S&P CAPITAL IQ

Country Risk and Sovereign Risk

Building Clearer Borders

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Around the world, credit analysts from banks and other credit-sensitive organisations are struggling to keep up with the potential impacts to corporate creditworthiness of key trends in a fast-changing world economy, including the increasing strength of emerging market economies such as China and Brazil and uncertainty caused by the sovereign debt crisis in Europe.

One reason this is proving such a challenge is that there is no uniform way to quantify country risk for the specific purpose of modelling corporate credit risk, even though country risk generally is a significant risk factor for corporations in emerging markets and, often, the single most important business risk factor for corporations in developing markets.

Instead, we understand many analysts use sovereign debt ratings as a proxy for country risk despite the fact that credit rating agencies do not intend their sovereign debt ratings to speak to country risk because these two risk sources are conceptually distinct:

- Sovereign ratings capture the risk of a country defaulting on its commercial debt obligations
- Country risk covers the downside of a country's business environment including legal environment, levels of corruption, and socioeconomic variables such as income disparity.

We believe the conflation by some in the market of sovereign and country risk is starting to cause meaningful difficulties in corporate credit modelling because levels of sovereign and country risk are diverging for some nations. For example, it's not clear that the sharp rise in sovereign risk in Greece has been accompanied by an equivalent rise in country risk or, conversely, that today's robust sovereign debt ratings for China incorporate what we consider to be that nation's continuing high levels of country risk.

In this article we first take a closer look at the relationship between country risk and sovereign risk and then suggest a potential way to independently score country risk that is easy to:

- Monitor and interpret in absolute and relative (i.e., country versus country) terms;
- Integrate into quantitative credit risk models; and
- Adjust quickly in the light of any imminent geopolitical event or trend

While publicly available criteria for the assessment of sovereign risk exist from many credit rating agencies including Standard & Poor's Ratings Services, there are no such explicit criteria for a country risk framework as part of corporate credit risk analysis.

For the latter, S&P Capital IQ's approach is based on own research, which includes, among others, the reading of various published research papers from Standard & Poor's Ratings Services analysts on a peer group analysis of country risk for certain geographies; see the footnote to Table 1 for details.

Country Risk and Sovereign Risk – An Uneasy Alliance

Location matters to corporate credit analysts, and one of the reasons is indeed related to sovereign risk. Fragility in a sovereign's finances and the diminishing strength of its currency can lead to all kinds of instability in the corporation's operating environment, especially if a crisis precipitates government intervention to control capital flows or a change in the policy of (pegged) exchange rates.

However, many other important location-driven risk factors have little direct effect on national finances, including local levels of corruption, legal environment (especially contract enforcement or intellectual property rights), and political stability as well as the general effectiveness of government in creating a supportive business environment (e.g., quality of national infrastructure). These are the risks best thought of as 'country risks' proper, as distinct from sovereign and sovereign intervention risk[1].

While both sovereign and country risks are potentially important risk factors in a corporate risk assessment, and are often correlated, the links between them can be quite tenuous. True, nations with a historical record of sovereign default tend also to be nations that exhibit high and persistent country risks. However, a stronger sovereign rating does not automatically mean that a country has freed itself from, say, the kind of endemic corruption that hurts corporate cash flow and profitability and inhibits corporate strategic decisions. Meanwhile, even nations with low levels of country risk can end up in default.

The distinction between sovereign risk and country risk has long been recognized by Standard & Poor's rating analysts, who look carefully at individual country risk factors when deriving each corporate rating, and then separately consider the implications of sovereign intervention risk.

However, credit analysts working to tighter schedules, and those building credit models, often simply note the location of the headquarters of a corporation and then impose a ceiling on their view of corporate creditworthiness equivalent to the relevant country's sovereign debt rating, i.e., if the sovereign debt rating is BB, then any corporate standalone rating that exceeds this will be reduced to BB.

Going Separate Ways

In the past, this approach has delivered acceptable results in relation to:

- **Developed countries**, such as Switzerland, that tend to attract investment grade countries ratings for their sovereign debt and have what we consider to be low country risk. Here, the sovereign rating ceiling is likely too high to act as a meaningful ceiling on most corporate ratings but in our view that should not matter because the country risk is anyway so low as to be essentially irrelevant.

[1] The methodological details of how to produce a sovereign intervention risk cap lie outside the scope of the present article; however, analysts should be sensitive to the industry sector occupied by the corporation under scrutiny. This is because certain sectors are regarded by national governments as vital to the national interest – notably utility companies and companies involved in key export industries such as oil companies in oil-exporting nations, or any other commodities. In our view, the support the government is likely to show this subset of industries makes them much more likely to continue to fulfill their obligations, even in the event of a sovereign crisis and government intervention.

- **Developing countries**, such as Kenya, that tend to attract non-investment grade ratings for their sovereign debt but that also tend to suffer from high levels of country risk. Again, the use of a sovereign rating as a cap in these circumstances has often produced a reasonably acceptable result in practice.

However, this approach has often been problematic, e.g. in the case of developing countries with national finances – and sovereign ratings – shored up by the exploitation of one or few major natural resources such as oil or gas. Some of these countries have been assigned relatively high sovereign ratings, which do not directly or predominantly reflect what might be difficult business environment (i.e., country risk) faced by their domestic corporations.

More recently, the approach has begun to show an even more worrying failure in relation to:

- **Fast track emerging market economies**, such as modern China, where the present sovereign ratings reflect newly robust national finances and a fast-growing economy alongside continuing high levels of country risk. This divergence of sovereign and country risk can be seen to some degree in nearly all the world's fastest-growing economies including Brazil, Russia and India. It represents a particular challenge for credit analysts because these economies are generating many new, globally connected corporations, each of which require an independent credit assessment and ongoing surveillance with particular emphasis on country risk.
- **Certain Euro zone countries**, where a divergence between sovereign and country risk is happening in reverse. The dramatic rise in the perceived sovereign risk of countries such as Greece has not, so far, been associated with an equivalent rise in country risk. Using assessments of Greek sovereign risk to cap the credit rating of a corporation headquartered in Greece is likely to result in an overly pessimistic rating, in particular in the current situation where there is no transfer and convertibility risk, which could occur if company debt were nominated in a hard currency that is not identical to the domestic currency and the government decided to stop inflows or trading of this hard currency for the domestic private sector.

For many economies in both the developed and emerging markets, therefore, we believe the approach of using sovereign ratings as a cap does not work and we think credit analysts should find an efficient way of measuring country risk that does not exclusively consider sovereign debt ratings.

How Can We Better Capture Country Risk?

At S&P Capital IQ, this prompted a recent project to improve the assessment of country risk in our credit risk models. Our first step was to define country risk and identify its key components by examining how Standard & Poor's rating agency analysts took account of country risk within their rating decisions for corporations around the world.

While Standard & Poor's does not calculate any sort of general country risk index or look-up table for industrials and utilities, its analysts consider a range of country risk factors in each of

their corporate rating assessments. The key factors applied by the analysts are set out in Table 1 for industrial corporations.

Table 1: Country Risk – Key Factors

LAW
General rule of law – the level of general protection the corporation can expect, e.g., are the company's labour force, capital and assets physically secure and protected by law?
Business legal environment – the protection the corporation can expect on business related issues such as contract enforceability and the defence of intellectual property, and respect for international arbitration courts
Corruption – the degree to which corruption inhibits the operations of a corporation, including its strategic flexibility, and drives down its cash flow and profitability
GOVERNMENT
Political stability – the likelihood that government will be removed by force or insurrection, and lesser forms of instability
Good government – the degree to which government and, especially, the civil service provides a supportive environment for business through providing or facilitating services to business and the general population (including basic services such as the provision of clean water and electricity)
Regulation and Red Tape – the degree to which the corporation can operate without being hampered by regulatory risk, excessive rules, arbitrary enforcement, and time-consuming bureaucracy
HUMAN DEVELOPMENT
Size and potential of domestic market – the size of the local market after taking into account factors such as inequality of income, e.g., corporations with large, well-developed, domestic markets generally have more potential and strategic flexibility
Education, literacy rates and technological sophistication – These factors may severely affect the percentage of the population that can become consumers of the products produced by corporations, as well as affecting the labour pool the corporation can draw on
Other socioeconomic variables that drive the overall business climate such as average household size or household income distribution

SOURCE: "Investigating Country Risk and Its relationship to Sovereign Ratings in Latin America" (H. Hessel & B.J Hall, Global Credit Portal, April 4, 2007)
"Investigating Country Risk and Its relationship to Sovereign Ratings in Emerging Europe" (H. Hessel & B.J Hall, Global Credit Portal, June 5, 2007)
"Investigating Country Risk and Its relationship to Sovereign Ratings in Emerging Asia" (H. Hessel, Global Credit Portal, July 25, 2007)

We then turned to the problem of how to measure differences between countries with respect to these risk factors in a way that could be incorporated into our credit models. It seemed to us that the best way might be to combine a careful selection of indices already available to the market that exhibited the following qualities:

- **Relevance** – each index should capture one or more of the key risk factors set out in Table 1
- **Transparency** – it should be clear how the index is constructed
- **Up to date** – ideally, the data should be updated at least once a year
- **Credibility** – the data should be gathered by institutions that have the trust of the marketplace
- **Dynamic** – selected components should be updated frequently in order to account for abrupt changes

These criteria helped us to select various existing indices, most of which are presented in Table 2 to feed our new country risk index from the large number of potential information sources. Many of the selected indices are themselves derived from multiple underlying sources of information, and there are inevitable overlaps in how the indices cover the Table 1 risk factors. However, a careful amalgamation of the indices seemed likely to generate scores that more fully reflected historical observations of country risk than simply using sovereign rating ceilings.

In order to turn our basket of underlying indices into a single country risk index we had to perform a number of operations. As a practical matter, we needed to translate each of the heterogeneous index ranges into a simple numerical score so that the scores could be combined into an overall numerical country risk score, which itself could then easily be mapped to a credit score such as 'bbb-'[2]

More importantly, the scores generated by each index needed to be questioned in terms of their suitability for the task in hand. For example, our purpose in including the Gini coefficient was to gain a broad measure of the level of inequality of wealth in a country, following the logic that inequality tends to bump up country risk by increasing political instability and by reducing the size of the domestic market open to corporations, i.e., in countries with a high Gini coefficient, much of the population may be excluded from consumer market.

However, both these effects may be partially mitigated in countries that reach a high level of wealth and political maturity. For example, countries or entities such as the United States, United Kingdom and Hong Kong have a relatively high Gini co-efficient but generally display low levels of country risk, e.g., even the less well-off have access to the consumer market. The translation of the coefficient into our country risk score had to be dampened to reflect this real-world complexity.

[2] The lower case letters in the commonly known nomenclature indicates that the country risk scores are not 'official' Standard and Poor's Ratings Services credit ratings or assessments.

Table 2: Major Indices from Public Sources for Calculating Country Risk

1. Corruption Perceptions Index (CPI) - Transparency International
The CPI ranks over 183 countries according to the perception of corruption in the public sector. The index is an aggregate based on an underlying collection of assessments and business opinion surveys carried out by various independent institutions.
2. Doing Business rankings – The World Bank
The Doing Business rankings monitor the environment for doing business across over 183 countries. For each economy, the ranking is calculated as the average of the percentile rankings on each of 10 topics, including starting a business, dealing with construction permits, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, resolving insolvency, and obtaining an electricity supply.
3. Global Competitiveness Index (GCI) - World Economic Forum (WEF)
The GCI analyzes over 142 economic indicators to provide a comprehensive assessment of the competitiveness of an economy, defined as 'the set of institutions, policies, and factors that determine the level of productivity of a country'. The index covers over 140 economies, and the underlying indicators encompass areas such as labour market efficiency, institutions, quality of infrastructure, technological readiness, business sophistication and innovation.
4. Gini coefficient (income inequality metric) – U.S. Central Intelligence Agency (CIA)
The Gini coefficient measures the degree of inequality in the distribution of family income in a country.
5. UN Human Development Index (HDI)
The HDI is a composite index that measures a country's achievements in terms of health, knowledge, and income. Introduced as an alternative to conventional measures of national development such as the rate of economic growth, the HDI covers over 187 countries
6. World Bank Political Risk Indicator
The World Bank political risk indicator is used as a stable and predictive measure to assess political risk. This indictor assesses the following risk dimensions: Voice & Accountability, Regulatory Quality, Political Stability, Rule of Law, Government Effectiveness and Control of Corruption

SOURCE: "Investigating Country Risk and Its relationship to Sovereign Ratings in Latin America" (H. Hessel & B.J Hall, Global Credit Portal, April 4, 2007)

Various gaps also had to be filled in, as the indices in Table 2 do not necessarily cover the complete universe of countries. For example, it may be inappropriate to apply an index score for China to calculate the country risk score of Hong Kong, given differences in the legal and business environment

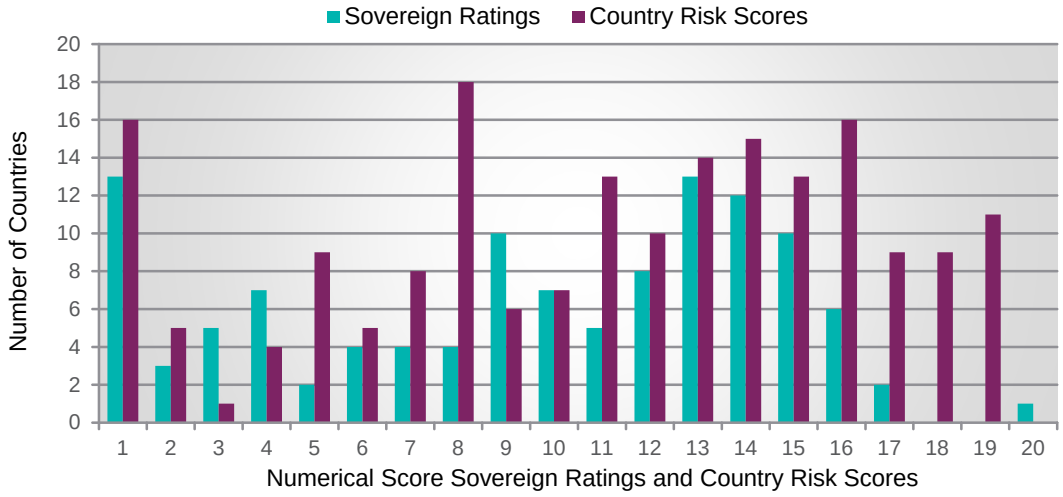
Once the aggregate numerical score for a country was computed, we again needed to use judgment to translate this score into a country risk score in letter grades. The underlying indices are largely driven by survey information that is somewhat backward looking, so it's critical to make sure the final ratings take on a forward looking flavour. For example, in recent years an index-driven approach would have been likely to generate a relatively low country risk score for some Middle Eastern countries; however, the events of the Arab Spring introduced a degree of political instability across the region that needed to be incorporated into the final up-to-date score.

What Does Our New Index Tell Us About Country Risk?

Using our new approach, we were able to calculate country risk scores for over 189 countries in all the main regions of the world on a numerical 1-20 scale in integer steps, with 20 representing the highest level of perceived risk. Thus, country risk was quantified and could be integrated as an explanatory factor in any quantitative credit risk model. Due to the establishment of a simple mapping of those numerical scores 1-20 to credit scores such as 'bbb-'it became also possible to interpret country risk within commonly applied terminology.

The scores strongly suggest a divergence in many instances between country risk scores and sovereign risk ratings. Figure 1 shows the aggregated distribution of country risk scores versus sovereign ratings. As the country breakdown in Figure 2 shows, the divergence effect is particularly strong for most of the BRIC nations (Russia, India, and China) or some European countries. This article is not intended to discuss our findings in detail, but below are some highlights.

Figure 1: Distribution of Country Risk Scores and Sovereign Ratings

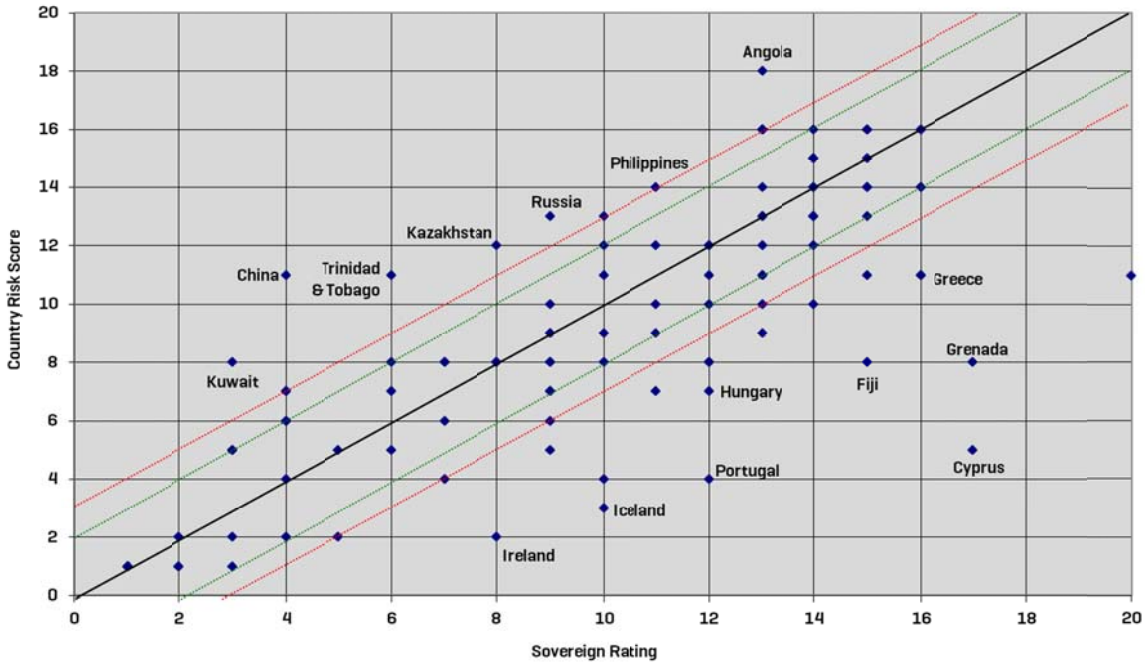


SOURCE: Sovereign Ratings (February 1, 2013 – Standard & Poor's Ratings on Global Credit Portal, Country Risk Scores (February 1, 2013 – S&P Capital IQ)

The total number of countries with a calculated Country Risk Score from S&P Capital IQ is 189. From these 189 countries 116 have a Standard & Poor's Sovereign Rating. The distribution in red above shows all countries with a Country Risk Score from S&P Capital IQ, while the distribution in blue shows all countries with a Standard & Poor's Sovereign Rating, which also have a Country Risk Score from S&P Capital IQ.

Overall, we would estimate that there is a strong divergence effect for around 50% of the countries traditionally regarded as 'developing' or 'emerging' and this represents, very roughly, around 80% of global GDP from emerging markets. These results put some hard numbers around what we see as the problem of using sovereign rating ceilings to capture country risk. More generally, we found that 79 of the countries have country risk scores of bbb- or better – the level at which the country risk score is likely to have a minor impact on corporate credit in our credit risk models– and 110 of the countries have country risk scores of bb+ and below, which is where country risk begins to have a major impact on the credit assessment of many corporations in our models. Meanwhile, 73 (more than a third of all) countries have a score of b+ or worse, suggesting that corporations in the country may be severely affected by the risk factors set out in Table 1.

Figure 2: Comparison of Country Risk Scores versus Sovereign Ratings



SOURCE: Sovereign Ratings (February 1, 2013 – Standard & Poor's Ratings on Global Credit Portal, Country Risk Scores (February 1, 2013 – S&P Capital IQ)

This figure is a scatter diagram of Sovereign Ratings by Standard & Poor's Ratings Services against Country Risk Scores from S&P Capital IQ. Letter grade Sovereign Ratings such as 'BBB' or Country Risk Scores such as 'bbb' were translated into numerical values 1-20, where 1 is best and 20 worst.

The 45 degree line in black indicates where Sovereign Ratings and Country Risk Scores are identical. Above this line, S&P Capital IQ's Country Risk Score, which is not intended to speak to a sovereign's creditworthiness, is lower in relative terms than the corresponding Sovereign Rating, below the line the opposite holds. All points within the green dotted lines are within 2 notches of Country Risk Scores versus Sovereign Ratings, indicating what we consider to be a non-major discrepancy between the two. The red dotted line indicates where this discrepancy is exactly 3 notches and all points at or above this level are from countries with what we believe is a significantly different profile of sovereign default risk versus country risk in the context of credit risk for corporates. For selected extreme observations the corresponding country name is indicated.

There are some interesting differences between different regions of the world. Table 3 shows a heat map of the world in terms of the average level of perceived country risk as opposed to perceived sovereign risk in each major geographic region and some other descriptive statistics.

Over time, we will be able to track the ebb and flow of these country risk calculations around the world and analyze more fully the impact, if any; this has on corporate credit risk and, eventually, on realized default rates.

Table 3: Aggregated Descriptive Statistics of Country Risk Scores vs. Sovereign Ratings

Region	Median Country Risk Score	Median Sovereign Rating	Mean Country Risk Score	Mean Sovereign Rating	Best Country Risk Score	Best Sovereign Rating	Lowest Country Risk Score	Lowest Sovereign Rating	Rank Correlation
Asia Mature	1.5	3.0	2.8	2.7	1.0	1.0	8.0	5.0	87%
Central and Eastern Europe	10.0	10.5	9.4	10.2	4.0	4.0	16.0	16.0	67%
Latin America	11.0	13.0	10.8	12.1	5.0	4.0	17.0	20.0	58%
North America	1.0	1.5	1.0	1.5	1.0	1.0	1.0	2.0	100%
Middle East and Africa	15.0	13.0	14.1	11.3	5.0	3.0	19.0	16.0	76%
Far East and South East Asia	13.0	12.0	13.3	11.1	6.0	4.0	19.0	15.0	53%
Western Europe	1.0	2.0	2.7	9.5	1.0	1.0	11.0	17.0	95%
Global	12.0	10.0	11.0	9.5	1.0	1.0	19.0	20.0	80%
Global Rated Sovereigns	9.0	10.0	8.8	9.5	1.0	1.0	18.0	20.0	80%

SOURCE: Sovereign Ratings (February 1, 2013 – Standard & Poor's Ratings on Global Credit Portal, Country Risk Scores (February 1, 2013 – S&P Capital IQ)

Country Risk Scores were calculated for 189 countries, while corresponding Sovereign Ratings existed for 116 Sovereigns. For few rated Sovereigns, no Country Risk Score was calculated. Note that for all rows in the table except the last one the statistics for Country Risk Scores related to all 189 countries for which this score could be generated. There is generally a bias towards worse Country Risk Scores for unrated Sovereigns such that a direct comparison between statistics for Country Risk Scores and Sovereign Ratings is not possible. In the last row, such a comparison is feasible because the universe is limited to countries that have both a Standard & Poor's Sovereign Rating and an S&P Capital IQ Country Risk Score.

Conclusion – Fly the Flag for Country Risk

We believe that sovereign risk is an increasingly poor proxy for country risk in many instances. We expect that credit risk modeling based solely on sovereign debt ratings may not fully reflect economic reality.

In this article, we have provided our view regarding the nature and scale of the problem and provided a sketch of a practical alternative approach. This involves identifying the key country risk factors and finding ways to score them efficiently, ideally using information readily available in the marketplace.

The final country risk score can then be integrated as part of the standalone analysis of a company's credit risk, i.e., acting as one of various risk factors that combine to yield the standalone corporate evaluation, with sovereign intervention risk continuing to act as a separate and final cap on any rating.

S&P Capital IQ has deployed our new country risk index through 2012 to further improve the efficacy of our corporate credit risk models, particularly as we extend the range of certain models to include emerging markets.

We hope our research helps other credit analysts and modellers by showing that a calculation of country risk can be readily achieved – a task that we believe will soon be inescapable as sovereign and country risk continue to diverge in both emerging and developed economies.

About S&P Capital IQ

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