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FUEL PRICE GAPS

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ABSTRACT

Governments in emerging countries have usually opt not to fully pass through increases in fuel prices to domestic consumers. On the one hand, fuel price interventions may lead to higher price stability in the short-run. On the other hand, they may negatively impact the trade balance, increase income inequality and signal a lack of commitment to fiscal budget control. The aim of this research project is to study the impacts of the Brazilian fuel price interventions on the macroeconomic uncertainty and sovereign risk.

1. Introduction

Although international fuel prices are not stable, many government in emerging countries have opt not to fully pass through the international fuel prices increases to domestic consumers. These governments are mainly concerned about the impact of higher fuel prices on inflation, real income and the welfare of households. However, the macroeconomic impacts of fuel price interventions are not restricted to the short-run impacts on inflation. The fuel interventions may also have an impact on the trade balance, income inequality and can signal a lack of commitment to fiscal budget control. The aim of this paper is to study the impact of the government incomplete pass-through of international fuel prices on sovereign risk.

There are several studies addressing the causal relationships between sovereign risk, output cycles and trade balance. Uribe and Yue (2008) find that the correlation between the output cycles and sovereign spreads is negative. Cline (1995) Cantor and Parker (1996) and Neumeyer and Perri (2001) also provide empirical evidence of countercyclical country spreads. Hilscher and Nosbusch (2010) find that the volatility of the terms of trade have a positive and significant impact on sovereign spreads. However, there is an open question in the literature. Do fuel price gaps impact sovereign risk?

The fuel prices are a significant component of the inflation indexes. In the academic literature, there are mainly two ways through which higher fuel prices impact inflation and the welfare of households. First, households demand fuel directly, e.g. for private transport and energy consumption. Second, fuel enters, as an intermediate product, in the final goods production and services provision of many components of the average consumption basket.

The Brazilian government interventions in the fuel prices, as a way of controlling inflation, are long-dated. Although the fuel sector has opened up to private investments in the 90s, Petrobras, the main Brazilian oil company, is controlled by the Brazilian government.

By setting the prices of products offered by Petrobras, the government can impact the Brazilian fuel prices and bring the inflation closer to the target level. However, the effects of the government interventions in the fuel prices are not limited to the short-run impact on inflation. By changing the relative prices in the economy, the government can also distort private incentives and the optimal investment allocations.

2. Research Hypothesis:

"Fuel price gaps impact sovereign risk"

Why this hypothesis could have empirical support?

A larger gap between international and Brazilian fuel prices can decrease the profitability for the Brazilian oil-companies and, as a consequence, investments in the fuel sector. In turn, less investment can result in lower productivity and/or production in the fuel sector and, as a result, greater dependence in imported fuel.

Not only the Brazilian fuel production may be impacted, but also the Brazilian fuel demand. Lower Brazilian prices can result in greater fuel consumption and the need to rely on more imported fuel. Altogether, the production and consumption impacts may imply a negative impact on the trade balance and a positive impact in sovereign risk.

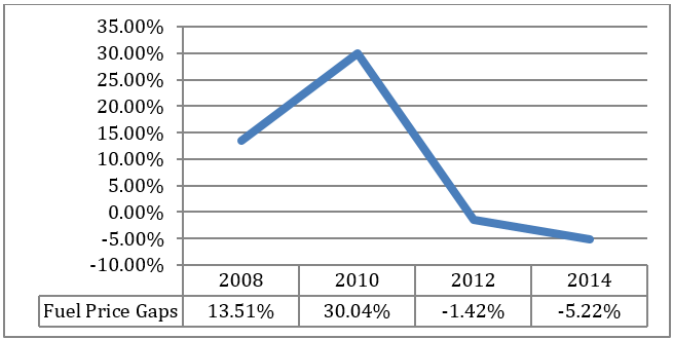
According to Agencia Brasil (2013), the Brazilian fuel imports may have led to a negative trade balance in 2013. Furthermore, domestic fuel subsidies seem to increase income inequality across domestic households. According to Coady et. al (2012), the consumption baskets of higher-income households rely more on the fuel component relatively to the baskets of lower-income households. As a result, most of the benefits of fuel subsidies accrue to the higher-income households. Besides the impacts on the trade balance and inequality, more government energy price controls can signal public profligacy or higher unwillingness to implement austere fiscal policies to control inflation.

In the literature, there are several studies addressing the causal relationships between sovereign risk and output innovations. However, the empirical literature does not address the causal relationships between fuel price gaps and sovereign risk.

3. Methodology:

In order to study the impact of fuel price gaps on sovereign risk, we first identify the period between 2008 and 2015 when there was a change in the Brazilian policies regarding the regulation of fuel prices. Then we analyze the relations between the Brazilian sovereign risk and the Brazilian fuel price gaps.

Figure 1 shows the fuel price gaps (in percentual terms) between the Brazilian fuel prices and the average international fuel prices. Fuel prices refer to the pump prices of the most widely sold grade of gasoline. Fuel price gaps (in percentual terms) were created by taking the difference between the Brazilian fuel prices and the average international fuel prices, and dividing the result by the average international fuel prices. Prices have been converted from the local currency to U.S. dollars. Data is provided by the World Bank (World Bank Indicators, 2015).



	2008	2010	2012	2014
Fuel Price Gaps	13.51%	30.04%	-1.42%	-5.22%

Figure 1- Brazilian Fuel Price Gaps

Until January 2011, the fuel price gaps were positive, meaning that the price of gasoline in Brazil was higher than in the rest of the world. Since the beginning of 2011, the Brazilian government created Brazilian fuel subsidies and the Brazilian fuel prices became relatively low (Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, 2014).

In order to study the effect of fuel prices gaps on sovereign risk, we analyze the comovements between the Petrobras stock prices and the Brazilian sovereign risk. The Brazilian sovereign risk is measured by the J.P.Morgan's Emerging Markets Stripped Global Bond Index (EMBI Global Stripped). It is an average of bonds spreads over US treasury bonds of similar maturity, weighted by market capitalization. It is stripped from collateralized flows, what controls for differences in collateral across countries. It covers U.S.dollar-denominated Brady bonds, loans and Eurobonds issued or guaranteed by emerging market governments. In order to be included, countries must have restructured debt in the past

10 years, or have restructured debt outstanding. They must also be low or middle income for the last two years, according to the World Bank classification. The instruments included in index the debt instrument must have more than $500 million outstanding, more than one year to maturity and verifiable daily prices and cash flows.

Figure 2 plots the comovements between Petrobras stock prices and the EMBI spreads. Each series is standardized by subtracting its average and dividing the result by its standard deviation.

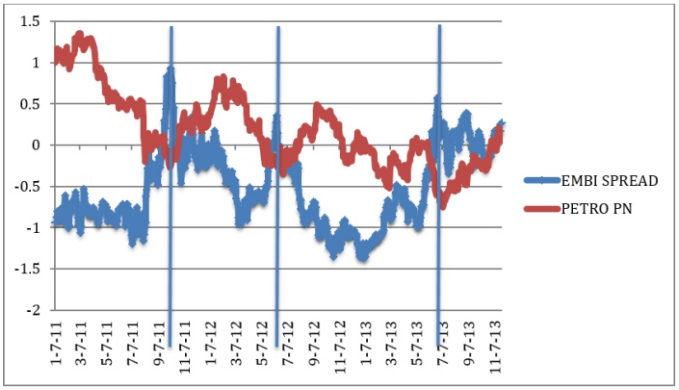


Figure 2 - Petrobras stock prices and the Brazilian EMBI spreads

Figure 2 shows the great comovements between the Brazilian sovereign risk and the Petrobras stock prices. In 2011, when the Brazilian government started to subsidize the domestic fuel prices, the Petrobras stock prices fall greatly and the EMBI spreads increased sharply. In particular, the vertical lines show that periods of large fuel subsidies were also periods of large decreases in the Petrobras stock prices and increases in sovereign risk.

4. Conclusion and Recommendation

According to Agência Nacional do Petróleo, Gás Natural e Biocombustíveis (2014), the period when the Brazilian fuel price gaps became negative was also the period when Brazil increased fuel imports. At the same time, relative low Brazilian fuel prices gave incentives for an increase in the Brazilian fuel consumption and a decrease in the Brazilian fuel production. Altogether, it implied an increase in fuel imports and a decrease in the trade balance. In turn, a lower trade balance implied a lower availability of resources to repay foreign debt, greater macroeconomic uncertainty and higher sovereign risk. Therefore, the research hypothesis "Fuel price gaps impact sovereign risk" has some empirical support. In order to decrease macroeconomic uncertainty, governments should consider the Brazilian experience before making use of fuel subsidies to control domestic inflation.

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