



Contents lists available at ScienceDirect

## Economic Modelling

journal homepage: [www.elsevier.com/locate/econmod](http://www.elsevier.com/locate/econmod)Growth, financial development, and housing booms<sup>☆</sup>

Taejun Lim

Korea Insurance Research Institute, 35-4, Yoido-Dong, Youngdeungpo-Gu, Seoul, 150-606, Korea

## ARTICLE INFO

## JEL classification:

E44  
G21  
O11  
O16

## Keywords:

Housing collateral  
Economic growth  
Financial development  
Entrepreneurship

## ABSTRACT

We present a quantitative model to assess the effect of a housing boom on economic growth. In the model, a housing boom boosts economic growth through expanding homeowners' borrowing capacities and mitigating capital misallocation, however, at different rates across different levels of financial development. Our analysis of 23 housing boom episodes in 54 countries from 1995 to 2012 corroborates the model's implication: economic growth during a housing boom is greater in countries with less developed financial systems.

## 1. Introduction

In the literature of economic growth, underdeveloped financial systems in poor countries are often considered major contributors to discrepancies in per capita income between poor and rich countries. Goldsmith (1969), for example, argued, “One of the most important problems in the field of finance, if not the single most important one, almost everyone would agree, is the effect that financial structure and development have on economic growth” (p.390).<sup>1</sup>

Theoretically, Buera et al. (2011, 2013) and Buera and Shin (2013) claim that much of the global income dispersion can be explained by cross-country differences in the level of financial development by presenting a quantitative model that can be characterized by (i) the role of collateral in loan contracts and (ii) an individual's occupational choice (to be a worker or an entrepreneur). Intuitively, their arguments are as follows: financial market imperfections (e.g., limited enforcement of contracts) are reduced with the provision of collateral in a capital rental contract. In countries with less developed financial systems, a higher level of collateral is required in any capital rental contract, and it is more likely that capital is allocated to the rich rather than the most productive. This inefficient allocation of capital results in a significant loss in aggregate productivity and output.

In this paper, we extend the model introduced in Buera et al. (2011) by adding a role for housing as collateral and use it to examine how

countries at different stages of financial development respond differently to an identical housing boom in terms of housing price growth. We treat a housing boom episode as an unexpected event that relaxes financial constraints faced by individuals, especially (potential) business owners. An increase in housing price shifts out a (potential) business owner's borrowing capacity through an increase in collateral value. Thus, a housing boom ameliorates the capital misallocation that results from an incomplete financial system, thereby boosting economic growth. Importantly, the model predicts that this collateral impact of a housing boom is greater in countries with less developed financial systems.

The run-up in house prices has been global, from developing countries (India, Brazil, Cyprus, etc.) to the most developed countries (US, UK, Hong Kong, etc.) since the late 1990s. Notably, the growth rates of house prices are fairly comparable across countries experiencing a housing boom episode, regardless of the level of economic development.<sup>2</sup> The recent housing booms around the world provide an opportunity to empirically test the explanatory power of our model.

We analyze 23 housing boom episodes in 54 countries from 1995 to 2012 through the lens of our model. Specifically, we check the relation between the level of financial development and output growth (normalized by house price growth) during the housing boom episode. The differential levels of financial development across countries are proxied by indicators—the ratio of private credit provided by deposit money

<sup>☆</sup> We thank the editor and two anonymous reviewers for their insightful comments. All errors and oversights are our own.

E-mail address: [limtaejun@gmail.com](mailto:limtaejun@gmail.com).

<sup>1</sup> Yet, Hsueh et al. (2013) argue that the direction of causality between financial development and economic growth might be sensitive to measures of financial development. Moreover, Bahadir and Valev (2010) and Koong et al. (2017) warn that excessive or rapid credit expansions may cause financial instability and thus have negative impacts on the economy.

<sup>2</sup> See Table 4.

<http://dx.doi.org/10.1016/j.econmod.2017.09.008>

Received 24 January 2017; Received in revised form 23 August 2017; Accepted 10 September 2017  
0264-9993/ © 2017 Elsevier B.V. All rights reserved.

banks to GDP, the ratio of private credit provided by deposit money banks and other financial institutions to GDP, and the ratio of domestic credit provided to the private sector to GDP—from the Global Financial Development Database (GFDD) provided by the World Bank.<sup>3</sup> A higher value of each indicator means that financial institutions are being utilized more extensively, which can be interpreted as a country having more developed financial systems. Our empirical analysis reveals that the economic growth rates during the housing boom period are lower in countries with less developed financial systems, which corroborates the collateral effect of a housing boom on economic growth as suggested by the model.

### 1.1. Related literature

A large yet expanding literature has been devoted to identifying sources of cross-national differences in total factor productivity (TFP) to understand the persistent differences in per capita income between poor and rich countries. Hall and Jones (1999) point out that differences in social infrastructure across countries explain a large part of the global dispersion in TFP. Recently, a few papers have stressed that the misallocation of resources among heterogeneous firms is to be blamed for low TFP in poor countries. For example, Restuccia and Rogerson (2008) show that policy distortions that result in heterogeneity in the prices faced by individual firms can lead to a significant drop (30 to 50 percent) in TFP, using a version of the neoclassical growth model. Hsieh and Klenow (2009) conduct a counterfactual experiment to show that if the level of resource misallocation in China and India, measured by the dispersion of productivity across firms, is improved to match the level observed in the US, TFP would increase by 30 to 50 percent in China and 40 to 60 percent in India. Bartelsman et al. (2013) also suggest that resource misallocation can lead to significant drops in aggregate economic performance.

Galor and Zeira (1993) and Piketty (1997) are among the first to focus on the interplay between the wealth distribution and financial frictions as a source of resource misallocation. The outbreak of the financial crisis in 2007 has subsequently stimulated considerable effort in seeking the source of misallocation from imperfect financial systems. Quintin (2008) and Amaral and Quintin (2010) argue that limited enforcement of the credit contract can result in a large output loss. Caselli and Gennaioli (2013) suggest that the tradition of dynastic management in developing countries with poor financial systems can explain a significant portion of the observed cross-country differences in TFP. A recent paper by Midrigan and Xu (2014) goes one step further: by exploiting micro-level firm data on China, Colombia, and Korea, they claim that the loss of TFP driven by financial frictions mainly comes from the extensive margin (entry or adoption of technology), not from the intensive margin (capital misallocation among incumbent firms).<sup>4</sup>

Another growing strand of the literature, ignited by the recent housing market boom and bust, has been devoted to finding empirical evidence of the role that housing collateral plays for business owners. Adelino et al. (2012) report empirical findings on the pivotal role of the collateral lending channel by showing a high correlation between cross-regional house price increases and increases in small business employment, in comparison to employment in the large corporate sector. Schmalz et al. (2016) come to a similar conclusion by exploiting information on homeownership by entrepreneurs as well as cross-regional variation in house prices. They look at the difference in the propensity to start or grow a business between renters and homeowners to identify the housing collateral channel. Their finding that

housing collateral matters to business owners provides empirical evidence of the crucial role of financial frictions at the individual level, which also supports our modeling assumption that entrepreneurs can collateralize housing units to raise funds for their projects.

We combine two strands of the literature – financial frictions and housing collateral – and explore how increases in housing prices can mitigate the negative effect of financial frictions on economic growth. We make contribution to the literature by providing a quantitative tool to study the effect of a housing boom on economic growth, which is relatively less explored in the literature. Notably, our paper is in line with recent studies that provide the evidence of the diminishing returns to improvement in financial development (See Mallick et al., 2016; Shen, 2013; Beck et al., 2014). It is claimed in the literature that a more developed financial system would help efficient resource allocation, leading to a higher level of aggregate output by mitigating the binding constraints of entrepreneurs. It is precisely the same mechanism through which housing booms positively affect the aggregate productivity in our model. Our work suggests that the housing boom effects are smaller in countries with higher levels of financial development; it corroborates the diminishing returns to improvement in financial development.

The growth of data that measure financial development has been accompanied by the development of a literature that seeks empirical evidence on the linkage between financial development and economic growth. Goldsmith (1969) compiled data from 35 countries for the period from 1860 to 1963 to show a positive correlation between economic growth and financial development. There has since been a significant effort to draw a causal relation by examining the effect of financial development on economic growth.<sup>5</sup> For example, King and Levine (1993a, 1993b) construct indicators for the level of development of financial institutions, and conduct a cross-country analysis using data on 80 countries from 1960 to 1989 to show that the development of a country's financial system can lead to economic growth. Levine and Zervos (1998) empirically document that measures of stock market development in terms of liquidity, size, volatility, and integration with world capital markets are positively correlated with the future rate of economic growth. Beck and Levine et al. (1999) and Beck and Kunt (2009) develop a globally comparable database on financial development and structure. The global financial crisis in 2007 has further increased the importance of establishing more sophisticated measures for the level of financial development. The Global Financial Development Database (GFDD) provided by the World Bank is the culmination of one long-lived effort and is now available at the World Bank's website.<sup>6</sup> In particular, a variety of measures of financial development included in the GFDD enable us to test the explanatory power of our model.

The paper is organized as follows. We develop the model in the following section. In Section 3, after explaining our calibration strategy, we present the results of the calibrated model for both the steady states and the transition paths. Then we provide empirical evidence on the model predictions in Section 4. Section 5 concludes the paper.

## 2. Model

We adopt an occupational choice model under an incomplete financial system. In particular, financial frictions are embodied in the form of limited enforceability of the capital rental contract. The model is essentially an extended version of Buera et al. (2011) with the introduction of the role of housing as collateral for the capital rental contract.<sup>7</sup> For simplicity, we assume that every household owns and lives in a house that is identical across households and that the housing

<sup>3</sup> The amounts of mortgage debt outstanding and credit to private sector are likely to increase during housing boom periods; thus, the levels of financial development are measured for the pre-housing boom periods.

<sup>4</sup> Also, Buera et al. (2011, 2013) and Buera and Shin (2013) deliver a similar argument as mentioned earlier.

<sup>5</sup> See also Levine (2005) for a great survey.

<sup>6</sup> Cihak et al. (2013) provide a detailed description of the data.

<sup>7</sup> Buera et al. (2011) assume that households' own savings are the only asset that can be used as collateral.

Download English Version:

<https://daneshyari.com/en/article/7347427>

Download Persian Version:

<https://daneshyari.com/article/7347427>

[Daneshyari.com](https://daneshyari.com)