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Booms and busts in housing markets: Determinants and implications

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ABSTRACT

This study looks at the characteristics and determinants of booms and busts in housing prices for a sample of eighteen industrialised countries over the period 1980–2007. From an historical perspective, we find that recent housing booms have been amongst the longest in the past four decades. Estimates of a Multinomial Probit model suggest that domestic credit and interest rates have a significant influence on the probability of booms and busts occurring. Moreover, international liquidity plays a significant role for the occurrence of housing booms and—in conjunction with banking crises—for busts. We also find that the deregulation of financial markets has strongly magnified the impact of the domestic financial sector on the occurrence of booms.

1. Introduction

Starting in late 1990s, a major housing boom coupled with strong money and credit growth emerged in the US and many other industrialised countries. This took place in an environment of strong financial innovation, and as it turned out, insufficient risk management, lack of transparency, poor incentives and increasing leverage. The turn from boom to bust and to crisis started with troubles in the sub-prime mortgage market in the US in early 2007. Initially these troubles were thought to remain well contained. But in the summer of 2007, the sub-prime crisis turned into a wider US housing market downturn and financial crisis that spilled over to Europe. Following the Lehmann default in September 2008, the financial crisis deepened and after a severe economic downturn coupled with expansionary fiscal programmes, a sovereign debt crisis emerged in a number of European countries in early 2010.[1]

The global nature of the financial crisis, in the context of a sharp weakening of the housing sector in many countries, has increased calls for monetary and regulatory policy makers to take into account emerging housing/asset price booms in their policy assessment and to develop early-warning devices for their identification. Booms are defined as price rises of major duration and amplitude that deviate significantly from long term trends. These might (ultimately) turn into the reverse phenomenon, i.e. busts.

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[1] See e.g. Schuknecht et al. (2010) for a study of sovereign bond spreads pre- and post-Lehmann.

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Booms and busts are, as we will argue, driven by fundamental factors but they might be compounded by altered market expectations and even speculative actions.[2] They may have significant economic effects by boosting growth and demand in booms and depressing these variables in busts.

From a policy perspective, the experiences around booms and busts explain why policymakers aim to improve tools to detect them at an early stage. From an analytical side, they also motivate the three main questions of our study: (a) how can we identify booms and busts in housing markets and what are their characteristics? (b) which factors determine the emergence of booms and busts? and (c) how different is the marginal impact of each factor during booms and busts compared to normal times, i.e. periods characterized by 'normal' housing prices fluctuations?

In order to address these questions, we proceed as follows. First, we use the so-called "triangular methodology" as initially proposed by Harding and Pagan (2002) to identify, for a set of 18 industrialized countries, housing boom and bust episodes. By comparing their characteristics in terms of persistence, magnitude and severity, we examine to what extent more recent booms differ from historical episodes. Second, we identify factors that can serve as early warning devices of booms and busts and analyse their marginal contributions within a discrete choice modelling framework.

Our work contributes to the existing empirical literature in several ways. First, we provide a comprehensive characterization of housing boom and bust phases across countries as we analyse in greater details their features in terms of duration, amplitude and severity. Second, we extend the existing research focused on the economic fundamentals of housing price dynamics (see e.g. Englund and Ioannides, 1997; Hwang and Quigley, 2006) and, more recently, on the prediction of turning points in housing markets (see e.g. Croce and Haurin, 2009). More specifically, we identify both economic and demographic determinants of real estate booms and busts and assess their importance during different phases of housing markets: booms, busts and normal times.

Third, we look at the influence of international factors on the probabilities of booms and busts occurring. In particular, we provide empirical evidence for the role of global liquidity. Considering that the impact of liquidity on housing prices has been extensively analysed mainly at domestic level, the assessment of international liquidity spillovers represents a novel aspect of our work. In addition, we examine whether international financial regulatory setting as well as the occurrence of systemic banking crises have contributed to alter the role of economic drivers during booms and bust periods.

The main findings can be summarized as follows: domestic monetary policy and liquidity have a strong influence on the probability of booms and busts occurring. In particular, a decrease in interest rates and an increase in the domestic credit growth rate increase significantly the probability of boom. As expected, the same set of variables has the opposite impact on the probability of the occurrence of busts.

Interestingly, we find that international liquidity plays a significant role and increases the probability of housing boom episodes. Moreover, international liquidity is the major driver of housing busts when such episodes are associated with the occurrence of systemic banking crises. Finally, as to the role of financial market deregulation, we find that the removal of ceilings on interest rates and the lifting of credit controls have significantly amplified the role of the domestic financial sector for the occurrence of boom episodes.

The remainder of the paper is organized as follows. Section 2 provides a review of the existing literature. Section 3 deals with the identification of boom and bust episodes in housing markets and puts recent experiences into an historical perspective. After describing the set of indicators of booms and busts, Section 4 presents the model set-up and discusses the estimation techniques used. Section 5 reports the empirical findings while Section 6 presents results from robustness checks. Finally, Section 7 concludes.

2. Overview of the literature

Our study touches on two strands of literature: the traditional literature that analyses the determinants of housing prices and the more recent one that focuses on the macroeconomic and policy implications related to the existence of asset price misalignments.

As to the first question, the empirical literature is vast (see Leung, 2004 and Gilchrist and Leahy, 2002 for a survey). So far, the interlinkage between housing markets and macroeconomy has been documented for countries that offer availability of long time series of housing prices (see e.g. Catte et al., 2004; Case, 2000; Green, 1997 for the case of US, Bowen, 1994 for the case of UK).

Single and cross-country studies generally find that housing markets and the macroeconomy are strongly interrelated at country-level and internationally correlated. Such studies show that, at national and regional levels, housing prices are strongly influenced by the business cycles and therefore driven by fundamentals like income growth, industrial production and employment rate (see Hwang and Quigley, 2006; Ceron and Suarez, 2006). Moreover, financial variables such as interest rate, money and credit supply have been found related to housing prices developments (see e.g. Kennedy and Andersen, 1994; Englund and Ioannides, 1997; Kasparova and White, 2001) also on the grounds that there may be credit rationing (e.g. Tsatsaronis and Zhu, 2004; IMF, 2004; Lecat and Mesonnier, 2005). Differences in real estate prices dynamics across countries can also be traced back to differences in regulatory setting and mortgage market features (see Adams and Füss, 2010). As regards non-economic domestic indicators, Parker (2000) and Jud and Winkler (2002)

[2] We use the term boom and not bubble as the latter term might insinuate a predominant role of non-fundamentals such as speculation. Moreover, we distinguish busts from crises as only some busts were followed by economic and/or financial crises.