratic framework. He observes that a house in the developed world exists on two levels: as a *physical* asset (which is true for a house anywhere in the world) and as a *capital* asset (which exists only in the conceptual world of law and regulation). The mystery of capital, in his view, is the conversion of physical asset into capital asset. That mystery has escaped most observers, he argues; it is taken for granted.

Institutions that define and protect the identity of the house as a capital asset enable its value to be put to work as an investment. Equity in house or land, for example, can be used as collateral to fund the creation of a small business. Do this tens of thousands of times over and the socio-economic profile of a developing country begins to change

² On the links between FDI and economic growth, see Theodore Moran, *Parental Supervision*, Washington, DC: Institute for International Economics, 2001.

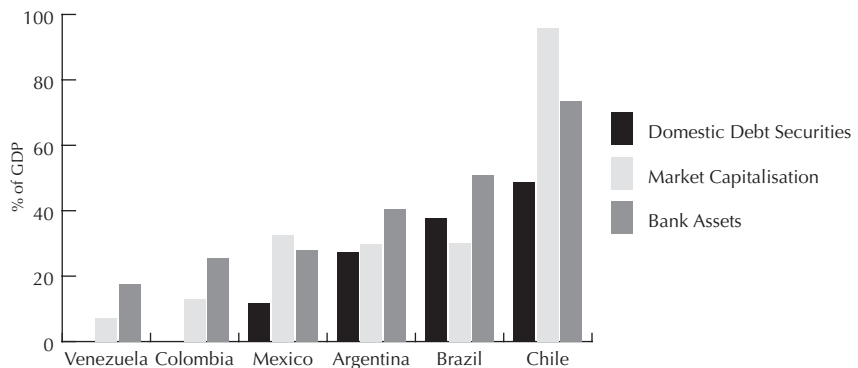
radically. De Soto argues that house or land in many developing countries is, today, “dead capital” owing to a vast gap between formal law and regulation and the informal agreements by which millions of lower-income citizens establish ownership of house or land. Unlocked and converted into capital assets, the physical assets of the bottom half of society in many countries could work, he believes, a peaceful economic revolution.

Hernando de Soto’s original and passionately argued concepts reinforce the major theme of this report: the developmental future of Latin America depends on improving, where needed, the institutions that underlie economic activity. Data on the five sectors grouped in the acronym CLEAR can help governments, influential executives, and the media to recognise where to concentrate their efforts in order to obtain tangible benefits.

Opacity and the State of Financial Markets in Latin America

All of the CLEAR dimensions coincide in financial markets. Exhibit 3 presents three measurements of the size of the financial sector in various Latin American economies (size is a standard proxy for a more elusive measure, the “depth” of financial markets). As the exhibit indicates, the least opaque country in the region, Chile, dominates in terms of equity market capitalisation and total banking assets, each expressed as a percentage of national output (GDP). The Mercosur members, Argentina and Brazil, lag behind Chile by these measures of financial market depth.

Exhibit 3
Structure of Financial Markets Latin America
 (1999, % of GDP)



³ Because of data availability, the measure used in the appendix for depth is M1/GDP. We also analysed an alternative composite measure of financial depth to quantify the amount of social resources allocated to the financial sector. For both data series, higher numbers indicate more financial depth. Thus, positive numbers in the correlation matrix in the appendix indicate a positive relationship between depth and transparency (corresponding to a negative relationship between depth and opacity).

⁴ See Levine, Laoyoz, and Beck, *Review of Economics and Statistics*, 2001, and Ross Levine, "Financial Development and Economic Growth: Views and Agenda," *Journal of Economic Literature*, 35:2, June, 1995, 688-726, and Michael Graff and Alexander Karmann, "Does Financial Activity Cause Economic Growth?," Swiss Federal Institute of Technology working paper; available through graff@kof.gess.ethz.ch, January, 2001.

Statistical analysis demonstrates a clear correlation between financial depth and both accounting opacity and corruption (see the appendix for details).³ Further testing of this premise will have to await a longer time series of data, and strict quantification of the effects of opacity on financial market depth will similarly have to await a longer time series. But the finding is so far quite clear: opaque countries tend to have less developed financial sectors.

Is financial depth important? An active area of academic research has shown that financial depth leads to economic growth. Sophisticated statistical tests have demonstrated a causal link.⁴ The *domestic* financial market thus provides another channel through which opacity can reduce economic growth. This observation parallels

previous Opacity Index research showing that opacity leads to increased costs and decreased quantities of *international* capital.

Sceptics may argue that economic growth in and of itself is not enough to generate equitable long-term development in Latin America. They would contend that the inequality endemic to the region will only increase if and when strong rates of growth appear—and increasing inequality can lead to social instability widespread enough to delay or defeat further growth. With these sceptics in mind, it is worthwhile to explore the links between inequality and financial depth. Hernando de Soto's theme—the poor family's house and land as a potential source of peaceful economic revolution—comes again to mind as we begin to explore this area.

Inequality and Financial Depth in Latin America

As noted just above, some argue that even if reduced opacity increases economic growth, *equitable* development may be sacrificed. However, there are both intuitive and empirical reasons to believe that, in the context of Latin America (and other emerging markets), financial depth will lead, at least initially, to decreased levels of inequality.

The reasoning behind this argument can be illustrated as follows. Imagine a country with a high level of inequality and a small financial sector. In such a country, the financial sector is likely to function through “crony capitalism,” under which a few individuals hold power, and scarce credit is allocated on the basis of personal relationships rather than the objectively-analysed risks and rewards of proposed enterprises.⁵ The meagre resources left over after the inner circle is satisfied are again likely to be allocated in ways and to projects that disregard investment discipline and the needs of people outside of what de Soto calls the “bell jar”—the closed circle of players who dominate that country's wealth.⁶

How might this change over time?⁷ As financial depth increases (due to increased transparency or other causes), more and more capital can be released from its nascent, potential state. The mystery of capital is increasingly free to do its transforming work. Resources are allocated to projects offering the best returns. Better-managed companies with profitable prospects will attract increasing capital flows, without regard to insider connections. If this dynamic prevails, inequality should decline, at least initially, as the depth of the financial sector increases and stimulates the development of a middle class with a keen interest in stability.⁸ If such a class comes to constitute a buy-side market for securities (either through individual investors or through mutual and pension funds, as in Chile today), then policies promoting transparency may become politically popular as well. The result can be a virtuous circle of transparency, development, and international openness, which we described in a previous publication as “the FDI-Transparency Accelerator”.⁹

The appendix to this report presents in technical style a body of evidence suggesting that financial development does correlate with reductions in damaging inequality. Using a sample of countries in Latin America and data for the period 1965–99, the statistical results are revealing. Controlling for the level of per capita income, these societies have

⁵ For a discussion of the historical cycles of dictatorship and democracy in Latin America, see Brian Loveman, “When You Wish upon the Stars: Why the Generals (and Admirals) Say Yes to Latin American ‘Transitions’ to Civilian Government,” in Paul Drake and Mathew McCubbins, eds., *The Origins of Liberty: Political and Economic Liberalisation in the Modern World* (Princeton: Princeton University Press, 1998).

⁶ State-owned or operated enterprises are not inherently less efficient than monopolistic private firms or companies sheltered in protected industries. Economic theory tells us that healthy competition based on good quality information and fair rules of the game promotes social welfare.

⁷ One analysis of how democratic capitalism interacts with financial sector development is presented in Raghuram Rajan and Luigi Zingales, “The Great Reversals: The Politics of Financial Development in the 20th Century,” MIT working paper, February 2001. A theoretical model is contained in François Bourguignon and Thierry Verdier, “Oligarchy, Democracy, Inequality, and Growth,” *Journal of Development Economics*, 62, 2000, 285–313.

⁸ The qualifier, “at least initially,” obviously attracts attention. Is equality nonlinear in its development? Whether, beyond a certain level of per capita income, financial depth creates more inequality is an interesting question that needs research. However, the topic exceeds the limits of this report.

⁹ See the April 2001 release of the Opacity Index, “Investigating the Costs of Opacity: Deterred Foreign Direct Investment,” available at www.opacityindex.com.

achieved broader income distributions as national financial markets have deepened. Greater transparency across the five CLEAR dimensions can accelerate this welcome trend.

Conclusion: The Political Economy of Opacity in Latin America

In the wake of the international financial crises of 1997 in East Asia, many observers have called for greater transparency in emerging market countries. This report indicates that reduced opacity will result in *quantifiable* improvements in several major areas. It will favour cheaper and more plentiful FDI. This in turn will lead to gains in domestic investment, productivity, technology transfer, management expertise, and marketing know-how. Economists are beginning to measure quantitatively gains of this kind.¹⁰

A further implication of the findings in this report concerns government tax concessions. Governments are often inclined to provide generous tax incentives in order to attract foreign capital goods and investment flows. Even if countered by increasing tariffs on other sorts of imports, this strategy can cause a decline in government revenues, and the effects of preferential tax concessions may distort market allocations of resources. Research based on the Opacity Index has shown that tax breaks can be replaced by an alternative that will not cause revenue losses: reducing opacity. If Mercosur members and their neighbours can decrease their level of opacity to that of the benchmark countries, such as Chile, they should be able over time to increase foreign capital inflows and gain the resulting developmental benefits without sacrificing government revenues.

Finally, we wish to call attention to the link between opacity and inequality. Research has shown that opacity correlates with limited financial sector depth, which in turn is associated with lower rates of economic growth. To these three interacting factors—opacity, growth, and financial depth—can be added a fourth: inequality. Because transparency favours financial depth and economic growth, and financial depth has been shown to reduce inequality, *opacity emerges as one of the hidden causes of inequality*. Inequality has been blamed for political instability in the region as well as for the tendency of economic reforms to be sidetracked, delayed, or reversed.¹¹ Future research, based on the expanding tool kit of Opacity Index applications, should be able to determine with more certainty the causal relationships among these four factors.

Latin America has the potential to become a host for additional investment from a broad spectrum of source countries (e.g., Japan and the Euro economies). More important still, it can raise the level of domestic investment, achieve greater financial sector depth, and thereby enact the kindest mystery of capital: opportunity for all. Toward these goals, it would be of far-reaching significance to reduce opacity. The vast economic potential of the Mercosur members and their regional neighbours can be converted to economic fact.

¹⁰For a survey of some work in this direction, see Theodore Moran (footnote 2).

¹¹See, for example, Walter Russell Mead and Sherle Schwenninger, *A Financial Architecture for Middle Class-Oriented Development* (New York: Council on Foreign Relations, 2000).

Risk and Uncertainty

The difference between investing in a transparent country and investing in an opaque country is the difference between risk and uncertainty. An analogy may clarify this interesting difference. If you flip a coin, there is a 50 percent chance it will land heads up (“1”), and an equal chance that it will land tails up (“2”). If you were to bet on the toss, you would be aware of the odds—the risk—before placing your money on the table. You would, of course, want to be sure that nothing fraudulent is going on (no two-headed coins, no sleight of hand). But absent such manipulations, you can calculate the risk.

All prudent investors measure risk, and much of finance theory is based on the fact that risk is, over the long term and on average, rewarded. Uncertainty—although it *can* be priced by the market—differs from risk. A two-sided coin will land heads up in a clearly understood, more or less predictable pattern. You know what you are getting into when you bet on an honestly conducted coin toss. But what if you don’t know how many sides are on the throwing piece? What if you think it is a two-sided coin but in reality it is a six-sided die? The odds of getting a “1” on any given bet decline from 50 percent to around 17 percent, and the bet is not only risky, but uncertain as well.

Uncertainty exists when investors are unsure of the rules of the game. Many investors refuse to have very uncertain assets in their portfolios, such as shares in the more speculative types of hedge funds. Uncertainty is sometimes priced by the market but, more often than not, it can lead to market failure, in the sense that nobody invests because nobody can determine the odds of reaping a fair return on investment. In the absence of adequate information (that is, in the absence of transparency), markets fail to realise their potential, and some fail outright.

In countries with greater transparency, a host of mechanisms exists to convert some of the inevitable uncertainty into risk, which is easier to price. These mechanisms include bond rating agencies, real estate appraisers, and insurance companies, among others. Opacity in emerging markets is often associated with limited disclosure and with under-the-table allocations of scarce capital. For example, many analysts argue that the East Asian financial crisis of 1997 was driven by two factors: a lack of transparency in the banking sector and politically influenced lending decisions that turned sour because the companies that received the loans weren’t the best bets (as noted earlier, such dealings are commonly known as “crony capitalism”).

Countries that adopt more disclosure and reduce opacity—both in the private sector and in the policy and regulatory arenas—will be likely to increase the quantity of capital investment and reduce its cost. Plentiful capital at reasonable cost is likely in turn to spur the development of a healthy and deep financial sector. And this in turn has been shown to favour the broader distribution of income and capital on which domestic peace and prosperity ultimately depend.

Technical Appendix

Quantifying the O-Factor

The following paragraphs are drawn from the January 2001 release of the *Opacity Index*, which is available on the Internet at www.opacityindex.com.

The composite O-Factor is calculated by averaging (on an equally weighted basis) the various components of opacity for each country in this report. The specific formula for computing the O-Factor is:

$$O_i = 1/5 * [C_i + L_i + E_i + A_i + R_i],$$

Where i indexes the countries and:

O refers to the composite O-Factor (the final score)

C refers to the impact of corrupt practices;

L refers to the effect of legal and judicial opacity (including shareholder rights);

E refers to economic/policy opacity;

A refers to accounting/corporate governance opacity; and

R refers to the impact of regulatory opacity and uncertainty/arbitrariness.

The composite O-Factor score is a linear transformation of the underlying average survey responses, all of which were weighted equally, as noted earlier, to avoid subjective bias. It is calculated as follows. We first converted all survey responses into a uniform four-point scale,¹² ranging from a low score of one to a high score of four (i.e., from “transparent” to “opaque”). We then adjusted this score by subtracting it from four and multiplying by 50, in order to provide a more relevant range of scores. Thus, the best possible score would be a zero—which a country would receive if all respondents identified uniformly, perfectly transparent conditions. The worst possible score would be a 150—indicating that all respondents identified uniformly, perfectly opaque conditions.

Opacity and Financial Depth

Because the Opacity Index has existed for less than a year, there are no historical data concerning the degree of opacity in different countries around the world. However, some components of the Index are highly correlated with aspects of transparency for which older data do exist. Based on these data, we can surmise that transparency—measured in terms of accounting rules, corruption, and legal system characteristics—may in fact be associated with greater degrees of financial depth, for which historical measures do exist. Previous academic research using rigorous standards of evidence has shown that a legal system oriented toward the protection of investor property rights causes deeper financial markets.¹³

For present purposes, the following correlation matrix reinforces our supposition that opacity is associated with reduced levels of financial depth, with values in bold indicating statistical significance at the 5 percent level:

¹²This was necessary because some questions asked respondents to score opacity on a 10-point scale, other questions referred to a five-point scale, etc. In addition, for some questions high scores indicated opacity whereas for other questions, high scores indicated transparency. We normalised all of these responses to a four-point scale, with higher numbers corresponding to more opacity.

¹³From Michael Graff, *Causal Links Between Financial Activity and Economic Growth: Empirical Evidence from a Cross-Country Analysis, 1970 – 1990*, Swiss Federal Institute of Technology working paper, Zurich.

	M1/GDP	Social Finance	CPI	Accounting Standards
M1/GDP	1	0.01	0.02	0.11
Social Finance	0.01	1	0.74	0.48
CPI	0.02	0.74	1	0.66
Accounting Standards	0.11	0.48	0.66	1

The matrix is based on two measures of financial depth: M1/GDP and a composite measure of societal resources devoted to the financial sector. Given the low—and statistically insignificant—correlation between M1/GDP and the “social finance” measure, it is clear that these are measuring two distinct aspects of financial market development and subjecting our two historical transparency measures to a more demanding test. For all of these variables, higher numbers indicate “better” values (i.e., more transparency, less corruption, deeper financial systems).

The matrix indicates that there are statistically significant and positive correlations between accounting standards and financial depth (measured in both ways) as well as between the Corruption Perception Index (CPI) and one sort of financial depth (social finance). The correlation between corruption perceptions and the other sort of financial depth (M1/GDP), although positive, is not statistically significant at the 5 percent level. These correlations are based on 238 observations covering more than 70 countries spanning the years 1965-92. On the whole, the correlation matrix reinforces the supposition that transparency and lack of corruption are associated with financial depth in a variety of countries around the world.

Financial Depth and Inequality: Regression Results

In order to ascertain the effect of financial depth on inequality, we take cases where two or more measures of inequality exist for a given country in different years. We can then determine if the intervening changes in inequality are associated with financial depth. As in the previous literature on the topic, in these regressions we control for per capita income (a measure of the general development of the economy).

We estimate two different models:

$$(1) \quad \text{GINI}_{i,t+1} = \text{GINI}_{i,t} + Y_{i,t} + \text{FINDEPTH1}_{i,t}$$

where:

$\text{GINI}_{i,t+1}$ = the value of GINI (with high values indicating high levels of inequality) for country i in period $t+1$

$\text{GINI}_{i,t}$ = the value of GINI in the previous period

$Y_{i,t}$ = real GNP per capita in 1987 US\$, using the World Bank Atlas method

$\text{FINDEPTH1}_{i,t}$ = financial depth measured as M1/GDP

And

$$(2) \quad \text{GINI}_{i,t+1} = \text{GINI}_{i,t} + Y_{i,t} + \text{FINDEPTH2}_{i,t}$$

where:

$\text{FINDEPTH2}_{i,t}$ = financial depth measured as the principal component of three measures of social resources allocated to financial markets (Graff, 2001)

The results of the regression (see table just below) indicate that, holding for per capita GDP, greater financial depth is associated with decreasing levels of inequality, as indicated by the negative sign on the coefficients for both measures of financial depth. These results are statistically significant at the 1-percent and 5-percent levels, respectively, for the M1/GDP measure and the social resources measure of financial depth.

Regression Results

Dependent Variable: Gini at time t+1

	(1)	(2)
Adjusted R ²	0.51	0.28
Intercept	43.15***	29.24***
Gini	0.31***	0.42***
Y	-0.00	0.00
FINDEPTH1	-57.23***	
FINDEPTH2		-4.78**
# Observations	45	39

* indicates significance at the 10-percent level

** indicates significance at the 5-percent level

*** indicates significance at the 1-percent level

NB: In order to control for widely varying historical conditions in various emerging market settings, only Latin American countries are included in this regression.