Journal of Applied Finance & Banking, vol.2, no.5, 2012, 43-61
ISSN: 1792-6580 (print version), 1792-6599 (online)
Scienpress Ltd, 2012

Are Sovereign Credit Ratings Objective?
A Tale of Two Agencies

Liping Zheng[1]

Abstract

The sovereign credit ratings provided by credit rating agencies have great impact on a country's access to credit markets. To gain access to international credit markets, a country usually seeks ratings from the three biggest international credit rating agencies: Standard & Poor's, Moody's, and Fitch. However, the reliability of credit ratings by these international credit agencies has been under debate and has attracted more attention since the global financial crisis. Studies have demonstrated the differences among the ratings by these biggest rating agencies, but little research has been undertaken on the ratings by other agencies. A Chinese credit rating agency, Dagong, attracted a lot of attention after it first published U.S. ratings below AAA in August 2011, three days before Standard & Poor's downgraded U.S. debt from AAA to AA+. The present paper fills the gap in the literature by examining the differences between the sovereign credit ratings by Standard & Poor's and Dagong. The paper also checks the reliability of these ratings by a regression analysis of the ratings and commonly used sovereign risk indicators. The results indicate that the two rating agencies shared several common indicators in their rating methodologies, but subjective judgments also played a role in the ratings assigned by these two agencies.

JEL classification numbers: G18, G24
Keywords: sovereign credit rating, credit rating agencies, credit risk indicators

---

[1] College of Business and Public Administration, Drake University, 2507 University Avenue, Des Moines, Iowa, 50311, USA, e-mail: liping.zheng@drake.edu

Article Info: *Received* : June 6, 2012. *Revised* : July 29, 2012
Published online : October 15, 2012

1 Introduction

Every economist knows that credit rating agencies provide measures of default risk, the risk that a debtor has no ability or willingness to repay its debts in full and on time. Every economist appears to focus on the ratings provided by the three major international rating agencies: Moody's Investor Services, Standard & Poor's (hereinafter "S&P"), and Fitch. Like other entities, a government may not be able or willing to repay its debts. Sovereign credit ratings assigned by rating agencies provide investors a measure of how likely a government may default on its debts. A country with good sovereign credit rating can improve its access to the credit markets and reduce its cost of borrowing (Cantor and Packer, 2006). The sovereign credit rating of a country also has a significant and robust effect on its private ratings, which usually do not exceed the sovereign rating (Cowan and et al., 2007). In addition to the direct impact on the bond market, a country's sovereign credit rating has a significant effect on stock market returns (Kaminsky and Schmukler, 2002; Ferreira and Gama, 2007). For an emerging economy, its sovereign credit rating not only has direct impact on the bond and stock markets (Kaminsky and Schmukler, 2002; Pukthuanthong-Le and et al., 2007; Li and et al., 2008), but also affects its domestic financial sector development, international cash inflow, and financial stability (Kraussl, 2005; Kim and Wu, 2008, 2011).

Given the great importance of sovereign credit ratings, it is crucial to understand how a credit rating agency assigns ratings and whether they are objective. The major credit rating agencies such as Moody's and S&P, have come under increased scrutiny since the most recent financial crisis. The failure to recognize the threats to the financial system prior to the crisis has led to much criticism. A Chinese credit rating agency, Dagong Global Credit Rating Co., Ltd. (hereinafter "Dagong"), caught the world's attention on August 2, 2011. It cut the credit rating of the United States from A+ to A with a negative outlook after the U.S. federal government announced that the country's debt limit would be increased. Three days later, on August 5, S&P downgraded U.S. debts from AAA to AA+. Chinese Dagong became the first credit rating agency to assign a published rating of the U.S. below AAA.

The downgrading of U.S. debts by Dagong and S&P has led me to ask the following questions: What determines sovereign credit ratings by these two rating agencies? Are the sovereign credit ratings objective? Do the sovereign credit ratings assigned by Dagong and S&P differ? These are the questions that this paper aims to answer.

A credit rating agency uses both quantitative and qualitative indictors to decide what ratings to give to different countries. It appears that credit rating agencies are concerned most with a country's financial ability to service its debts. Researchers have examined the impacts of a variety of economic variables on sovereign credit ratings. Cantor and Packer (1996) conduct the first systematic analysis of the determinants of the sovereign credit ratings assigned by the two leading agencies: S&P and Moody's. They show that six factors appear to play an

important role in determining a country's credit rating: GDP per capita, GDP growth rate, inflation, external debt, level of economic development, and default history. Afonso (2003) again analyzes the ratings assigned by S&P and Moody's and confirms the same set of variables that appear to be the most relevant to the sovereign credit ratings. Other studies[2] also show the high explanatory power of macroeconomic variables.

Besides quantitative economic indicators, qualitative variables, such as political risk, may also play a role in the sovereign credit ratings. Block and Vaaler (2004) examine the proposition that political business cycle theory is relevant to private foreign lenders to developing countries. They find that credit rating agencies and bondholders view elections negatively. Credit rating agencies downgrade developing country ratings more often in election years and do so by approximately one rating level. Mellios and Paget-Blanc (2006) use corruption, measured by Transparency International's Corruption Perceptions Index, as a proxy for both economic development and the quality of the governance of a country. They highlight the importance of corruption on a country's credit rating. Archer et al. (2007), however, find that political factors have little effect on the ratings. Credit rating agencies appear most concerned with a country's economic ability to repay its debts.

All these studies use the ratings assigned by the three big international rating agencies - Moody's, S&P, and Fitch. To my best knowledge, this is the first study to examine the ratings assigned by a Chinese rating agency. As China is the largest foreign holder of U.S. debts, it is of great interest to understand how a Chinese credit rating agency measures default risk of the U.S. and other countries.

My analysis of sovereign credit ratings assigned by S&P and Dagong takes two steps. The first step is to examine whether the ratings assigned by Dagong and S&P differ. The second step is to investigate the relationship between sovereign credit ratings and the various economic indicators. I examine both domestic currency ratings and foreign currency ratings, which differentiates this study from others that only examine the foreign currency ratings. I show that Dagong and S&P appear to use similar economic indicators to decide sovereign ratings. But it seems that the agencies have different subjective weights attached to these indicators, which leads to the differences in their ratings.

The remainder of the paper is organized as follows. Section 2 discusses Dagong and S&P rating scales and some common sovereign rating indicators. In section 3, I use regression analysis to compare sovereign ratings assigned by the two agencies. Section 4 offers concluding remarks.

---

[2] See, for example, Tellez and Marin (2005), Mellios and Paget-Blanc (2006), Iyengar (2010), Afonso and et al. (2011) and Gartner and et al. (2011).

2 Rating Agencies and Their Sovereign Ratings

2.1 Rating Scales

S&P is a well-known credit rating agency, while Dagong is relatively new in the game. Dagong was founded in 1994 to rate Chinese companies. It started publishing sovereign credit ratings of fifty countries in July 2010. As of September 2, 2011, Dagong rated sixty-seven countries.

A credit rating agency, like S&P or Dagong, uses notations to give ratings to different countries. These notations indicate the likelihood of the countries to default on their debts. Table 1 shows the rating symbols by S&P and Dagong and the interpretation of the riskiness of the countries. From the table, it is clear that the two rating agencies use the same notations for their ratings, except that Dagong does not have C+ and C- in its ratings.

2.2 Rating Indicators

As I discussed earlier, a credit rating agency uses both quantifiable and qualitative indicators to decide ratings to different countries. It appears that a rating agency is most concerned with a country's economic ability to repay its debts. In this paper I focus on the effects of quantifiable indicators on sovereign credit ratings assigned by both agencies.

The quantifiable indicators include a list of variables that measure economic and financial performance of the countries. When a credit rating agency uses these indicators to assign ratings to different countries, it puts weights to each of the quantifiable measures, but it doesn't release the weights assigned. The credit rating agency, however, does provide a list of indicators that it considers for its ratings. Cantor and Packer (1996), followed by Afonso (2003) and Iyengar (2010), identify some of the commonly used economic indicators by S&P and Moody's. I explain below the relationship between each of these variables and a country's ability and willingness to service its debts:

- *GDP per capita (in US$):* Government revenue comes from taxation. GDP per capita provides a measure of the potential tax base of a country. The higher GDP per capita, the greater the ability of a government to increase its revenue to repay its debts.
- *Real GDP Growth:* A country with a relatively high real GDP growth will increase its ability to service its debts over time.
- *Inflation (Consumer Price Index):* High inflation leads to distortions in the economy and may lead to political instability. High inflation also indicates that a government has no ability or willingness to finance its budgetary expenses through increase in taxes or debt insurance. The only choice the government has is to finance its expenses through inflationary money finance. This will reduce the ability of the country to service its debts.

Table 1: Rating Symbols by Standard and Poor's and Dagong

Standard and Poor's Ratings	Dagong's Ratings	Interpretation
Investment Grade Ratings		
AAA	AAA	Highest quality
AA+	AA+	High quality
AA	AA	
AA-	AA-	
A+	A+	Strong payment capacity
A	A	
A-	A-	
BBB+	BBB+	Adequate payment capacity
BBB	BBB	
BBB-	BBB-	
Speculative Grade Ratings		
BB+	BB+	Likely to fulfill obligations, ongoing uncertainty
BB	BB	
BB-	BB-	
B+	B+	High-risk obligations
B	B	
B-	B-	
CCC+	CCC+	Not likely to fulfill obligations
CCC	CCC	
CCC-	CCC-	
CC+	CC+	Vulnerable to Non-Payment
CC	CC	
CC-	CC-	
C+	C	Highly vulnerable to Non-Payment
C		
C-		
D	D	Default

Source: www.dagongcredit.com and www.standardandpoors.com

- *Fiscal Balance:* A country with a large fiscal deficit indicates that the government is not willing or able to cover its current expenses or service its debt though taxes.
- *External Balance:* External balance is measured as current account deficit. Persistent current account deficits make it harder for a country to service its debts.
- *External Debt:* A country with higher external debts has higher default risk.
- *Economic Development:* Economic development could be measured by GDP per capita. It could also be measured by a country's level of development. International Monetary Fund (IMF) classifies countries into developed countries and developing countries. It appears that credit rating agencies also consider this effect: a developed country is less likely to default on its debts.
- *Default History:* A country with a history of default has a higher likelihood to default again.

To summarize, GDP per capita, real GDP growth, fiscal balance, and economic growth have a positive impact on a country's sovereign rating, while inflation, external balance, external debt, and default history have a negative impact on its rating.

3 Comparison of Sovereign Ratings: S&P and Dagong

Dagong started issuing sovereign credit ratings on fifty countries on July 11, 2010. By September 2, 2011, it had increased the number of issued sovereign credit ratings to sixty-seven. At the same time period, S&P issued sovereign credit ratings for 118 countries. Sixty-three countries were rated by both agencies. Considering that both agencies use similar economic indicators to assign credit ratings, one would expect that commonly rated countries should receive similar ratings. The comparison of the ratings assigned by both rating agencies, however, tells a different story.

Table 2 and Table 3 show the differences in the sovereign credit ratings for selected countries by Dagong and S&P for their local and foreign currency debts in September 2011. The absolute average level of rating difference was 1.88 for local currency debt and 1.93 for foreign currency debt. In both cases it was about two levels of difference. Take Venezuela for example; Dagong assigned BB+ to its local currency debts, while S&P assigned BB-. It appears that Dagong is more likely to assign a higher rating for those "non-Western" countries than S&P is. This implies that Dagong may use more qualitative measures to assign ratings for those countries. The difference could also come from different weights assigned to those rating indicators used by Dagong and S&P. It is therefore important to investigate if these differences are significant and whether the differences are due to weight variations or qualitative biases by the agencies.

Table 2: Sovereign Credit Ratings Assigned by Dagong' and Standard and Poor's for Selected Countries Having Differences in Level of Local Currency Ratings in 2011

Obs.	Country	Dagong's Ratings	S&P's Ratings	Level Diff. in Ratings
1	Austria	AA+	AAA	1
2	Belgium	A+	AA+	3
3	Brazil	A-	BBB+	1
4	Canada	AA+	AAA	1
5	Chile	A+	AA	2
6	China	AA+	AA-	2
7	Ecuador	CCC	B-	2
8	Estonia	A	AA-	2
9	France	AA-	AAA	3
10	Germany	AA+	AAA	1
11	Greece	BB	CC	9
12	Hungary	BBB	BBB-	1
13	Iceland	BB	BBB-	2
14	India	BBB	BBB-	1
15	Indonesia	BBB-	BB+	1
16	Ireland	BBB	BBB+	1
17	Israel	A-	AA-	3
18	Italy	A-	A+	2
19	Kazakhstan	BBB	BBB+	1
20	Kenya	B	B+	1
21	Latvia	BB	BB+	1
22	Malaysia	A+	A	1
23	Mexico	BBB	A-	2
24	Mongolia	B+	BB-	1
25	Morocco	BBB+	BBB	1
26	Netherlands	AA+	AAA	1
27	Nigeria	BB+	B+	3
28	Philippines	B+	BB+	3
29	Portugal	BBB+	BBB-	2
30	Romania	BB+	BBB-	1
31	Russia	A	BBB+	2
32	Saudi Arabia	AA	AA-	1
33	South Korea	AA-	A+	1
34	Spain	A	AA	3
35	Sri Lanka	B+	BB-	1

Table 2: (Cont.)

Obs.	Country	Dagong's Ratings	S&P's Ratings	Level Diff. in Ratings
36	Thailand	BBB	A-	2
37	Tunisia	BBB+	BBB	1
38	Turkey	BB	BB+	1
39	Ukraine	B	BB-	2
40	U.K.	A+	AAA	4
41	U.S.	A	AA+	4
42	Venezuela	BB+	BB-	2
43	Vietnam	B+	BB-	1
Average Rating Level Difference				1.88

Source: www.dagongcredit.com and www.standardandpoors.com

Table 3: Sovereign Credit Ratings Assigned by Dagong' and Standard and Poor's for Selected Countries Having Differences in Level of Foreign Currency Ratings in 2011

Obs.	Country	Dagong's Ratings	S&P's Ratings	Level Diff. in Ratings
1	Australia	AA+	AAA	1
2	Austria	AA+	AAA	1
3	Belgium	A+	AA+	3
4	Brazil	A-	BBB-	3
5	Canada	AA+	AAA	1
6	China	AAA	AA-	3
7	Ecuador	CCC	B-	2
8	Egypt	BBB-	BB	2
9	Estonia	A	AA-	2
10	France	AA-	AAA	3
11	Germany	AA+	AAA	1
12	Greece	BB	CC	9
13	Iceland	BB-	BBB-	3
14	India	BBB	BBB-	1
15	Indonesia	BBB-	BB+	1
16	Ireland	BBB	BBB+	1

Table 3: (Cont.)

Obs.	Country	Dagong's Ratings	S&P's Ratings	Level Diff. in Ratings
17	Israel	A-	A	1
18	Italy	A-	A+	2
19	Japan	AA	AA-	1
20	Kazakhstan	BBB-	BBB	1
21	Kenya	B	B+	1
22	Latvia	BB	BB+	1
23	Lithuania	BBB-	BBB	1
24	Malaysia	A+	A-	2
25	Mongolia	B+	BB-	1
26	Morocco	BBB+	BBB-	2
27	Netherlands	AA+	AAA	1
28	Nigeria	BB+	B+	3
29	Peru	BBB+	BBB	1
30	Philippines	B+	BB	2
31	Portugal	BBB+	BBB-	2
32	Romania	BB	BB+	1
33	Russia	A	BBB	3
34	Saudi Arabia	AA	AA-	1
35	South Africa	A	BBB+	2
36	South Korea	AA-	A	2
37	Spain	A	AA	3
38	Sweden	AA+	AAA	1
39	Thailand	BBB	BBB+	1
40	Tunisia	BBB+	BBB-	2
41	Turkey	BB-	BB	1
42	Ukraine	B-	B+	2
43	U.K.	A+	AAA	4
44	U.S.	A	AA+	4
45	Venezuela	BB+	BB-	2
46	Vietnam	B+	BB-	1
Average Rating Level Difference				1.93

Source: www.dagongcredit.com and www.standardandpoors.com

3.1 Data and Methodology

In this study, I examine both domestic currency ratings and foreign currency ratings, which differentiates this study from others that only examine the foreign currency ratings. The analysis of the rating difference between these two rating agencies takes two steps. The first step is to examine if the difference is significant. The second step is to investigate the impact of various economic indicators on credit ratings. In Table 4, I describe and indentify the variables I use in my empirical analysis. The data for the economic indicators were collected from different sources. S&P sovereign risk indicators provided data on GDP per capita, real GDP growth, fiscal balances, external balances, CPI, internal debt, and external debt. The indicator of economic development was from IMF. The data on default history was obtained from S&P.

Note that the ratings are in letters and need to be converted to numbers for regression analysis. Cantor and Packer (1996) convert B3 (B-), the lowest ratings assigned by Moody's (S&P) to 1 and the highest rating to 16. Iyengar (2010) starts from the lowest ratings possible, C3 for Moody's and C- for S&P, and moved up to the highest ratings for both. For the present study, the numeric conversion starts from CC-, as no ratings assigned by Dagong and S&P were below CC, and the two agencies have different rating scales below CC-. Table 5 gives the numeric conversion for each level of the ratings from CC- for both agencies. It is assigned from 1 for CC- to 22 for AAA for both agencies.

To analyze the differences in ratings of the two agencies, I use ratings of forty-three commonly rated countries to run the following linear regression:

$$Y_i = a + bX_i + u_i \tag{1}$$

where Y is Dagong's ratings and X is S&P's ratings. The intercept term "a" indicates the basic difference in level of ratings of the two agencies. The slope "b" measures the responsiveness of Dagong's ratings to S&P's ratings. If a = 0 and b = 1, there would be no basic difference in the ratings of the two agencies, and a change in S&P's ratings would lead to a one-for-one change in Dagong's ratings.

There are other questions to investigate: How do the risk indicators affect sovereign credit ratings assigned by Dagong and Standard & Poor's? What is the impact of these risk indicators on the difference in ratings by the two agencies? I use an Iyengar type of model to examine these effects. The regression model takes the following form:

$$Y_i = a + \sum_{k=1}^{9} b_k X_{k,i} + u_i \tag{2}$$

where the nine explanatory variables are described in Table 4. Four dependant variables are used in four regressions: individual ratings given by S&P, individual ratings given by Dagong, average of the ratings by the two agencies, and the difference in ratings for all the commonly rated countries (Dagong's and S&P's ratings).

Table 4: Description of Variables

Determinants of Sovereign Ratings	Definition	Unit of Measurement	Data Source
GDP per Capita	GDP per capita in 2010	Thousands of dollars	S&P
Real GDP Growth	Average annual real GDP growth on a year-over-year basis, 2006-2010	Percent	S&P
Inflation	Average annual consumer price inflation rate, 2006-2010	Percent	S&P
Fiscal Balance	Average annual central government budget surplus relative to GDP, 2006-2010	Percent	S&P
External Balance	Average annual current account surplus relative to GDP, 2006-2010	Percent	S&P
External Debt	Average annual net external debt relative to current account receipts, 2006-2010	Percent	S&P
Internal Debt	Average annual net internal debt relative to GDP, 2006-2010	Percent	S&P
Indicator of Economic Development	IMF classification as an industrialized country as of 2010	Indicator variable: 1=industrialized; 0=not industrialized	IMF
Indicator of Default History	Default on Foreign currency debt, 1975-2010	Indicator variable: 1=default; 0=not default	S&P

Table 5: Rating Scales Used by Dagong and Standard and Poor's and Their Respective Numeric Conversions

S&P's Ratings	Dagong's Ratings	Numeric Conversions
AAA	AAA	22
AA+	AA+	21
AA	AA	20
AA-	AA-	19
A+	A+	18
A	A	17
A-	A-	16
BBB+	BBB+	15
BBB	BBB	14
BBB-	BBB-	13
BB+	BB+	12
BB	BB	11
BB-	BB-	10
B+	B+	9
B	B	8
B-	B-	7
CCC+	CCC+	6
CCC	CCC	5
CCC-	CCC-	4
CC+	CC+	3
CC	CC	2
CC-	CC-	1

3.2 Empirical Results

Table 6 presents the regression results of Dagong's ratings over S&P's ratings. The intercept is statistically significant for both local and domestic currency ratings, which indicates a significance difference in basic level of ratings of the two agencies. The slope coefficient of 0.859 for local currency ratings and 0.850 for foreign currency ratings are significantly different from 1. This shows that changes in Dagong's ratings are not equally responsive to the changes in the ratings by S&P. The present evidence raises reasonable doubts on the consistency of ratings assigned by the two agencies. Although these agencies use similar economic indicators to decide ratings, they seem to assign subjective weights to these indicators. The subjective differences may lead to differences in ratings. It is therefore important to examine the impact of the indicators used by these agencies to decide ratings.

Table 6: Results of Regressions of Dagong's Ratings on Standard and Poor's Ratings

	Intercept (a)	Slope Coefficient (b)
Local currency ratings	1.895**	0.859***
	(0.762)	(0.045)
Foreign Currency ratings	2.272**	0.850***
	(0.778)	(0.047)

Note: **, and *** denote significance at 5% and 1% levels respectively.

Tables 7 and 8 present the results of the regressions of individual ratings of Dagong, the individual ratings of S&P, the average ratings by the two agencies, and the difference of ratings on the same set of indicators. The regressions on local currency ratings and foreign currency ratios yield very similar results. The results for the average ratings show that inflation, external balance, and the dummies for economic development and default history come out as statistically significant at a 5% level. Moreover, these coefficients carry the expected signs. GDP per capita, real GDP growth rate, internal debt, and external debt are statistically insignificant. In the regression of the individual ratings of the two agencies over the indicators, significant variables in the case of the average ratings are also significant. This indicates that a set of indicators determine not only the average ratings, but also the individual ratings of both agencies. Apart from the given set of indicators, the ratings by S&P are also determined by GDP per capita and internal debt. These two indicators are not significant in Dagong's ratings. The significant R^2 values for all three regressions also indicate a good amount of explanatory power of the selected indicators in explaining variations in the individual as well as the average ratings.

The regression results clearly indicate that the ratings of these two agencies have some common determinants. It also appears that GDP per capita and internal debt exclusively determine the S&P ratings. Recall from the earlier findings that there is a significant difference in the basic ratings level, and changes in Dagong’s ratings are not equally responsive to the ratings of S&P. This may come from different weights attached to the determinants by the two agencies. To check this, I consider a regression of the difference in ratings over the same indicators. The results show that only external debt is statistically significant. The significance of external debt indicates that this variable helps explain the differences in the ranks given by these two agencies, through the weights attached. The differences in the ratings do appear to be caused due to the dissimilarity of the weights attached to the indicators. The differences can also be attributed to the weights attached to the subjective criteria used by these agencies in order to decide the ratings. Such criteria imply the qualitative biases built by the agencies.

Table 7: Results of Regression of Local Currency Ratings of the Two Agencies on the Economic Indicators

Explanatory Variables		Dependent Variables			
		Average Ratings	Dagong's Ratings	S&P's Ratings	Rating Differences (Dagong's -S&P's)
Intercept	Coeff.	15.913	15.486	13.761	-0.853
	t-Stat.	14.870	14.610	18.980	-1.110
GDP per capita (1000 US$)	Coeff.	0.021	0.029	0.048	0.017
	t-Stat.	0.620	0.880	**2.300****	0.690
	p-value	0.536	0.382	0.023	0.491
Real GDP (% change)	Coeff.	0.030	0.087	-0.040	0.113
	t-Stat.	0.230	0.660	-0.470	1.190
	p-value	0.821	0.510	0.638	0.239
Inflation	Coeff.	-0.233	-0.216	-0.193	0.034
	t-Stat.	**-2.400****	**-2.240****	**-2.540****	0.490
	p-value	0.020	0.029	0.012	0.627
Fiscal Balance (%)	Coeff.	0.222	0.234	-0.083	0.024
	t-Stat.	1.200	1.280	-0.790	0.180
	p-value	0.234	0.206	0.433	0.856
External Balance (%)	Coeff.	0.143	0.176	0.108	0.065
	t-Stat.	**1.840***	**2.280***	**2.960*****	1.160
	p-value	0.071	0.027	0.004	0.252
External Debt (%)	Coeff.	-0.001	0.001	-0.002	0.004
	t-Stat.	-0.380	0.270	-0.960	**1.780*****
	p-value	0.709	0.788	0.338	0.081

Table 7: (Cont.)

Explanatory Variables		Dependent Variables			
		Average Ratings	Dagong's Ratings	S&P's Ratings	Rating Differences (Dagong's -S&P's)
Internal Debt (%)	Coeff.	-0.005	-0.004	-0.020	0.001
	t-Stat.	-0.370	-0.310	**-2.340****	0.160
	p-value	0.716	0.759	0.021	0.870
Economic Development	Coeff.	3.465	3.093	4.560	-0.744
	t-Stat.	**2.370****	**2.140****	**4.980*****	-0.710
	p-value	0.021	0.037	0.000	0.483
Default History	Coeff.	-2.630	-2.381	-1.922	0.499
	t-Stat.	**-1.960***	**-1.790***	**-2.090****	0.520
	p-value	0.055	0.079	0.039	0.608
R^2		0.73	0.72	0.71	0.11
No. of Countries		63	63	118	63

Note: *, **, and *** denote significance at 10%, 5% and 1% levels respectively.

Table 8: Results of Regression of Foreign Currency Ratings of the Two Agencies on the Economic Indicators

Explanatory Variables		Dependent Variables			
		Average Ratings	Dagong's Ratings	S&P's Ratings	Rating Differences (Dagong's -S&P's)
Intercept	Coeff.	15.394	15.356	13.356	-0.853
	t-Stat.	14.870	14.460	19.660	-1.110
GDP per capita (1000 US$)	Coeff.	0.018	0.019	0.052	0.017
	t-Stat.	0.570	0.580	**2.690*** **	0.690
	p-value	0.571	0.567	0.008	0.491
Real GDP (% change)	Coeff.	0.046	0.117	-0.030	0.113
	t-Stat.	0.360	0.890	-0.380	1.190
	p-value	0.723	0.375	0.707	0.239
Inflation	Coeff.	-0.228	-0.226	-0.194	0.034
	t-Stat.	**-2.430****	**-2.340****	**-2.720*****	0.490
	p-value	0.019	0.023	0.008	0.627
Fiscal Balance (%)	Coeff.	0.238	0.261	-0.074	0.024
	t-Stat.	1.330	1.430	-0.750	0.180
	p-value	0.188	0.159	0.455	0.856
External Balance (%)	Coeff.	0.147	0.182	0.098	0.065
	t-Stat.	**1.960***	**2.350****	**2.840*****	1.160
	p-value	0.055	0.023	0.005	0.252
External Debt (%)	Coeff.	-0.002	0.000	-0.003	0.004
	t-Stat.	-0.570	-0.130	-1.090	**1.780***
	p-value	0.573	0.900	0.277	0.081

Table 8: (Cont.)

Explanatory Variables		Dependent Variables			
		Average Ratings	Dagong's Ratings	S&P's Ratings	Rating Differences (Dagong's -S&P's)
Internal Debt (%)	Coeff.	-0.003	-0.001	-0.020	0.001
	t-Stat.	-0.250	-0.060	**-2.540****	0.160
	p-value	0.803	0.954	0.012	0.870
Economic Development	Coeff.	3.936	3.532	4.738	-0.744
	t-Stat.	**2.790*****	**2.440****	**5.520*****	-0.710
	p-value	0.007	0.018	0.000	0.483
Default History	Coeff.	-2.296	-2.194	-1.660	0.499
	t-Stat.	**-1.770***	**-1.650**	**-1.920***	-1.110
	p-value	0.082	0.105	0.057	0.274
R^2		0.75	0.73	0.74	0.11
No. of Countries		63	63	118	63

Note: *, **, and *** denote significance at 10%, 5% and 1% levels respectively.

These biases against a country are formed on the basis of its social and political conditions, and agencies' reactions to news regarding the changes in the capital market of the country. It appears that the weights attached to these criteria are changed according to the non-transparent methodologies of the raters.

4 Conclusion

Studies have demonstrated the differences among the ratings by the three biggest rating agencies, but little research has been undertaken on the ratings by other agencies. The present paper fills the gap in the literature by examining the differences between the sovereign credit ratings by S&P and Dagong. The paper also checks the reliability of these ratings by a regression analysis of the ratings and commonly used sovereign risk indicators.

I show that differences exist between the ratings by the two agencies. Regression results show that the agencies use similar economic risk indicators: inflation, external balance, and the dummies for economic development and default history come out statistically significant in both agencies' ratings. But the agencies assign different weights to these indicators. It also seems that Dagong assigned higher ratings for non-Western countries than S&P did. This cannot be explained by pure economic factors. Qualitative factors, such as cultural and political factors, and subjective criteria must also play an important role in the ratings decisions by the two agencies. These qualitative factors and subjective criteria—and their ratings impact—are areas for future research.

References

[1] R. Cantor and F. Packer, Determinants and Impact of Sovereign Credit Ratings, *Federal Reserve Bank of New York Economic Policy Review*, **2**(2), (1996), 37-53.

[2] K. Cowan, P. Valenzuela and E. Borensztein, Sovereign Ceilings 'Lite'? the Impact of Sovereign Ratings on Corporate Ratings in Emerging Market Economies, International Monetary Fund, *IMF Working Papers*, **07/75**, (2007), p. 32 pages.

[3] G. Kaminsky and S.L. Schmukler, Emerging Market Instability: Do Sovereign Ratings Affect Country Risk and Stock Returns? *World Bank Economic Review*, **16**(2), (2002), 171-195.

[4] M.A. Ferreira and P.M. Gama, Does Sovereign Debt Ratings News Spill over to International Stock Markets? *Journal of Banking and Finance*, **31**(10), (2007), 3162-3182.

[5] K. Pukthuanthong-Le, F.A. Elayan and L.C. Rose, Equity and Debt Market Responses to Sovereign Credit Ratings Announcement, *Global Finance Journal*, **18**(1), (2007), 47-83.

[6] H.Li, et al., The Impact of Sovereign Rating Changes and Financial Contagion on Stock Market Returns: Evidence from Five Asian Countries, *Global Finance Journal*, **19**(1), (2008), 46-55.
[7] R. Kraussl, Do Credit Rating Agencies Add to the Dynamics of Emerging Market Crises? *Journal of Financial Stability*, **1**(3), (2005), 355-385.
[8] S.-J. Kim and E. Wu, Sovereign Credit Ratings, Capital Flows and Financial Sector Development in Emerging Markets, *Emerging Markets Review*, **9**(1), (2008), 17-39.
[9] S.-J Kim and E. Wu, International Bank Flows to Emerging Markets: Influence of Sovereign Credit Ratings and Their Regional Spillover Effects, *Journal of Financial Research*, **34**(2), (2011), 331-364.
[10] A. Afonso, Understanding the Determinants of Sovereign Debt Ratings: Evidence for the Two Leading Agencies, *Journal of Economics and Finance*, **27**(1), (2003), 56-74.
[11] S.A. Block and P.M. Vaaler, The Price of Democracy: Sovereign Risk Ratings, Bond Spreads and Political Business Cycles in Developing Countries, *Journal of International Money and Finance*, **23**(6), (2004), 917-946.
[12] C. Tellez Valle and J.L. Martin Marin, Sovereign Credit Ratings and Their Determination by the Rating Agencies, *Investment Management and Financial Innovations*, **2**(4), (2005), 159-173.
[13] C. Mellios and E. Paget-Blanc, Which Factors Determine Sovereign Credit Ratings? *European Journal of Finance*, **12**(4), (2006), 361-377.
[14] S. Iyengar, Are Sovereign Credit Ratings Objective and Transparent? *The IUP Journal of Financial Economics*, **VIII**(3), (2010), 7-22.
[15] A. Afonso, P. Gomes and P. Rother, Short- and Long-Run Determinants of Sovereign Debt Credit Ratings, *International Journal of Finance and Economics*, **16**(1), (2011), 1-15.
[16] M. Gartner, B. Griesbach and F. Jung, PIGS or Lambs? The European Sovereign Debt Crisis and the Role of Rating Agencies, *International Advances in Economic Research*, **17**(3), (2011), 288-299.
[17] C.C. Archer, G. Biglaiser and K. DeRouen, Jr., Sovereign Bonds and the 'Democratic Advantage': Does Regime Type Affect Credit Rating Agency Ratings in the Developing World? *International Organization*, **61**(2), (2007), 341-365.
[18] www.dagongcredit.com
[19] www.imf.org
[20] www.standardandpoors.com
[21] www.worldbank.org