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Predicting the RP Sovereign Credit Rating: Has the Philippines Been Underrated?

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Introduction

Starting in 2010, the Bangko Sentral ng Pilipinas has been using the results from the models in this report in its engagements with the three credit rating agencies (CRAs). Our analysis show that despite the significant improvements in the Philippines' macroeconomic performance through the period 2002 to 2010, the country's credit ratings were even lower than in 2002. After several upgrades since the results from this study were used, the latest long-term foreign currency ratings are just even with those of ten years ago.

Table 1. Ratings

Long-term foreign currency ratings:	2002	2010	Latest ratings (end 2012)
S&P	BB+	BB	BB+
Moody's	Ba1	Ba3	Ba1
Fitch	BB+	BB	BB+

These ratings seem to contrast with the positive developments in the Philippines' macroeconomic performance during the same period. In terms of income, real gross domestic product (GDP) growth rate is 4 percentage points and 0.3 percentage point higher in 2010 and 2011, respectively, versus 2002, while nominal GDP per capita has increased by US$1,467 during the same period. The fiscal health has also shown improvements: national government (NG) deficit/GDP, NG total outstanding debt/GDP and consolidated public sector debt/GDP are all lower in 2011 relative to 2002. In addition, external debt/GDP and total external debt/gross international reserves (GIR) have also declined during the same period. The current account balance/GDP reversed from a negative rate (-0.4%) in 2002 to positive (3.1%) in 2011 as remittances grew from US$6.9 billion to US$20.1 billion in 2011.

Table 2. Macroeconomic Indicators

	2002	2010	2011	2012
Real GDP (percent change)	3.6	7.6	3.9	6.6
GDP per capita (current prices, US$)	920	2,155	2,386	2,613
Inflation (CPI Philippines, average change)	3.0	3.8	4.6	3.2
NG Revenue/GDP	13.8	13.4	14.0	14.7 (Jan-Sep)
NG Tax Revenue/GDP	12.1	12.1	12.3	13.1 (Jan-Sep)
NG Deficit/GDP	-5.0	-3.5	-2.0	-1.4 (Jan-Sep)
NG Total Outstanding Debt/GDP	67.1	52.4	50.9	50.5 (Jan-Sep)
NG Interest Payments/GDP	4.4	3.3	2.9	3.2 (Jan-Sep)
Consolidated Public Sector Debt/GDP	104.1	68.8	78.6	72.9 (Jan-Jun)
Remittances (US $ Bil.)	6.9	18.8	20.1	19.4 (Jan-Nov)
Current Account Balance/GDP	-0.4	4.2	3.1	4.0 (Jan-Sep)
External Debt/GDP	66.1	30.1	27.5	25.6 (Jan-Sep)
Gross International Reserves (US$ Bil.)	16.4	62.4	75.3	83.8
Total External Debt/Gross International Reserves	3.3	1.0	0.8	0.6 (Jan-Sep)

By employing econometric and statistical methodologies, this study intends to show that the Philippines' long-term foreign currency credit rating has been underrated. Section 2 of this paper provides an overview of the data and methodologies used for this study.

Section 3 discusses the estimation results and Section 4 concludes.

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Data and Methodologies

This study employed three models, namely, ordered logit, panel regression using ordinary least squares (OLS), and cluster analysis, to investigate the determinants of sovereign credit ratings and predict a country's rating based on the same. We focus on the results for the Philippines.

For the ordered logit and panel regression models, the study uses data for 78 (78 for Moody's and S&P, and 63 for Fitch) economies for the period 2000-2010. Only those countries with ratings that are at least as far back as 2000 are chosen. The economies covered are listed in the table below. Those indicated in bold font are the 63 subset countries used for the Fitch models.

Table 3. Economies included

Argentina	**Egypt**	**Latvia**	**Romania**
Australia	**El Salvador**	**Lebanon**	**Russia**
Austria	**Estonia**	**Lithuania**	**Singapore**
Barbados	**Finland**	**Luxembourg**	**Slovakia**
Belgium	**France**	**Malaysia**	**Slovenia**
Belize	**Germany**	**Malta**	**South Africa**
Bolivia	**Greece**	**Mexico**	**Spain**
Brazil	**Hong Kong SAR**	Morocco	**Sweden**
Bulgaria	**Hungary**	**Netherlands**	**Switzerland**
Canada	**Iceland**	New Zealand	Taiwan Province of China
Chile	**India**	**Norway**	**Thailand**
China	**Indonesia**	Oman	Trinidad & Tobago
Colombia	**Ireland**	Pakistan	**Tunisia**
Costa Rica	**Israel**	**Papua New Guinea**	**Turkey**
Croatia	**Italy**	Paraguay	**United Kingdom**
Cyprus	**Japan**	**Peru**	**United States**
Czech Republic	Jordan	**Philippines**	**Uruguay**
Denmark	**Kazakhstan**	**Poland**	**Venezuela**
Dominican Republic	**S. Korea**	**Portugal**	
Ecuador	**Kuwait**	Qatar	

For the cluster analysis, the authors only used data from the respective ratings agencies for economies with sovereign ratings of BB to BBB (for Fitch Ratings and Standard & Poor's) and Ba2 to Baa2 (for Moody's).

Ratings by Standard and Poor's, Moody's and Fitch are the dependent variables in the linear regression and ordered choice models.

Macroeconomic and governance indicators are used as explanatory variables. The macroeconomic indicators considered in the models as determinants of sovereign ratings are:

- budget balance as a percent of GDP;
- capital account balance as a percent of GDP;
- external debt as a percent of current account receipts;
- per capita GDP (in US dollars);
- real GDP growth rate;
- real per capita GDP (in US dollars);
- gross domestic debt as a percent of GDP;
- inflation rate;
- the number of unemployed workers as a percent of the labor force; and
- foreign exchange reserves in terms of months of imports.

Meanwhile, the governance indicators used in the analysis are:

- World Bank indicator of government effectiveness; and
- World Bank indicator of political instability.

In addition, dummy variables were included for the following: membership in the European Union (1 if EU member); prior history of default on sovereign obligations (1 if defaulted); level of economic development (1 if developing economy); and whether the economy is in Latin America (1 if a Latin American country).

From the literature, it is expected that the budget balance, capital account balance, per capita GDP, GDP, foreign reserves, the World Bank indicator on government effectiveness, and the dummy variable membership in the European Union will show positive relationships with the credit ratings categories, where the ratings categories are arranged in ascending order. On the other hand, credit ratings are expected to be inversely related to the variables on inflation rate, external debt, unemployment rate, World Bank indicator of political instability, and the dummy variables for development status, default history and Latin America.

Estimation Results

Overall, three indicators are common among the ordered logit and pooled OLS models: inflation rate, unemployment rate and World Bank indicator for government effectiveness. Such result highlights the necessity for close coordination between the monetary and fiscal authorities, and improving the government's credibility and commitment to a stable policy environment.

Ordered logit model. The empirical results of the logit model indicate that the Philippines is under-rated by the three credit rating agencies (CRAs). Given the country's economic performance as of end 2010 and the perceptions on government effectiveness as of 2009, the quantitative analysis predicts credit ratings for the Philippine long-term foreign currency papers to be higher than their latest actual ratings.

Table 4. Estimation results: Ordered logit

	2010 ratings	Latest Actual Ratings	Predicted Ratings	Notches under-rated (vs. latest)
S&P	BB	BB+ (July 5, 2012)	BB+	0
Moody's	Ba3	Ba1 (October 29, 2012)	Baa3	1
Fitch	BB	BB+ (June 23, 2011)	BBB-	1

Government effectiveness has the greatest marginal effect on the probability of Philippine sovereigns getting upgraded to the predicted ratings. An increase by one index point for the Philippines in World Bank's indicator for government effectiveness increases by 0.7 percentage point the probability of Philippine sovereigns being rated BB+ by S&P, Baa3 by Moody's, and by 0.6 percentage point the probability that the same instruments get BBB- from Fitch. External debt, gross domestic debt, inflation rate, import cover, unemployment rate, government budget balance, per capita GDP, and capital account balance were also found to be significant determinants of ratings actions. Additionally, the dummy variables for European Union membership (1 if EU member) and Latin America (1 if a Latin American country) are highly significant. Meanwhile, the models for S&P and Moody's indicate that government budget balance (as a percent of GDP) is significant for countries that previously defaulted.

Pooled OLS model. The panel regression confirms the outcome of the logit model that the Philippines' credit rating has been under-rated.

Table 5. Estimation results: Panel regression

	Actual Ratings		Predicted Ratings		Notches under-rated (vs. latest)	
	2010	Latest	Pooled OLS	Random Effects	Pooled OLS	Random Effects
S&P	BB	BB+	BB+	BB	0	0
Moody's	Ba3	Ba1	Ba1	Ba2	0	-1
Fitch	BB	BB+	BBB	BB+	2	0

Five (5) indicators are found to be statistically significant across the three (3) pooled OLS regressions: budget balance (as a percent of GDP), dummy variable for developing economies (1 if a developing economy); inflation rate, unemployment rate, and World Bank indicator for government effectiveness. Being a developing economy seems to be viewed as requiring a credit risk premium as indicated by the negative values of the estimated coefficients.

Cluster analysis. For the cluster analysis, among the economies rated BB to BBB (S&P and Fitch) and Ba2 to Baa2 (Moody's), the Philippines is grouped with economies that are rated 1-2 notches higher.

Findings and Conclusion

In sum, our analysis show that the Philippines remains underrated by one (1) to two (2) notches. The country's economic situation has vastly improved in recent years compared to 2000-2002. Both the logit and panel models show that based on economic fundamentals, the Philippine sovereign bond remains underrated. Likewise, based on ability-to-pay and liquidity measures, the Philippines is in the same cluster as economies with investment-grade rated sovereign issuances.

We also show that inflation rate, unemployment rate and government effectiveness are significant determinants of credit ratings across the three models we employed. Of the three, government effectiveness plays the biggest role.

This highlights the important role of reforms that improve governance and the ability of government and political institutions to support long-term and potential growth of the economy.

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