

Comparative Rating Index for Sovereigns (CRIS): A Report Based on “**The Relativity of Sovereigns: A New Index of Sovereign Credit Ratings and an Analysis of How Nations Fared over the Last Six Years**”

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Foreword

In the rush to produce urgent policy documents and briefing notes that any government has to do, it is easy to let matters that may not be quite as urgent to go unattended. However, the not-so-urgent often includes matters of great importance for the long-run well-being of the nation and its citizenry. Research papers on topics of strategic economic policy fall in this category. The Economic Division in the Department of Economic Affairs, Ministry of Finance, has initiated this Working Paper series to make available to the Indian policymaker, as well as the academic and research community interested in the Indian economy, papers that are based on research done in the Ministry of Finance and address matters that may or may not be of immediate concern but address topics of importance for India's sustained and inclusive development. It is hoped that this series will serve as a forum that gives shape to new ideas and provides space to discuss, debate and disseminate them.

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Disclaimer and Acknowledgements

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Abstract

Major credit rating agencies give out the sovereign credit rating of each nation as an absolute grade. How other nations fare over the period under consideration does not matter in a particular nation's rating score. This is very different from a comparative rating which would tell us something about how one particular sovereign fares in relation to how other sovereigns are doing. Since, for investors, relative or comparative rating is such an important concept, it was felt that a new index which captures precisely this idea ought to be developed. In this paper we define a new relative performance index and then track how nations have performed over time. It turns out that India's Comparative Rating Index for Sovereigns (CRIS) has improved over the six years from 2007 to 2012 by about 2.98% while its rank moved up from 61st to 55th. On the other hand, over this period, the CRIS for Greece has dropped sharply by 74.52%. In terms of CRIS, the US has gone from the top of the chart to the 13th position though it still improved its CRIS score by 2.12%. This was largely due to the dramatic falls of scores of some European economies. Like many other economic indicators, the CRIS points towards a tectonic shift in the global economic landscape. Some of the largest jumps in ranks across the 2007 to 2012 interval are those of emerging and developing economies. Some developed economies like Australia, Canada, Denmark and Germany maintained their sovereign ratings and therefore had a rise in CRIS values. Some of the largest falls were recorded by the European economies and Japan.

Introduction

Recent economic events have led to the lowering of the sovereign credit ratings of several major economies. In the aftermath of the global financial crisis and the more recent European economic turmoil, many economies with high credit rankings have been severely downgraded. Other major economies have seen small downward shifts in their ratings or outlooks but these have been tectonic events considering that they are very large economies hitherto enjoying the highest grades for a considerable period of time. Such events would naturally make other economies relatively more attractive as investment destinations for debt and other types of capital flows, even if the ratings of those economies remain unchanged. Major credit rating agencies give out the sovereign credit rating of each nation as an absolute grade. How other nations fare does not matter in a particular nation's rating score. This is very different from a comparative rating which would tell us something about how one particular sovereign fares in relation to how other sovereigns are doing. When an investor searches across nations for a place to put her money, the *relative* rating of nations is important. It is fairly evident that with the huge downgrades of some highly rated economies and the minor but significant lowering of outlooks for some major industrialised economies, other economies that have not suffered these downgrades would become relatively more attractive, even if their ratings taken in isolation have not changed. This makes it entirely possible that a particular nation that has had no rating change may now be better off or worse off in comparative terms. Also, a nation that has travelled down the rating ladder in absolute terms may be, in relative terms, better off because others have done even worse. Since, for investors, relative or comparative rating is such an important concept, it was felt that a new index which captures precisely this idea ought to be developed.

The aim of this paper is to develop a *relative* performance index, and apply it to sovereign credit ratings. In other words, we use standard credit rating data for all nations and then compute a new "Comparative Ratings Index for Sovereigns" (CRIS). Thus if India's rating remains unchanged during a period when the world's average rating drops, we can say that India's CRIS has risen. In this paper we define a new relative performance index and then track how nations have performed over time in such a relative sense. It turns out that India's Comparative Rating Index for Sovereigns has improved over the six years from 2007 to 2012 by about 2.98% while its rank moved up from 61st to 55th. On the other hand the CRIS for Greece has dropped sharply by 74.52%. In terms of CRIS, the US has gone from the top of the chart to the 13th position though it still improved its CRIS score by 2.12%. This was largely due to the dramatic falls of scores of some European nations.

This relative attractiveness can be conceptualized as a function of an economy's rating and its size (in terms of Gross Domestic product (GDP)), in comparison with other economies and the world at large. If a large (in terms of GDP) economy becomes less attractive, the relative attractiveness of other economies increases more than if the same happened to a smaller economy. In order to capture this impact, we develop a new system for comparing the relative ratings of sovereign debt based on the historical evolution of their ratings and the volume of their

economic activity as measured by their GDP (not adjusted for Purchasing Power Parity (PPP)). We develop a relative rating index and rank 101 economies according to this for the years 2007 to 2012. The index uses external data on GDP and credit ratings (Moody's Investor Services) combined in terms of pure mathematical and statistical methods without interventions or interpretations.

Conceptual background and literature

Sovereign credit ratings are “the risk assessments assigned by the credit rating agencies to the obligations of central governments (Cantor and Packer, 1996)”.¹ Cantor and Packer (1996) carried out an initial and seminal analysis of the determinants and impact of sovereign credit ratings given by the main U.S. based rating agencies, Moody's Investors Service and Standard and Poor's. They find that both agencies use a relatively small set of well-defined criteria with similar weights to arrive at credit ratings. The yields on sovereign debt broadly share the relative rankings assigned by the agencies but the ratings appear to have correlation with yields over and above the publicly available information. Ferri, Liu and Stiglitz (1999) examine the role and reactions of the rating agencies during the East Asian Crisis of 1997. They demonstrate that the rating agencies contributed to an aggravation of the crisis. Having failed to predict the crisis, it is averred that they had an incentive to become more conservative to recover their reputation. Consequently they downgraded economies more than what trends in economic fundamentals warranted. Dadush and Dasgupta (2001) examine the risks associated with capital account liberalization in developing economies. In doing so, they carry out a pioneering work in converting the alphabetic rating scores into numeric ratings. Gaillard (2009) studies Moody's ratings for sub-national entities. It provides a useful linear transformation of the ratings into numerical scores. Moody's Investor Service (2011) provides a guide to the rating system of the agency. Barua (2011) undertakes a critical appraisal of the credit rating system. He finds that the rating agencies face a ‘revenue versus reputation’ conflict of interest. In line with Ferri, Liu and Stiglitz (1999), in the wake of the global financial crisis, Barua finds that the rating agencies are *pro-cyclical* and failed to provide appropriate early warnings of the impending crisis. He also detects flaws in their methodology in that the variables they use often do not capture important economic aspects such as currency misalignment that may turn out to be crucial factors in precipitating an adverse economic event. Comparing India's ratings with countries that enjoy an identical rating, Barua finds that the peer countries have much weaker indicators vis-à-vis India. As a constructive remedy he suggests a balance between the credit rating and early warning functions.

The present paper does not present a critique of the existing system of credit ratings, particularly sovereign credit ratings, *per se*. Neither is it concerned with the factors that determine a country's absolute credit rating, though the brief review of the literature presented above

¹ Though in a strict sense the sovereign ratings relate to debt of the central government, in effect they serve as a barometer for confidence and creditworthiness at an economy-wide level influencing the borrowing costs of private entities and in a wider sense the investment flows.

provides sufficient hints as to the drawbacks that exist in that regard. Our aim is to demonstrate that existing absolute credit ratings of sovereigns can be viewed in a different light - *comparatively* - to extract more information out of them regarding the relative attractiveness of investment destinations. In such a case, little or even no changes in absolute ratings of nations would imply relative increases or decreases in the country's attractiveness as a destination of international capital. Several drawbacks of the existing credit rating architecture notwithstanding, this way of perceiving individual sovereign ratings would remain relevant.

Methodology

Systems of converting the alphabetical ratings into numerical scores have been proposed in papers, such as, Dadush and Dasgupta (2001) and Gaillard (2009). The numerical scores corresponding to each rating are as broadly follows:

Aaa	20
Aa1	19
Aa2	18
.	
.	
Ca	1
C	0

We build upon this system but introduce an innocuous cardinal change (Sen, 1977; Basu, 1983) of multiplying each number by 3. The conversion yields the following:

Aaa	60
Aa1	57
Aa2	54
.	
.	
Ca	3
C	0

This modification allows for a richer analysis. Since in addition to the grades, Moody's also gives three outlook classifications, 'positive', 'stable' and 'negative' for each grade, we can refine the conversion system further by subdividing each grade across the three outlook classes and assigning a numerical score corresponding to each. For this the above converted score is

assigned to the 'stable' outlook, with the 'positive' outlook being one number higher and 'negative' outlook a number lower. The resulting score is as follows:

Table 1: Moody's ratings, outlooks and numerical scores

Moody's Rating	Numerical score	Outlook	Outlook adjusted score
Aaa	20	P	Does not exist
		S	60
		N	59
Aa1	19	P	58
		S	57
		N	56
Aa2	18	P	55
		S	54
		N	53
Aa3	17	P	52
		S	51
		N	50
A1	16	P	49
		S	48
		N	47
A2	15	P	46
		S	45
		N	44
A3	14	P	43
		S	42
		N	41
Baa1	13	P	40
		S	39
		N	38
Baa2	12	P	37
		S	36
		N	35
Baa3	11	P	34
		S	33
		N	32
Ba1	10	P	31
		S	30
		N	29
Ba2	9	P	28
		S	27

		N	26
Ba3	8	P	25
		S	24
		N	23
B1	7	P	22
		S	21
		N	20
B2	6	P	19
		S	18
		N	17
B3	5	P	16
		S	15
		N	14
Caa1	4	P	13
		S	12
		N	11
Caa2	3	P	10
		S	9
		N	8
Caa3	2	P	7
		S	6
		N	5
Ca	1	P	4
		S	3
		N	2
C	0		1

Notes: Based on Gaillard (2009) as adapted by the authors. ‘P’ signifies Positive, ‘S’ Stable and ‘N’ Negative.

Having arrived at a system of converting the combination of each rating grade and outlook to a numerical value we now go on to develop a system for using these to determine relative ratings. The mathematical formula that is used to compute the CRIS scores is reported in the full paper (Basu, *et al.*, 2012). The formula, however, is for now treated as classified. Among the important mathematical properties of the CRIS are the following:

- (1) If nation i 's sovereign credit rating is constant, and all other nations' Moody's ratings rise, then nation i 's CRIS will decline.
- (2) The weighted average of the CRIS for all nations is constant. Hence, one nation's improvement in CRIS is invariably accompanied by worsening of the CRIS for some other nation or nations.
- (3) The CRIS has been constructed so as to register diminishing marginal returns to improvements in the absolute ratings. This is motivated from the observation that once a high

rating has been achieved by a country it is easier to retain that rating than it is for a lower rated country to rise in the ratings scale.

All that remains to be done now is to compute each nation's relative rating and track it through time.²

Results

Our preliminary results show that India's attractiveness in terms of this index increased by around 2.98% across the period and its rank improved from 61st in 2007 to 55th in 2012 (Tables A1 and A2, Annexure). If we view the rankings in terms of quintiles (blocks of one-fifth of the distribution) India moves from the fourth (second lowest) quintile to the third that is the middle quintile. In 2007 the 1st slot was shared between 20 economies but by 2012 this cohort had shrunk to 12.

The US fell from the 1st category to the 2nd slot (13th rank) across the period (due to a lowered outlook) though its attractiveness still increased by 2.12% largely due to the rapid rating downgrades and economic contraction of some European economies. Dramatic falls of this type include Ireland's descent from the 1st rank club to 69th position across the 2007 to 2012 period with a 28.41% fall in its index value and Greece's precipitous dive from 30th rank to 101st (last) position accompanied by a 74.52% fall in index value across the same period. Other interesting developments include China's movement from 34th rank in 2007 to 21st in 2012 with an index value increase of about 7.19%.

Figure 1 gives the CRIS dynamics of some select European economies. It gives a sense of relative directions and magnitudes of the changing CRIS scores. It may be noted that while significant falls are experienced by peripheral European economies like Greece, Spain and Portugal, other economies like the Germany, UK and France continue to improve their score. This is largely due to their holding on to the ratings or having slight downgrades while the other economies suffer much larger fall in ratings and GDP. The figure also reveals the divergence of relative ratings arising after the global financial crisis in 2008.

² Moody's long term foreign currency sovereign ratings data updated up to 13th February 2012.

Figure 1: CRIS dynamics of some select European economies

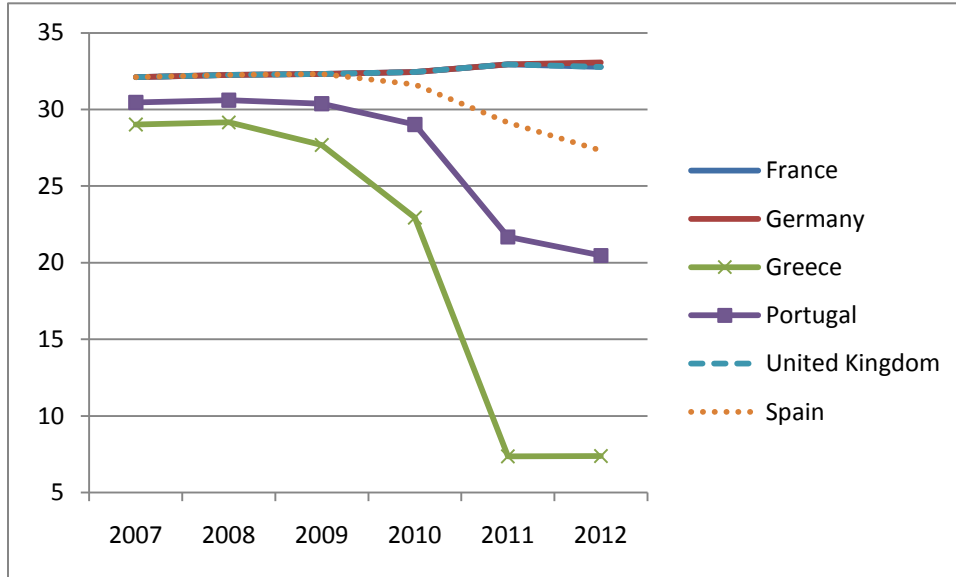
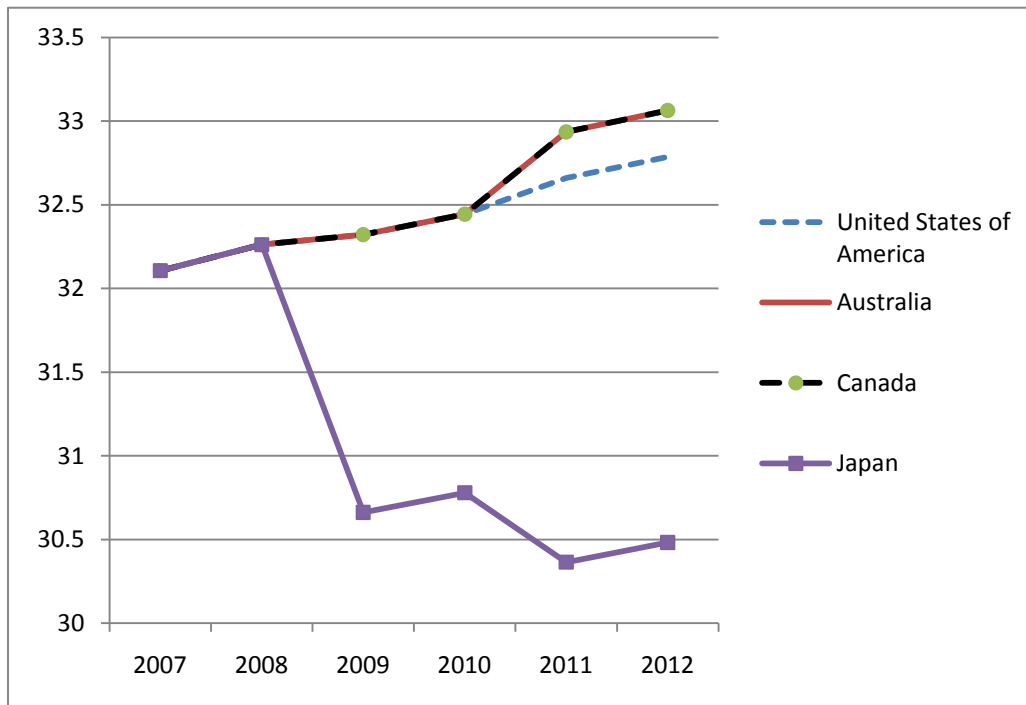


Figure 2 gives the CRIS dynamics of some select Non-European developed economies. In this case the divergences are less pronounced except for Japan. Here again the divergences start from 2008. The US continues to rise despite the lowering of its outlook. But the lowered outlook results in it being left lower than Australia and Canada which continue with their top notch ratings.

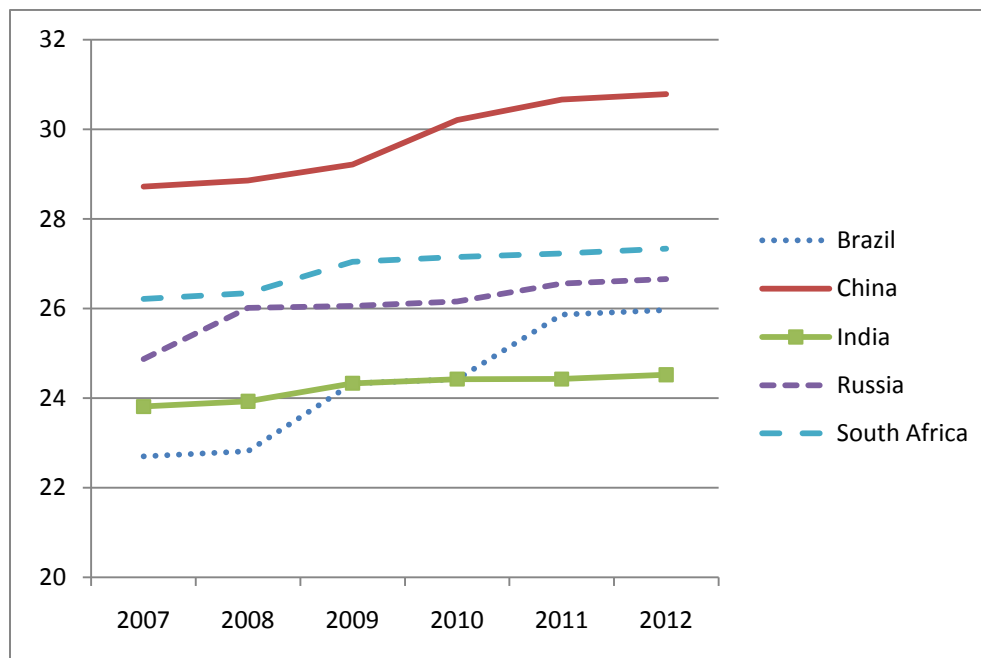
Figure 2: CRIS dynamics of some select Non-European developed economies



It would not be wrong to surmise, that like many other economic indicators, the CRIS points towards a tectonic shift in the global economic landscape. This becomes more obvious if we see the ranking changes. Some of the largest jumps in ranks across the 2007 to 2012 interval are those of emerging and developing economies. These include the rank leaps of Indonesia (22 positions), Paraguay and Peru (20), Bolivia and Lebanon (19), Chile (18) and Brazil (16). In interpreting these results, it needs to be borne in mind that for countries which began with low CRIS values, the scope for improvement is more. Some developed economies like Australia, Canada, Denmark and Germany maintained their positions. Some of the largest falls were among European economies and Japan. Greece fell by 71 positions, Ireland 68, Iceland 61, Portugal, 53, Spain 36 and Japan 21.

Figure 3 gives the CRIS dynamics of the BRICS economies. In contrast to the developed economies discussed above. The divergence in performance of the BRICS is comparatively less. All have shown continuous improvement and the global financial crisis does not seem to have impacted them adversely in terms of CRIS scores. Rather these economies seem to have had improvements in CRIS after the crisis.

Figure 3: CRIS dynamics of BRICS economies.



The ten highest increases in the CRIS from 2007 to 2012 were achieved by (1) Paraguay (36.23%), (2) Lebanon (26.12%), (3) Uruguay (25.12%), (4) Bolivia (24.72%), (5) Indonesia (20.75%), (6) Philippines (16.77%), (7) Peru (15.56%), (8) Belize and Nicaragua (15.14%) and (10) Brazil (14.37%). As stated before, it needs to be kept in mind that countries with initially very low scores have greater scope for rank improvement. Twenty-seven economies had

negative growth in the CRIS across this period. The most significant decreases were (1) Greece (-74.52%), (2) Portugal (-32.79%), (3) Ireland (-28.41%), (4) Iceland (-24.79%), (5) Egypt (-18.87%), (6) Hungary (-17.33%), (7) Belarus (-15.92%), (8) Cyprus (-15.49%), (9) Spain (-14.87%) and (10) Jamaica (-12.97%).

Conclusions

This paper developed an index of relative ratings of sovereigns, the Comparative Rating Index of Sovereigns (CRIS). Given that existing ratings do not give an idea of the *inter se* rankings of various economies with respect to the performance of the others, this index addresses an important conceptual lacuna. The results reveal major changes in relative ratings of various countries, driven largely by the rapid downgrades of some European economies following the global financial crisis. India's Comparative Rating Index for Sovereigns has improved over the six years from 2007 to 2012 by about 2.98% while its rank moved up from 61st to 55th. The US has gone from the top of the chart to the 13th position though it still improved its CRIS score by 2.12%. Some developed economies like Australia, Canada, Denmark and Germany maintained their sovereign ratings and therefore had a rise in CRIS values. Some of the largest falls were among European economies and Japan. Greece fell by 71 positions, Ireland 68, Iceland 61, Portugal, 53, Spain 36 and Japan 21. BRICS economies show continuous improvement and the global financial crisis does not seem to have impacted them adversely in terms of CRIS scores.

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Annexure

Table A1: Values of CRIS with percentage change from 2007-2012

Country	2007	2008	2009	2010	2011	2012	Change (%)
Albania	18.99	19.09	19.12	19.19	19.48	19.56	2.98
Argentina	16.58	16.13	16.16	16.22	16.47	16.53	-0.29
Armenia	21.54	21.64	21.68	21.76	21.68	21.76	1.06
Australia	32.11	32.26	32.32	32.44	32.93	33.06	2.98
Austria	32.11	32.26	32.32	32.44	32.93	32.79	2.12
Azerbaijan	22.70	23.19	22.85	22.94	23.67	23.77	4.68
Bahamas	26.86	26.99	27.04	27.14	27.23	27.33	1.75
Bahrain	27.80	27.94	27.68	27.14	26.21	26.31	-5.37
Barbados	24.52	24.64	23.97	24.06	24.05	24.15	-1.53
Belarus	18.99	19.09	19.12	19.19	15.91	15.97	-15.92
Belgium	31.57	31.72	31.50	31.62	32.10	30.18	-4.39
Belize	14.36	14.43	16.16	16.22	16.47	16.53	15.14
Bolivia	16.05	16.13	17.70	19.65	19.94	20.02	24.72
Bosnia and Herzegovina	17.59	17.67	17.70	17.77	17.53	17.60	0.08
Botswana	28.11	28.25	27.99	27.78	28.52	28.63	1.85
Brazil	22.70	22.81	24.33	24.42	25.86	25.96	14.37
Bulgaria	24.17	23.93	23.97	24.42	25.51	25.61	5.97
Cambodia	17.59	17.67	17.70	17.77	18.04	18.11	2.98
Canada	32.11	32.26	32.32	32.44	32.93	33.06	2.98
Chile	27.80	27.94	29.21	29.91	30.36	30.48	9.63
China	28.72	28.86	29.21	30.20	30.66	30.78	7.19
Colombia	21.93	22.81	22.85	23.32	24.43	24.52	11.80
Costa Rica	22.70	23.19	23.23	24.06	24.43	24.52	8.01
Croatia	24.17	23.93	23.97	24.06	24.43	24.52	1.45
Cyprus [1]	29.01	29.74	29.80	29.91	24.43	24.52	-15.49
Czech Republic	29.01	28.86	28.91	29.02	29.46	29.57	1.92
Denmark	32.11	32.26	32.32	32.44	32.93	33.06	2.98
Dominican Republic	17.59	17.67	17.70	19.19	19.48	19.56	11.23
Ecuador	11.72	5.89	10.22	10.26	12.76	12.81	9.23
Egypt	22.32	22.43	22.85	22.94	19.02	18.11	-18.87
El Salvador	23.81	23.93	22.47	21.36	22.09	22.18	-6.85
Estonia	28.72	28.55	28.61	29.02	29.46	29.57	2.98
Fiji Islands	21.13	21.24	18.66	18.73	19.02	19.09	-9.68
Finland	32.11	32.26	32.32	32.44	32.93	33.06	2.98
France	32.11	32.26	32.32	32.44	32.93	32.79	2.12
Germany	32.11	32.26	32.32	32.44	32.93	33.06	2.98

Greece	29.01	29.15	27.68	22.94	7.36	7.39	-74.52
Guatemala	21.93	21.64	21.68	22.94	23.29	23.38	6.59
Honduras	17.59	17.67	17.70	17.77	18.04	18.11	2.98
Hong Kong	30.46	30.61	30.95	30.78	32.38	32.51	6.73
Hungary	27.80	26.67	25.72	26.16	24.05	22.99	-17.33
Iceland	32.11	25.67	23.97	23.69	24.05	24.15	-24.79
India	23.81	23.93	24.33	24.42	24.43	24.52	2.98
Indonesia	20.31	20.40	21.68	21.76	23.29	24.52	20.75
Ireland	32.11	32.26	31.23	25.82	22.90	22.99	-28.41
Israel	28.11	28.86	28.91	29.02	29.46	29.57	5.19
Italy	30.46	30.61	30.66	30.78	28.20	27.33	-10.27
Jamaica	18.99	19.09	13.84	16.22	16.47	16.53	-12.97
Japan	32.11	32.26	30.66	30.78	30.36	30.48	-5.06
Jordan	21.54	21.64	21.68	21.76	21.68	21.76	1.06
Kazakhstan	24.87	24.99	24.69	25.13	25.51	25.61	2.98
Korea	27.80	27.94	27.99	29.02	29.46	29.57	6.36
Kuwait	30.46	30.61	30.38	30.78	31.24	31.37	2.98
Latvia	27.80	26.67	23.60	24.06	24.79	24.89	-10.49
Lebanon	15.51	16.66	18.19	19.19	19.48	19.56	26.12
Lithuania	27.80	27.63	25.72	26.16	26.55	26.66	-4.13
Luxembourg	32.11	32.26	32.32	32.44	32.93	33.06	2.98
Malaysia	26.86	26.99	27.04	27.14	27.56	27.66	2.98
Malta	28.11	28.86	28.91	29.02	28.20	27.33	-2.78
Mauritius	24.87	24.99	25.04	25.13	25.51	25.61	2.98
Mexico	25.88	26.01	26.06	26.16	26.55	26.66	2.98
Mongolia	18.99	19.09	19.12	19.19	19.48	19.56	2.98
Morocco	22.70	22.81	22.85	22.94	23.29	23.38	2.98
Netherlands	32.11	32.26	32.32	32.44	32.93	33.06	2.98
New Zealand	32.11	32.26	32.32	32.44	32.93	33.06	2.98
Nicaragua	14.36	14.43	14.45	16.22	16.47	16.53	15.14
Norway	32.11	32.26	32.32	32.44	32.93	33.06	2.98
Oman	27.80	27.94	27.99	29.02	29.46	29.57	6.36
Pakistan	18.54	15.58	16.16	16.22	16.47	16.53	-10.82
Panama	22.70	22.81	22.85	24.06	24.79	24.89	9.63
Papua New Guinea	18.99	19.09	19.12	19.19	19.48	19.56	2.98
Paraguay	14.36	16.13	16.16	19.19	19.48	19.56	36.23
Peru	21.54	22.81	23.97	24.06	24.79	24.89	15.56
Philippines	18.99	19.54	20.44	20.52	22.09	22.18	16.77
Poland	27.80	27.94	27.99	28.10	28.52	28.63	2.98
Portugal	30.46	30.61	30.38	29.02	21.68	20.47	-32.79
Qatar	30.46	30.61	30.66	30.78	31.24	31.37	2.98

Romania	23.81	23.93	23.97	24.06	24.43	24.52	2.98
Russia	24.87	26.01	26.06	26.16	26.55	26.66	7.19
Saudi Arabia	29.01	29.15	29.21	29.91	30.36	30.48	5.06
Singapore	32.11	32.26	32.32	32.44	32.93	33.06	2.98
Slovakia	28.72	29.15	28.91	29.02	29.46	28.31	-1.40
Slovenia	30.74	30.89	30.66	30.78	30.36	28.31	-7.89
South Africa	26.21	26.34	27.04	27.14	27.23	27.33	4.26
Spain	32.11	32.26	32.32	31.62	29.15	27.33	-14.87
St. Vincent & the Grenadines	18.99	19.09	19.12	19.19	19.48	19.56	2.98
Suriname	18.99	19.09	19.12	19.19	19.48	19.56	2.98
Sweden	32.11	32.26	32.32	32.44	32.93	33.06	2.98
Switzerland	32.11	32.26	32.32	32.44	32.93	33.06	2.98
Taiwan	29.60	29.74	29.80	29.91	30.36	30.48	2.98
Thailand	25.88	25.67	25.72	26.16	26.55	26.66	2.98
Trinidad and Tobago	25.88	26.01	26.06	25.13	26.55	26.66	2.98
Tunisia	24.87	24.99	25.04	25.13	24.05	24.15	-2.91
Turkey	20.31	20.40	20.86	22.16	22.50	22.59	11.23
Ukraine	19.44	19.54	17.20	17.77	18.04	17.60	-9.48
United Arab Emirates	30.46	30.61	30.66	30.78	31.24	31.37	2.98
United Kingdom	32.11	32.26	32.32	32.44	32.93	32.79	2.12
United States of America	32.11	32.26	32.32	32.44	32.66	32.79	2.12
Uruguay	18.99	19.09	20.44	20.52	23.29	23.77	25.12
Venezuela	17.59	17.67	17.70	17.77	18.04	18.11	2.98
Vietnam	20.72	19.97	20.01	18.73	19.02	19.09	-7.89

Table A2: Rankings of countries on the basis of the CRIS from 2007-2012

	2007		2008		2009		2010		2011		2012
1	Australia	1	Australia	1	Australia	1	Australia	1	Australia	1	Australia
1	Austria	1	Austria	1	Austria	1	Austria	1	Austria	1	Canada
1	Canada	1	Canada	1	Canada	1	Canada	1	Canada	1	Denmark
1	Denmark	1	Denmark	1	Denmark	1	Denmark	1	Denmark	1	Finland
1	Finland	1	Finland	1	Finland	1	Finland	1	Finland	1	Germany
1	France	1	France	1	France	1	France	1	France	1	Luxembourg
1	Germany	1	Germany	1	Germany	1	Germany	1	Germany	1	Netherlands
1	Iceland	1	Ireland	1	Luxembourg	1	Luxembourg	1	Luxembourg	1	New Zealand
1	Ireland	1	Japan	1	Netherlands	1	Netherlands	1	Netherlands	1	Norway
1	Japan	1	Luxembourg	1	New Zealand	1	New Zealand	1	New Zealand	1	Singapore
1	Luxembourg	1	Netherlands	1	Norway	1	Norway	1	Norway	1	Sweden
1	Netherlands	1	New Zealand	1	Singapore	1	Singapore	1	Singapore	1	Switzerland
1	New Zealand	1	Norway	1	Spain	1	Sweden	1	Sweden	13	Austria
1	Norway	1	Singapore	1	Sweden	1	Switzerland	1	Switzerland	13	France
1	Singapore	1	Spain	1	Switzerland	1	United Kingdom	1	United Kingdom	13	United Kingdom
1	Spain	1	Sweden	1	United Kingdom	1	United States of America	16	United States of America	13	United States of America
1	Sweden	1	Switzerland	1	United States of America	17	Belgium	17	Hong Kong	17	Hong Kong
1	Switzerland	1	United Kingdom	18	Belgium	17	Spain	18	Belgium	18	Kuwait
1	United Kingdom	1	United States of America	19	Ireland	19	Hong Kong	19	Kuwait	18	Qatar
1	United States of America	20	Belgium	20	Hong Kong	19	Italy	19	Qatar	18	United Arab Emirates
21	Belgium	21	Slovenia	21	Italy	19	Japan	19	United Arab Emirates	21	China
22	Slovenia	22	Hong Kong	21	Japan	19	Kuwait	22	China	22	Chile
23	Hong Kong	22	Italy	21	Qatar	19	Qatar	23	Chile	22	Japan
23	Italy	22	Kuwait	21	Slovenia	19	Slovenia	23	Japan	22	Saudi Arabia
23	Kuwait	22	Portugal	21	United Arab Emirates	19	United Arab Emirates	23	Saudi Arabia	22	Taiwan
23	Portugal	22	Qatar	26	Kuwait	26	China	23	Slovenia	26	Belgium
23	Qatar	22	United Arab Emirates	26	Portugal	27	Chile	23	Taiwan	27	Czech Republic
23	United Arab Emirates	28	Cyprus	28	Cyprus	27	Cyprus	28	Czech Republic	27	Estonia
29	Taiwan	28	Taiwan	28	Taiwan	27	Saudi Arabia	28	Estonia	27	Israel
30	Cyprus	30	Greece	30	Chile	27	Taiwan	28	Israel	27	Korea
30	Czech Republic	30	Saudi Arabia	30	China	31	Czech Republic	28	Korea	27	Oman
30	Greece	30	Slovakia	30	Saudi Arabia	31	Estonia	28	Oman	32	Botswana
30	Saudi Arabia	33	China	33	Czech Republic	31	Israel	28	Slovakia	32	Poland
34	China	33	Czech Republic	33	Israel	31	Korea	34	Spain	34	Slovakia
34	Estonia	33	Israel	33	Malta	31	Malta	35	Botswana	34	Slovenia

34	Slovakia	33	Malta	33	Slovakia	31	Oman	35	Poland	36	Malaysia
37	Botswana	37	Estonia	37	Estonia	31	Portugal	37	Italy	37	Bahamas
37	Israel	38	Botswana	38	Botswana	31	Slovakia	37	Malta	37	Italy
37	Malta	39	Bahrain	38	Korea	39	Poland	39	Malaysia	37	Malta
40	Bahrain	39	Chile	38	Oman	40	Botswana	40	Bahamas	37	South Africa
40	Chile	39	Korea	38	Poland	41	Bahamas	40	South Africa	37	Spain
40	Hungary	39	Oman	42	Bahrain	41	Bahrain	42	Lithuania	42	Lithuania
40	Korea	39	Poland	42	Greece	41	Malaysia	42	Mexico	42	Mexico
40	Latvia	44	Lithuania	44	Bahamas	41	South Africa	42	Russia	42	Russia
40	Lithuania	45	Bahamas	44	Malaysia	45	Hungary	42	Thailand	42	Thailand
40	Oman	45	Malaysia	44	South Africa	45	Lithuania	42	Trinidad and Tobago	42	Trinidad and Tobago
40	Poland	47	Hungary	47	Mexico	45	Mexico	47	Bahrain	47	Bahrain
48	Bahamas	47	Latvia	47	Russia	45	Russia	48	Brazil	48	Brazil
48	Malaysia	49	South Africa	47	Trinidad and Tobago	45	Thailand	49	Bulgaria	49	Bulgaria
50	South Africa	50	Mexico	50	Hungary	50	Ireland	49	Kazakhstan	49	Kazakhstan
51	Mexico	50	Russia	50	Lithuania	51	Kazakhstan	49	Mauritius	49	Mauritius
51	Thailand	50	Trinidad and Tobago	50	Thailand	51	Mauritius	52	Latvia	52	Latvia
51	Trinidad and Tobago	53	Iceland	53	Mauritius	51	Trinidad and Tobago	52	Panama	52	Panama
54	Kazakhstan	53	Thailand	53	Tunisia	51	Tunisia	52	Peru	52	Peru
54	Mauritius	55	Kazakhstan	55	Kazakhstan	55	Brazil	55	Colombia	55	Colombia
54	Russia	55	Mauritius	56	Brazil	55	Bulgaria	55	Costa Rica	55	Costa Rica
54	Tunisia	55	Tunisia	56	India	55	India	55	Croatia	55	Croatia
58	Barbados	58	Barbados	58	Barbados	58	Barbados	55	Cyprus	55	Cyprus
59	Bulgaria	59	Bulgaria	58	Bulgaria	58	Costa Rica	55	India	55	India
59	Croatia	59	Croatia	58	Croatia	58	Croatia	55	Romania	55	Indonesia
61	El Salvador	59	El Salvador	58	Iceland	58	Latvia	61	Barbados	55	Romania
61	India	59	India	58	Peru	58	Panama	61	Hungary	62	Barbados
61	Romania	59	Romania	58	Romania	58	Peru	61	Iceland	62	Iceland
64	Azerbaijan	64	Azerbaijan	64	Latvia	58	Romania	61	Tunisia	62	Tunisia
64	Brazil	64	Costa Rica	65	Costa Rica	65	Iceland	65	Azerbaijan	65	Azerbaijan
64	Costa Rica	66	Brazil	66	Azerbaijan	66	Colombia	66	Guatemala	65	Uruguay
64	Morocco	66	Colombia	66	Colombia	67	Azerbaijan	66	Indonesia	67	Guatemala
64	Panama	66	Morocco	66	Egypt	67	Egypt	66	Morocco	67	Morocco
69	Egypt	66	Panama	66	Morocco	67	Greece	66	Uruguay	69	Hungary
70	Colombia	66	Peru	66	Panama	67	Guatemala	70	Ireland	69	Ireland
70	Guatemala	71	Egypt	71	El Salvador	67	Morocco	71	Turkey	71	Turkey
72	Armenia	72	Armenia	72	Armenia	72	Turkey	72	El Salvador	72	El Salvador
72	Jordan	72	Guatemala	72	Guatemala	73	Armenia	72	Philippines	72	Philippines
72	Peru	72	Jordan	72	Indonesia	73	Indonesia	74	Armenia	74	Armenia

75	Fiji Islands	75	Fiji Islands	72	Jordan	73	Jordan	74	Jordan	74	Jordan
76	Vietnam	76	Indonesia	76	Turkey	76	El Salvador	74	Portugal	76	Portugal
77	Indonesia	76	Turkey	77	Philippines	77	Philippines	77	Bolivia	77	Bolivia
77	Turkey	78	Vietnam	77	Uruguay	77	Uruguay	78	Albania	78	Albania
79	Ukraine	79	Philippines	79	Vietnam	79	Bolivia	78	Dominican Republic	78	Dominican Republic
80	Albania	79	Ukraine	80	Albania	80	Albania	78	Lebanon	78	Lebanon
80	Belarus	81	Albania	80	Belarus	80	Belarus	78	Mongolia	78	Mongolia
80	Jamaica	81	Belarus	80	Mongolia	80	Dominican Republic	78	Papua New Guinea	78	Papua New Guinea
80	Mongolia	81	Jamaica	80	Papua New Guinea	80	Lebanon	78	Paraguay	78	Paraguay
80	Papua New Guinea	81	Mongolia	80	St. Vincent & the Grenadines	80	Mongolia	78	St. Vincent & the Grenadines	78	St. Vincent & the Grenadines
80	Philippines	81	Papua New Guinea	80	Suriname	80	Papua New Guinea	78	Suriname	78	Suriname
80	St. Vincent & the Grenadines	81	St. Vincent & the Grenadines	86	Fiji Islands	80	Paraguay	86	Egypt	86	Fiji Islands
80	Suriname	81	Suriname	87	Lebanon	80	St. Vincent & the Grenadines	86	Fiji Islands	86	Vietnam
80	Uruguay	81	Uruguay	88	Bolivia	80	Suriname	86	Vietnam	88	Cambodia
89	Pakistan	89	Bosnia and Herzegovina	88	Bosnia and Herzegovina	89	Fiji Islands	89	Cambodia	88	Egypt
90	Bosnia and Herzegovina	89	Cambodia	88	Cambodia	89	Vietnam	89	Honduras	88	Honduras
90	Cambodia	89	Dominican Republic	88	Dominican Republic	91	Bosnia and Herzegovina	89	Ukraine	88	Venezuela
90	Dominican Republic	89	Honduras	88	Honduras	91	Cambodia	89	Venezuela	92	Bosnia and Herzegovina
90	Honduras	89	Venezuela	88	Venezuela	91	Honduras	93	Bosnia and Herzegovina	92	Ukraine
90	Venezuela	94	Lebanon	94	Ukraine	91	Ukraine	94	Argentina	94	Argentina
95	Argentina	95	Argentina	95	Argentina	91	Venezuela	94	Belize	94	Belize
96	Bolivia	95	Bolivia	95	Belize	96	Argentina	94	Jamaica	94	Jamaica
97	Lebanon	95	Paraguay	95	Pakistan	96	Belize	94	Nicaragua	94	Nicaragua
98	Belize	98	Pakistan	95	Paraguay	96	Jamaica	94	Pakistan	94	Pakistan
98	Nicaragua	99	Belize	99	Nicaragua	96	Nicaragua	99	Belarus	99	Belarus
98	Paraguay	99	Nicaragua	100	Jamaica	96	Pakistan	100	Ecuador	100	Ecuador
101	Ecuador	101	Ecuador	101	Ecuador	101	Ecuador	101	Greece	101	Greece