Correlations Between Christian Population Changes and Changes in Sovereign Ratings in Countries for the Period Between 2000 to 2012

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Correlations have been computed for five- and ten-year intervals using linear regression analysis of changes in percentages of Christian populations in over 100 countries and changes in their corresponding sovereign ratings (Moody and Fitch). The base intervals for the Christian population were from 2000 to 2005 and 2000 to 2010. The intervals for the sovereign ratings were 2002 to 2007 (the onset of the present global economic crisis) and from 2002 to 2012. When using total Christian populations per country, statistically significant positive linear correlations were obtained in seven out of eight combinations of data source, rating agency and either five- or ten-year interval. Similar regression models were computed for three subsets of total Christians, namely protestants, evangelicals and Catholics. For these subsets significant correlations were obtained in fourteen of twenty cases, with high sensitivity occurring in the case of evangelicals. Finally, as a matter of additional interest, the same regression analysis was performed for Muslims, with results showing no significant correlations in seven of eight cases and negative correlation in the remaining single case.

Introduction

In recent decades western culture has been consistently moving in the direction which demands more and more personal independence from all forms of constraining authority and traditional societal norms. In the spiritual sphere such attitudes have exhibited themselves in the increasing secularization of society in which all reference to God or His relevance at both personal and national levels is being systematically and relentlessly expunged.

In the year 2007 there began the financial crisis which quickly reverberated throughout the entire world. Since then countless proposals for its solution have been advanced. Most such prescribed measures have been entirely technical in nature. However, due to the extraordinary scope and complexity of the issues involved, discovery of *the* cure-all solution has proven elusive.

The relationship between social behavior and the general economy has been the topic of much academic debate for many years, and a considerable body of research has been conducted in an attempt to shed light upon it [e.g., 1-12]. Various approaches and viewpoints are reflected within the literature on the subject. In some instances the economy is seen to exhibit a traceable causal dependence upon religious beliefs and practices [e.g.,12], while in others religion is found to be dependent on economics [9]. In the second view, reflected conspicuously in the writings of Marx, the assertion is that increasing economic prosperity leads more or less inevitably to a decrease in religious faith and practice.

Overall, we have found no consensus in the body of literature and have found considerable ambiguity in the results presented. De Jong in his review and assessment of more recent studies [7] finds a general lack of a

"theoretical framework" in much of the work. Among other recommendations, he suggests that additional research efforts in the area should employ specific hypotheses as their departure points. He furthermore recommends that additional work should be focused on individual religions or faiths rather than on the general category of "religion."

Traditional Judeo-Christian Biblical teaching, by way of contrast, consistently and unambiguously proclaims that one direct consequence in a society that consciously turns its back on God and His standards of conduct is a sure and certain downturn, if not collapse, in its temporal well-being.

In view of the foregoing, it was considered to be of intriguing interest to investigate the general hypothesis that a quantifiable effect exists between the *post-modern* tendency to ignore the relevance of God in society on the one hand and today's concurrent financial turbulence on the other. To do so we adopted a more specific hypothesis, namely that there exists a significant correlation between the change in percentages of Christians in a large sample of countries and the changes in their respective sovereign ratings. In the remainder of this paper we present the rationale for the approach taken and results obtained from the analysis carried out to test this hypothesis.

Methodology

A fundamental challenge in this effort was the selection of a measure of the influence of God at a practical level on the conduct of personal and national life within a given country. After consideration of a number of potential alternatives, the metric chosen was the percentage of Christian population on a per-country basis. Much previous work has made use of World Value Survey data [14, 9]. The variables used included answers to largely subjective questions on religious behavior such as attendance at religious meetings, the importance of God in your life, etc. Such variables cannot be used in the present study both because they lump religions and faiths other than Christianity together and because the data are not consistently available for all the years needed herein. In the end this choice was largely driven pragmatically by the availability of quantitative data sets on both total populations of individual countries and their corresponding constituent percentages of Christians. Furthermore, it was required that the data exist and were available for the ten-year period from 2000 through 2010. While our approach was based on the use of Christian population as an assumed metric of a nation's attitude toward God, we do not mean to imply a view that only Christians live according to high moral standards. What is assumed, however, is that Christians, or at least a substantial subset thereof, are more open to living by Biblical principles than are nonbelievers in God. Although in today's world there are notorious exceptions to this assumption, we elected to proceed with the analysis using our adopted metric so see where it led.

Two data sets are available which contain the required information for the time intervals of interest. These are from Operation World (OW) [13] and from the World Religion Database (WRD) [14]. Issues about the content and differences between the two data sets were discussed with representatives of each organization. The idea of simply using the country averages of the two sets was not recommended by either group. In the end it was

therefore decided to apply the statistical analyses that will be described below uniformly to both of the data sets independently.

Naturally differences are seen in each category on a country-by-country basis. According to the OW data, over the 2000-2010 period total Christian populations varied by country by as much as -14% to +7%, and the protestant population from -11% to +9%. See Table 1.

Table 1. Bounds of percentage changes in populations of various religious groups for individual countries over the five- and ten-year intervals from 2000 through 2010.

	Operation World		**World Religion Database**	
%	2000-2005	2000-2010	2000-2005	2000-2010
Total Christians	-5 to +4	-14 to +7	-3 to +3	-7 to +10
Protestants	-7 to +4	-11 to +9	-5 to +12	-11 to +22
Evangelicals	-1 to +2	-3 to+5		
Catholics	-7 to +4	-15 to +8	-8 to +11	-14 to +19
Muslims	-2 to +4	-5 to +13	-1 to +5	-2 to +12

For any country there exists a wide variety of indicators and factors that can be used in assessing national economic status, and there are many different organizations and agencies involved in such activity, conspicuously among which are the firms of Standard and Poor's, Moody, and Fitch. A great many factors of economic, political and other natures are used in the analyses that result in the national ratings, called *sovereign ratings,* assigned by each organization [15]. These ratings are extensively employed by and relied upon throughout the global financial system. Because of the comprehensive nature of such ratings, their widely accepted utility in grading the general economic status of the rated entities, and the availability of their historical data covering the interval from 2000 through 2012, they were adopted for use in this study as our metric of economic status or well-being of individual countries.

The required data were requested from each of the three organizations mentioned above. Standard and Poor's declined to provide theirs, but we were provided files containing their historical data by the other two and were directed to their respective websites for the more current information. From those sources, two comprehensive data sets were assembled for the years 2002, 2007 (the early onset of today's crisis), and 2012. The ratings are given in a descending sequence of values (e.g., *AAA stable* through *D stable* for Fitch). Moody's system comprises 21 major steps, while that of Fitch contains 22. In both cases each major step is further broken down into three sub-steps (positive, stable, and negative) which are intended to signal the outlook for potential change. When these sub-steps are integrated into the overall systems, Moody's scheme ends up with 61 individual steps and Fitch's with 64. In each case the alphanumeric descriptors can be transformed into a corresponding numeric code of either 61 or 64 equally spaced and assumed equally valued steps or points, as listed in Appendix 1. It is this

set of numerical values that was employed in the statistical analyses carried out in this study. What were specifically calculated were the correlations between the changes in the sovereign ratings of both Moody and Fitch (in terms of the number of steps within each respective system) with respect to the corresponding percentage changes in the Christian populations for over a hundred countries for which the required data are at hand.

The range of changes in the sovereign ratings of the countries that make up our database for both the five- and ten-year intervals of interest are summarized in Table 2. Our working hypothesis under test was that any significant change in the percentage of Christians within a given country over a selected period of years would in due time exercise an influence on the economic status of that country. The five- and ten-year intervals used in looking at the changes in Christian populations are from 2000 to 2005 and 2000 to 2010, respectively. However, in order to allow an elapsed time for the effects, if any, of these changes to be reflected in the sovereign ratings, we adopted a two-year delay period in the overlap of the five- and ten-year intervals used for the sovereign rating data as is indicated in Table 2. It is further assumed that any causal relationship between the two variables is linear.

Table 2. Range of changes, **in steps**, of Moody and Fitch sovereign ratings for the countries employed in this study for the 5- and 10-years intervals of interest.

	2007-2012	2002-2012
Moody	-49 to +10	-48 to +10
Fitch	-37 to +8	-37 to +19

Having thus developed the required sets of data, linear regression models were then computed with the percentage change in Christian population as the independent variable and the change in steps in the sovereign ratings of the corresponding countries as the dependent variable. Since there are two sets of input data for Christian population (OW and WRD), two different rating systems (Moody and Fitch) and two time intervals (5 and 10 years) there results a matrix of eight computations that were performed using the standard statistical analysis software package SPSS [16].

Intervals of five and ten years were chosen in order to minimize the effects of short term perturbations of the economic conditions in any particular country. We would like to have been able to examine longer time intervals, but the necessary data are not as yet available. Furthermore, in order to suppress the effects of any existing control variables associated with individual countries, the *differences* in national percentages of Christian populations and in their assigned sovereign ratings over the intervals of interest were used rather than the absolute values of those variables.

In order to make our results applicable at the worldwide level, it was necessary to employ a weighting factor to ensure that the influence of each country represented in the specific model is properly proportional with respect to total population of all countries included in each particular calculation. To that end we apply the weighting factor (1)

$$\frac{(Pop_n * N)}{TotalPopulationofN}$$

Where n = the individual country identifier, and
N = the total number of countries included in the calculation

(The population data employed in constructing the weighting factors were taken from the OW database.) Using this method, the sum of the total number of countries represented in each model is equal to the sum of the weighting factors of each of those included countries[5]. For example, consider the case from the results presented in Table 3 below corresponding to the Moody rating, 10-year interval, OW data set. The weighting factor (1) applied to each country included in that calculation becomes

$$W_n = \frac{Pop_n * 95}{5{,}326{,}000{,}000}$$

wherein the divisor represents the sum of the populations of all ninety-five countries included in that particular calculation.

The set of countries used in the matrix of computations performed in this study are given in Appendix 2. In certain cases the necessary data for individual countries are missing. Thus, depending on the combination of specific rating agency and period of interest being addressed, the number of countries involved varies. Only 77 countries were included in the case of the ten-year interval for the Moody ratings, for example, while the available data permitted the use of 105 countries in the Moody five-year case. The results for the set of the eight initially computed models are summarized in Table 3 below.

The first step in interpreting the correlations exhibited in the results from each calculation is to look at the value of the descriptor P, which is, in effect, a measure of the reliability of the hypothesis represented by the model. The bound in sociological studies generally accepted as indicating significant correlation is that $P \leq 0.05$. If that condition is met, the hypothesis represented by the model is considered to be valid with a reliability of ≥95%. Any calculation characterized by $P > 0.05$ is discarded as exhibiting no significant correlation.

The second step in evaluating the results is to look at the coefficient of determination R^2, which provides a measure of the degree to which the x variable (in our case the percentage change in Christian population) accounts for the predicted value of the y variable (in our case, the change in rating). Worded differently, R^2 provides a measure of how well future outcomes are likely to be predicted by the computed regression model.

Finally, the slope of the regression line is important. A positive slope (y increases with increasing x) means in our context that a positive increase in the change of Christian population produces an increase in the change of ratings in the positive direction. The steepness of the slope indicates the sensitivity of the y value to that in the x value.

Results and Discussion

Shown in Figure 1 is an example graph of the data points and the linear regression line as computed from the OW data for the Moody ten-year interval combination. The figure contains 77 individual weighted data points (some of which fall atop each other). The analytic expression for the computed line is given in the lower right corner of the figure. In that equation, the value of the y variable where it crosses the x=0 point is +4.85, and the slope of the line, which is a measure of the sensitivity of the ratings to the change in percentage of Christians, is 1.56.

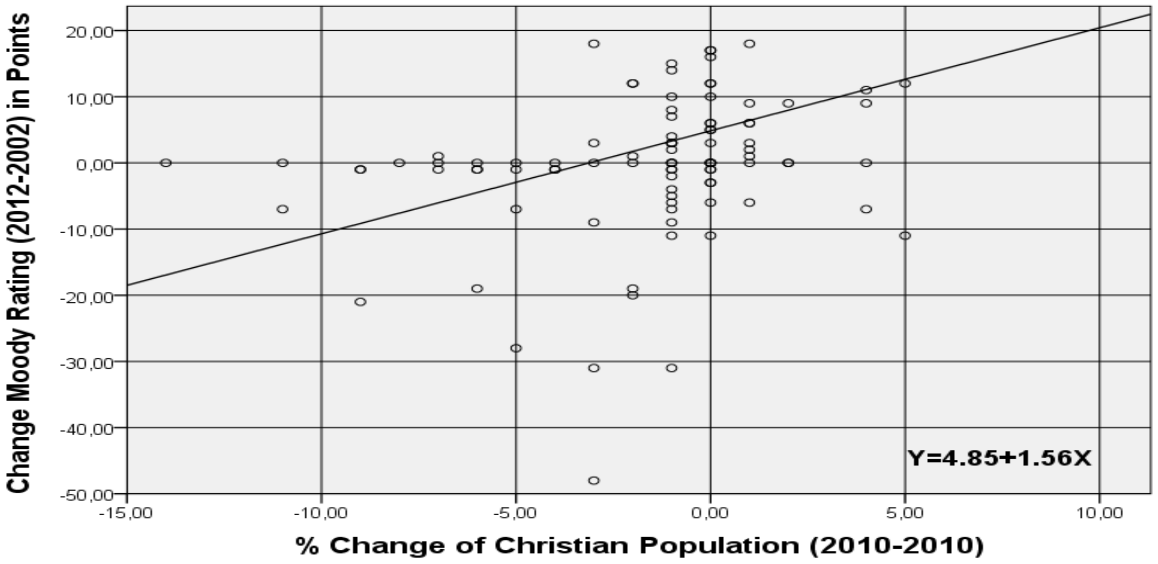

Figure 1. Change in Moody ratings as a function of weighted percentage changes in total Christian populations for the 2000 through 2010 interval obtained using the Operation World data set

Table 3 contains the parameters that describe the eight individual modeled cases and their results based on changes in total Christian populations. Computed entries are only given for those cases in which significant correlations were found (i.e., $P \leq 0.05$). All the cases presented were obtained using the data for the percentages of all Christians in each country weighted according to equation 1 in the previous section. Note that significant correlations were observed in seven of the eight modeled cases.

Table 3. Model results obtained for the set of combinations of data sources (OW and WRD), rating agencies (Moody, Fitch) and time intervals (5, 10 years) based on weighted percentage changes in **total Christian population** of included countries

Data Source	Rating Agency	Interval	N	P	R^2	Linear Regression Line *y = a + bx*
WRD	Fitch	5-year	101	0.679		
	Fitch	10-year	77	0.018	0.07	3.97 + 0.82x
	Moody	5-year	105	0.033	0.04	0.22 + 1.56x
	Moody	10-year	95	0.001	0.012	4.24 +1.26x
OW	Fitch	5-year	101	0.018	0.06	-0.51 +0.84x
	Fitch	10-year	77	0.000	0.022	4.29 + 1.09x
	Moody	5-year	105	0.000	0.015	0.72 + 1.88x
	Moody	10-year	95	0.000	0.31	4.85 + 1.56x

By way of interpretation, we note that as indicated in Table 1 the largest estimated percentage decrease in Christian population occurred in the OW data for the ten-year period from 2000 to 2010 and was listed as -14%. Evaluating the regression line equation for the corresponding case, given in the last row of Table 4, we have y(steps) = 4.85 + 1.56(-0.14) = -17 Moody steps. Referring to Appendix 1, it can be seen that the predicted seventeen steps might correspond, for example, to a change from the highest possible rating of *Aaa stable* down to *Baa3 stable,* or alternatively 17 steps downward from any other starting point. The steepest slope of the computed regression lines, 1.88, was found in the case of the OW, Moody, five-year combination.

As a matter of interest, similar regression calculations were also performed for three subsets of total Christian population for which the necessary data were available, namely protestants, evangelicals, and Catholics. Those results are presented in Tables 4 through 6 below. The parameters of the regression lines are not shown in the tables in those cases for which no significant correlations were found.

Table 4. Model results obtained for combinations of data sources (OW and WRD), rating agencies (Moody, Fitch) and time intervals (5, 10 years) based on weighted percentage changes of **protestant Christian population** in the countries included

Data Source	Rating Agency	Interval	N	P	R^2	Linear Regression Line *y = a + bx*
WRD	Fitch	5-year	100	0.009	0.07	-0.75 + 2.23x
	Fitch	10-year	76	0.000	0.19	4.40 + 2.98x
	Moody	5-year	105	0.018	0.05	0.29 + 2.85x
	Moody	10-year	95	0.001	0.11	4.79 + 2.67x
OW	Fitch	5-year	101	0.330		
	Fitch	10-year	76	0.001	0.13	4.67 + 1.57x
	Moody	5-year	105	0.383		
	Moody	10-year	94	0.007	0.08	5.02 + 1.42x

Table 5. Model results obtained for combinations of OW data source, rating agencies (Moody, Fitch) and time intervals (5, 10 years) based on weighted percentage changes of **evangelical Christians**

Data Source	Rating Agency	Interval	N	P	R^2	Linear Regression Line *y = a + bx*
OW	Fitch	5-year	101	0.004	0.08	-2.07 + 3.05x
	Fitch	10-year	77	0.000	0.15	1.16 + 3.73x
	Moody	5-year	104	0.000	0.23	-2.83 + 6.92x
	Moody	10-year	95	0.001	0.12	1.81 + 3.48x

The WRD provides no data for the separate category of evangelical Christians, and thus, the only entries in Table 5 are those associated with the OW data set. Note the relatively steep slopes of the regression lines in all four cases in this table. In particular, the slope of +6.92 shown in the third row corresponds to the highest sensitivity obtained in any of our calculated estimates. The graph corresponding to this case is shown in Figure 2 below for direct comparison with Figure 1. Evaluating the regression line equation in the third row of Table 6 for the maximum negative change in evangelical population (-3%) given in Table 1, it is seen to correspond to a total change of -2.83+6.92(-3) = -24 points in the Moody rating schedule.

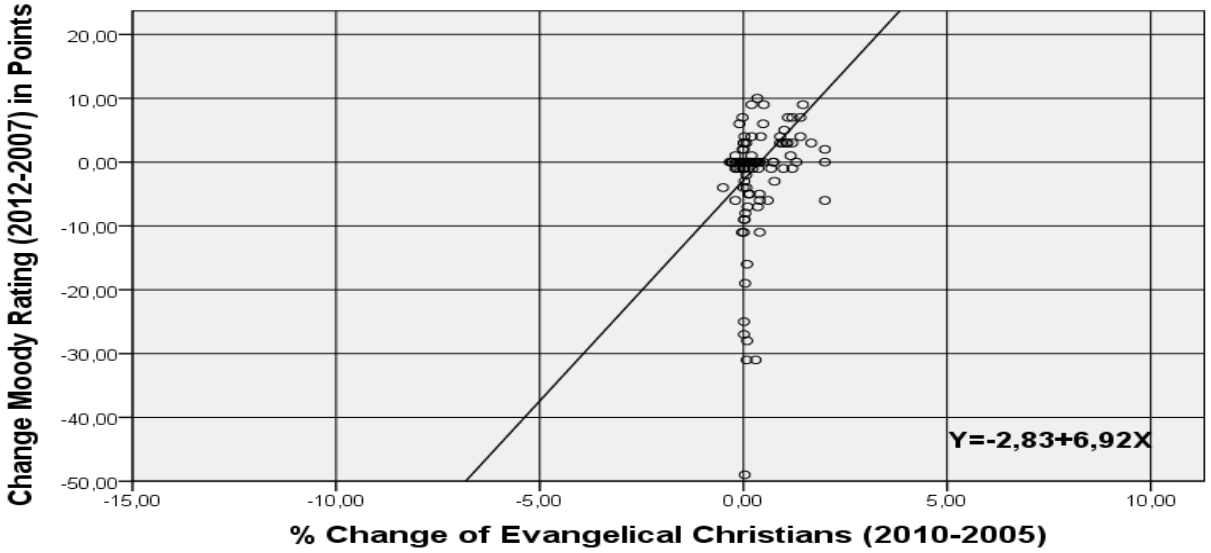

Figure 2. Change in Moody ratings as a function of percentage changes of weighted evangelical Christian populations for the 2005 through 2010 interval obtained using the Operation World data set

Table 6. Model results obtained for combinations of data sources (OW and WRD), rating agencies (Moody, Fitch) and time intervals (5, 10 years) based on weighted percentage changes of **Catholics**

Data Source	Rating Agency	Interval	N	P	R^2	Linear Regression Line *y = a + bx*
WRD	Fitch	5-year	101	0.036	0.04	-0.64 + 1.33x
	Fitch	10-year	77	0.519		
	Moody	5-year	105	0.025	0.05	0.41 + 1.98x
	Moody	10-year	95	0.295		
OW	Fitch	5-year	99	0.110		
	Fitch	10-year	75	0.112		
	Moody	5-year	104	0.004	0.08	0.30 + 1.25x
	Moody	10-year	95	0.003	0.09	5.22 + 0.90x

Only four of the eight combinations in the computed results for Catholics produced any significantly correlated results. Weighting as described in the previous section were applied to the input populations in all cases.

Finally, in order to examine the situation for at least one non-Christian religion, we also computed the correlations for the same eight combinations of factors as were used in the previously discussed Christian models.

Because of the considerable importance of Islam in world affairs over the time interval of interest, that was the particular non-Christian religion that we analyzed, with results as shown in Table 7.

Table 7. Model results obtained for combinations of data sources (OW and WRD), rating agencies (Moody, Fitch) and time intervals (5, 10 years) based on weighted percentage changes of **Muslims**

Data Source	Rating Agency	Interval	N	P	R^2	Linear Regression Line *y = a + bx*
WRD	Fitch	5-year	100	0.392		
	Fitch	10-year	76	0.497		
	Moody	5-year	104	0.068		
	Moody	10-year	94	0.875		
OW	Fitch	5-year	95	0.256		
	Fitch	10-year	72	0.055		
	Moody	5-year	100	0.092		
	Moody	10-year	89	0.019	0.06	6.14 – 2.93x

The results in the table show that only one of the eight combinations yielded significant correlation and that, interestingly, the slope is negative in the one case in which significant correlation was found.

A number of individual country examples taken from the input data combination of OW and the Fitch ratings are given in Table 8.

Table 8. Selected examples of input data combinations for specific countries using OW data for the Christian population and Fitch ratings for the associated five- and ten-year intervals

Country	Interval (Years)	Christians (% Change)	Fitch Rating Change (No. Steps)
Belgium	5	-3	-4
China	10	+2	+6
Iceland	10	-5	-17
Italy	10	-6	-13
The Netherlands	5	-2	0
Spain	10	-9	-22
United kingdom	5	-4	-1
Germany	5	-3	0
United States of America	5	-2	-1

Conclusions

Consistent with suggestions tendered by de Jong [7], we have analyzed the relationship between the percentage change in the population of the single religious group, Christians, and the change in sovereign ratings awarded by the Moody and Fitch agencies. Based on the results presented herein, the specific hypothesis that changes in the percentage of Christians within a society exert a measurable correlated influence of the economic well-being of that society (as measured by changes in sovereign ratings from two independent organizations) appears to have been generally validated to within the limits of the assumptions adopted and the level of detail of the available data. When considering total populations of all Christians per country, significant correlations were obtained in seven out of the eight combinations of data sources, rating agencies and time intervals that were analyzed. In every case the results demonstrated a positive relationship between changes in Christian populations and changes in sovereign rating; that is, increases in Christian populations were reflected in increases in the quality of the corresponding rating. While it is well recognized that the broadness of the category of the independent variable "Christian" probably masks the contributions of other multivariate factors, we regard the nature of the results to be not without merit as a first-order demonstration that a society's rejection of the relevance of God and godly principles in the conduct of personal and national life carries with it commensurate negative consequences. As a matter of further interest, similar analyses were conducted for the Christian subsets of protestants, evangelicals and Catholics. For the twenty combinations analyzed under those categories for which data are available, similar positive statistically significant results were obtained in fourteen cases. The highest degree of sensitivity of the sovereign ratings to changes in population in any of our analyses was observed in relation to evangelicals. Finally, a similar analysis was performed for Muslims, which yielded significant correlation in only one of eight cases, and in that single instance the correlation was negative.

It is our hope that this approach can be expanded and refined in future years. In particular, we suggest an extension of this approach, perhaps based on other suitable hypotheses, for longer time frames and intervals, and with the incorporation of suitable multivariate analysis as possible when requisite supporting data are available. Further, it is recommended that such analyses be extended to other individual religious groups.

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Appendix 1: Fitch and Moody Rating System Value Steps

Moody			Fitch		
Aaa	Stable	61	AAA	stable	64
	Neg	60	AAA	neg	63
Aa1	Pos	59	AA+	pos	62
	Stable	58	AA+	stable	61
	Neg	57	AA+	neg	60
Aa2	pos	56	AA	pos	59
	Stable	55	AA	stable	58
	Neg	54	AA	neg	57
Aa3	pos	53	AA-	pos	56
	Stable	52	AA-	stable	55
	Neg	51	AA-	neg	54
A1	pos	50	A+	pos	53
	Stable	49	A+	stable	52
	Neg	48	A+	neg	51
A2	pos	47	A	pos	50
	Stable	46	A	stable	49
	Neg	45	A	neg	48
A3	pos	44	A-	pos	47
	Stable	43	A-	stable	46
	Neg	42	A-	neg	45
Baa1	pos	41	BBB+	pos	44
	Stable	40	BBB+	stable	43
	Neg	39	BBB+	neg	42
Baa2	pos	38	BBB	pos	41
	Stable	37	BBB	stable	40
	Neg	36	BBB	neg	39
Baa3	pos	35	BBB-	pos	38
	Stable	34	BBB-	stable	37
	Neg	33	BBB-	neg	36
Ba1	pos	32	BB+	pos	35
	Stable	31	BB+	stable	34
	Neg	30	BB+	neg	33
Ba2	pos	29	BB	pos	32
	Stable	28	BB	stable	31
	Neg	27	BB	neg	30
Ba3	pos	26	BB-	pos	29
	Stable	25	BB-	stable	28
	Neg	24	BB-	neg	27
B1	pos	23	B+	pos	26
	Stable	22	B+	stable	25
	Neg	21	B+	neg	24
B2	pos	20	B	pos	23
	Stable	19	B	stable	22
	Neg	18	B	neg	21
B3	pos	17	B-	pos	20
	Stable	16	B-	stable	19
	Neg	15	B-	neg	18
Caa1	pos	14	CCC+	pos	17
	Stable	13	CCC+	stable	16
	Neg	12	CCC+	neg	15
Caa2	pos	11	CCC	pos	14
	Stable	10	CCC	stable	13
	Neg	9	CCC	neg	12
Caa3	pos	8	CCC-	pos	11
	Stable	7	CCC-	stable	10
	Neg	6	CCC-	neg	9
Ca	pos	5	CC	pos	8
	Stable	4	CC	stable	7
	Neg	3	CC	neg	6
C	pos	2	C	pos	5
	Stable	1	C	stable	4
			C	neg	3
			D	pos	2
			D	stable	1

Appendix 2: Country Set Included in Present Analyses

Country	Fitch 5	Fitch 10	Moody 5	Moody 10
Albania	.	.	X	.
Argentina	.	.	X	X
Armenia	X	.	X	.
Aruba	X	X	.	.
Australia	X	X	X	X
Austria	X	X	X	X
Azerbaijan	X	X	X	.
Bahamas, The	.	.	X	X
Bahrain	X	X	X	X
Barbados	.	.	X	X
Belarus	.	.	X	.
Belgium	X	X	X	X
Belize	.	.	X	X
Bermuda	X	X	X	X
Bolivia	X	.	X	X
Bosnia	.	.	X	.
Botswana	.	.	X	X
Brazil	X	X	X	X
Bulgaria	X	X	X	X
Cambodia	.	.	X	.
Cameroon	X	.	.	.
Canada	X	X	X	X
Cayman Islands	.	.	X	X
Chile	X	X	X	X
China	X	X	X	X
China, Hong Kong	X	X	X	X
Colombia	X	X	X	X
Costa Rica	X	X	X	X
Croatia	X	X	X	X
Cuba	.	.	X	X
Cyprus	X	X	X	X
Czech Republic	X	X	X	X
Denmark	X	X	X	X
Dominican Republic	X	.	X	X
Ecuador	X	X	X	X
Egypt	X	X	X	X
El Salvador	X	X	X	X
Estonia	X	X	X	X
Fiji	.	.	X	X
Finland	X	X	X	X
France	X	X	X	X
Gabon	X	.	.	.
Gambia, The	X	X	.	.
Georgia	X	.	.	.
Germany	X	X	X	X
Ghana	X	.	.	.
Greece	X	X	X	X
Guatemala	X	.	X	X

Country	Fitch 5	Fitch 10	Moody 5	Moody 10
Honduras	.	.	X	X
Hungary	X	X	X	X
Iceland	X	X	X	X
India	X	X	X	X
Indonesia	X	X	X	X
Ireland	X	X	X	X
Israel	X	X	X	X
Italy	X	X	X	X
Jamaica	X	.	X	X
Japan	X	X	X	X
Jordan	.	.	X	X
Kazakhstan	X	X	X	X
Kenya	X	.	.	.
Korea, North	X	X	X	X
Kuwait	X	X	X	X
Latvia	X	X	X	X
Lebanon	X	X	X	X
Lesotho	X	X	.	.
Lithuania	X	X	X	X
Luxembourg	X	X	X	X
Macedonia	X	.	.	.
Malawi	X	.	.	.
Malaysia	X	X	X	X
Mali	X	.	.	.
Malta	X	X	X	X
Mauritius	.	.	X	X
Mexico	X	X	X	X
Moldova	X	X	X	X
Mongolia	X	.	X	.
Montenegro	.	.	X	.
Morocco	X	.	X	X
Mozambique	X	.	.	.
Namibia	X	.	.	.
Netherlands	X	X	X	X
New Zealand	X	X	X	X
Nicaragua	.	.	X	X
Nigeria	X	.	.	.
Norway	X	X	X	X
Oman	.	.	X	X
Pakistan	.	.	X	X
Panama	X	X	X	X
Papua New Guinea	X	X	X	X
Paraguay	.	.	X	X
Peru	X	X	X	X
Philippines	X	X	X	X
Poland	X	X	X	X
Portugal	X	X	X	X
Qatar	.	.	X	X

Romania	X	X	X	X
Russia	X	X	X	X
Rwanda	X	.	.	.
San Marino	X	X	.	.
Saudi Arabia	X	.	X	X
Serbia	X	.	.	.
Singapore	X	X	X	X
Slovakia	X	X	X	X
Slovenia	X	X	X	X
South Africa	X	X	X	X
Spain	X	X	X	X
Sri Lanka	X	.	X	X
Suriname	X	.	X	.
Sweden	X	X	X	X
Switzerland	X	X	X	X
Thailand	X	X	X	X
Trinidad; Tobago	.	.	X	X
Tunisia	X	X	X	X
Turkey	X	X	X	X
Turkmenistan	X	X	.	.
Uganda	X	.	.	.
Ukraine	X	X	X	X
United Arab Em	.	.	X	X
United Kingdom	X	X	X	X
United States of Am	X	X	X	X
Uruguay	X	X	X	X
Venezuela	X	X	X	X
Vietnam	X	X	X	.
Total	101	77	105	95