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Long and short-runs determinants of the sovereign CDS spread in emerging countries

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ABSTRACT

In this paper, we study the long and short-runs determinants of sovereign CDS spread for eight emerging countries from 2008.Q4 to 2013.Q2. We estimate the spread of sovereign CDS using three macroeconomic determinants: current account, external debt and international reserves. Using the Pooled Mean Group cointegration approach, our findings can be summarized as follows: i, the existence of cointegration between the variables indicated above; ii, the coefficients of the current account, the external debt and international reserves are highly significant to explain the long-run sovereign CDS spread for all countries; iii, international reserves are more important than the current account in order to reduce the sovereign CDS spread in long-run; iv, when allowing for heterogeneous short-run dynamics, the short-run effects are not significant for all countries.

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1. Introduction

The subprime mortgage crisis in 2007 provoked serious consequences for the global economy. So far, numerous articles have referred to the causes of this crisis, and one of them is Credit Default Swap (CDS), a favored derivative at this time. Since then, it has been considered as a proxy for sovereign default risk. In fact, the sovereign CDS spread 5-year has appeared for emerging markets from 2007, and it has become the most traded in the CDS market because of its liquidity.

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Credit Default Swap (CDS) is an insurance contract between a seller and a buyer that allows investors to buy protection against default. The buyer pays a fee to the seller (called CDS premium or spread), in exchange, the buyer of the CDS receives compensation from the seller if a default occurs. The aim of sovereign CDS is to insure the sovereign bonds buyer against the default of government bond. The higher the risk of default, the larger the CDS spread as demonstrated by Chan-Lau (2003, 2006). The default probability can be computed and predicted from the CDS spread, indicating that the CDS spread has been a proxy of country risk since then. Therefore, an interesting question emerged from investors and economic researchers is how to determine the sovereign CDS spread.

In fact, numerous articles link the relationship between the fundamental factors and sovereign credit default proxies such as sovereign credit ratings and sovereign default probability. Actually, Bulow and Rogoff (1989) show that exchange rates variations have a direct impact on a country's terms of trade, which may affect the ability of the country to generate dollar revenue and so make payments on its external debt. Hernandez-Trillo (1995) indicates that the default probability of sovereign depends on: the degree of openness, international reserves and the risk-free interest rate. According to his model, he creates a spread index over LIBOR and debt service ratio to determine the sovereign default probability, and defines the default probability as a function of the cost of default. He concludes for 33 debtors emerging countries in the period 1970–1988 that liberalization policies decreases the probability of default by both raising the GDP and increasing openness. A country default will induce a loss in access to future credit. This model displays a negative effect of openness and international reserves on the default probability. Then, Cantor and Packer (1996) regress a country's ability and willingness-to-service its debt for a panel of developing countries. They find six variables affecting the sovereign credit rating which are per capita income, GDP growth, inflation rate, external debt, default history and an economic development indicator. Additionally, Mellios and Paget-Blanc (2006) determine two other factors that are government income and change in the real exchange rates. These variables have a positive impact on default probability except for the inflation rate. Baek et al. (2005) show the link between sovereign risk in emerging countries and macroeconomic variables such as government budget balance and current account balance. Georgievska et al. (2008) use the Bayesian approach to find three classified variables explaining sovereign default: total debt to GDP ratio and Export to GDP ratio represent solvency variables, international reserves to GDP ratio express liquidity and currency account balance to GDP ratio and imports to GDP ratio variables represent macroeconomic variables. More recently, Ramos-Francia and Rangel (2012) create a sovereign spread index as the difference between the long-term government bonds yield and the 10-year US Treasuries yield. They test the relationship of this index with macroeconomic variables such as inflation, economic growth, fiscal and current account deficits, international reserves and nominal exchange rates variations. These results illustrate that international reserves and exchange rates appreciations are associated with lower default risk in emerging markets.

Nevertheless, there are a few studies mentioning the determinant of sovereign CDS in emerging markets. For example, IMF-Report (2013) introduces the determinants of the CDS spread by regressing it on various macroeconomics and financial explanatory variables. This paper finds that the debt/GDP ratio and GDP growth rate increase the spread whereas international reserves reduce it. Aizenman et al. (2013) show that the external debt/GDP ratio and inflation explain the sovereign CDS spread in the crisis period while in the post-crisis period, this index is caused by inflation and public debt/GDP ratio. The shortcomings of these studies are that the pooled OLS estimator imposes common intercept and slope coefficients for all cross-sections, implying that it disregards heterogeneity in individual. In addition, these regressions take into account the influence of these explanatory variables to the sovereign default proxies over a specific period but do not examine dynamics their effects.

Different from these works, this paper examines how fundamental macroeconomic factors are determinated on to sovereign CDS spread over both the short- and long-runs for an empirical study. We use the Autoregressive Distributed Lag (ARDL) estimator as introduced by Pesaran et al. (1999) that allows the intercept, short-run coefficients and error variances to be heterogeneous across countries, and assume homogeneous long-run coefficient. The useful of this approach is that it shows a homogeneous long-run coefficient and short-run coefficients for each country. On the contrary, its disadvantage is that all variables must be integrated at the same level. Choosing this approach is justified by the necessity to distinguish different kind of period, i.e. short-run and long-run. And more

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