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**ECONOMIC AND LEGAL ANALYSIS OF
MANDATORY NON-RECOURSE MORTGAGES
WITH APPLICATIONS TO SPAIN**

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Economic and legal analysis of mandatory non-recourse mortgages with applications to Spain

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Abstract

“The liquidity crisis of the Spanish banks is largely due to the lack of confidence of foreign investors and, therefore, the changes that occur in the legislation should not affect the credibility, stability, legal certainty, predictability that markets expect”.

Sergio Nasarre (2011)

In the current situation of economic crisis, many people have found they can no longer pay back the mortgage loans that were granted to them in order to purchase a dwelling. It is for this reason that, in light of the economic, political and social problems this poses, our paper studies the state of the Spanish real-estate system and of foreclosure, paying special attention to the solution that has been proposed recently as the best option for debtors that cannot make their mortgage payments: non-recourse mortgaging. We analyze this proposal from legal and economic perspectives in order to fully understand the effects that this change could imply. At the same time, this paper will also examine several alternatives we believe would ameliorate the situation of mortgage-holders, among them legal reforms, mortgage insurance, and non-recourse mortgaging itself.

Keywords: *Mortgage, Non-recourse, Dation, Payment in kind, Foreclosure, Real estate, Spain, Appraisals*

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1. INTRODUCTION

1.1. Current Situation

We situate ourselves in the year 1998, with the pass of the Law 6/1998 of April 13th, on regulation of ground and valuations (commonly known as “Ley de Suelo”), which allowed the privatization of the same by the Dept. of Public Works. The law, which intended to increase the amount of construction land in order to increase supply and lower the price of housing, ended up turning land zoning into a source of financing for many Public Departments.

Since 2002, the supply of housing increased rapidly and continuously, but so too did demand, driven among other things by the readiness of financial institutions to give out mortgage loans. Given this, the price of housing continued to grow and, guided by a boom that seemed to be unending, families contracted greater and greater levels of debt to pay for evermore expensive houses. The banks, bolstered by the long period of economic growth, lent out large amounts of capital and granted mortgage loans that both were above the market value of the house, and did not meet minimum requirements (such as the 20% downpayment), increasing families’ purchasing power through debt. The reasoning was that as the price of the house always goes up, in the event that families could not repay the loan, they could sell the property and the bank would recoup the investment.

Businesses, for their part, also felt the effects of this economic euphoria, which allowed them to increase their ROI through leverage. On the other hand, thanks in large part to the construction industry, the country grew at a high rate and unemployment fell to a record low of 8.3%¹ in 2007.

However, the GDP growth was built on debt at the household, business and even institutional level, and this is currently the root of many problems. Foreign economies financed the Spanish debt, and Spain paid interest rates that were artificially low, thanks to the illusory feeling of security that stemmed from being part of the Eurozone. In 2007, the current financial crisis exploded in the United States, which spread rapidly throughout the world in the form of a liquidity crisis in the banks, which simultaneously caused the credit crunch and the drop in consumer confidence which continued through 2008.

In this context, the construction industry, which comprises itself the 10.6%² of GDP and overall employed 13%³ of the active population at the end of year 2007, began to show signs of crisis,

¹ Data extracted from the Instituto Nacional de Estadística by the Encuesta de Población Activa (EPA).

² Data extracted from Rojas Tejada, A. J., Pumares Fernández, P., & González-Martín, B. (2010). El «colapso» del sector de la construcción y sus repercusiones socio-laborales sobre la población inmigrante. análisis de las fuentes estadísticas.

with a sharp fall in sales of houses, a decrease in new construction, a stagnation of house prices and a sustained increase in delinquency. Among many other consequences, the bursting of the housing bubble caused a huge increase in unemployment and contracted domestic consumption.

Financial institutions also faced a complicated situation when estate agents and construction companies, to which they had lent large sums of money, began to declare bankruptcy due to their inability to sell their properties or find sources of finance to finish their constructions. This fact, along with new laws that required banks to keep more cash on hand, restricted the flow of credit from financial entities and causing serious liquidity problems for many businesses. On the other hand, the global financial crisis and loss of competitiveness of Spanish businesses also reduced the ability to export. At the end of 2008, despite policies on the part of the government that aimed to stimulate the economy, the country entered recession.

In this context of global crisis, the markets began to punish those countries with greater macroeconomic imbalances and larger risk of default, among which Spain is situated. Foreign investors began to demand higher interest rates on sovereign debt, causing the risk premium to skyrocket and destabilizing public finances. The government saw itself forced to undertake austerity measures which shrunk the economy even more, following mandates from the Eurozone to decrease the public deficit and contain the ever-increasing public debt.

The increase in unemployment has left many families unable to repay the debts they took on with financial entities to whom they demanded mortgage loans⁴. These same entities foreclosed the real properties in order to attempt to recoup losses. The problem resides in the fact that currently, house prices are much lower than they were when the loans were granted. Consequently, at the moment of foreclosure the price of the auctioned property is no longer enough to cover the existing amount of debt, leaving borrowers out of a house and with a pending debt that they must still repay.

1.2. Motivations and structure of the paper

We have chosen to study mandatory non-recourse mortgages for several reasons: among them, that it is a current topic of great importance, especially to Spain, where the effects of the housing bubble have been more severe than in most other countries. It is also a topic on which there is little consensus: not only is it highly polarizing but the debate has also been greatly politicized.

³ Data extracted from Eurostat's database (Database by theme, Economy and finance, National accounts, Annual national accounts, National Accounts detailed breakdowns, National accounts aggregates and employment by branch, National Accounts by 10 branches - employment data)

⁴ No author found. (2011, 19.SEP.2011). La morosidad del sector inmobiliario con la banca alcanza un récord con un 17,7%. *El País*

We feel it is important to attempt to demystify what non-recourse mortgaging consists of, and its likely effects both positive and negative - especially as it has been increasingly touted as a panacea for Spain's economic woes. Further, it is a subject that spans both the legal and economic fields; as our group contains students of both subjects we thought it would behoove us to choose a subject that had something to do with both.

Purchasing, contracts, property and mortgages are all concepts that are closely linked in the legal and economic fields. It is reasonable to say that there is a relationship between law, a discipline that studies rules and judicial principles, and economics, a social science focused on human interactions. The existence of laws demarcates limits to human actions; therefore, our paper cannot simply study judicial measures independently of their possible effects on the economy.

Before commencing the analysis it is important to remark on the fact that our study will be focused on physical persons in the Spanish state who have solicited a mortgage with a bank or "caja de ahorros". Further, it must be noted that our paper is largely based off of existing publications: we have not collected our own data or conducted our own study except to compare home ownership structure between countries. Finally, we take the U.S.A. as an example of a country with a substantially differing legal system and institutions. In section 2, we will examine the legal environment of mortgage contracts; section 3 turns to existing literature on the economic effects of non-recourse mortgages; section 4 is an empirical extension of the analysis applied to Spain; in section 5 we lay out several policy proposals and discuss the effects of applying them to Spain; section 6 concludes.

2. LEGAL CONCEPTS AND BACKGROUND

2.1. Mortgage System of Spain

The housing rights enshrined in the Spanish Constitution of 1978

To understand the Spanish real estate system, it is necessary to start with the right to a dignified home enshrined in article 47 of the "Constitución Española" (hereinafter CE). The contents of this article, as it belongs to Titol I (fundamental rights) – and within this, Chapter III (principal guiding social and economic policy), the wherein are guidelines – are not rights in the strictest sense. This fact notwithstanding, it is the authorities in the general sense that must pursue this mission, as there are a plethora of policies that, directly or indirectly, have an impact on this right.

The real estate mortgage under the current situation

When a family wishes to buy a flat or house, they tend to go to a bank to acquire a loan. In Spain in 2008, 77% of purchases were financed with some kind of loan⁵, in many cases due to the absence of sufficient liquid assets and in anticipation of future income. As collateral on the loan, the bank institutes a mortgage on the property.

A mortgage is a real right that lies on a property and that seeks to enforce the fulfillment of an obligation, usually the repayment of the loan granted for the acquisition of the property. This right is regulated by the “Código Civil Español” (art. 1857 to 1862 and 1874 to 1880 CC), the “Ley Hipotecaria” of 1946 (art. 104 to 197 LH) and the “Reglamento Hipotecario” (art. 215 to 271 RH).

The defining features of a mortgage are that it requires the lifting of the deed and its inscription in the Property Registry in order to be valid (art. 1875 CC and art. 145 LH). In addition, it is a non-possessory real right, as it requires no shift of the possession of the good to the creditor or a third party and the borrower can therefore maintain possession of the property, or cede it to a third party, without the fear that the creditor may realize the value of the good. Despite this, it is a right of realization of value (*ius distrahendi*) where if the debtor does not meet the guaranteed obligation, the creditor can initialize proceedings to foreclose the property and collect the proceeds (art. 1858 CC and art. 129 LH).

As a real right, the mortgage has *erga omnes* efficiency, which implies that if the mortgage has been validly constituted it can be exercised before any third party, even if said party is a new owner of the mortgaged property; furthermore, the loan secured by the mortgage has preference for repayment in the case of bankruptcy (*ius prelationis*), as cited in article 1923 CC.

Finally, the mortgage is a right that is accessory to the guaranteed loan (art. 149 LH) and per this fact, it follows the same fate as the loan; therefore, the former suffers from all the vicissitudes that the latter might have.

Having analyzed the characteristics, we understand that in general the mortgage is a guarantee instated by the bank on a property to insure the payment of a loan granted to purchase that same property. This fact allows the bank to initialize judicial proceedings laid out in the “Ley de Enjuiciamiento Civil” (LEC) to foreclose the property or, in the case of a private agreement, to conduct extrajudicial sales, regulated by the Mortgage Regulation (arts. 234 et seq.).

⁵ Data extracted from Díaz Guijarro, R. (2008, 08.MAY.2008). El 23% de las casas compradas en el boom se pagaron sin hipoteca. *Cinco Días*

Foreclosure Procedure

As discussed above, in case of a breach of the obligation secured by the mortgage, the bank may choose one of two ways to recover the money laid out under article 129.1 LH: judicial procedure for foreclosure and extrajudicial procedure.

Roughly speaking, the sequence followed by the judicial process of foreclosure consists of the creditor presenting a claim against the debtor to the “Juzgado de Primera Instancia” of the place where the property is; in this moment it is understood that the foreclosure procedure has begun (art. 685 LEC).

If the creditor has not demanded payment from the debtor previously through an extrajudicial process, he must do so in the moment that he notifies the debtor of his claim (art. 686 LEC); the judge themselves must request a certificate of inscription of the mortgage from the “Registro de la Propiedad”, as well as a list of all the other charges that the property may have (art. 688 LEC).

Once thirty days have passed since the notification and payment requirement, the property on which the mortgage has been taken out will be auctioned to pay the bank. In order to find the minimum value for which a creditor or third party can buy the good, the price from the appraisal conducted at the time the mortgage was granted is used. In the auction, the following situations may occur as per article 691 LEC, differing in whether there is a plurality of bidders (art. 670 LEC) or whether this is not the case (art. 671 LEC). (Please see Appendix 1 for more detail)

At this point it is crucial to add that, as indicated in article 672 LEC, the amount the house is sold for in the auction shall be used to cancel the debt, and the remainder, if any, shall be given to the debtor. If it is not enough, the creditor can use the borrower's other assets to pay off the remaining debt. It is important to note that, as indicated in article 670 LEC, the person that obtains the title of the foreclosed property shall be responsible for all previous charges and taxes, if any, and shall take the place of the debtor in this case.

Finally, once the auction has been carried out, the deed of the foreclosed property will be modified in favor of the person who bought the property in the Land Registry. This person may take possession of the property and, if the property is occupied, can evict the illegal occupants.

On the other hand, an alternative method of acquiring the value of the asset is an extrajudicial foreclosure, laid out under article 129.1.b LH, a process that is not configured exactly as a foreclosure, but more as an extrajudicial sale realized via a public auction. Thus, it can be carried out according to article 1858 CC, so long as the option had been agreed on in the mortgage agree-

ment, in the event of delinquency. This process shall be carried out according to the guidelines found in article 129.2 LH, explained in detail in Appendix 2.

The Mortgage Guarantee

As mentioned previously, a mortgage is created to guarantee a monetary obligation, and therefore it is ancillary to the property; it is therefore not a real right that exists on its own. This is why, even though a mortgage can have as an objective securing any sort of obligation (art. 1861 CC), the mortgage always guarantees the fulfillment of the principal obligation (art. 1857 CC) through the payment of a monetary sum in case of delinquency.

It is important to emphasize that the Spanish system of real rights is based on guarantees and universal debt, as detailed by articles 105 and 140 LH, as well as article 1911 CC. The article 105 LH, the same way as article 1911 CC, details that the foreclosure of the mortgaged property does not limit the responsibility of the debtor, given that the debt is universal. It is also important at this point to introduce article 140 LH, as it includes the possibility of non-recourse mortgage, as a result of the principle of autonomy of both parties. Despite this, it would be necessary to reform said article 105 of the same law in order to allow this system of extinction of the debt that has been incurred.

2.2. The U.S. Mortgage System

In a very broad sense, one could say that there are three major differences between the Spanish and American mortgage system (Gimeno, 2011).

The first major difference is that, in the U.S.A., the loan never covers 100% of the value of the real property. The American system uses a figure known as the Loan-To-Value (LTV) ratio, which is the relation between the fair value of the real property and the size of the loan. Although no law has been passed in this regard, banks and savings banks have chosen not to grant mortgages above 80%. In the cases where LTV climbs above 80%, it is common for banks to require some sort of collateral or insurance against default. This restriction is completely different from the situation in Spain, where it is common for banks to grant mortgages with LTV higher than 100%. It must be understood that this practice increases the risk assumed by the bank as well as the possibility of default of debtors.

As a consequence of this, the American system forces individuals to make an initial contribution of 20-40% of the house price. This is the second difference we can find between both systems. Note that this initial requirement, apart from reducing the risk taken by the institutions,

serves as a filter for those families where the savings capacity is not sufficient to meet this initial amount. In this manner, the individuals who finally choose the loan are those with the highest chances of repaying it.

Finally, the main difference between the two systems is that in the American system pro solute payment prevails. This implies that with the delivery of the real property to the financial institution, the debt is liquidated. There is no law that requires this measure, but it is a practice so common that it could be considered the default option in a mortgage contract. This clashes completely with the Spanish system, where debts are governed by the principle of universal liability, by which the debtor must always repay the debts with all his or her current and future assets. In Spain, the borrower must also repay all the debt that remains after the foreclosure and auctioning of the housing. The surrender of the real property only has a pro solute character when both parts previously agreed or subsequently negotiated it, but this is not the general rule in the Spanish system.

2.3. Measures Taken Until Now

In order to address the needs of families with a mortgage, a series of events have occurred at a political, legal, economic and especially social level.

To begin with, we must take note of the steps taken by the government with the aim of protecting borrowers. To this end, the first steps that were taken in 2011 were changing article 607 LEC to increase the exemption for garnishable wages, and modifying article 670 LEC to raise the price of auctioned properties in order to reduce outstanding debt.

The government has added new measures for 2012 in the same vein, but more focused on borrowers with few resources. In this, the “Real Decreto-Ley 6/2012” has established different mechanisms for the restructuring of debts in the event of extraordinary difficulties in repayment in Chapter II, as well as making more flexible the implementation of the collateral by way of a code of good practice in articles 5 and 6. Finally, the “Real Decreto-Ley 27/2012” has allowed the immediate suspension for two years of evictions of families who find themselves at risk of social exclusion.

The last adjustment is the “Ley 1/2013” of May 14th, 2013 where some of the reforms mentioned above were put into law. More generally, this law alters, among others, the “Ley Hipotecaria”, the “Ley 2/1981” and the reform “Ley 41/2007” on the regulation of mortgage system. However, although the law also contains previous measures, as it has been in effect for a month, it is still too early to tell what the overall effects will be.

Further, in the legal field there are several rulings that have treated payment-in-kind as an option to resolve the situation in which borrowers find themselves. For example, the AUTO 111/2010 in Pamplona on December 17th, or the AUTO 119/2011 in Girona on the 16th of December, argue that, applying the principle of estoppel, the fact that the bank previously conducted an appraisal of the home implies that they knew value of the property and therefore they consider abusive that the bank should acquire the property for half of its value and still hold the debtor liable for the difference. However, it remains unknown whether these are solid legal foundations.

In the economic sphere, we must take into account the measures adopted by the Bank of Spain. It has made several structural modifications to financial institutions in order to clean up their balance sheets and thus optimize their solvency and liquidity, with the ultimate goal of improving the credit flow to businesses and households. In addition, it has changed the rules for the valuation of items used to discourage the process of foreclosure. For its part, the banking sectors has in many cases conceded grace periods to debtors who have been unemployed for three years, in which they pay only the interest on the debt. They have also accepted payment in kind under certain circumstances, even when this had not been previously agreed on the mortgage contract.

From the social point of view, there have been many motions from both political parties and various associations that have argued in defense of borrowers. For example, on December 27th, 2012, the “Unión Progreso y Democracia” political party presented a bill concerning the acceptance of payment in kind, changing some articles of the LEC and LH, and the protection of insolvent individuals via a bankruptcy procedure similar to what legal entities receive to avoid unlimited liability, reforming the articles 5 and 178 of the “Ley Concursal” (LC). This proposal was rejected Congress by 169 votes against, 146 in favor, and one abstention.

Finally, one of the most important social movements has been the “Plataforma de Afectados por la Hipoteca” (PAH), which has presented the “Iniciativa Legislativa Popular” (ILP). This aims to change the relevant laws and allow the delivery of the property as a form of payment in order to liquidate the mortgage loan and, above all, allow non-recourse mortgages to be made retroactive in order to avoid the eviction of families from their primary residence. With this purpose, PAH proposed the reform of the articles 579 LEC, 675 LEC and 693 LEC to be able to accept the retroactive payment in kind.

2.4. Payment in Kind

Concept and requirements

Before turning to an economic analysis of the possible impacts of the imposition of non-recourse mortgages, it is in our interests to establish what we mean by this legally. In brief, one can define it as an act by which the debtor makes, with the aim and purpose of payment, a provision different to the one established, which is accepted by the creditor and extinguishes the previous obligation.

It is important to emphasize the extinctive effect that parties confers unto the payment in kind with respect to the debt, as this feature is what allows us to distinguish between payment in kind (*datio pro soluto*) and another legal institution commonly known as cessation of payment (*datio pro solvendo*). While the former involves the liquidation of the debt regardless of the value of the collateral relative to the amount of outstanding debt, cessation only liquidates the part of the debt that can be compensated by the value of the collateral, the debtor still having to pay the rest.

Apart from the ability to repay required by article 1160 CC and the general rules for contracts specified in article 1278 et seq. CC, in order to discuss payment in kind, the concurrence of three requirements is necessary. The first of these is that the service must be performed as a surrogate for the fulfillment of the original obligation (*animo solvendi*), whether this collateral is the transfer of a physical object or a right; the second refers to the need for the service to be different from the one originally agreed to (*aliud pro alio*); the last requires the agreement between the parties for the immediate discontinuance of the original debt with the realization of the new payment. It is only when the three characteristics coincide that we can speak of payment in kind as *datio pro soluto*.

Legal recognition and application in the current context

Although payment in kind is an institution with certain relevance in our system, it is not recognized in the Civil Code as a way to extinguish obligations, as it does not appear in article 1156 CC on the extinction of obligations. However, the institution of payment in kind is assumed further on in articles 1521 and 1636 CC, on repurchase and leasing, among other provisions.

Despite this lack of recognition in the Civil Code, the institution of payment in kind is widely accepted in the field of real estate, where the same article 140 LH, establishes in its first paragraph: “podrá válidamente pactarse en la escritura de constitución de la hipoteca voluntaria que la obligación garantizada se haga solamente efectiva sobre los bienes hipotecados”. As we can see, this precept openly accepts the possibility that the parties agree to payment in kind ex ante, re-

stricting the liability of the borrower and the right of the creditor to the real property which has been mortgaged.

However, the most widespread form of payment in kind is that which is conceived as an extinctive system of payment when the debtor is unable to pay the fees of a mortgage loan. In these situations, the financial institution accepts the delivery of the good, under autonomy of the parties, which liquidates the outstanding debt.

To appreciate the significance of this practice today, it may be useful to know that the number of foreclosures that took place during 2012 was 14,229 and the number of awards by foreclosure (foreclosures in which payment in kind did not take place) was 38,976. Therefore, payment in kind was made in 27% of cases.

3. THE ECONOMIC PERSPECTIVE

In this section we discuss the advantages and disadvantages of implementing mandatory non-recourse mortgage and its economic effects in spite of the imperfection of the market.

3.1. Against Mandatory Non-recourse Mortgages

There is still an open discussion between different schools of thought and policymakers on the need for mandatory non-recourse mortgages. Arruñada (2012) argues that in a perfect competitive market, the market must reach to the general equilibrium. Furthermore, he explains that in the practice, markets cannot be perfectly constituted, so a problem of asymmetric information appears.

In the mortgage market, from part of the agent (borrowers), who has own specific information such that cannot be transferred perfectly in spite of the interest of the agent, or not observable by the principal, for example, the status of employment, status of marriage, real salary, risk attitude, personality, etc. This could arise the problem of moral hazard, where agent takes an opportunistic action, like as the bankruptcy. In the presence of asymmetric information, the competitive equilibrium may not be Pareto-optimal, in which case government intervention (in this case, mandating NR mortgages) to correct market failure may be justified.

If we make non-recourse mortgage mandatory, (Meir, 2012) this protects the agent (borrowers) more and, in case of default, as the borrowers have limited liability, then the residual value of a mortgage will be responsabilized by the lenders. Following this sense, there are fewer incentives

on the part of the borrower to divert more of his or her income into the repayment of the loan, (Melzer, 2010), a lower sensitivity to negative equity (Ghent & Kudlyak, 2011).

In addition, Ghent and Kudlyak also find that for homes valued under \$200,000, there is no significant effect on borrower behavior in non-recourse versus recourse states; conversely, however, for homes valued between \$500,000 and \$750,000, borrowers are twice as likely to default in non-recourse states. This has important policy implications as it suggests that non-recourse mortgages have incentive effects (i.e. incentivize strategic default) mostly in high-income borrowers, who can or should be able to afford an expensive loan otherwise.

For this reason, Arruñada (2012) points out that non-recourse mortgage overprotects the borrower and it can lower the borrower's effort of repayment, and otherwise, the borrower would be more disciplined in their expenditure pattern if the mortgage were recourse.

Once the lenders have observed this increment on risky action of borrowers, they will charge more costs to borrowers (cost can be interpreted as interest rate). We can assume that the demand of credit curve is downward sloping, it means that an increment on interest rate lead to a decline of the aggregate supply for credits.

Therefore, making non-recourse mortgages mandatory could mean that, in an economic downturn, as the number of strategic defaults goes up, the foreclosed price could be negative and causing losses for the bank; the end result could well be that the tax payer picks up the bill if these losses cause the bank to fail. (Basus, 2011) This shock can have a huge effect and can cause a breakdown in credit activity because of the quit of suppliers.

On another hand, the increase in interest rate can create an adverse selection problem and lead the borrowers to request a riskier loan due to the lack of liability on this part. Consequently, lead to a suboptimal equilibrium with non-recourse mortgages.

As Stiglitz and Weiss (1981) analyze how imperfect information can lead to imperfections in the case of credit markets; specifically, the authors show how information private to the borrower – for example, information on future expected wages – results in credit being rationed in equilibrium. Credit rationing here meaning either a) among identical loan applicants some are able to take out a loan and others are not, even at a higher interest rate; or b) given a certain supply of credit, certain (identifiable) groups are unable to obtain a loan at any interest rate, whereas with a greater supply of credit they would be.

When banks choose whether to make loans, they are concerned with the interest rate and the perceived riskiness of the loan. However, the interest rate itself affects the riskiness of the loan,

either through a) making it more or less attractive for riskier borrowers (adverse selection), or b) affecting how attractive default is and thus how likely borrowers are to do it (incentive effects). The bank therefore needs some method of screening applicants; interest rates serve as one such method. Under low interest rates, both risky and non-risky borrowers will apply for a non-recourse loan (the bank, of course, has no way of telling which is which); therefore, *ceteris paribus* it is profitable for the bank to raise interest rates. However, past a certain level of interest rates, low-risk borrowers begin to drop out of the pool, and it is only attractive for high-risk borrowers to continue demanding non-recourse loans. Therefore, for the bank, past a certain interest rate r^* , even though interest rates go up the expected return goes down. It is conceivable, the authors argue, that at the profit-maximizing interest rate there is an excess of demand, because banks would not be willing to lend to people who offered to pay a higher interest rate due to increased riskiness and lower expected return. Therefore the market forces are incapable of inducing the bank to lend. If raising interest rates does not serve to screen out applicants and instead results in some (observationally identical) individuals being denied loans while others receive them, and if the market by itself is incapable of resolving this dilemma, a case can be made against mandatory non-recourse legislation inasmuch as it forces an insufficient number of low-risk borrowers to join the non-recourse mortgage pool, which does not allow banks to lower interest rates for these types of mortgage, which may bring equilibrium supply far to equilibrium demand.

3.2. In Favor of Mandatory Non-Recourse Mortgages

We now turn to arguments in support of the optimality of mandatory non-recourse mortgage policies. One alternative to said policies that is often touted is: why mandatory non-recourse mortgages, specifically? Why not simply make consumers more aware of the choice, or make recourse mortgages “opt-in”? In order to analyze the optimality of mandatory non-recourse mortgage policies, it is vital we first understand what problems may arise in situations where it is not mandatory.

According to Stiglitz and Weiss (1981), the credit market is rationed and regulated by market itself. If banks cannot screen out perfectly between low and high risk borrower, and then the effect of lower interest rates for non-recourse mortgages may be counterbalanced by higher interest rates overall (see White, 2012), which reduces demand. At the same time, a complimentary consideration must be addressed: although the borrower has access to private information concerning risk incentives and characteristics, the bank has private information on the likely future trend and/or volatility of house prices. Given this, it may be economically rational to assign greater risk

to the bank: the bank can easily deal with the losses stemming from a single foreclosure; what it is vulnerable to is systemic risk. However, systemic risk is precisely what the bank has the most information about – certainly more information than the borrower. It is possible then, that putting more of the risk on the bank may be justifiable.

However, when considering foreclosure legislation, it is essential to simultaneously consider bankruptcy policy, as agents' choice to foreclose and/or declare bankruptcy are concomitant. Kuchler and Stroebel (2009) examine the interaction between households' foreclosure and bankruptcy decisions using a two-period model which is then tested using state-level data from the U.S. They find that negative home equity is a necessary, but not sufficient, condition for households to enter into foreclosure, and that its interaction with idiosyncratic income shocks and the regulatory environment that determine household behavior.

However, the main body of the work analyzes the idea of turning non-recourse mortgages into recourse mortgages to try and reduce bankruptcy: they conclude that *ceteris paribus*, in the short run a move from non-recourse to recourse would have little to no effect on foreclosure rates, but would result in much higher bankruptcy rates. Although interesting, this result has little applicability to the particular case of Spain, as recourse is already the default here and there is no “fresh start” bankruptcy.

Mitman (2011) goes a step further and, apart from conducting broadly the same analysis as Kuchler and Stroebel, goes on to calculate the welfare effects of non-recourse versus recourse mortgages. Mitman constructs a model with infinitely-lived agents who can purchase risky household assets with a (secured) mortgage, can save in bonds, and borrow in unsecured debt. The model manages to explain over 80% of the variation in bankruptcy rates due to differences in law, and around 20% of the variation in default rates. He finds, somewhat counter-intuitively, that empirically recourse actually has very little effect on foreclosure and mortgage prices; in fact, recourse and non-recourse states with similar homestead exemptions have similar foreclosure rates. This suggests that recourse is not as effective a deterrent of foreclosure as might be thought; rather, instead of choosing not to foreclose, recourse pushes households to simply declare bankruptcy in addition to foreclosing. This is perhaps not so strange a result when one considers that in recourse states households simply face additional liability, and this may trigger bankruptcy where otherwise there would be none. This is consistent with the results reported by Kuchler and Stroebel insofar as they found that a switch to recourse would, all else equal, raise bankruptcy rates without having a significant effect on foreclosure rates.

Most importantly, Mitman uses his model to quantitatively determine the optimal policy, and finds that “optimal joint policy is no-recourse foreclosure and a homestead exemption of roughly 25% of the state median income.”

Consistent with Kuchler and Stroebel, this is a relatively low level of exemption: currently in some states, the homestead exemption is up to 75% of the median income. The intuition behind this result is relatively simple. Households face both income and housing risk; non-recourse mortgaging allows secured debt to provide greater insurance against housing risk, because it effectively makes the decisions to foreclose and to go bankrupt independent—so households facing a housing shock do not risk also having to go bankrupt. The increased risk here is balanced out by the smaller homestead exemption, which takes into effect both the insurance value of being able to keep some home equity after bankruptcy with the increased cost of credit associated with a higher default risk. In other words, it balances the insurance given to higher-income households with the borrowing costs for lower-income households. Non-recourse mortgaging allows the two instruments (foreclosure and bankruptcy) to more effectively span the space of possible income and housing shocks, as it breaks the links between foreclosure and bankruptcy. Mitman finds that households have modest welfare gains approximately 0.4% of average lifetime consumption under the optimal policy, with recourse and high-exemption states seeing the largest gains.

It is important to note, here, that the above studies consider foreclosure and bankruptcy in the legal context of the United States. Chapter 7 bankruptcy is a so-called “fresh start” system. Livshits, MacGee and Tertilt (2007) quantitatively contrast the system used in the U.S. with “no fresh start” systems such as are usually found in European countries. They take into account two opposing forces of bankruptcy: on the one hand, as it weakens debtors’ commitment to repaying debts, it restricts their ability to smooth consumption; on the other hand, it provides insurance against “bad luck” situations, which can help agents smooth consumption. The authors find that under reasonable parameters the fresh start system is welfare-improving. This clearly has important policy implications, which we will discuss in Section 6.

A final factor that is important to the debate (for and against) on mandatory non-recourse is the fact that higher interest rates on mortgages may push more people toward renting. This topic is studied in the following sub-section.

4. EFFECTS ON SPANISH HOUSING MARKET

4.1. Existing Literature

We will now turn to a brief analysis of the real-world effects of implementing a mandatory non-recourse policy in Spain. In order to do this, a preliminary analysis of the way the housing market is currently set up is useful. In their 2012 article, García Montalvo and Raya Vilchez delve into the workings of the housing market to find an explanation for the rampant overvaluation seen in the past few years. They explain that the current price indexes are not based on actual market prices, but appraisal prices – and these are not determined by the market at all, but by appraisal companies (which are usually owned by financial institutions). It is clear that there are perverse incentives here: for instance (given that the Bank of Spain recommends that mortgages not cover more than 80% of the value of the property), if a family had trouble coming up with 20% of the value of the property as a down payment, the company had incentives to appraise the property above its actual market value in order to grant the loan (and to grant larger loans in general). In fact, it was a common practice to take into account expectations of (higher) future prices when appraising properties; as the official house price index was then based off of these figures, this made house prices increase more than they should have, overheating the market, and generated a spillover effect when future appraisals went even higher in expectation of further price increases. This mechanism not only caused housing prices in Spain to increase much more than they should have, but prevented them from adjusting as fast or as much as they should have once the bubble burst: the Department of Public works reports a contraction from September '07 to March '12 of just 25.6%⁶; by comparison, by May '09 US house prices had already contracted by 32%⁷, and by March '12 Ireland's housing index was down by a whopping 48.5%⁸.

The authors obtain data on final house prices (i.e. the ones that appear in the contracts) in order to estimate the magnitude of the overvaluation. They find that, although mortgages had a median at 80% of appraisal value and a significant drop-off at 100%, when market price was used, most of the distribution of loan-to-value was over 100%, with an average of 110% and a similar median.

Although this presents a problem all by itself, its true significance in relation to non-recourse mortgages becomes clear when we consider the effects on interest rates and fees that instituting mandatory non-recourse mortgages would have. Frías Mendi et al. (2011) construct a simple

⁶ Data extracted from the Index housing price, section “Construcción y vivienda”, by Instituto Nacional de Estadística (INE).

⁷ Data extracted from [S&P Dow Jones Indices](#) LLC. *McGraw Hill Financial*.

⁸ Data extracted from [Central Statistics Office](#), Ireland.

model to put a figure on the value of non-recourse mortgages; they treat payment-in-kind (“dación”) as a type of “put option” that, American-style, can be exercised at any point over the life of the loan. At any point in time, the debtor has the ability to cut his losses by exercising this “option”; thus, as previously stated, the ability to walk away functions as a type of insurance. Given that it can be treated as an option, the authors use a binomial pricing method to figure out what the total value of non-recourse should be, using INE data on mortgage loans in order to predict the real effects of having no recourse. They find that increases are relatively modest: for the average mortgage, they predict that switching to non-recourse for a Loan-to-Value ratio of 80% (the maximum recommended) would raise monthly payments by 16.20€ (0.30%). For housing in urban areas, the figure is 25.20€ (0.33%). Crucially, however, the authors find that the increment in monthly payments is larger for higher LTV ratios: 61€ and 85.60€ for average and urban mortgages, respectively. This throws into stark relief the importance of adjusting the way house price indices in Spain are calculated, in order to get LTV ratios under control.

However, although Frías Mendi et al. find that the increase in mortgage fees should be rather modest, the fact remains that it can and will push some number of people past the tipping point and leave them unable to afford their payments. This may partly result in households buying less expensive property and consequently demanding smaller loans, but exclusion rates will also rise. However, as families who do not qualify for a loan will rent instead, it is not clear whether a higher exclusion rate is necessarily negative. If we look at home ownership structures for Spain we see that it was 83.2% in 2004 (up from 77.8% in the 90s) – an extremely high value. By comparison the US – even though it was also undergoing a boom – had just 68.69%. Cabré and Módenes (2004) argue that this high rate of homeownership is not the result of tradition but of both economic circumstances and public policy (e.g. protective tenancy laws which decreased the stock of rental housing, etc.) that took off in the latter half of the twentieth century. In point of fact, this trend towards increasing home ownership is a part of what overheated the real estate market in the first place; further, homeownership exerts a negative effect on labor mobility inasmuch as it increases negative equity and the transaction costs of moving (Oswald, 1996), resulting in higher equilibrium unemployment. Given all this, an attractive case can be made in favor of increasing the proportion of families who rent.

4.2. Extension of the Analysis

Despite some attempts at answering the empirical question, however, the waters remain muddy. Something that must be taken into account in any empirical analysis is the dual-edged nature of non-recourse mortgages, and its interaction with the particularities of the economy in which it

is applied. Broadly, in the presence of relatively small or transient shocks, non-recourse mortgages may actually do more harm than good if the higher interest rates that come with them push households past the point where they can weather the bad times and meet their payments. If this is the case, household may find that because of the fact that they hold a non-recourse mortgage, they lose their house when they otherwise would not have. However, under large or persistent shocks, non-recourse mortgages are unambiguously good for the borrower: it is a given that they will have to forfeit the property, but the non-recourse mortgage ensures that they are not left in addition with a large outstanding debt that they must pay regardless.

In order to ascertain the likely effects of implementing payment in kind, we must consider the characteristics of the Spanish economy and the Spanish labor market in particular. As far as we are aware, there is no existing literature that addresses this point; this may be an interesting area to explore further. However, if we look at Spanish labor market statistics, we see that long-term unemployment is much higher in Spain than in other countries – accounting 11.1 percentage points of the total unemployment in 2012, versus 4.1 in neighboring France and just 2.8 in the United States⁹. This suggests that Spain has been and is particularly susceptible to persistent shocks: once a person loses their job, they will on average spend much more time unemployed than in either of the two countries. Jimeno and Bentolila (2004) analyze regional persistence of unemployment in Spain and find that it is much higher than in countries like the U.S. They estimate that one of the main causes is low interregional migration, which was dry high in 1973 and very low afterwards; they draw attention to the role of house prices (as well as unemployment benefits) in determining migration. Further, Bentolila et al. (2012) draw attention to the fact that although prior to the crisis, France and Spain had similar unemployment rates of around 8%, France's unemployment rate increased to about 10%, while Spain's has shot up to 23%. This also suggests that in the economy overall, the shock to incomes was much larger. There is one caveat to this analysis, which is that house prices did not adjust as much in Spain as in the U.S., Ireland, etc., as previously seen. Therefore, it is not so much the negative shock to house prices *per se* that has caused so many defaults – the type of risk the bank is most susceptible to; but the fact that the Loan-to-value ratio was so high meant that even a (relatively) modest negative price shock was enough to push a huge number of people underwater. Given all this, it is quite likely that mandatory non-recourse mortgages will have a greater beneficial effect in Spain than elsewhere, where factors like less bulimic labor markets and lower LTV ratios reduce the likelihood of persistent shocks severe enough to make someone lose their home.

⁹ Data extracted from [Eurostat](#)

5. POLICY PROPOSALS

Up to here, our paper has explained the evolution of the Spanish economy from the moment that the real estate bubble began to the present. We have also studied both the legal and economic situation, and the possible effects of introducing mandatory non-recourse mortgage in the Spanish legislation.

In this section we will present various reforms that could be introduced into the state regulations as alternatives to mandatory non-recourse mortgage and analyze their effects, before moving on to non-recourse itself. Many of the following proposals have been advocated for by economists, jurists, associations and political parties, but we believe that to start we should emphasize certain measures that, given the situation, we consider necessary going forward.

5.1. Necessary measures

The first measure is derived from the problem of diversity of assessments provided for in the current legislation. The special foreclosure process provided for in article 682.2.1 LEC specifies that a valuation, undertaken by an appraisal entity, must be included in the mortgage deed. On the other hand, in the case of ordinary foreclosure, the articles between 637-639 LEC establish that an appraisal must be done by the appraisal society in the case that the homeowner and holder of the deed disagree on the value of the property. This is problematic as errors in appraisals have been derived, as has been shown, from the participation of financial entities in the appraisal companies, which in addition received commissions from the latter on assigning them clients.

Therefore, the independence of the appraisal companies is crucial in order to avoid harming consumers; one option would be to establish a system of random selection between appraisers that operate in an area. This way, we can eliminate the symbiotic relation between financial entities and appraisal companies. On the other hand, it is necessary to establish a system whereby financial entities are blocked from participating in appraisal companies so as to prevent this influence from surging anew.

Another proposal we consider crucial, following the American model analyzed in section 2.2 of this paper, is to require that henceforth the value of the mortgage not exceed 80% of the property value that is to be acquired with the loan requested.

The first thing we must highlight is that the percentage we have indicated is arbitrary, since we do not know the reasons why the American market demands this and not another figure. However, the fact that the credit does not cover the entire value of the home has the positive effect of

serving as a mechanism for self-selection for the families most likely to return the money, since only they will be able to generate enough savings for the 20% downpayment. Moreover, this measure also reduces the risk taken by financial institutions as there is more probability that foreclosure, in the event of default, allows them to recover the money lent.

If we now analyze the negative effects, it is clear that one of the most significant costs of this measure is that, by restricting the value of the loan to 80% of the property value, you are restricting access to housing for those families who for some reason are not able to generate savings. It also hurts those that, although they have the capacity to save, have not yet been able to gather the amount necessary because they are young, have had setbacks, etc., delaying their access to property. From a desire to avoid this side effect came the infamous U.S. sub-prime mortgages that were granted to low-income families, who had no ability to generate these savings, and covered more than 80% of the price of housing. To ensure that the debt would be returned, they were forced to take out insurance to respond in the event of default. These sub-prime mortgages triggered the 2007 U.S. mortgage crisis and the global economic crisis.

As a last comment, we must add that having this option could cause problems since some families may seek alternative solutions to saving the 20%, thereby undermining the positive effects of this measure. Against this assumption, our only solution is to implement stringent controls.

These are necessary but not sufficient conditions for the proper functioning of the mortgage market; below we will discuss further proposals.

5.2. Repurchases and *rebus sic stantibus*

The first measure we could include consists of reinforcing the advice given to the individual soliciting the loan. Along this line, the reform to article 193 “Reglamento de la organización y régimen del Notariado” establishes that the notary must explicitly communicate to the borrower the meaning of the clauses that, due to their technical nature, may not be properly understood by the borrowers themselves.

Nonetheless, it does not concretely determine what this advice should consist of, and given that many notaries are not educated in economic matters, there is a debate as to whether notaries must only apply the law and thus have no power to declare abusive clauses null and void and prevent the signing of the contract, or if they should follow the laws on consumer protection.

To this end, one possible solution is the introduction in the mortgage contract of an evaluation similar to the “Markets in Financial Instruments Directive” (MIFID) and the imposition of higher sanctions on notaries that do not fulfill their function. This test that solicitors must pass before the

notary would serve to establish whether they understand the clauses of the contract, avoiding possible cases of error or deceit as the debtor would no longer be able to allege ignorance. However, it is difficult to evaluate the effectiveness of this system, and it would also imply an increase in transaction costs.

Secondly, another measure is a change to the auction system laid out in the LEC in order to help connect people in danger of losing their homes with those willing to buy them. This could be realized through online platforms, better advertising for housing auctions or bulletin boards in courthouses. The LEC allows for this, and it could lead to a better outcome for the debtor.

Further, another measure that could be undertaken is to set up a system of repurchase in case of non-payment. With this we refer to two possible situations: the first is the case where an agreement is reached between the parts whereby a third party acquires the property for the value of the outstanding debt. The second situation is where the financial entity acquires the property and then rents it to the individual who foreclosed on it. Although the individual still loses ownership of the property, the debt is liquidated and he or she still has a home. In the first case the bank recovers the full amount of the loan; in the second, it receives a steady flow of income from the rent, and it keeps the property.

Finally, some judges have, through the *rebus sic stantibus*, argued that the current crisis constitutes an unexpected alteration of the circumstances that were present at the moment the contract was signed, therefore causing the disappearance of equivalence of obligations negotiated. This clause is applicable in a restricted manner – for example, according to the STS of May 29th of 1996, November 15th of 2000, or March 21st of 2003, when there is an extraordinary alteration of current circumstances with respect to the initial ones, an exorbitant imbalance in obligations, and the unpredictability of the alteration.

Contrary to this, article 1911 CC establishes that, in light of insufficiency in the value of the collateral, the creditor may lay claim to other assets of the debtor; this, along with the provisions of the LEC, do not allow for affirmation of ignorance of the law. Therefore, it seems as though the individuals that solicited loans in the past few years were fully aware of the economic situation and, according to the STS, Sala 1ª, March 1st 2007, this renders it impossible to defend the supposed unpredictability.

According to Amunátegui (2003), the unpredictability of a contract depends on the type of contract and the amount of information available to the parties; therefore, in a long-term contract, the possibility of unpredictable circumstances occurring is larger and requires more contingencies. On the other hand, there has been a debate over whether the application of this clause presupposes

es the impossibility of fulfillment of the obligation, or an extraordinary difficulty in doing so (Castilla Barea, 2001). The doctrine allows that analysis must be conducted on a case by case basis to establish concurrence of the three requirements, and that impossibility of payment must satisfy the principle of good faith and excessive burden.

5.3. Insurance for mortgages

We have shown that non-recourse mortgage could improve the social welfare and lead banks to be more disciplined, especially in the case of Spain, where bankers admit that the size of the mortgage is over 100% of the collateral's value; this can be solved with non-recourse mortgage, which provides incentives for them to be more accurate in their appraisals because of the associated risk.

Making the non-recourse mortgage mandatory protects the agent's income; the function is similar to insurance. Therefore, we propose a possible alternative to the mandatory system, such as creating an insurance market for borrowers. Borrowers can buy the insurance to cover their default.

Firstly, imagine a borrower situation under uncertainty. The borrower has a probability of default which is given exogenously. So the condition for borrower to buy the insurance is that the expected utility of buying the insurance must be greater or equal to the expected utility without the insurance:

$$\begin{aligned} p * U(\text{default, insurance}) + (1 - p) * U(\text{no default, insurance}) \\ \geq p * U(\text{default, no insurance}) + (1 - p) * U(\text{no default, no insurance}) \end{aligned}$$

Intuitively, if borrower knows he would not default in any case, then the utility of no default with insurance is lower than without insurance because it is an extra cost:

$$U(\text{no default, insurance}) \leq U(\text{no default, no insurance})$$

On another hand, in case of default, the utility with insurance should be greater than the utility without insurance; otherwise the borrower would not buy the insurance. It means that, in case of default, the utility should be higher with insurance (or non-recourse mortgage) than without insurance (or recourse).

$$U(\text{default, insurance}) \geq U(\text{default, no insurance})$$

Hence, if we want borrowers to choose the insurance, the following condition should be kept:

$$\begin{aligned} U(\text{default, insurance}) - U(\text{default, no insurance}) \\ \geq U(\text{no default, insurance}) - U(\text{no default, no insurance}) \end{aligned}$$

This means that, in the margin, the expected utility of buying the insurance must be greater or equal than the expected utility of not doing so.

However, in reality the probability of default is not exogenously given, so in this case, the p would be a function of a set of characteristics of the agent, insurance, price, etc. If we want to encourage people not to default, we must give incentives: for instance, in case of successful repayment of the mortgage loan, the bank could return the risk premium (e.g. 60%) of the insurance payment to the borrower. This would of course create general equilibrium effects, making the problem more complex; this goes beyond the scope of our analysis. In addition, in case of non-systemic risk, this system would work only if insurance providers are better at evaluating risks than the borrower; otherwise, the insurance market could collapse if a large number of borrowers default at the same time.

5.4. Mandatory Non-recourse Mortgage and Fresh-start

Up to this point we have seen several largely complementary policy proposals to improve the functioning of the Spanish mortgage and housing market, including one proposal that could serve as a direct alternative to payment-in-kind. Nonetheless, given both our analysis of the existing literature, and taking into consideration the particular characteristics of the Spanish economy, we believe that mandatory non-recourse mortgages can be welfare-improving. As previously discussed, Spain is particularly susceptible to persistent shocks (and in the recent crisis has been amongst the countries to suffer some of the largest income shocks in Europe); this suggests that this policy would be more effective at protecting consumers from the effects of these shocks, and thus allowing consumption smoothing, than perhaps it would be in other countries like the U.S.

One of the most prominent criticisms to this policy is its exclusion effects: that is, that because of the higher interest rates, fewer families would qualify for the mortgage loans they apply for. As has likewise been mentioned previously, less homeownership may actually improve the unemployment rate overall, and especially may improve regional persistent unemployment by facilitating interregional as well as international labor migration; this of course is of particular relevance to Spain. However, this positive effect must be weighed against the fact that greater homeownership rates also has several important externalities – for example, it gives consumers access to collateralized credit (see Díaz and Prado, 2010), yields academic benefits for children, (Green, Painter and White, 2012). However, a full analysis of the costs v. benefits of reducing homeownership is beyond the scope of our paper.

In addition, as explored above, making non-recourse mortgages mandatory carries with it a

number of important problems that must be addressed. Firstly, any non-recourse mortgage legislation must be accompanied by measures to reduce the risk the bank is exposed to because of the borrower. Broadly, there are two kinds: risk characteristics (i.e. borrowers whose income is more variable will be more attracted to loans if they are non-recourse), and risk incentive (i.e. borrowers have a greater incentive to default in a non-recourse mortgage). One way of reducing the bank's exposure to risk is to centralize borrower information – for example, credit history. By providing more relevant information on the borrower, the bank will be more able to distinguish between types and avoid the negative effects of adverse selection; it will also allow them to better tailor interest rates to each individual borrower. At the same time, a centralized repository of information will make the mortgage market more dynamic by allowing consumers to "shop around" for the most competitive loan. As it stands, anyone seeking a loan from a bank that is not "their" bank will pay higher loans; however, if all banks have access to the same information, this need not be the case.

As mentioned above, we consider that fixing the way the official index of house prices is calculated, as well as legislation requiring the LTV ratio to be no more than 80% of the value of the house, are necessary reforms that must be undertaken regardless of whether any of the other proposals are taken up or not. However, in the case that non-recourse mortgages are made mandatory, there might be additional effects and interactions worth studying. In point of fact, the cap on LTV ratio may be good for the system. Consider a policy of payment-in-kind with an average LTV ratio of $\geq 100\%$: even a small economic shock would be enough to spark a rash of strategic defaults, causing great damage to the financial institutions. A limit on this ratio (as well as fixing the price index) counteracts systemic risk; combined with non-recourse mortgages, it should significantly reduce the probability of situations like the current one where massive outstanding debts reduce consumption, and strike a balance between protection for the banks and protection for the consumer.

As regards the possibility of introducing a bankruptcy policy for physical persons, although "Fresh Start" systems can deliver higher welfare, given the current economic situation, any bankruptcy policy introduced right now would result in a massive amount of people rushing to liquidate their debts, which would help consumers at the cost of hurting creditors. Therefore, while we still believe a bankruptcy policy with a small homestead exemption of around 25% of the average value – similar to Chapter 7 in the U.S. – would be welfare-improving for Spain in the long run, it is a policy that should perhaps be considered once Spain has started to recover from the current recession.

6. CONCLUSIONS

Since the beginning of the housing market crash, many discussed solutions to the increasingly serious problem of households no longer being able to meet mortgage payments have been bandied about, of which the foremost of these is mandatory non-recourse mortgages. To this end, we have conducted an analysis of the current situation with a view to determining the legal and economic standing and feasibility of mandatory non-recourse. We have analyzed the workings of the American and Spanish legal systems, and have laid out in detail the mechanics of the Spanish system in particular, including the foreclosure system, etc. In the economic field, we have conducted a review of existing literature, and further conducted an analysis of the likely empirical effects of application of the policy in Spain, taking into account the idiosyncrasies of the economy and institutions.

From this, we have drawn several conclusions. Perhaps the most important of these is that making non-recourse mortgages mandatory *is* feasible, and can be welfare-improving; however, it is only feasible if a certain set of requirements is filled, which in Spain is currently not the case. In light of this, we have laid out certain reforms we consider necessary, though not sufficient, for the proper functioning of the Spanish real estate system – and absolutely crucial if mandatory non-recourse mortgaging is implemented. First, the 80% LTV ratio, the maximum recommended by the Bank of Spain, absolutely must be reinforced. To this end, we propose enshrining it into law. Related to this, we have seen that perverse incentives led appraisals to be overly high in order to avoid fulfilling the 80% LTV maximum. Therefore, it is necessary to reinforce the independence of appraisal companies, and break the symbiotic relationship between these and the financial entities which, as we have seen, have been causing problems in the Spanish housing market, overheating it and then preventing proper adjustment of house prices when the bubble finally burst.

Secondly, in order for mandatory non-recourse mortgages to work, certain problems must be addressed. First, the global effects of the higher interest rate must be carefully analyzed – specifically, whether the exclusion effect of higher interest rates is good or bad for the economy overall. It must be accompanied by measures to reduce the new risk imposed on the bank; a centralized database of borrower information could be one such measure. Finally, the effect of the two "necessary" reforms in the context of mandatory non-recourse must also be considered. Thirdly, as a result of our analysis of the legal system, we have concluded that retroactive payment-in-kind will only work through mutual agreement of the creditor and the borrower; attempting to legislate it would infringe the principle of *pacta sunt servanda*.

Finally, we have seen there are a number of measures that could be used complementarily or alternatively to mandatory non-recourse mortgages. Among them are modifying the role of notaries in order advice and protect the users, changing the auction system for foreclosed homes or to set up a system of repurchase; we have also discussed the principle of *rebus sic stantibus*, although it is a difficult to draw any solid conclusions from this matter. The final alternative is to set up a sort of insurance for mortgages in order to both protect the borrower and give additional incentives to repay the loan. Of course, this option would have to be carefully controlled in order to avoid a repeat of the conditions prior to the Great Recession whereby risky financial assets were bundled and sold to investors, and subsequently suffered a collapse in value.

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8. APPENDICES

1. The following situations can occur during the auction (art. 691 LEC):

- Concurrence of bidders (art. 670 LEC):
 - If the highest offer is equal to or greater than 70% of the value of the property, the auction will be won by the highest bidder.
 - If the highest offer is less than 70% of the value of the property, the debtor may search for a third party that offers more than 70% of the value, or that offers a sufficient quantity to cover the outstanding debt.
 - If the property is not adjudicated through either of the two options above, the financial entity may acquire the property for 70% of the value, or 60% if it is the borrower's primary residence.
 - If the entity does not wish to acquire the property, it will be adjudicated to the highest bidder who made an offer greater than 50% of the value, or which covers the borrower's outstanding debt with the creditor.
 - If the highest offer does not correspond to any of these cases, the Secretary responsible for the foreclosure may approve a claim on other goods in order to cover the outstanding debt.
- No concurrence of bidders (art. 671 LEC):
 - The creditor may request the allocation of the asset for an amount equal to 60% of the property value.
 - If the creditor does not request this, the debtor may request the lifting of the embargo.

2. Extrajudicial foreclosure procedure:

The second way of realizing the value of the asset is through extrajudicial foreclosure, which can only be carried out if it was agreed upon in the deed of incorporation of the mortgage (art. 234 HR).

In this case, the procedure consists in that, initially, the bank requests from the notary of the property the start of extrajudicial proceedings, providing all documentation to prove the validity of the mortgage and the value of the loan, including interest (art. 236-a RH).

The notary must request from the Land Registry ("Registre de la Propietat") a certificate of registration of the mortgage, and a list of all other charges the property may have (art. 236-b RH); sub-

sequently, it will turn to the debtor to claim the payment of the amount due within 10 days. If the debtor does not fulfill this obligation, the parties will proceed to the auctioning of the property (art. 236-c RH).

After the 10 days mentioned above, the notary shall notify the proprietor of the asset of the beginning of the auction (if this person is not the debtor), as well as the holders of liens and charges posterior to the mortgage so they can participate in the auction or satisfy the debt (art. 236-d,e RH).

At this point, the parties proceed to the auction of the property and the payment of the creditor financial entity (art. 236-g RH), which consists of:

- In the first action, a new appraisal of the property is made; no offer lower than this will be admitted. If there are no offers, the creditor can adjudicate the property.
- If the creditor does not acquire the property, there will be a second auction where the price will be fixed at 75% of the appraisal value; again, no offers lower than this will be considered. If no offers fulfill this requirement, the creditor may demand the allocation of the asset for 75% of the appraisal value.
- If the creditor chooses not to purchase the good, a third option without a fixed value will be held. If the best offer is less than the value used for the second auction, the creditor or the debtor can better the offer; otherwise the good will be awarded to the highest bidder.

It is important to note that, with the amount earned in the auction the debt will be paid off, and the remainder, if any, will be given to the borrower. If it is not enough to cover the debt, the creditor may lay claim to the debtor's other assets in order to cover the amount of remaining debt (art. 236-k).

Once the auction has been held, the deed of the property will be modified, and the registration of the mortgage, along with all posterior charges and liens, will be removed from the Property Registry (Registre de la propietat) (art. 236-l). The successful bidder may request possession of the property from the "Jutge de Primera Instància" of the area the property is located, as well as judicial release, if necessary.