Housing-market heterogeneity in a monetary union

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ABSTRACT

This paper studies the implications of cross-country housing-market heterogeneity in a monetary union for both shock transmission and welfare. I develop a two-country new Keynesian general equilibrium model with housing and collateral constraints to explore this issue. The conventional wisdom is that welfare would be higher in a monetary union if mortgage markets were homogeneous. This paper shows instead that welfare is higher only when homogenization does not result in higher aggregate volatility (because of financial accelerator effects) or does not redistribute too much wealth from borrowers to savers.

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"Several of the benefits of the euro are already clearly visible, such as the deepening of trade and financial links between euro area countries and the greater resilience of the euro area to external shocks. Today I will discuss both of these accomplishments, and I will also touch on some of the challenges that we continue to face. For instance, there is presently a degree of diversity among euro area countries."

Jean-Claude Trichet, October 8, 2007.

1. Introduction

Costs and benefits of monetary unions are a much-discussed topic, especially in relation to Europe's Economic and Monetary Union (EMU). There are clear arguments in favor of such unions. A single

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currency eliminates exchange rate risk, allows rapid price comparison, lowers transaction costs across countries and favors trade. However, costs can arise if countries are not sufficiently similar in some respects. Different national characteristics such as heterogeneous institutions, consumption patterns or financial structures can be a source of different transmission of common shocks. Also, country-specific shocks derived from member heterogeneity can enhance the possible divergence.

In this paper, I focus on housing markets. I develop a two-country new Keynesian general equilibrium model with housing and collateral constraints and I consider how heterogeneous housing markets across members in a currency area affect the transmission of shocks. Then, I compare the dynamics with existing empirical studies and use the model to evaluate from a normative perspective whether housing-market homogenization would be beneficial.

Countries in Europe clearly differ in their housing markets. There is evidence of different loan-to-value ratios (LTVs), different proportions of residential debt relative to GDP across countries, and heterogeneous mortgage contracts. Also, house-price movements do not follow the same pattern in every country. The conventional wisdom is that welfare would be higher in a monetary union if mortgage markets were homogeneous. For instance, Maclennan et al. (1998) concluded that an effort should be made toward institutional homogenization among European countries to alleviate possible tensions. In its study "Housing Finance in the Euro Area," the European Central Bank (ECB 2009) also remarks on the importance of such differences for the EMU.

Table 1 in the Appendix shows that countries in Europe have different LTVs, as well as different residential-debt-to-GDP ratios. LTVs are as low as 50% in Italy and as high as 90% in the Netherlands, where the debt-to-GDP ratio exceeds 100%. In countries with a high LTV or a high proportion of indebted consumers, housing collateral effects are stronger. Therefore, shocks that affect the value of the collateral constraint could potentially have amplified effects on aggregate variables. This is a clear example of the financial accelerator mechanism, first modeled by Bernanke et al. (1999).

Differences in mortgage contracts across countries are another important source of heterogeneity in Europe. In countries such as Germany or France, the majority of mortgages are fixed rate. Conversely, the predominant type of mortgages in such countries as the United Kingdom, Spain, and Greece is variable rate. Calza et al. (2009) and Rubio (2011) showed that the mortgage structure of an economy is an important factor in the transmission of shocks.

Extensive studies discuss the differences in the transmission mechanisms between European countries using vector autoregressive (VARs) or large macroeconometric models, but few have focused on the consequences of housing-market heterogeneity from a theoretical standpoint.[1] A microfounded general equilibrium model is needed to understand the implications of housing-market differences, explore all the interrelations that take place in the economy, and conduct some normative analysis. Closed-economy models do not take into account important interactions, such as the fact that countries trade in both consumption goods and financial assets. A two-country model is also needed to appropriately calibrate the economy, according the corresponding size to each country and thereby comparing the result of the analysis with the evidence.

This paper relates to different strands of the literature. On the one hand, it is related to papers that study the shock transmission under different housing-market characteristics, such as the work by Calza et al. (2009). I extend their framework to an international version to address those issues in a monetary union. My paper is also related to two-country models with a financial accelerator, such as that of Gilchrist et al. (2002). In contrast to their model, which does not feature a housing market, those by Iacoviello and Smets (2006) and Aspachs and Rabanal (2008) develop a monetary-union model with housing markets and collateral constraints.[2] I add to this literature by considering the role of mortgage-contract heterogeneity and provide normative analysis.[3] The present paper also has links with papers that study welfare for different housing-market features. For instance, Campbell and Hercowitz (2009) study the welfare implications of moving to high LTVs. Rubio (2011) analyzes welfare when mortgages

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[1] For empirical VAR studies, see Calza et al. (2009), Carstensen et al. (2009) and Assenmacher-Wesche and Gerlach (2010).
[2] Aspachs and Rabanal (2008) focus on the case of Spain and the EMU.
[3] Darracq and Notarpietro (2008) study optimal monetary policy in a two-country model with housing for the US and the EMU.