



# Job creation and housing construction: Constraints on metropolitan area employment growth<sup>☆</sup>

Raven E. Saks

*Federal Reserve Board of Governors, 20th & C Street, NW, Washington, DC, USA*

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## Abstract

Differences in the supply of housing generate substantial variation in house prices across the United States. Because house prices influence migration, the elasticity of housing supply also has an important impact on local labor markets. I assemble evidence on housing supply regulations and examine their effect on metropolitan area housing and labor market dynamics. Locations with relatively few barriers to construction experience more residential construction and smaller increases in house prices in response to an increase in housing demand. Furthermore, housing supply constraints alter local employment and wage dynamics in locations where the degree of regulation is most severe.

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## 1. Introduction

A growing literature argues that labor migration is one of the primary mechanisms through which metropolitan areas adjust to changes in local economic conditions (Blanchard and Katz, 1992; Gallin, 2004; Topel, 1986). Prospective migrants choose a location by comparing the benefit to living in each area to the cost of moving. Because housing is a large share of the household budget, house prices have an important effect

on the relative value of wages across geographic areas.<sup>1</sup> As a result, areas with high house prices will attract fewer migrants holding other factors constant (Gabriel et al., 1993; Johnes and Hyclak, 1999).

Because housing markets influence migration, local employment growth depends critically on the capacity of the construction industry to accommodate increases in housing demand. In places where residential construction responds to new demand without difficulty, workers will move into the area with little change in house prices. In contrast, if new construction is con-

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*E-mail address:* [raven.e.saks@frb.gov](mailto:raven.e.saks@frb.gov).

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<sup>1</sup> In 2002, households in the United States spent 19.2% of average annual expenditures on shelter (US Bureau of Labor Statistics, 2002, Table 4).

strained, an increase in demand will lead mostly to higher house prices, with little change in employment. Thus, the elasticity of housing supply is a key factor in determining how labor markets adjust to changes in local economic conditions.<sup>2</sup>

Although changes in the housing supply are not the only way in which an area can adjust to a change in local labor demand, the correlation between changes in employment and new construction is strong. Controlling for year and metropolitan area fixed effects, a simple OLS regression of annual log changes in employment on annual log changes in the housing stock yields a coefficient of 0.57 (with a standard error of 0.03).<sup>3,4</sup> Therefore, growing cities must confront the issue of where new workers will live.

In this paper, I explore the effect of the housing supply on metropolitan area labor markets. To determine the elasticity of housing supply in individual metropolitan areas, I assemble evidence from six different sources of information on local land use policy. This new index reveals considerable heterogeneity in the extent of regulation across locations, and I find that areas with a larger degree of regulation experienced less residential construction and larger house price increases than less regulated locations from 1980 to 2000. In addition to these effects on local housing markets, I develop a simple model to show how the elasticity of housing supply (and consequently the degree of housing supply regu-

lation) should also impact local labor markets. Specifically, a labor demand shock should result in lower employment growth, higher wages and higher house prices in places with an inelastic housing supply. Consistent with this theory, the long-run response of employment to an increase in labor demand is about 20 percent lower in metropolitan areas with a high degree of housing supply regulation.

## 2. Housing supply regulations across metropolitan areas

In order to explore the effect of the housing supply on labor markets, first it is necessary to identify credible variation in the elasticity of housing supply across locations. Using this variation, I will then show how the dynamics of metropolitan housing and labor markets depend on the responsiveness of the housing supply to shocks to labor demand. Empirical evidence on differences in the elasticity of housing supply across metropolitan areas is scarce because this parameter is not easy to observe.<sup>5</sup> Rather than estimating this elasticity from fluctuations in house prices and quantities, I use information on the restrictiveness of land use regulation in each location to evaluate the responsiveness of the housing supply in individual metropolitan areas. In this section, I describe how I construct this index and show that locations with more regulation have higher house prices and less new construction in response to a demand shock, suggesting that this index reflects meaningful variation in elasticity of housing supply across locations.

### 2.1. Measuring housing supply regulations across metropolitan areas

Government regulations can influence residential construction in numerous ways. Land use policy is generally controlled by local governments, and the political

<sup>2</sup> Although a number of studies have examined the correlation between house prices and migration, only a few specifically address the effect of the housing supply on local labor markets. One example is Case (1991), who discusses this issue in the context of rising labor demand in Boston in the 1980s. Also, Bover et al. (1989) analyze the effect of regional housing market constraints on migration flows in the UK. Neither of these papers attempts to identify the effect of housing supply constraints separately from housing demand, as I will do in this paper.

<sup>3</sup> In this regression and in all of the analysis that follows, metropolitan areas are defined using the 1999 Census definitions of PMSAs and NECMAs. County-level data are aggregated to the metropolitan level so that metropolitan area boundaries can be kept fixed over time. See Appendix A for details.

<sup>4</sup> Some mechanisms that allow labor markets to adjust when the housing supply remains fixed include changes in the unemployment rate, labor force participation and the housing vacancy rate. However, prior studies show that these margins of adjustment appear to be small. Blanchard and Katz (1992) find that labor force participation and unemployment account for about 50 percent of the impact of a labor demand shock in the first year, and that these factors become less important over longer time horizons. Hwang and Quigley (2006) find that vacancy rates are only weakly related to labor market conditions in metropolitan areas. Glaeser et al. (2006) also show that changes in vacancy rates and household size only explain a small fraction of the variance of changes in population across cities.

<sup>5</sup> Although one could theoretically identify this elasticity from a regression of house prices on quantity and instrumenting with shocks to housing demand, in practice it is difficult to find exogenous instruments that are strong enough to yield precise estimates. Along these lines, in Saks (2004) I use an instrumental variable strategy to estimate the responses of construction and house prices to a labor demand shock in 131 individual metropolitan areas. I find substantial variation in the elasticity of housing supply across locations. Other related research includes Green et al. (1999), who estimate MSA-specific elasticities from a reduced form regression of prices on quantities, and Evenson (2002), who estimates local elasticities from changes in employment. However, neither of these studies identifies the slope of the supply curve from exogenous changes in housing demand.

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