Impact of displacements costs on a spatially scattered labor market A theoretical approach

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Résumé / Summary

We develop In this paper a theoretical model at the crossroads of labor and urban economics, used for explaining the mechanism through which the home-workplace trips generalized costs impact the labor demand and supply in a spatially scattered labor market. The main innovative aspect of the paper, but not the only one, consists on building a micro-geographic founded matching function that links the parameters of the passengers transport system to those of employment. Thanks to this function it is possible to deal with a spatial mismatch issue at an aggregate level.
The spatial disconnection between home and job opportunities is referred to as the spatial mismatch hypothesis (SMH). Its harmful impact on employment has been subject to numerous theoretical propositions. However, the theoretical models proposed so far are patterned around the American context, which is marked by racial discrimination against blacks in the housing and the labor markets. Therefore, it is only natural that most of these models are developed in order to reproduce a steady state characterized by agents carrying out their economic activities in a mono-centric city in which most unskilled jobs intended to blacks are created in the suburbs, far from their residency area in the city-centre. As a consequence, the Black population suffers from a higher unemployment rate.
The model we build in this paper is designed to describe and explain situations that are more general and more complex than the ones most of the models proposed so far deal with. It is intended to set a theoretical framework thanks to it can be possible to deal with some SMH related issues whatever the geographical structure of the considered city is.
The model we present doesn't rely on any racial discrimination and doesn't aim at reproducing a steady state

in which the stylized facts above mentioned are replicated; but it takes the main principle of the SMH -the spatial disconnection between homes and workplaces- as a starting point.
We consider here a city that consists of Q districts and we reason with a series of short periods. In each district unemployed workers seeking for job opportunities are residing and firms looking for labor force are located. In each period, unemployed workers are informed of the existence of k≤Q job opportunities in k different districts. The information relates to the availability of the job and the productivity (and thus the wage) of the unemployed worker if hired. The latter chooses to send his candidacy for a job only if the proposed wage net of displacement costs is higher than his reservation wage. On the other hand, if the employer receives some candidacies, he hires the most productive candidate otherwise the proposed position remains vacant. At the end of each period, the unemployed workers who did not get a job start a new search and the positions that have not been filled are proposed again in the next period.
Based on this mechanism, we build a global matching function for the hole city, and a "partial" matching function for each couple of districts. We demonstrate that the sum of the "partial" matching functions is exactly equal to the global matching function.
The first findings show that the unemployed workers living in areas benefiting from good transport infrastructures and services have a better chance to prefer activity to unemployment than those who live in areas where the transport infrastructures and services are poorer.
We also show that the firms located in the most accessible areas receive much more applications and are more likely to fill their vacancies more quickly than the firms located in the less accessible ones.

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