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A Test of Government Bond Ratings as a
Measure of Political Risk

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Abstract

Political risk analysis benefits from a cross-disciplinary approach. For what we typically regard to be crucial political, economic and social factors often are difficult to measure. At the same time, readily quantified economic indicators and market prices often do not capture the kind of information that is relevant to political risk. Research on financial markets has the potential to bridge the gap and has contributed an important market context to the assessment of political risk.

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INTRODUCTION

Political risk analysis benefits from a cross-disciplinary approach. For what we typically regard to be crucial political, economic and social factors often are difficult to measure. At the same time, readily quantified economic indicators and market prices often do not capture the kind of information that is relevant to political risk. Research on financial markets has the potential to bridge the gap and has contributed an important market context to the assessment of political risk.

REVIEW OF THE LITERATURE

Cosset and Suret (1995), for example, found that stock markets are perceived differently in terms of political risk. Cosset and Doutriaux de la Rianderie (1985) concluded that political risk news is impounded both in equity returns and in exchange rates and, further, that the financial impact of political news is more dramatic for unfavorable events than for favorable ones. Other event studies also have concluded that political risk is a priced factor in equity markets (Bailey and Chung, 1995; Bonser-Neal, Brauer, Neal, and Wheatley, 1990).

Another group of political risk studies has employed multiple regression analysis on various dependent variables. Ramcharran (1999) focused on the determinants of secondary market prices for government loans in developing countries (LDCs). His findings showed that the most significant variable was the sovereign credit rating of the country (using the Euromoney measure). Other research has found a relationship between bond yield spreads and country risk, using the Institutional Investor measure (Scholtens, 1999). Studies of large samples of LDCs have found a significant relationship between political risk and the probability of default on government loans (Balkan, 1992) and between political risk and capital flight (Lensink and Hermes, 2000).

Along similar lines, Doumpos, Pentaraki, and Zopounidis (2001) estimated a model using Moody's/Standard & Poor ratings on government bonds as the dependent variable. Against these ratings, the authors set a large group of independent variables derived from published economic indicators, such as gross foreign exchange reserves, GNP growth rate, inflation, total debt service/GNP and current account balance/GDP. The twenty-factor model explained 72.65 % of total variance. Earlier research by Juhl (1976) also used economic indicators to measure political instability.

The purpose of this study is to contribute to the growing body of empirical research on political risk by spanning two research fields. Specifically, the aim is to test a model that relates social and political factors (as opposed to standard

economic indicators) to a finance-based measure of political risk. Research organizations have produced valuable data on such factors as civil liberties, government interference in business activity, corruption, quality of life, and social inequality. Typically they report their findings as country rankings or as indexes. Among the most relevant for political risk analysis are the Index of Economic Freedom (Heritage Foundation), the Corruption Perceptions Index (Transparency International), Freedom in the World Comparative Rankings (Freedom House), the Gini Index and several development indicators (World Bank). The advantage of using indexes like these is that considerable research has gone into the data collection while at the same time the ratings have not been compiled with political risk specifically in mind. This adds to their impartiality as variables in any empirical research. This study will test several of these indexes as independent variables and will use government bond ratings by Standard and Poor as the dependent variable. In contrast to the economics-based model developed by Doumpos, Pentaraki, and Zopounidis (2001), the objective here is to test the feasibility of a social/political model of political risk that uses the same government bond ratings as the dependent variable.

DATA AND HYPOTHESES

The research dataset consists of data for 140 countries, at all levels of economic development and from all geographical regions.

Dependent Variable: Standard and Poor's Sovereign Debt Ratings.

Sovereign debt ratings were drawn from Standard and Poor's list for January, 2006. These ratings apply to only 89 of the 140 countries in the file for which data on the other variables are available. For the most part, the unrated countries are very poor countries that most likely have not been in a position to issue public debt that even approaches investment grade. Thus the absence of a rating may in itself be a rating that reflects political instability and/or government unreliability. All of the ratings were "Issuer Credit Ratings" rather than "Financial Strength Ratings."

The distribution of sovereign debt ratings in each credit category is presented in Table 1. The Standard & Poor's letter ratings were divided into four groups in accordance with the descriptions of the ratings provided on the Standard & Poor's website. Only three countries fell in the lowest rated group. The remaining 86 countries break down very roughly into thirds, with a heavier tilt toward very marginal government issues.

Table 1: Sovereign Debt Ratings, By Category.

Credit Rating	Frequency	Percentage
1: AAA to AA-	24	27.0
2: A+ to BBB	29	32.6
3: BBB- to B-	33	37.1
4: CCC+ to C	3	2.1
Missing	51	
Total	140	100.0

The figures in Table 2 reveal a tendency toward stability, with a few more countries showing an improved, as opposed to a deteriorating, status.

Table 2: Trends in Sovereign Debt Ratings.

Trend of Credit Rating	Frequency	Percentage
Positive	13	14.6
Stable	72	80.9
Negative	4	4.5
Missing	51	
Total	140	100.0

The distribution of credit ratings by geographical region (Table 3) shows some interesting patterns: most Latin American countries were in the third credit category, in contrast to East Asia, where the distribution among categories is roughly equal—with five countries in the highest category. In Europe, although most countries had the top rating, a substantial percentage of countries was in the second category, nearly all of them new members of the European Union in 2004.

Table 3: Sovereign Debt Ratings, By Geographical Region.

Geographical Region	1: AAA to AA-	2: A+ to BBB	3: BBB- to B-	4: CCC+ to C
Europe	16	13	1	0
East Europe / Central Asia	0	2	3	0
Mideast / North Africa	0	5	1	0
Sub-Saharan Africa	0	2	7	1
Latin America	1	3	13	2
South Asia	0	0	3	0
East Asia	5	4	5	0
North America	2	0	0	0
Totals	24	29	33	3

Table 4 shows a breakdown of credit rating by World Bank per capita income category. The association of high income countries with strong sovereign debt ratings, and the association of poor countries with weak sovereign debt ratings, while hardly surprising, is dramatically revealed.

Table 4: Sovereign Debt Ratings, By World Bank Income Categories.

World Bank Income Category	1: AAA to AA-	2: A+ to BBB	3: BBB- to B-	4: CCC+ to C
High Income	23	5	0	0
Middle Income	1	24	19	2
Low Income	0	0	14	1
Totals	24	29	33	3

Independent Variables: Political and Social Indexes

What follows is a description of the seven political and social indexes that serve as independent variables in this study, along with the hypothesized relationships between them and the dependent variable.

1. Freedom House Political Rating: Comparative Measures of Freedom. Freedom House investigates the political environment of a country with respect to two dimensions: (a) political rights: the degree to which fair and competitive elections occur; the ability of citizens to vote and form political parties; safeguards on the rights of minorities; and (b) civil liberties: freedom of the press; equality under the law; personal social freedoms. Each of these dimensions is given a score from 1 (free) to 7 (not free). Combined ratings, i.e., the average of the two dimensions, produce comparative measures of political freedom that sort into three groups: Free (1-2.5), Partly Free (3 - 5), and Not Free (5.5 - 7). The greater level of citizen participation in government, combined with protection of civil liberties and minority rights, creates not only a more democratic political system but a more stable society. Investments in such countries would be less vulnerable to mass societal disruption and to seizure of business assets, i.e., macro-level political risks are low. Because larger index numbers indicate less political freedom, we expect a positive relationship between the Freedom House Political Rating and Sovereign Debt Rating.

2. Corruption Perceptions Index. Transparency International is a Berlin-based organization founded to curb corruption in international transactions and promote reform by raising public awareness about corrupt practices in countries all over the world. It defines corruption as “the abuse of entrusted power by political leaders for private gain, with the objective of increasing power or wealth.” Such

abuses “poison politics and threaten democracy” (Transparency International website, Introduction). The organization investigates areas such as the electoral process, disclosure of public money flows, the role of the private sector in influence peddling, embezzlement by government leaders, and human rights abuses. Information is combined to produce a corruption score between 1 and 10, with high scores indicating a low level of corruption. High levels of corruption in the target government and economy drag down an investment. A corrupt operating environment may become expensive, either in payments or in the need for greater monitoring, and such an environment threatens to divert a company from its strategic objectives. Since higher levels of corruption are indicated by lower numbers, we expect a negative relationship between the Corruption Perceptions Index and Sovereign Debt Rating.

3. Index of Economic Freedom. The Heritage Foundation developed this index to reflect the level of government involvement and interference in the economy. The composite score combines information on trade barriers, fiscal burden, monetary policy, level of government intervention, restrictions on foreign investment, control of the banking system, interference with wages and prices, protection of property rights, level of state regulation, and amount of activity in the informal market. The composite scores run from 1.0 to 5.0, with high scores indicating economies with the highest level of government restrictions and interference. The Index of Economic Freedom categories are as follows: free (1-2); mostly free (2-3); mostly unfree (3-4); and repressed (4-5). Government intervention in the business environment typically constitutes micro-level political risk, although, if the intervention is extensive and heavy-handed, the environment may approach macro-level political risk. Extensive government ownership of business and lax protection of property rights, for example, are important hurdles for foreign investors. Since high numbers represent “repressed” systems, we expect a positive relationship between the Index of Economic Freedom and Sovereign Debt Rating.

4. Employment Laws Index. This index was developed by the World Bank group (*Doing Business*) to reflect one aspect of the legal environment facing companies with operations in a given country. The index is a two-digit number less than 100, with higher scores reflecting a company’s lack of flexibility in hiring and firing workers. Generally speaking, a large number of laws and regulations governing employment would hamper decision-making in a business. As a separate factor in strategic decision-making, companies would likely prefer countries where employment decisions are not subject to a great deal of government interference.

Since high numbers indicate a high level of interference, we expect a positive relationship with Sovereign Debt Rating.

5. Procedural Complexity Index. Also developed by the World Bank group, this index reflects the level of difficulty in enforcing contracts. It includes the number of procedural actions mandated by law or court regulation, the average duration of these procedures in calendar days, and the cost of these procedures as a percentage of GDI per capita. The Procedural Complexity Index is a two-digit number less than 100, with high numbers indicating a high procedural burden for business. As with the restrictions on hiring and firing, procedural complexity burdens business decision-making. All else equal, companies would be inclined to favor environments that are less encumbered by complicated regulations and court procedures. Since high numbers indicate a high level of procedural complexity, we expect a positive relationship with Sovereign Debt Rating.

6. Human Development Index. This index was created by the Human Development Group at the United Nations to be a broad measure of a society's well-being. Specifically, it is a combination of life expectancy, educational attainment, and adjusted real income. The index is a three-digit number less than 1.000, with higher numbers reflecting a higher level of social well-being. A high index level clearly would seem to correlate with high income level, since high educational attainment and long life expectancy are difficult to achieve without money. Still, the index goes beyond restatement of the benefits of economic development to reflect beneficial social policy. All else equal, foreign investment would be expected to face fewer threats, less uncertainty, and less opposition in such a society. Since high index numbers reflect higher social well-being, we expect a negative relationship with Sovereign Debt Rating.

7. Gini Index. This index, also developed by the World Bank group, measures the extent to which the income distribution among a country's households deviates from a perfectly equal distribution. Index numbers may range from 0 (perfect equality) to 100 (perfect inequality). In general, the Gini index measures the opportunities presented by an economy and the stability of a society. The hypothesis is that a society with less disparity between rich and poor is a more stable and thus less subject to political disruption. Since high numbers indicate a greater potential for societal unrest, we expect a positive relationship with Sovereign Debt Rating.

METHODOLOGY AND RESULTS

As indicated earlier, the purpose of this paper is to determine whether government bond ratings are a good indicator of country risk. By focusing on political and social conditions, rather than on economic factors, the index variables package information that pertains directly to research on political risk. Building a multivariate model is not possible, however, because the indexes show a high level of intercorrelation. Bivariate analysis is employed instead.

Table 5: Regression Results.

Index	t-statistic	Significance
Freedom House Political Rating	3.733	.000
Corruption Perceptions Index	-12.848	.000
Index of Economic Freedom	6.649	.000
Employment Law Index	3.657	.000
Procedural Complexity Index	3.888	.000
Human Development Index	-9.217	.000
Gini Index	4.189	.000

The results in Table 5 show strong statistical relationships between sovereign debt rating and all of the political and social indexes in the study, when simple regression tested each of the independent variables separately against the dependent variable. What is interesting about this result is the strong association of this single measure (Sovereign Debt Rating) with *all* aspects of political risk. The first two variables (the Freedom House Political Rating and the Corruption Perceptions Index) describe fundamental political institutions and practices. The next three variables reflect state policy: the Index of Economic Freedom identifies a country's overall approach to political economy; the Employment Law Index and the Procedural Complexity Index evaluate the regulatory burdens in particular areas of the economy. The remaining two variables (the Human Development Index and the Gini Index) indicate underlying social conditions that may give rise to political unrest.

Table 6: Correlations of the Indexes with Credit Rating, Controlling for Geographical Region (df = 66).

Index	Correlation	Significance
Freedom House Political Rating	0.380	.001
Corruption Perceptions Index	- 0.834	.000
Index of Economic Freedom	0.590	.000
Employment Law Index	0.501	.000
Procedural Complexity Index	0.447	.000
Human Development Index	- 0.754	.000
Gini Index	0.342	.004

Table 6 clarifies these relationships further. It is likely that multinational companies, on the basis of strategic market objectives or logistics management, would consider a general region for expansion, then select a particular country within that region for the placement of a foreign affiliate. If this is true, then political risk may enter into the managerial decision process only in the second stage of investment analysis. Thus it may be most appropriate to measure the relative level of political risk within a region, as opposed to the level of political risk overall. By controlling for geographical region, correlation analysis shows that even within geographical regions, all of the political and social factors reflected in the tested indexes are signaled by the government bond ratings.

CONCLUSION

This study therefore lends support to the findings of Ramcharren (1999) and Doumpos, Pentaraki, and Zopounidis (2001). We can conclude that sovereign debt ratings offer a convenient way to measure political risk, not only for lending institutions, but also for non-financial businesses looking to invest in other parts of the world.

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