# Systemic Economic Impacts of Variation in International Oil Prices: The Case of Colombia.

Topic:
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The powerful economic presence of primary commodities as a driving force on exportation is a reality for multiple developing countries. ColÃ´mbia, therefore, is included in the group of developing economies. When taking into consideration the international insertion of the country, it is found that there is a late commercial opening that appears latent only from the year 2002. During the first half of the XXI century, in which an enhancement of exportation turned noticeable, it is possible to note a positive change of the Colombian Gross Domestic Product (GPD). (World Bank, 2022). In terms of economic diversification, Colombian exports are based on primary products, in particular, oil. Oil, due to its scarcity and non-renewable nature, combined with its importance as energy input, is a highly desired and traded commodity on the international market. Between 2015 and 2019, oil was the most exported product in the country, representing 38% of the total exporter during the period. In sequence, manufactures represent 21%, and agricultural products are responsible for 19% of Colombian exports.
In order to systematically analyze the variation of world oil prices in the Colombian economy, first, a simulation exercise is carried out using a hypothetical extraction technique applied to the Colombian input-output matrix for 2015. Subsequently, through the optic of Computable General Equilibrium (CGE), an exercise will be carried out through a positive variation of 1% in world prices of the commodity, to verify the implicit elasticity of prices in the country's economy. It is through the variables important to emphasize that such variation will be applied both to export prices, through the variable â€œf4pâ€• - variation in the prices of demand for exports of a given commodity. As well as in the variation of imported prices - â€œpf0cifâ€•, given that the oil also inserts itself in Colombia's import list, even if it is to a lesser extent. In this way, the impacts of increases in the international price of oil will be fully measured.
Among the wide range of CGE models available, the ORANI_G was selected, a regional computable general equilibrium model. The model was adapted for different countries, including the present customization for Colombia, developed by Haddad (2016). The regional model of CGE adapted to the country, allows a greater detailing of the national economy, including more precisely the intersectoral and systemic relations, allowing a better assessment of the internal impacts after the proposed shock. It is important to point out that this article is considering the long-term closing. In this scenario, according to Horridge (2006), capital stocks become endogenous and adjust to the model, on the other hand, rates of return are now fixed. Therefore, an open capital market is assumed.
In general terms, after simulating changes in world oil prices, it was possible to evaluate the recurrent impacts of the shock for the Colombian economy. In macroeconomic terms, there is an increase in GDP, mainly linked to the increase in investment and government spending. There is also a positive variation in real wages after the shock, which can also be reflected in the increase in household consumption. However, systemic results for the Colombian economy in the long term also points to a generalized positive variation in basic prices in the economy.
In the long-run scenario, in which commodity prices varied to a greater extent when compared to international prices, there is a loss of the country's external competitiveness. Therefore, it is suggested that economies with a low degree of diversification tend to become more vulnerable in situations of commodity price volatility, as the loss of competitiveness in these products can lead to an increase in the trade deficit. This was also verified in relation to imported products, which expanded their entry into the country after the long-term shock, indicating a potential external dependence on other products as well.

Keywords: Colombia. Computable General Equilibrium. Petroleum.

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