Brazilian labour market: evaluating imperfections in a general equilibrium perspective
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Introduction

The traditional CGE models usually rely on the assumption that the labour demand determines the total employment in the short-run and in the long-run the growth in labour usage is only limited to some trend, related (or not) to projections on population growth. In a economy in which labour supply is greater than labour demand, and assuming that the adjustment can be fast enough, this can be a good approximation for the equilibrium in the labour market. However, if the economy has labour demand greater than labour supply, the demand side cannot determine employment by itself, and at the same time its reaction speed may impose a limit to production growth. In the case of Brazil, the recent low decreasing unemployment rate combined with increasing real wages suggests that the economy is close to some limit in labour market in which the supply as well as the lag of adjustment in wages and unemployment plays as important role.

Methodology

The methodology proposed involves to build connections between models that have been used to address labour-market related questions in a general equilibrium perspective. In the demand side, the general assumption is that firms make production decisions based on profits maximization. Therefore, the amount of primary inputs in production are given their production function is given by a CES function in which the demand for labour can be represented by:

\[ l_i + a_{labi} = x_{primi} - \sigma_{prim} w_i + a_{labi} - p_{primi} \]

Where \( l_i \) is the percentage change in labour demand, \( a_{labi} \) presents technological change, \( x_{primi} \) is the total demand for primary factors, \( \sigma_{prim} \) is the elasticity of substitution between primary factors, and \( w_i \) is the percentage change in wages for industry \( i \). This way, firms can choose how much labour they need to production, and with small modifications, the composition can be split up in categories of occupation, education, qualification, formality, gender, age, etc.

In the supply side, microsimulation has been a dominant methodology, making possible to analyze how changes in wages and other relative prices can affect people decisions about entering or not in the labour market. Following the developments of Roy (1959) and Magnac (1991), the model can the formalized as follows:

Individuals maximize their utility (\( U_i \)) choosing between a set of options (\( a = 0,1, ..., f \)). Therefore, using microdata and econometric approaches for discrete variables it is possible to calculate the latent variable (utility) that is translated into the probability of each individual offer jobs (or stay out of the labour force), given the level of wages, a set of personal characteristics and control variables. This way, an individual \( k \), chooses the option \( a \) if, and only if this option gives him a higher utility then any other option \( j \):

\[ U_k^a > U_k^j \text{ for all } j \neq 0 \]

The labour supply is the summation of individual decisions. Finally, demand and supply side can interact until convergence using a loop of simulations for both models:

What is wrong?

Even with this two estimations (about labour demand and supply) are correctly specified there are still a remaining link, that involves the question: How labour demand and supply find themselves in the market? If there is asymmetric information, it is necessary to incorporate some assumption about labour market coordination.

Final Comments

This is an ongoing research, and we do not have the results. Nevertheless, the data is showing that Brazilian economy is experiencing a consistently growth in real wages combined with declining unemployment, which suggests the labour market is becoming tight and the supply side, as well as market coordination, can play a important role. With the proposed methodology the authors expect to better understand the underlying forces of this movement.

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