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HETEROGENEOUS EFFECTS OF THE EXCHANGE RATE PASS THROUGH IN BRAZIL: ESTIMATIONS USING LOC AL PROJECTIONS FROM 2003 TO 2024

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The exchange rate is an important macroeconomic variable that connects the domestic economy to foreign markets. It affects investment, capital flows, and production costs. A competitive, i.e., undervalued, exchange rate is positively associated with higher economic growth, especially for emerging economies (Rapetti et al, 2012). This effect could be attributed to the increase in exports, which stimulates the increase in capacity utilization, profit margins, and investment, making higher profitability of tradable over non-tradable investment. (Gala, 2007; Rodrick, 2008).

Eichgreen (2008) argues that it is common for emerging economies that experienced sustained growth acceleration to have an undervalued exchange rate during that period. The competitive exchange rate encourages the redeploying of resources into the manufacturing sector, boosting domestic income growth. It happens because exporting becomes more attractive, as importing gets more costly. As manufacturers and domestic production develop, the dependence on import products reduces. When discussing Latin American

economies development, Tavares (2000) states that the increase of import relative price led to a considerable stimulus to substitutive domestic production. This process led to economic growth and development in these economies, until the balance of payments was pressured by the import composition shift.

However, the use of the exchange rate as a growth policy has its limitation and consequences for domestic economy. It may create tensions with other countries, implicate in foreing exchange reserves accumulation with resources that could be allocated for other purposes, and pressure over domestic prices (Eichgreen, 2008, p. 3). What we aim to discuss in this work are the consequences of an undervaluation of the exchange rate over domestic prices.

The exchange rate pass-through (EXPT) effect is the local price change in response to a change in the exchange rate (Campa & Goldberg, 2002). Goods that depend on imported components or have part of their production abroad will find their prices more sensitive to changes in the exchange rate. The EXPT is especially relevant for emerging economies, as they tend to be highly dependent on the import of capital goods and technological inputs for its economic growth.

Several factors, such as the degree of market concentration, production structure, and goods substitutability, determine the influence of the exchange rate on prices. Competitive markets are characterized by a high substitutability of products, with firms having less power over price decisions, increasing price volatility in the short term (Lavoie, 2014). On the contrary, in

oligopolistic markets, firms are price makers, allowing for greater price stability over time (Eichner, 1973). They are not as demand-sensitive as in a competitive framework, setting prices according to their costs and the desired profit (markup) (Lee, 1998).

Additionally, the exchange rate can also directly affect the firm’s costs. Given a change in the exchange rate, the adjustment in oligopolistic markets depends on the degree of market integration, the substitutability between domestic and foreign products, and market organization (Dornbusch, 1987).

Empirical studies have shown that emerging economies have a higher pass-through, in contrast to developed ones (Alpaslan & Demirel, 2014; Borenztein & Heideken, 2016). Given that the EXPT is a country-specific phenomenon, our analysis is conducted solely on the Brazilian economy. The country choice is given for two main motives. First, Brazil has a diversified industry, but with some

relevant degree of import dependence. It makes the country's pricing sensitive to exchange rate shocks, but the particular domestic dynamics may attenuate this effect. And because it is a relevant emerging economy, it could be representative and give insights for other countries' analysis. Besides that, the EXPT heterogeneous effect on sectors is relevant to the extent that it may impact on household budget and consumption. Given that different types of family composition present different consumption patterns (Passos et al, 2008), the EXPT may have an indirect impact on functional and personal income inequality.

In Brazil, sectoral price dynamics can be analyzed using the disaggregated General Consumer Price Index (IPCA). However, most studies on exchange rate pass-through (EXPT) rely on various industrial price indices for sectoral analysis (Correa, 2017; Kannebley, Prince & Costa, 2023; Pereira & Missio, 2024; Pimentel et al., 2020). To the best of our knowledge, no study has yet examined EXPT effects across all inflation subgroups within the IPCA. This paper contributes to the literature by extending the analysis to all nineteen IPCA subgroups and covering a more recent and extended time span.

To achieve this, we apply the local projections method to estimate impulse response functions to an exchange rate shock and compute the corresponding pass-through coefficients. This econometric approach relies on sequential regressions of the transformed endogenous variable over multiple future horizons, offering a direct multi-step forecast while minimizing forecast errors. In addition to our main variables of interest—disaggregated inflation (Y) and the nominal exchange rate (X)—we include the Brazilian Economic Activity Index (IBC-BR) as a proxy for domestic demand, the Commodity Price Index as an exogenous cost factor, Unit Labor

Cost as a control for domestic production costs, and the Nominal Interest Rate to account for monetary policy.

Our findings reveal an average EXPT of 2.5% for the aggregated IPCA. Among the subgroups, Fuels and Energy (13%) and Electronic Devices (12.3%) exhibit the highest sensitivity to exchange rate shocks, while Shoes and Accessories (-3.16%) and Personal Services (-2.83%) show the least. Categories such as Household Maintenance, Transportation, Pharmaceuticals and Optics, Health Services, Personal Care, and Recreation do not exhibit statistically significant responses. These results confirm the heterogeneity of EXPT across sectors, influenced by factors such as market competition, production structure, and

reliance on imported inputs. Notably, sectors producing predominantly non-tradable goods tend to show no significant reaction to exchange rate fluctuations. Finally, we argue that the heterogeneous pass-through may lead to distributive effects, depending on the extent to which household consumption baskets are composed of goods sensitive (or not) to exchange rate changes.

Palavras-chave: exchange rate pass-through; sectoral inflation; tradable and non-tradable.