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Understanding the sovereign credit ratings of emerging markets

Orhan Erdem [1], Yusuf Varli *

Borsa İstanbul, Research Department, Turkey

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ABSTRACT

This paper identifies the macroeconomic factors behind the sovereign credit ratings of global emerging markets assigned by Standard and Poor's (S&P). The financial integration and globalization of capital markets have facilitated the capital inflows/outflows among countries. Sovereign credit ratings have served as a signal for countries' economic, financial and political situations. Ratings are very important in the sense that they attract capital inflow and investments. This is especially vital for emerging markets. Although the rating agencies do not explicitly reveal their methodologies, it is possible to guess the effects of several variables on ratings by using various econometric models. Concerning the heavy criticisms on rating agencies' performances, we wish to examine the sovereign credit ratings within a specific country-category. In this essay, we study the effects of macroeconomic factors on the sovereign ratings of emerging markets. Using several approaches, we find that the most relevant factors are Budget Balance/GDP, GDP per capita, Governance Indicators and Reserves/GDP. Moreover, our model predicts up to 93% of all credit rating levels. Interestingly, we obtain that S&P's evaluation of the sovereign credit rating for Turkey performs poorly, especially in the highest rating levels.

1. Introduction

Sovereign credit rating is an assessment allocated by rating agencies regarding financial and economic obligations of a specific country. It plays an important role in determining countries' access to international

* Corresponding author. Tel.: +90 212 298 2123; fax: +90 212 298 2500.
E-mail addresses: Orhan.Erdem@borsaistanbul.com (O. Erdem), yusuf.varli@borsaistanbul.com (Y. Varli).
[1] Tel.: +90 212 298 2220; fax: +90 212 298 2500.

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debt markets and the terms of that access. The credit rating evaluation for a country corresponds to the economic, financial, and political performance of that country from the point of capacity in payment of its loans.

The three main rating agencies; namely, Standard and Poor's (S&P), Moody's, and Fitch, use a combination of several quantitative and qualitative variables (economic, social, and political) in order to assign a credit rating to a debtor. Because they do not announce their methodologies explicitly, an important issue is to identify the factors behind their assignment of sovereign credit ratings.

Various studies try to identify and model these factors. These studies can be classified according to either the methodology (OLS analysis vs. ordered response model) or the data type (panel data vs. cross-section data) used. Cantor and Packer (1996) is one of the first studies attempting to assess the relevance of eight important macroeconomic variables explaining rating assignments by Moody's and S&P's. This study is a cross-section analysis of 49 countries, both developed and developing, as of September 29, 1995. Using an OLS analysis, they establish the importance of six factors; namely, per capita income, GDP growth, inflation, external debt, level of economic development, and default history, in determining a country's ratings. In a later paper, using the same econometric framework for 49 developing countries with ratings of B- and higher, Rowland (2004) finds that GDP per capita, the economic growth rate, the inflation rate, external-debt ratios, debt-service ratios, the level of international reserves, and the openness of the economy are important factors of sovereign credit ratings. GDP per capita and debt ratio are significant in both studies, even if Cantor and Packer (1996) also included developed countries in their data set.

By comparing his results with those of Cantor and Packer (1996), Rowland (2004) claims that the rating agencies use a similar framework when evaluating both developed and developing countries. Gültekin-Karakaş et al. (2011) examine the main factors that determine the credit rating using an ordered probit model for both developed and developing countries. They use Moody's data which belongs to 93 countries between the years 1999 and 2010. Their model includes not only macroeconomic variables, but also additional dummy variables for the income level of countries. The results of their study suggest that, holding all other factors constant, low income countries tend to receive lower rating than high income countries, and that this distinction is clearer for the OECD countries than it is for non-OECD countries. Furthermore, Ozturk (2014) employs not only macroeconomic variables but also various governance indicators in order to explain the sovereign credit ratings. It is found that government effectiveness and regulatory quality were predominantly responsible for low sovereign credit ratings especially for the developing countries.

Afonso (2003), however, discovers that the macroeconomic factors affecting the ratings are different in developing and developed countries. Studying the key factors determining sovereign debt ratings using data from 81 developed and developing countries, based on ratings assigned by Moody's and S&P's in June 2001 using a cross-section data and employing both a linear and a non-linear transformation of rating levels, he shows that six variables are the most relevant factors in explaining the credit ratings: (1) GDP per capita, (2) external debt-to-exports ratio, (3) level of economic development, (4) default history, (5) real growth rate, and (6) inflation rate. He concludes that GDP per capita emerges as virtually the sole relevant economic variable for developed countries, while external debt is important for developing countries.

Later studies are more comprehensive in the sense that they use panel data: Afonso et al. (2007) empirically examine the economic determinants of sovereign credit ratings for the period 1995–2005, employing panel estimation and ordered probit approaches with random effects. They find that GDP per capita, real GDP growth, government debt, government effectiveness, external debt and external reserves, sovereign default indicator, as well as being a member of the European Union are the most important determinants of the sovereign debt ratings. Their evidence also shows that the external debt and external reserves are more relevant for low-rated countries, while inflation played a more profound role for high-rated countries. The importance of external debt for developing countries is in line with our finding in Section 4.

Bissoondoyal-Bheenick (2005) presents an extensive analysis in terms of the number of countries (95 developing and developed), time period (from December 1995 to December 1999), and methodology (an ordered response model). He attempts to analyze the determinants of sovereign ratings separately for high-rated and low-rated countries. The estimated results reveal that current economic and financial indicators are only a part of the input, and that they alone do not determine ratings. Moreover, GNP per capita and inflation seem to be the most relevant economic variables. He also adds that the relevance of