PRODUCTIVITY AND DEMOGRAPHIC TRANSITION: LIMITS TO THE BRAZILIAN ECONOMY'S RECOVERY IN THE POST-PANDEMIC PERIOD

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In recent decades, studies show that changes in the demographic structure can impact its economic growth and development through different mechanisms (FOUGERE; HARVEY, 2007; BLOOM et al., 2010; FERREIRA; SANTOS, 2020). This phenomenon, known as demographic transition raises various discussions in the literature - such as its impacts on social security and public finances, consumption patterns, demand for public health and education, and in the labor market, as it directly influences labor availability. In this context, studies specifically focused on the labor market, such as Peng (2008), Pappas and Nikos (2008), Maestas et al. (2016), Liu and McKibbin (2022), and Zuo et al. (2022) suggest that, in the context of population transformations, one of the important channels impacting and limiting economic growth occurs through labor supply constraints.

The relationship between demographic change and labor supply is a recurring theme in the literature. While a reduction in the workforce poses a constraint to economic growth, one of the channels for sustainability and income increase is to increase labor productivity (FOUGERE; HARVEY, 2006; PENG, 2008; AMARANTE; COLACCE; MANZI, 2021; LIU; MCKIBBIN, 2022; ZUO et al., 2022). This is because young and elderly age groups, considered 'dependent,' may consume more resources than contribute through their work. Therefore, increasing labor productivity has the capacity to minimize the negative impact of labor supply constraints (MASON; LEE 2022). This discussion is particularly relevant in Brazil, which historically has been characterized as a low labor productivity compared to other peer countries.

The above motivates this research, which aims to assess the growth of the Brazilian economy in the post-COVID-19 period, considering the projections of labor supply constraints based on the demographic projections for Brazil. We use a dynamic inter-regional Computable General Equilibrium (CGE) model called TERM-UF. The dataset employed is the Brazilian Input-Output Database (release 2015).

We aim to contribute to accounting literature in the following ways: (1) First, we use detailed regional model, focused on Brazilian Federal Units. According to Fougere and Harvey (2006) and Poot (2008), regional age structure changes can be faster and more diversified than those observed at the national level, consequently having a significantly differentiated impact on the competitiveness of that region and interdependent regions. (2) Second, through the analysis of general equilibrium, we can understand the effect of labor supply constraints from a broader perspective compared to a partial equilibrium study, as it considers the systemic effect resulting from the interactions and interdependencies of different sectors and agents in the economy, contributing to more comprehensive policy planning and development. (3) Finally, literature on this theme for developing countries is scarce, especially at the subnational level.

In sum, this paper answers not only if the reduction in the labor supply in the Brazilian economy leads to changes in aggregate and sectoral demand patterns but also explores if the pattern of demographic change across Brazilian regions can influence the economic outcomes across distinct regions. These are all significant issues for the development of the world and a country.

The results indicate that the reduction in the labor supply in the Brazilian economy leads to changes in aggregate and sectoral demand patterns, resulting in lower economic growth, higher labor costs,

and reduced overall economic production. The findings also reveal that the pattern of demographic change and structure is not homogenous among Brazilian regions. The states of Rio Grande do Sul, Minas Gerais, Bahia, Pernambuco, Sergipe, and PiauÃ- were the states with the highest projected reduction in labor supply over the period, and consequently, with the highest cumulative negative deviation of their regional product by 2060, which could reach 10.11%. These findings revealed that to uphold a trajectory of economic growth, the country faces the inevitable challenge of altering its course from stagnant labor productivity.