

The Opacity Index

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Launching a new measure of the effects of opacity
on the cost and availability of capital in countries world-wide



A Project of the PricewaterhouseCoopers Endowment for the Study of Transparency and Sustainability

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The following report is published in three versions. This compact version presents the key findings and interpretations. A longer version with supplemental findings, appendices, and bibliography is available both in print and at www.opacityindex.com. To receive a complimentary copy of the full printed report, contact Max Henderson-Begg at PricewaterhouseCoopers (max.henderson-begg@us.pwcglobal.com). For more information about the Opacity Index Project, or to express views on the contents of this report, visit www.opacityindex.com.

Opacity in the World's Capital Markets

Opacity is the lack of clear, accurate, formal, easily discernible, and widely accepted practices in the world's capital markets. Is it possible to measure opacity and its costs? PricewaterhouseCoopers assembled a team of senior economists, survey professionals, analysts, and distinguished advisors to explore the development of a world-wide Opacity Index. While the topic of opacity has ethical, political, and cultural aspects, this inquiry would focus on a new question: how much do certain behaviours cost?

This first report on the Opacity Index, to be followed by others at regular intervals, provides estimates of the adverse effects of opacity on the cost and availability of capital in 35 countries. It offers a composite "O-Factor" score for each country, based on opacity data in five different areas that affect capital markets: a) corruption, b) legal system, c) government macroeconomic and fiscal policies, d) accounting standards and practices (including corporate governance and information release), and e) regulatory regime.

Thanks to the efforts of Transparency International and other organisations, measures of perceived corruption in countries world-wide have become important indicators for many participants in global markets. While the Opacity Index correlates significantly with other indices, it should be viewed as a new indicator, raising new questions in five areas of concern and giving new results.

The report presents three related data streams: 1) the O-Factor scores, 2) measurements of the effects of opacity as if it levied a surtax on foreign direct investment (FDI), and 3) measurements of the risk premium attributable to opacity when countries borrow through sovereign bond issuances. In a short time, we plan to publish a fourth set of findings, estimating the degree to which opacity deters FDI and thus diminishes opportunities for economic progress.

Exhibit 1 summarises many of the findings in this first edition of the report.

Exhibit 1

Summary Table: The Effects of Opacity on the Cost of Capital

Country	O-Factor	Tax-Equivalent (%)	Opacity Risk Premium (Basis Points)
Argentina	61	25	639
Brazil	61	25	645
Chile	36	5	3
China	87	46	1,316
Colombia	60	25	632
Czech Republic	71	33	899
Ecuador	68	31	826
Egypt	58	23	572
Greece	57	22	557
Guatemala	65	28	749
Hong Kong	45	12	233
Hungary	50	17	370
India	64	28	719
Indonesia	75	37	1,010
Israel	53	19	438
Italy	48	15	312
Japan	60	25	629
Kenya	69	32	848
Lithuania	58	23	584
Mexico	48	15	308
Pakistan	62	26	674
Peru	58	23	563
Poland	64	28	724
Romania	71	34	915
Russia	84	43	1,225
Singapore	29	0*	0*
South Africa	60	24	612
South Korea	73	35	967
Taiwan	61	25	640
Thailand	67	30	801
Turkey	74	36	982
UK	38	7	63
Uruguay	53	19	452
USA	36	5	0*
Venezuela	63	27	712

O-Factor is the score of a country based on the survey responses. High numbers indicate a high degree of opacity and low numbers indicate a low degree of opacity.

Tax Equivalent shows the effect of opacity when viewed as if it imposes a hidden tax. For example, the number 30 indicates that opacity in that country is equivalent to levying an additional 30-percent corporate income tax.

Risk Premium indicates the increased cost of borrowing faced by countries due to opacity, expressed in basis points (100 basis points = one percentage point). On average, countries with more opacity tend to have to pay a higher interest rate on the debt they issue. For example, a score of 900 would indicate that countries need to pay international investors an extra 9 percent on their sovereign debt due to opacity. Some opacity premiums in this tabulation are higher than the actual interest rate at which the corresponding country is able to borrow. This apparent anomaly, discussed on p. 20, is explained by certain capital markets dynamics and by hidden subsidies.

* Where zero (0) is reported in the table, that country served as the benchmark level of opacity for the calculations.

Survey Design

Telephone and in-person interviews were conducted with four different groups of respondents: chief financial officers (CFOs) of medium and large firms based in the countries; equity analysts familiar with the countries; bankers in the countries; and PricewaterhouseCoopers employees residing in the countries. Responses were aggregated and re-expressed by standard statistical procedures to obtain a comprehensive O-Factor score for each country.

We set the goal of interviewing in each country at least 20 CFOs, five bankers, three equity analysts, and five PricewaterhouseCoopers employees. In practice, the actual numbers of respondents in each category were sometimes higher, sometimes lower. At least 20 CFOs were interviewed in every country excepting China, where the survey population consisted of PricewaterhouseCoopers partners and staff. At least five bankers participated in all countries excepting China, the UK, and the US, in each of which the number was lower. And finally, at least three equity analysts were interviewed in every country (the exception is China, as noted just above).

The survey was conducted during the third and fourth quarters of the year 2000 in 35 countries world-wide. We included countries in all major emerging markets as well as a few mature industrial countries, in order to obtain a scale that would allow meaningful comparisons among countries. The scale allows comparisons among countries today and, in future reports, will make it possible to determine on a year-to-year basis whether a given country's practices are becoming more or less opaque.

CLEAR: The Five Dimensions of Opacity

As noted earlier, our working definition of opacity is “the lack of clear, accurate, formal, easily discernible, and widely accepted practices,” and the potential for opacity exists in five principal areas (no country is likely to earn a perfect score). There may be *corruption* in government bureaucracy that allows bribery or favouritism. The *laws* governing contracts or property rights may be unclear, conflicting, or incomplete. *Economic* policies—fiscal, monetary, and tax-related—may be vague or change unpredictably. *Accounting* standards may be weak, inconsistent or unenforced, thus making it difficult to obtain accurate financial data. Business *regulations* may be unclear, inconsistent, or irregularly applied. Together, these create the acronym CLEAR (Corruption, Legal, Economic, Accounting, Regulatory). A high degree of opacity in any of these areas will raise the cost of doing business and curtail the availability of investment capital.

Quantifying the O-Factor

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. The best possible score would be a zero, corresponding to uniformly, perfectly transparent conditions. The worst possible score would be a 150, indicating that all respondents identified uniformly, perfectly opaque conditions.

The results of this scoring methodology are reported in Exhibit 2. As you explore this key table, you will recognise O-Factor scores that seem contrary to received wisdom. The O-Factor is a complex measure, yielding new insights in part because it aggregates results from five zones of inquiry, rather than from any one zone. While the survey may report, for example, a relatively high level of corruption in a country, this may be offset in the composite O-Factor by a relatively low number for accounting or economic opacity.

Exhibit 2

Scores for O-Factor and Components

Country	C	L	E	A	R	O-Factor
Argentina	56	63	68	49	67	61
Brazil	53	59	68	63	62	61
Chile	30	32	52	28	36	36
China	62	100	87	86	100	87
Colombia	48	66	77	55	55	60
Czech Republic	57	97	62	77	62	71
Ecuador	60	72	78	68	62	68
Egypt	33	52	73	68	64	58
Greece	49	51	76	49	62	57
Guatemala	59	49	80	71	66	65
Hong Kong	25	55	49	53	42	45
Hungary	37	48	53	65	47	50
India	55	68	59	79	58	64
Indonesia	70	86	82	68	69	75
Israel	18	61	70	62	51	53
Italy	28	57	73	26	56	48
Japan	22	72	72	81	53	60
Kenya	60	72	78	72	63	69
Lithuania	46	50	71	59	66	58
Mexico	42	58	57	29	52	48
Pakistan	48	66	81	62	54	62
Peru	46	58	65	61	57	58
Poland	56	61	77	55	72	64
Romania	61	68	77	78	73	71
Russia	78	84	90	81	84	84
Singapore	13	32	42	38	23	29
South Africa	45	53	68	82	50	60
South Korea	48	79	76	90	73	73
Taiwan	45	70	71	56	61	61
Thailand	55	65	70	78	66	67
Turkey	51	72	87	80	81	74
UK	15	40	53	45	38	38
Uruguay	44	56	61	56	49	53
USA	25	37	42	25	48	36
Venezuela	53	68	80	50	67	63

These data are based on average survey responses for the five types of opacity. Using the simple averages derived from aggregating the survey responses, we derive the O-Factor by adjusting the scores so that larger scores reflect more opacity, while smaller scores reflect more transparency.

The Impact of Opacity

Opacity can adversely impact the cost and availability of capital in several different ways. Domestic capital markets may suffer from relative underdevelopment if proper disclosure of information is not made to investors who are deciding where to place their funds. International investors may be reluctant to fund projects if they are uncertain that funds will be allocated to their purported uses. In addition, the lack of clear, consistent, and reliable practices in the realms of legal disputes, regulation, and national economic policy may negatively impact the quantity of funds available for investment in countries. Similarly, awareness of unofficial (and often illegal) payments required by bureaucrats may dissuade investors from purchasing securities or investing in physical plants in the countries.

The present study focuses on two major features of capital markets—opacity viewed as a surtax on FDI and opacity as the cause of a risk premium when countries borrow—to estimate the economic cost of opacity in the selected countries. Each “view” applies the O-Factor scores to a major feature of capital markets.

The Tax-Equivalent View

Exhibit 3 conveys country-by-country estimates of the cost of opacity, treated as if it were a surtax imposed on FDI (through an increase in the corporate tax rate). Singapore is used as the benchmark for these calculations.

According to the estimates in Exhibit 3, an increase in opacity from the level of Singapore to the level of Colombia has the same negative effect on investment (domestic and international) as a 25-percent increase in corporate income tax. An increase in opacity from the Singaporean level to the Chinese level has the same negative effect on investment as raising the tax rate by 46 percent. These examples are not chosen to call attention specifically to these countries, but simply to illustrate the uses of the chart.

There is irony in this finding. Many developing countries are eager to cut tax rates in order to boost investment, often by offering tax concessions to attract foreign investment. Exhibit 3 argues that a reduction in opacity can essentially substitute for a tax cut. To put the matter differently, domestic reforms that reduce opacity may be as effective as a tax cut in boosting domestic investment and attracting foreign investment—without sacrificing tax revenues.

Exhibit 3

Economic Cost of Opacity: "Tax-Equivalent" Estimates

Country	O-Factor	Tax-equivalent (%)
Argentina	61	25
Brazil	62	25
Chile	36	5
China	87	46
Colombia	60	25
Czech Republic	71	33
Ecuador	68	31
Egypt	58	23
Greece	57	22
Guatemala	65	28
Hong Kong	45	12
Hungary	50	17
India	64	28
Indonesia	75	37
Israel	53	19
Italy	48	15
Japan	60	25
Kenya	69	32
Lithuania	58	23
Mexico	48	15
Pakistan	62	26
Peru	58	23
Poland	64	28
Romania	71	34
Russia	84	43
Singapore	29	0*
South Africa	60	24
South Korea	73	35
Taiwan	61	25
Thailand	67	30
Turkey	74	36
United Kingdom	38	7
United States	36	5
Uruguay	53	19
Venezuela	63	27

* Singapore served as the benchmark for this calculation.

Portfolio Flows

An additional method suggested itself to determine the economic effects of opacity. National governments often obtain funding from international capital markets in order to meet their spending needs and pursue their agendas for education, national defence, and infrastructure provision. Sovereign bonds—so-called because they are backed by the full faith and credit of national governments—are issued and traded in countries around the world.

Exhibit 4

Risk Premium due to Opacity

Country	O-Factor	Opacity Risk Premium (Basis Points)
Argentina	61	639
Brazil	61	645
Chile	36	3
China	87	1,316
Colombia	60	632
Czech	71	899
Ecuador	68	826
Egypt	58	572
Greece	57	557
Guatemala	65	749
Hong Kong	45	233
Hungary	50	370
India	64	719
Indonesia	75	1,010
Israel	53	438
Italy	48	312
Japan	60	629
Kenya	69	848
Lithuania	58	584
Mexico	48	308
Pakistan	62	674
Peru	58	563
Poland	64	724
Romania	71	915
Russia	84	1,225
Singapore	29	0
South Africa	60	612
South Korea	73	967
Taiwan	61	640
Thailand	67	801
Turkey	74	982
UK	38	63
Uruguay	53	452
USA	36	0
Venezuela	63	712

They represent an important aspect of a nation's participation in international capital markets. Exhibit 4 shows that countries with more opaque practices

generally must reward investors by paying a premium (a spread) over what the benchmark United States pays. (The “risk-free” rate in Exhibit 4 corresponds to the United States, the nation with the lowest probability of default on its bonds.) While the price of an asset already reflects a market assessment of risk, in this study we are interested in decomposing that price to understand the portion resulting from opacity factors.

Using the composite O-Factor to calculate the risk premium imposed by opacity, we controlled for the fact that some governments have deep pockets in terms of accumulated foreign currency reserves (an indication that their price of borrowing should be lower). We found that a one-point increase in the O-Factor score leads to a 25.5 basis point increase in the interest rate that investors demand in order to purchase new-issue bonds originated in that country. The estimated risk premium for each country in the study appears in Exhibit 4. Interpretation of this exhibit can be straightforward. For example, were Poland to issue 4 billion zloty (approximately US\$1 billion) in government bonds, the Opacity Risk Premium implies an interest expense of approximately 280 million zloty (or approximately US\$70 million) per year, which could be avoided through the reduction of opacity to the level of Singapore.

Why the Risk Premium Can Exceed Actual Sovereign Bond Rates

Some countries listed in Exhibit 4 are currently able to borrow internationally in hard currency at low interest rates—in some instances at rates below the premium associated with opacity. This apparent anomaly is not an error in calculation; it results from a combination of market dynamics and government policies.

As to market dynamics, countries that borrow in international capital markets are typically obliged to service their debts in hard currency, such as US dollars. They are accordingly able to borrow at lower interest rates than Exhibit 4 estimates. However, when the same countries float domestic bond issuances, the interest rates are typically much higher. Opacity contributes to the inability of some countries to borrow in their own currencies.

When actual rates in domestic markets are lower than the opacity-based risk premiums in Exhibit 4, this may well be a symptom of what economists technically term “financial repression.” This generally occurs when governments crowd out private investment through macroeconomic means such as the imposition of below-equilibrium interest rates. The anomaly often indicates the absence of investment opportunities that can compete with government-issued debt. The end cost of such policies is borne by any individual who saves money, yet is unable to obtain the returns that would result from financial systems without government repression. A hidden and involuntary subsidy is thus provided by savers who are often unaware of the disadvantage imposed on their efforts.

Conclusions

Our empirical results indicate that opacity imposes significant costs on investors—be they individual or corporate—and on countries. Investors assume, in effect, a significant hidden surtax when they commit funds to countries burdened with a high O-Factor. Similarly, countries with a burdensome O-Factor may pay a risk premium when they borrow from abroad or domestically by issuing bonds. As the true costs of opacity are increasingly understood and publicised, measures to achieve greater transparency and provide it with a firm regulatory basis will surely rise in priority on the agendas of governments and international commissions.

The Opacity Index is neutral in its research methods and mathematics, but it points unmistakably to the benefits of transparency for nations, governments, businesses, and the public at large.

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