Review of Economic Dynamics 18 (2015) 863–880

Contents lists available at ScienceDirect

Review of Economic Dynamics

www.elsevier.com/locate/red

Regional reallocation and housing markets in a model of frictional migration

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ARTICLE INFO

Article history:
Received 29 January 2014
Received in revised form 25 August 2015
Available online 2 September 2015

JEL classification:
E24
J61
J64
R23

Keywords:
Reallocation
Housing markets
Gross migration
Indirect inference

ABSTRACT

Migration frictions are important for understanding key features of gross migration and housing markets. This paper studies a multi-region equilibrium model with frictional migration. Idiosyncratic preference shocks, a mobility cost, and imperfectly directed migration lead to slow worker reallocation in response to changes in local conditions. This leads to a dependence of local house prices on the history of labor market shocks. The model accounts for the comovements of unemployment and rental and house prices with gross migration observed in a panel of U.S. cities. Structural estimation reveals a high mobility cost for unemployed workers and a low probability of directed migration. Both of these imply that regional reallocation has a limited importance for the aggregate labor market and that the effects of housing markets on reallocation are small.

1. Introduction

How important is regional labor reallocation – the net flow of workers across regions – for the labor market? Do housing markets affect the labor market through their impact on regional reallocation? The recent U.S. recession and its aftermath have caused renewed interest in these questions.

When a region falls in a deep recession the net worker flow out of that region should serve as adjustment that dampens the labor market effects of the shock (Blanchard and Katz, 1992). However, as population flows out, local housing costs decline, which compensates the workers that remain for the adverse labor market conditions. This equilibrium compensating effect impacts regional labor reallocation, and through that channel, both the local and aggregate labor markets.

This paper studies the importance of regional reallocation for the labor market and of the compensating effect of housing markets on reallocation. Both of these depend on the structure of individual migration decisions. If moving decisions respond

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[1] This paper subsumes much of the analysis contained in previous papers titled "Regional Mismatch and Labor Reallocation in an Equilibrium Model of Migration" and "Labor Market and Regional Reallocation Effects of Housing Busts". I want to thank the managing editor, Matthias Doepke, the associate editor and three anonymous referees for suggestions that helped greatly improve the paper. I also want to thank Daron Acemoglu, George-Marios Angeletos, Ricardo Caballero, Jonathan Halket, Espen Moen, and seminar participants at MIT, UC Louvain, University of Amsterdam, University of Cologne, Aarhus University, Norges Bank, Stockholm University, University of Copenhagen, ECB, BI Norwegian Business School, the Federal Reserve Board, Paris School of Economics, INSEAD, Oxford, University of Exeter, University of Bristol, the Bank of Finland, the Cologne Workshop in Macroeconomics, the 2012 Urban Economics Association Meeting, University of Oslo (ESOP), Mannheim Workshop in Quantitative Macroeconomics, the 2013 SED Meetings, and the 2014 Louvain Workshop on "Housing, Mobility and Labor Market Outcomes" for valuable comments.

http://dx.doi.org/10.1016/j.red.2015.08.002
1094-2025/

strongly (weakly) to a deterioration in local labor market conditions, and moves are directed towards better performing labor markets (untargeted – with many moves to under-performing labor markets), then reallocation is large (small) and populations adjust quickly (sluggishly). In that case the importance of regional reallocation for unemployment is significant (limited), and housing markets exert a large (small) compensating effect.

If individual moves respond weakly and are untargeted, then moving outcomes arise *as if* driven by a frictional migration process. However, this paper argues that this is the empirically relevant case, since such a frictional process is important for understanding key features of gross migration flows and housing markets.

I show this in a spatial equilibrium model that includes an interaction between local labor market conditions, housing markets and migration flows. The model economy I consider consists of a continuum of islands (locations) in the spirit of Lucas and Prescott (1974). Local labor markets are characterized by search and matching frictions, which give rise to unemployment within islands, while island-specific labor market shocks drive local business cycles. Each region is endowed with a fixed supply of durable housing that workers value for its housing services and rent in a competitive rental market. A downward sloping demand for housing services by workers leads to differences in equilibrium rental prices across locations with different populations.

Workers migrate out in response to local labor and housing market conditions. However, they also move for idiosyncratic reasons due to preference shocks for their current location. Their migration decision is a combination of directed and undirected (random) migration, that is, workers either migrate to regions offering the most favorable labor and housing market conditions or alternatively, to any region of the economy.

This individual migration process allows the model to generate the comovements of unemployment and house prices (or rental prices) with gross migration flows observed in a panel of U.S. cities. Specifically, the unemployment rate in a city correlates positively with migration out of that city and negatively with migration into it, controlling for housing prices. More importantly, housing prices correlate positively with out-migration and negatively with in-migration, controlling for unemployment.

The individual migration process in the model leads to sluggish labor reallocation in response to local labor market differences. This slow reallocation creates a rich equilibrium distribution of regional populations and a dependence of regional house prices on the history of labor market shocks. For example, a region whose labor market is depressed for a longer time has a lower population, and hence, house prices, compared to a region which has experienced a negative shock more recently. This "history dependence" drives the positive comovement between out-migration and house prices, controlling for unemployment, since regions with lower house prices, other things equal, are more attractive to potential emigrant workers. Combined with partially directed migration, the history dependence also drives the negative comovement between in-migration and house prices, controlling for unemployment.

I use the magnitudes of the observed comovements in the data to estimate the individual migration process using an indirect inference procedure. The migration parameters of interest are the probability of directed migration, a mobility cost for unemployed workers (combining moving costs and a preference for staying in a region), and the dispersion in idiosyncratic regional preferences.

The model can match well the moments used in the estimation and also performs well against a large set of non-targeted moments. It fits particularly well the variability in rental prices observed in the data and also features persistence in house price growth rates. Both of these are hard to generate in models with frictionless mobility, which tend to predict either a counterfactually high dispersion in rental prices (Davis and Ortalo-Magne, 2011) or no persistence in house price growth (Glaeser et al., 2014).[2] The reason why this model produces a lower rental price variability and persistence in price growth is the slow reallocation due to the mobility cost, idiosyncratic regional preferences, and the partially directed migration. The slow reallocation compresses the equilibrium distribution of populations, which leads to a decreased variability in equilibrium rental prices. Also, the smooth out- and in-migration flows lead to persistence in house price growth. Additionally, I directly show that the history dependence in prices and populations in the model is consistent with the observed data.

The estimation reveals a low probability of directed migration and a high mobility cost for unemployed workers, which contribute to a low regional reallocation rate. In particular, the model predicts that around 50% of net flows across U.S. cities are driven by local labor market disparities. The low probability of directed migration is particularly important for the low reallocation rate. Specifically, at the estimated parameters, a small change in the probability of directed migration has a large impact on reallocation.

Next, I consider a set of counterfactual experiments to establish the role of housing for reallocation and the importance of reallocation for unemployment. By comparing the cases with and without a compensating effect of the housing market, I show that, at the estimated parameters, housing has a limited effect on labor reallocation. The reason for this small effect is that with slow reallocation the equilibrium distribution of regional populations is compressed, so housing market differences play a small role in migration decisions. In contrast, whenever there is more reallocation, particularly, due to a higher probability of directed migration, the housing market also exerts a substantial effect. In that case, the equilibrium distribution of populations across regions is more dispersed, so rental prices differences matter more.

[2] In recent work, Head et al. (2014) study a model with housing markets characterized by search frictions, which features persistence in house price growth rates.