

# Should European Mortgages Be Non-Recourse? Macroeconomic Arguments.\*

Pedro Gete<sup>†</sup> and Franco Zecchetto<sup>‡</sup>

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## Abstract

This article discusses how macroeconomic arguments should shape the design of mortgage contracts. Mortgage recourse systems, by discouraging default, magnify the impact of nominal rigidities and cause deeper and more persistent recessions. Default mitigates liquidity traps because it redistributes wealth towards the borrowers with the highest marginal propensity to consume. This redistribution has positive aggregate effects when nominal rigidities are binding. This mechanism can account for up to 30% of the recovery gap during the Great Recession between the U.S. (mostly a non-recourse economy) and European economies with recourse mortgage systems. The article reviews policy options for Europe.

**Keywords:** Aggregate Demand, Consumption, Default, Europe, Foreclosures, Housing, Liquidity Traps, Mortgages, Nominal Rigidities, Recourse, Recovery

**JEL Classification:** E51, H81, G21, R2

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<sup>†</sup>IE Business School. Maria de Molina 12, 28006 Madrid, Spain. Email: pedro.gete@ie.edu.

<sup>‡</sup>ITAM Business School. Río Hondo 1, CDMX 01080, Mexico. Email: franco.zecchetto@itam.mx.

# 1 Introduction

It is widely recognized that a well-functioning price system is essential for market economies to be successful. In a liquidity trap, prices stop working, for example, nominal interest rates hit the zero-lower bound and nominal wage rigidities are binding.<sup>1</sup> Since prices are stuck, the economic adjustment is done only through quantities, with high unemployment and low output. For this reason, liquidity traps are associated with deep and persistent recessions, like the Japanese experience since the mid-1980s.<sup>2</sup> There is a wide consensus that the decline in housing prices that started in 2007 moved both Europe and the U.S. into a liquidity trap and triggered the Great Recession (see for example Draghi 2008, or Yellen 2016).<sup>3</sup>

Recently, several authors like Bernanke (2017) or Kiley and Roberts (2017) have warned that liquidity traps will happen often in the future. The recovery from the Great Recession has been so slow that policy rates are still low.<sup>4</sup> Once the next recession arrives, traditional monetary policy will not have much room to stimulate the economy and prevent a new liquidity trap. This menace is especially dangerous for Europe for two reasons: 1) lower European policy rates make the ECB more exposed to the zero lower bound, and 2) European labor and product markets have more frictions that make prices sticky.

There is an active debate in the policy and academic communities about structural reforms to better deal with liquidity traps and prevent deep recessions. For example, Rogoff (2016) and Fernández-Villaverde (2016) have proposed getting rid of cash such that central banks are not constrained by the zero-lower bound. The IMF recommended raising inflation targets to 4% (Blanchard et al. 2010). Bernanke (2017) and several Fed governors have argued for switching from inflation to temporary price level targeting (Bernanke 2017). In this paper, building on the insights from Gete and Zecchetto (2017), we propose a very different set of reforms that involve redesigning mortgage contracts.

Mortgage systems vary in striking ways through time and across countries. Gete and Zecchetto (2017) study a key characteristic, whether mortgages allow for recourse or not. This is a characteristic that recently attracted considerable attention in Spain with the social movements in favor of the non-recourse mortgages ("Dación en Pago"). However, it has vanished from the mortgage reform debate in Spain (the new "Ley Hipotecaria").

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<sup>1</sup>See, for example, Eggertsson and Krugman (2012), Korinek and Simsek (2016) or Schmitt-Grohé and Uribe (2017) for recent work on liquidity traps.

<sup>2</sup>See, for example, Krugman, Dominquez and Rogoff (1998).

<sup>3</sup>The "Great Recession" label makes a parallel with the "Great Depression" that followed the 1929 financial crisis. It stresses the intensity and persistence of the crisis that started in 2007.

<sup>4</sup>For example, by the end of 2017, policy rates in the U. S. are not even at 1.5%, while in Europe they are still at zero.

In a non-recourse mortgage, the debt obligation disappears when the lender repossesses the house that serves as collateral. In a recourse mortgage, the lender can pursue a defaulted borrower for the balance of the mortgage after foreclosing on the home. For example, in Ireland or Spain mortgage debt is never extinguished, not even after a personal bankruptcy. Moreover, in most of Europe the length of a bankruptcy proceeding is measured in years, not months or weeks, as in the U.S., during which time almost all income must be devoted to debt service. Even if most U.S. states are in theory recourse states, recourse is rarely enforced because of the legal hurdles and costs associated with pursuing borrowers for the difference between what the borrower owes and what the lender recovers from the foreclosure (Ghent and Kudlyak 2011, Harris and Meir 2015, Willen 2014). Thus, in practice the U.S. is mostly non-recourse and for most U.S. borrowers, foreclosure results in the complete elimination of their mortgage obligations.

Non-recourse mortgages are riskier for lenders. Thus, they have higher mortgage rates and it is more difficult for the riskiest households to obtain them. From a macroprudential view, non-recourse mortgages make credit-fueled housing booms less likely. In this paper we discuss why non-recourse mortgages improve the recovery from a housing bust.

The rest of the paper is organized as follows. Section 2 documents that the U.S., Ireland and Spain had similar dynamics pre-crisis and at impact of the financial shock. However, the U.S. recovered much faster while having a larger number of mortgage defaults. Section 3 discusses the core result: recourse mortgages amplify liquidity traps. The recourse feature of the European mortgages can account for up to 30% of the slow recovery of Europe relative to the U.S. Section 4 concludes analyzing policy implications.

## 2 Facts

It is interesting to compare Ireland, Spain and the U.S. because they had similar patterns pre-crisis and at the start of the crisis. In these countries, housing prices and mortgage debt increased fast during the 1996-2006 period, together with current account deficits (Gete 2009, Bernanke 2010). Figure 1 shows that in 2007 housing prices fell by a similar percentage in these countries. Gross (2014) discusses how the beginning of the financial crisis affected Europe and the U.S. in a very similar way. On both sides of the Atlantic, monetary policy hit the zero-lower bound and economic performance tanked in 2009. However, over the 2011-2013 period the U.S. economy grew by about 4.5 percentage points more on a per capita basis.

The main reason for the recovery gap is the difference in private consumption, which grew

in the U.S., but fell in the Eurozone.<sup>5</sup> As Figure 1 shows, in the U.S. it took four years for house prices to start to recover while in Spain and Ireland it took more than 6 years. In these two countries, it took nearly seven years for aggregate consumption to stop falling. The top two panels of Figure 1 show that the length of the recession and the dynamics of the recovery have been very different across the two continents.

The bottom panel of Figure 1 shows that U.S. households have reduced their mortgage debt burden from the peak in 2007 considerably faster than households in Ireland and Spain. Most of the reduction happened through default, not through repayments (Willen 2014). That is, U.S. households reduced their mortgage debt outstanding by defaulting on it.<sup>6</sup> In Ireland and Spain the mortgage lenders have full recourse to the borrowers' personal assets and future income until all the mortgage debt is paid. Thus, there were less defaults and they did not reduce mortgage balances.

Next we discuss a mechanism why the debt relief brought by the non-recourse U.S. mortgages can explain the previous facts.

### 3 Why do recourse mortgages amplify liquidity traps?

To study how mortgage design affect macroeconomic dynamics, Gete and Zecchetto (2017) study a quantitative general equilibrium model. In the model there are households who can rent or buy a house with a mortgage. There are lenders who price the default risk of the mortgagor such that riskier borrowers face larger mortgage costs. The model replicates the main economic magnitudes of housing and mortgage markets. It is also consistent with the heterogeneity in leverage, and with the propensities to consume out of cash and house prices documented in the empirical literature.

Gete and Zecchetto (2017) use the model as a laboratory for policy analysis. The goal is to quantify how fast Europe would have recovered if at the onset of the 2008 crisis it would have switched its mortgage system from being a recourse to a non-recourse system. The exercise studies a credit supply shock (a decrease in the loan-to-value, LTV) similar to the 2007 financial crisis. This shock at impact approximately doubles the default rate (Hatchondo et al. 2013). The exercise compares a recourse economy with an economy without recourse. Figure 2 plots the results.

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<sup>5</sup>Public consumption and investment actually subtracted more demand in the U.S. than in the European Union. The contraction of private investment in Europe accounted for one-third of the growth gap (Gross 2014).

<sup>6</sup>Bhutta et al. (2017) show that in addition to recourse, emotional and behavioral factors play an important role in decisions to default.

The contraction on the borrowing limits induces less mortgage originations and a lower demand for housing from the leveraged households. House prices fall. Because of both wealth and collateral effects (lower house prices decrease access to credit and increase borrowing spreads), the fall in house prices encourages households to cut consumption.

As aggregate consumption falls then nominal wage rigidities cause unemployment. That is, given the lower demand for their products, firms lower their demand for labor. If wages were perfectly flexible this would translate into lower wages and the same employment. However, when wages do not fall the labor market does not clear and there is unemployment. Output becomes demand-driven due to binding downward nominal rigidities. The labor market is rationed. The economy enters into a liquidity trap with interest rates at the zero lower bound and output below fundamentals. Prices (including the nominal interest rate) do not fall enough to stimulate savers' consumption.

Unemployment causes lower income, which in turn depresses consumption even more, especially from the leveraged households with high marginal propensity to consume. Demand for house purchases decreases and house prices fall even more. There is a negative self-reinforcing loop as lower housing prices depress aggregate output and consumption. Unemployment raises, earnings fall, and again house prices fall. The economy, trapped by the zero-lower bound for interest rates and the nominal wage rigidities does not easily self-correct. However, once in this negative loop, a recourse economy behaves differently than a non-recourse economy.

Recourse and non-recourse mortgages provide different incentives to default. Table 1 and Figure 3 show the share of mortgagors defaulting in the recourse and non-recourse economies as a function of household's debt-to-value (DTV) and liquid assets.

With recourse mortgages, the utility from strategic default (that is, the household defaults even if she is able to repay) is non-existent because the defaulter remains liable for any debt after the house is foreclosed. Default is accounted for by households with high debt-to-value. These are mortgagors who had low income or bad house value shocks and face large mortgage payments relative to the value of the house. Among these highly leveraged households, the level of liquid assets is the key determinant of default. Households without liquid assets default as much as three times more often than households whose liquid assets allow them to smooth bad idiosyncratic shocks. For low holdings of liquid assets, even having 20% equity does not eliminate default risk if the household receives a bad idiosyncratic shock.

With non-recourse mortgages, there is strategic default. The region of strategic default depends on the housing transaction costs, house prices, prepayment costs and endogenous credit spreads. Having negative home-equity is not a necessary condition for default, although most

of the default is due to the households with low equity in the house. As Table 1 shows, with non-recourse mortgages the level of liquid assets is less relevant to explain default differences across mortgagors. There is four times less default with recourse mortgages.

Non-recourse mortgages facilitate default and debt reduction for highly leveraged households. Figure 4 shows the cross-section of propensity to consume and leverage. High leveraged mortgagors have high marginal propensity to consume and are a sizable share of the population. Many mid and low-wealth, high-indebted households that would have defaulted under non-recourse prefer not to do so under recourse. Moreover, households that default under recourse are still liable for the outstanding mortgage debt, reducing their consumption.

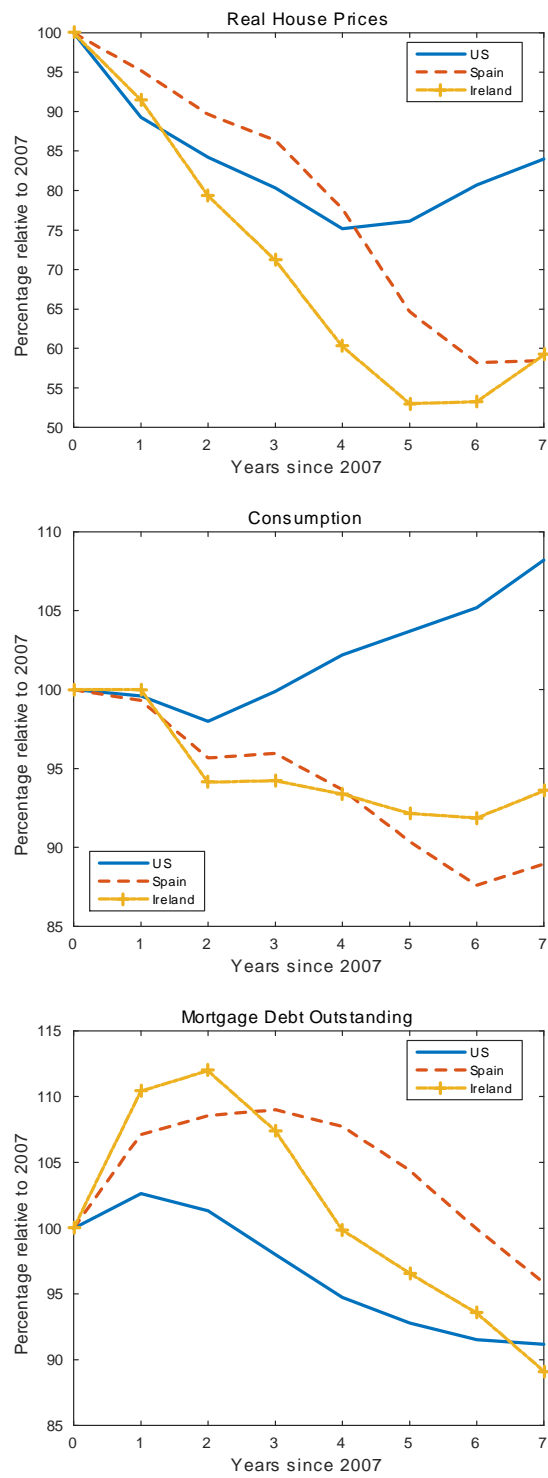
Because of default, leveraged households can obtain liquidity that they allocate to consumption. This mitigates the negative loop discussed before. As a consequence, Figure 2 shows that for the same fall in the borrowing limit, the non-recourse economy has a faster recovery in housing prices, employment and aggregate consumption relative to the recourse economy. The general equilibrium effects are substantial. Lower unemployment in the economy with non-recourse mortgages helps to sustain higher consumption.

When comparing the gap across mortgage regimes in Figure 2, with the gap in the U.S. versus Ireland and Spain in Figure 1, we can see that the recourse mechanism can account for 30% of the recovery gap in consumption in the data. That is, even in the presence of reasonable foreclosures costs, mortgage recourse systems magnify the impact of nominal rigidities by discouraging default and cause deeper and more persistent recessions relative to a non-recourse economy.

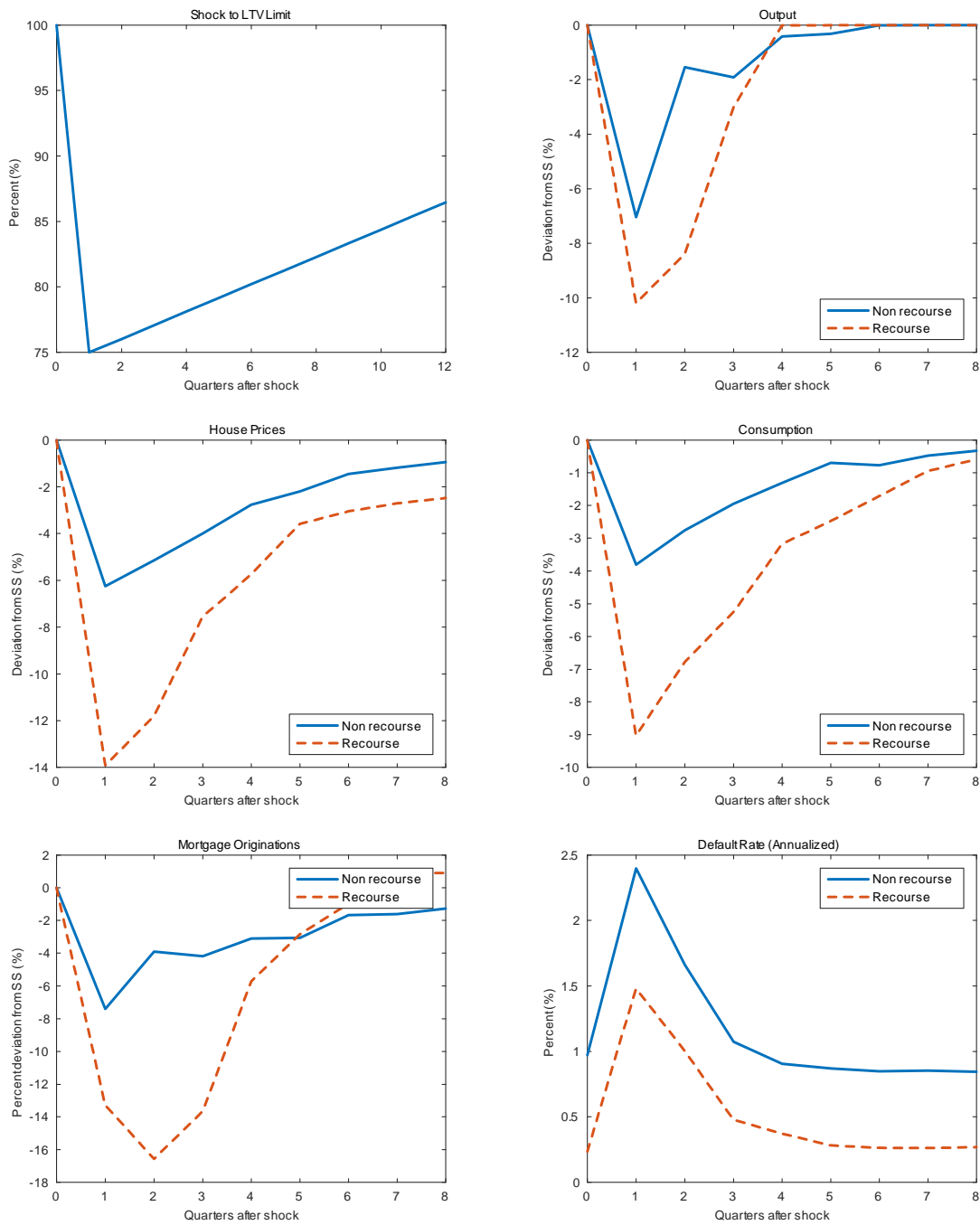
Table 1: Probability of Default (% annual) across Households and Mortgage Systems.

Subgroup	Non-Recourse		Recourse	
	All mortgagors	Illiquid households	All mortgagors	Illiquid households
DTV $\geq$ 85%	7.73	10.2	2.38	7.63
DTV $<$ 85%	0.13	0.13	0.00	0.00
All mortgagors	1.01		0.24	

Note: This table reports average default rates in the stationary equilibrium. Default rates are expressed in annual terms. DTV is debt-to-value. Illiquid households are those with no liquid asset holdings.

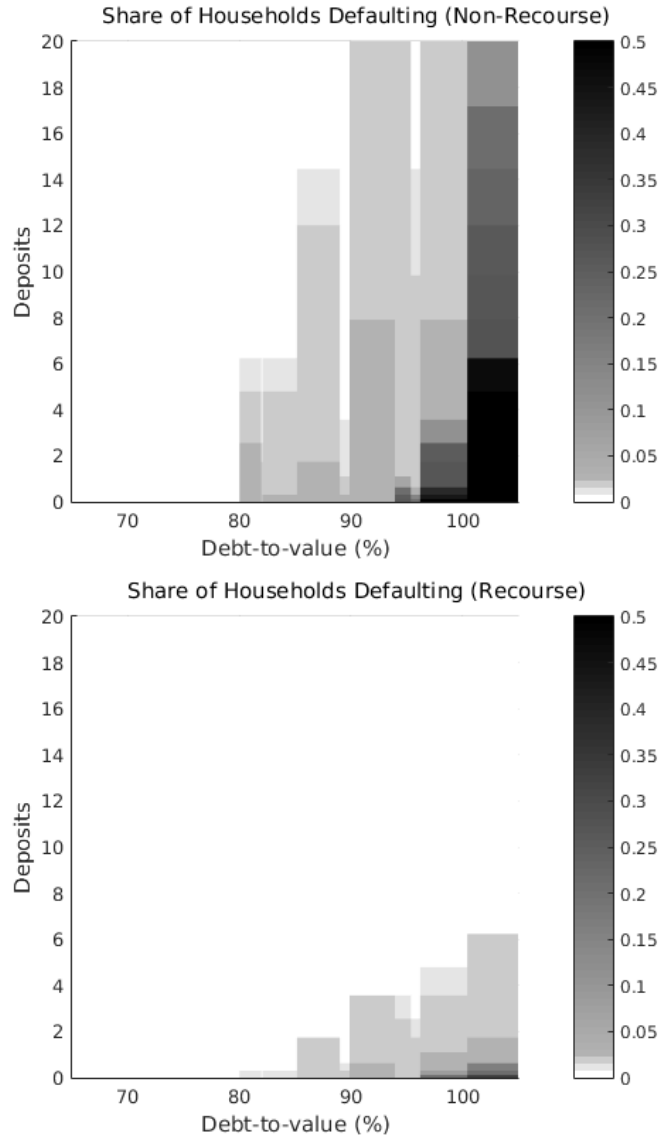


**Figure 1. Comparing Recourse (Ir, Sp) versus Non-Recourse Countries (US).**  
 Sources: OECD and Datastream.

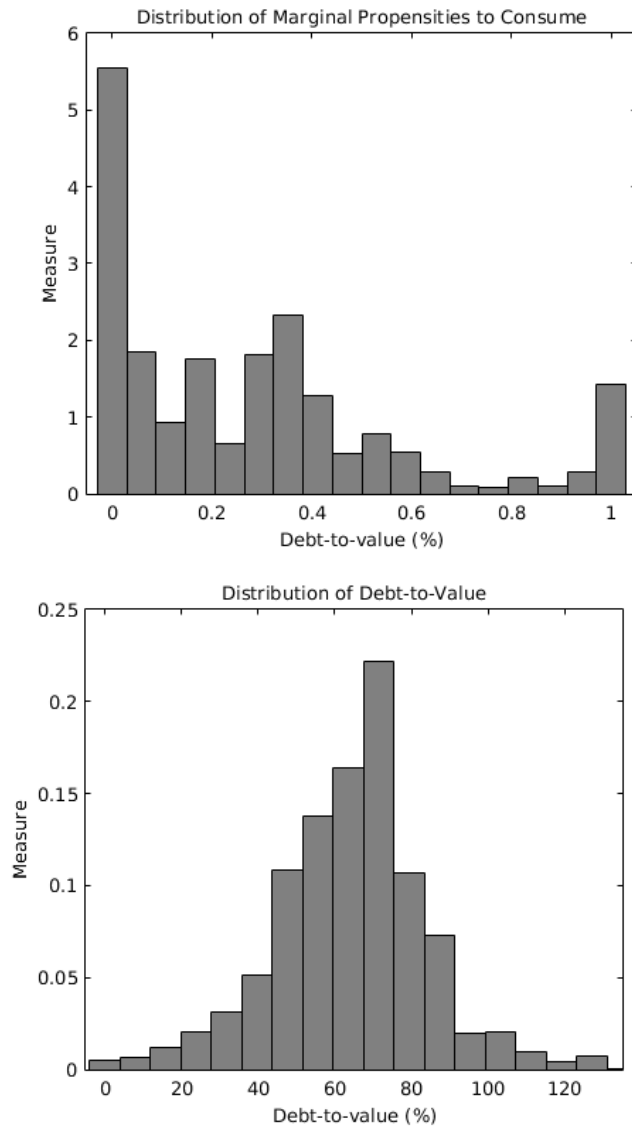


**Figure 2. Dynamics of Recourse and Non-recourse Economies following an Unexpected Loan-to-Value shock.**





**Figure 3. Percentage of Households Defaulting in Recourse versus Non-Recourse Economies.** The shades of the panels capture the percentage of households defaulting for a given debt-to-value and deposits. The top panel is the non-recourse economy while the bottom panel is the recourse economy.



**Figure 4. Cross-sectional Distributions of Debt-to-Value and Marginal Propensity to Consume out of Liquid Wealth in the Non-Recourse Economy.** These panels plot the distributions in the stationary equilibrium (that is, before the shock happens) of the non-recourse economy.

## 4 Policy implications and conclusions

As discussed above, the structure of the mortgage system is a key determinant of the reaction of an economy to a liquidity trap. Once the economy is in such a trap, there are gains from mechanisms that redistribute wealth from the savers unwilling to consume towards the borrowers with high propensity to consume. Default is a mechanism to do so. Non-recourse mortgages allow over-indebted households to default and start afresh, rather than reduce their consumption for years. Thus, in a liquidity trap, default with non-recourse mortgages generates positive gains for the economy from reducing unemployment, even in the presence of reasonable deadweight losses from foreclosure. Outside the liquidity trap, that is, when nominal rigidities do not bind, default only generates redistribution with no positive aggregate effects on employment and output.

Non-recourse systems seem better for economies with more nominal rigidities, like Europe. However, without recourse, access to mortgage credit is much more expensive for low income, high debt mortgagors. That is, transitioning from recourse to non-recourse mortgages will increase mortgage rates specially for the low-income leveraged mortgagors with higher default risk, like Figure 5 shows.

The higher defaults associated with non-recourse mortgages may depress banks' equity. This is potentially a negative channel in countries with strong frictions to allocate new capital into mortgage markets. However, the strength of the results from Gete and Zecchetto (2017) recommend transitioning European mortgages into a non-recourse regime. Unfortunately, the new "Ley Hipotecaria" in Spain, while innovative on issues such as promoting fixed rate mortgages, ignores this reform.<sup>7</sup>

Debt relief mechanisms or equity mortgages are even better policies than non-recourse mortgages as they decouple foreclosures from the wealth redistribution mechanism discussed. Debt relief policies allow underwater mortgagors to lower their payments or reduce their mortgage principal. One implication from Gete and Zecchetto (2017) is that reducing payments is more efficient than forgiving mortgage principal because it has stronger effects on households' budget constraints and consumption.<sup>8</sup>

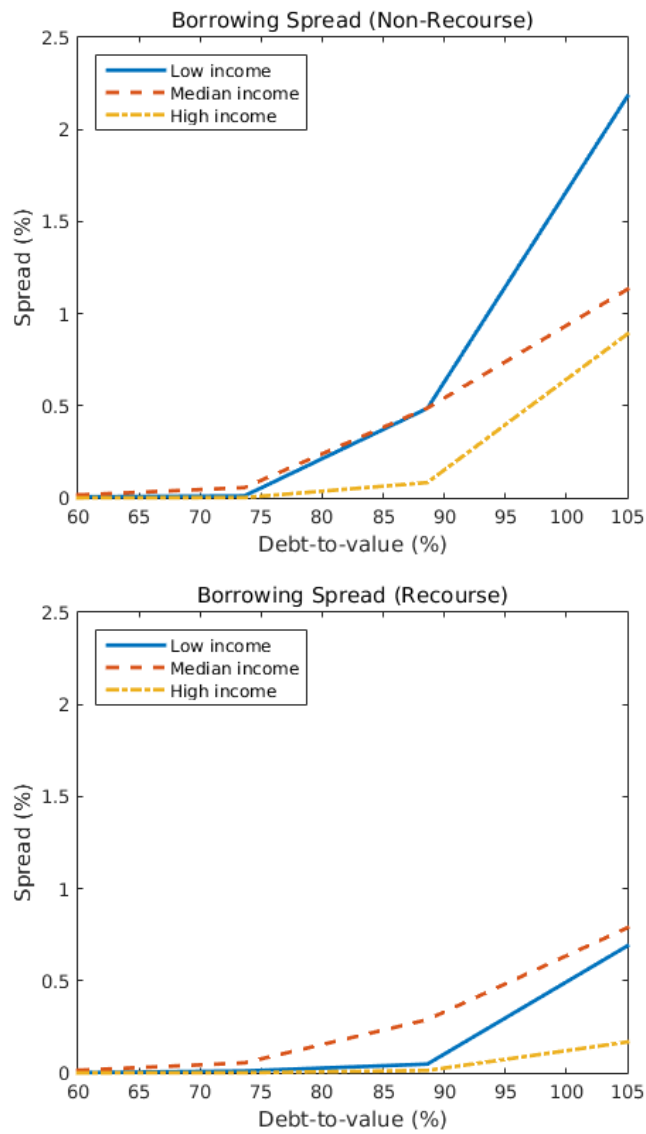
Debt relief policies are usually "one-off policies" (Agarwal et al. 2017, Gabriel et al. 2016). There are gains from adding such policies to the standard policy toolbox of Finance Ministers and Central Banks. Also, it seems promising to incentivize equity mortgages that allow

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<sup>7</sup>Recent research like Campbell et al. (2017), Di Maggio et al. (2017), Garriga et al. (2017) or Guren et al. 2017 compare the pros and cons of variable versus fixed rate mortgages.

<sup>8</sup>Ganong and Noel (2017) provide supportive empirical evidence.

mortgagors and lenders to share the gains and losses from housing price changes. Although, a difficult problem to overcome is how to design such mechanisms or contracts while mitigating moral hazard.<sup>9</sup>



**Figure 5. Borrowing Spreads in Recourse versus Non-Recourse Economies.** This figure plots the spread between the mortgage rate that a borrower would face and the risk free rate, as a function of the debt-to-value of the borrower, and for three income levels. The top panel is the non-recourse economy while the bottom panel is the recourse economy.

<sup>9</sup>Kung (2015), Piskorski and Tchisty (2017) and Greenwald et al. (2017) study equity mortgages from a normative perspective.

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