Available online at www.sciencedirect.com
ScienceDirect
Journal of Monetary Economics 54 (2007) 1962–1985
Journal of MONETARY ECONOMICS
www.elsevier.com/locate/jme

99 Luftballons: Monetary policy and the house price boom across U.S. states

Marco Del Negro[a], Christopher Otrok[b,*]

[a]*Federal Reserve Bank of Atlanta, GA, USA*
[b]*University of Virginia, VA, USA*

Received 9 September 2005; received in revised form 9 November 2006; accepted 14 November 2006
Available online 10 January 2007

Abstract

We use a dynamic factor model estimated on quarterly state-level data from 1986 to 2005 via Bayesian methods to disentangle the relative importance of the common component in OFHEO house price movements from local (state- or region-specific) shocks. We find that historically movements in house prices were mainly driven by the local component. The recent period (2001–2005) has been different: the increase in house prices is a national phenomenon. We use a VAR to investigate the extent to which expansionary monetary policy is responsible for this phenomenon. We find the impact of policy shocks on house prices to be small in comparison with the magnitude of recent fluctuations.

JEL classifications: E52; R31; C11; C32

Keywords: Housing; Monetary policy; Bayesian analysis

> We don't perceive that there is a national [housing] bubble but it's hard not to see ... that there are a lot of local bubbles.
>
> Chairman Alan Greenspan (Economic Club of New York, May 20, 2005; CNN Money)

*Corresponding author. Tel.: +1 434 924 3692; fax: +1 804 924 2904.
E-mail addresses: marcodelnegro@frbatlanta.org (M. Del Negro), cmo3h@virginia.edu (C. Otrok).

0304-3932/$ - see front matter
doi:10.1016/j.jmoneco.2006.11.003

1. Introduction

In some U.S. metropolitan areas house prices increased dramatically during the last few years. The increase in house prices is substantial even if one looks at the average state-level price, which smooths out the differences across local markets within each state. The dark bars in Fig. 1 show the annualized average growth rates from the first quarter of 2001 to the last quarter of 2005 in the Office of Federal Housing Enterprise Oversight (OFHEO) house price indexes, deflated by the core PCE inflation, for the 48 contiguous U.S. states. In this five-year period house price indexes increased more than 10% per year in several states on both the East and the West Coasts, notably California, Florida, Nevada, Maryland, Rhode Island, New Jersey and Virginia. The rise in house prices has been very uneven across the nation, with some states, like Texas and Ohio, growing at 2% per year. If we compare the growth in house prices in the last five years with the average growth since 1986, we find that states like Florida have grown two and half times their average, while other states, like Michigan, have grown 25% less than average.

From the perspective of the current debate, an important question is whether the widespread, but not homogeneous, increase in house prices reflects a national phenomenon or rather, in the words of Chairman Greenspan, a collection of "local bubbles." The answer to this question has important policy implications. "Local bubbles" are most likely attributable to local factors, i.e., circumstances that are specific to each geographic market, rather than to monetary policy, which is the same across the nation. On the contrary, if the boom in house prices is a national phenomenon, monetary policy may well be a likely suspect.

To address the issue of a potential national housing cycle we estimate a dynamic factor model in the spirit of Geweke (1977), Sargent and Sims (1977), and Stock and Watson (1989), on state-level OFHEO house price indexes from the mid-80s to the end of 2005. We then use the factor model to disentangle the component of the increase in the value of housing that is common to all states from the component that is idiosyncratic, i.e. specific to each state. The latter component is meant to capture the "local bubbles" Chairman Greenspan refers to, while the former captures co-movement across all states, and therefore, potentially, what has been referred to as a "national bubble." We find that historically movements in house prices have mainly been driven by the local (state- or region-specific) component. Indeed, growth rates in OFHEO house price index are far less synchronized across states than are the growth rates in real per capita income, which are a measure of the business cycle at the state level.

However, the recent period has been different in this regard. While for a number of states local factors are still very important, for many states that experienced large increases in house prices a substantial fraction of these increases is attributable to the national factor. How can we reconcile this finding with the fact that increases in house prices have been uneven across states? Of course, part of the cross-state heterogeneity is due to local factors. But about 60% of the heterogeneity is due to the fact that states have different exposures to the common cycle: some states, like Iowa, Nebraska, or Oklahoma, are barely affected by the common cycle, while others, for instance most states in the north-east, are strongly affected.

Since in the recent period the common component of the growth in house prices across states has been sizable, we ask to what extent monetary policy is behind this co-movement. Of course there are many other potential causes of the house price boom, such as mortgage