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# The effects of the 2012 Spanish law reform to protect mortgage debtors

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**Abstract:** We examine the effects of the legal reform passed in 2012 in Spain to protect mortgage debtors. Under the new regime, it is difficult for low-income debtors who meet certain requirements to be evicted. In the case of default, the bank is forced to offer the debtor a restructuring of the debt, or the debtor can even, as a last resort, transfer the property to the bank as an alternative to having the lender foreclose on it, thus being allowed to stay in the property as a tenant and paying a reduced rent, and avoiding eviction even after foreclosure. We consider quarterly data from 50 Spanish provinces (NUTS III regions) from 2001 to 2019(Q3). We use panel data models with regional, year, and quarter fixed effects, linear and quadratic region-specific time trends, and other relevant control variables at the regional level (house prices, inflation, and unemployment rates), and our results reveal that the reform significantly reduced the number of foreclosures, but that this effect was transitory, fading six years after the reform. However, the negative effect on the mortgage loans market was permanent throughout the period under consideration.

**Keywords:** House prices, mortgage loans, default, law reform, panel data models.

**JEL:** K00, K11, R21.

## 1. Introduction

The 2008 global financial crisis and its subsequent economic and political shockwaves were widely linked to housing policy failures in North America and Europe. Fields and Hodkinson (2018) and Aalbers (2016) highlight the way in which encouraging home ownership and asset-based welfare while failing to regulate high-risk lending fuelled both an unsustainable housing boom and a toxic asset bubble in housing-backed financial instruments. As a result, the later housing crisis had an international scope, headlined by housing market crashes across wealthy countries and the loss of millions of homes to foreclosure, with the United States and Spain hit the hardest (Beswick et al., 2016). In this paper, we focus on the Spanish case, studying the effectiveness of the political measures implemented to mitigate the effects of the unprecedented wave of foreclosures and evictions following the crash of the Spanish housing bubble.

The last decade of Spanish economic history has been difficult; before the Great Recession, Spain had unemployment rates of around 8% (INE, *Instituto Nacional de Estadística*), but the rate reached more than 25% in 2012 and 2013, three times the rate during the economic expansion period. One of the consequences of the financial crisis was the dramatic collapse of the housing bubble; from 2008 onwards, prices fell for six years in a row (Martín et al., 2019).

As Parreño Castellano et al. (2019) indicate, “between 1996 and 2007 6.5 million new residences were built in Spain (Romero, et al., 2012), while average prices grew by 135%.” Consequently, household debt in the form of mortgage loans rose from 66.1% to 167.9% of GDP (Parreño Castellano et al., 2019). During these years, several institutional characteristics made the Spanish economy especially prone to suffering a housing bubble. Jimeno and Santos (2014) and Martín et al. (2019) enumerate these characteristics: “the banking sector was able to attract capital inflows, construction firms had built up large capacities during earlier infrastructure projects, and the Spanish population was young and growing fast” (Martín et al., 2019, p. 8).

Changes in zoning and land use regulations in 1997 and 1998 (the new Law 6/1998 on land regime), an oversized construction sector, weak lending standards (loan-to-value ratios close to 100% in many cases) particularly in regional banks controlled by local political elites (Akin et al., 2014), growing demand due to the increase in the population (both nationals and foreigners, particularly in tourist regions), and the

speculative behaviour of some institutional and private buyers also helped to sustain the growth in house prices, housing stock, urban space, and mortgage loans (García, 2010).

Figure 1 shows the evolution in house prices at the national level from 1994 to 2019(Q3), along with the number of new mortgages<sup>1</sup> granted in this period to secure loans to buy urban properties. The evolution of house prices illustrates the recent Spanish housing boom. As Blanco et al. (2016) explain, from the middle of the 1990s to 2007 the housing market was characterised by an extraordinary boom, which multiplied house prices by a factor of more than three. In particular, between 1995 and 2007 the average annual rate of increase of house prices was 9.7%, with a maximum of over 17% in 2003 and 2004. After 2008, during the Great Recession, house prices dramatically decreased. It is worth pointing out that house prices and the number of new mortgages display a similar evolution in most of these years, although in 2006 the number of new mortgages reached a maximum historical total of 1,842,925 and then started to decrease, while house prices maintained their positive growth for two more years until 2008 when they also began to decline. The most recent data show that from 2015 there has been a recovery in both the number of mortgages and house prices.

Two specific factors in Spain contributed to strengthening the impact of the shock on households' finances. The first of these is the Spanish regulatory regime. The basic laws are the 1946 Mortgage Law and its subsequent amendments, and the general rules of the Civil Code (Private Law). Most households need credit from a bank to buy a house, and a mortgage secures the repayment of the loan. Thus, if the borrower defaults and there is judicial foreclosure, the property securing the mortgage loan is sold in a public auction. What we want to emphasize is that in Spain (as in many European countries) the general rule is that, in case of default, if the judicial foreclosure does not result in full repayment of the existing debt, because the sale price is substantially lower than the appraised value at the time of the loan agreement, the liability of the debtor remains and the debt subsists for the remaining amount under the principle of personal liability given in Article 1911 of the Civil Code, which states that "the debtor is liable for the performance of his obligations with all present and future property".<sup>2</sup>

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<sup>1</sup>There are no available data on the stock of existing mortgages.

<sup>2</sup> The *New York Times* highlighted the negative impact of this personal liability on households in Spain during the Great Recession: "In Spain, Homes are Taken but Debt Stays", <https://www.nytimes.com/2010/10/28/world/europe/28spain.html>.

Second, Spaniards show a strong preference for property ownership rather than renting. As Blanco et al. (2016) point out, “in Spain, property ownership is widely viewed as superior to renting almost as a social status”. As a result, the rental market is far less developed in Spain than in other European countries. According to the last Spanish population census in 2011, owner occupancy rates are (on average) around 78.9%, while the rental share is around 13.5%. Dewilde (2008) provides some statistics on the housing market for 12 European countries; her calculations, based on national micro-data from the European Community Household Panel in the period 1995–2001, reveal that the percentage of households in owner occupation in Spain is the highest (84.9%) in her sample of countries. Only Greece shows a similar figure, while other European countries are far below: Portugal (66.7%), France (63.1%), Germany (44.4%), and the United Kingdom (71.8%). Thus, given that the proportion of owners was much higher than that of renters in Spain, the exposure of households to the bursting of the housing bubble was considerably more serious than in other countries.

The sudden end of the housing bubble meant that a proportion of the 319 billion euros in mortgage loans could not be paid back, generating an unprecedented wave of foreclosures and evictions in the country (Parreño Castellano et al., 2019). Figure 1, showing house prices and judicial foreclosures by year from 2001 to 2019(Q3), illustrates the magnitude of the shock at the national level. Eviction data, when available, are also shown. The graph shows that, starting in 2008, when the unemployment rate increases rapidly as a result of the economic crisis, the number of foreclosures rises (doubling in just the two years from 2008 to 2010) until it reaches a maximum in 2015 that is four times the figure for the year 2008. The maximum number of foreclosures also coincides with the peak in evictions. After 2015, both foreclosures and evictions decline over time. Moreover, it can be observed that the increase in foreclosures coincides with the decrease in house prices.

This situation of social tension resulted in the foundation of several associations (the most prominent being the Association of those Affected by Mortgages – *Plataforma de Afectados por la Hipoteca*). In February 2013, these social movements, among other actions, led to a popular legislative initiative<sup>3</sup> with over 1,402,854

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<sup>3</sup> A popular legislative initiative is a direct and participatory democratic mechanism for the population in public affairs. A group of people can submit a non-governmental bill to parliament, but no fewer than 500,000 authenticated signatures are required. The 1978 Spanish Constitution adopted the most restrictive

signatures that requested that debtors could transfer their property over to the bank as an alternative to having the lender foreclose on it (a so-called ‘*dación en pago*’ or *datio in solutum*), asked the government for a social rent for low-income debtors, and called for a moratorium on all evictions. Prior to this, in January 2012, the Ombudsman (*Defensor del pueblo*) had published a report entitled *Economic Crisis and Mortgage Debtors: Actions and Proposals of the Ombudsman*, which contained a series of recommendations including that “we must seek solutions with practical results equivalent to the transfer of property in payment of debts”, especially “for essential purchases, such as the habitual residence.”

As a result, the government and parliament introduced several new rules, reforming the banking sector and creating new instruments to protect low-income mortgage debtors at risk of eviction:

- Royal Decree-Law<sup>4</sup> 8/2011, July 1, on support measures for mortgagors, control of public spending and debt cancellation for businesses and individuals contracted by local institutions, the promotion of entrepreneurship and impulse of building rehabilitation and the administrative simplification.
- Royal Decree-Law 6/2012, March 9, on urgent measures to protect mortgage debtors without resources.
- Royal Decree-Law 27/2012, November 15, on urgent measures to strengthen the protection of mortgage borrowers.
- Law 1/2013, May 14, on measures to strengthen the protection of mortgage borrowers, on debt restructuring, and on social renting.
- Law 14/2013, September 27, on support measures for entrepreneurs and encouraging them to engage in international trade.
- Royal Decree-Law 1/2015, February 27, on the mechanism of the second chance, the reduction of financial burdens and other measures of social order.
- Royal Decree-Law 5/2017, March 17, to modify Royal Decree-Law 6/2012, March 9, concerning urgent measures for protecting mortgage debtors without

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popular legislative initiative model (a final decision is made by parliament and there is no possibility of a referendum) among decentralised countries (Virgala, 2012).

<sup>4</sup> A Royal Decree-Law is a legal rule having the force of a law approved by the government under very specific circumstances: There must be a situation of extraordinary necessity that requires certain measures that must be implemented urgently (and cannot be carried out by the normal parliamentary process, which may be slow). A Royal Decree-Law is temporary and must be ratified, rejected or converted into law by parliament within 30 days of its publication.

resources, and Law 1/2013, May 14, on measures to strengthen the protection of mortgage borrowers, to restructure debt, and to boost social renting.

- Law 5/2019, March 16, regulating real estate credit agreements.

Among these rules, the most important was the Royal Decree-Law 6/2012. Under this new regime, low-income debtors who meet certain requirements can only be evicted with difficulty and, in case of default, a bank must offer the debtor a restructuring of the debt, or the debtor can even, as a last resort, transfer the property over to the bank as an alternative to having the lender foreclose on it.

This rule established a new Code of Good Practice for banks and financial institutions; although accession to this Code is voluntary, once an institution has agreed to adhere to the Code (and over a short time almost all Spanish banks did) it is obliged to offer a borrower who is having difficulties with the payment of his or her mortgage debt the option to apply for the measures included in the Code.

Mortgagors protected by the Royal Decree-Law 6/2012 are borrowers under a loan secured by mortgage on their first residence when the resulting mortgage payments exceed 50 percent of the net income received by all the members of the household. The restructuring plan for the mortgage debt consists of the joint implementation of different measures in a sequential way. First, if the borrower's difficulties are considered to be temporary (and the bank still expects to be fully repaid in the end), some of the terms in the loan agreement can be modified, allowing the bank to offer the debtor:

- a) A five-year grace period for the repayment of capital;
- b) An extension of the repayment period to a total of 40 years from when the loan was granted;
- c) A reduction in the applicable interest rate to the Euribor rate + 0.25 percent during the grace period; and
- d) An indefinite agreement not to apply interest rate floor clauses (also known as 'collar clauses') in the mortgage loan contract.<sup>5</sup>

It is also possible to combine debts owed to the bank.

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<sup>5</sup> The European Court of Justice ruled on December 21, 2016, that the typical 'floor clauses' included in mortgage loans in Spain were null and void. Previously, Royal Decree-Law 1/2015 had established that floor clauses in mortgage contracts for mortgage debtors without resources could no longer be applied.

Second, if the application of the above measures is considered to be unfeasible because the restructuring results in a monthly payment of over 50 percent of the total income received by all members of the household, the mortgagor has the option to apply (within one month after the unfeasibility of the restructuring plan has been acknowledged) for the implementation of additional measures consisting of a reduction of the debt, although the bank is not obliged to accept this application. These additional measures are:

- a) A reduction of 25 percent of the loan;
- b) A reduction equivalent to the difference between the repaid capital and the total capital in the same proportion as the number of installments paid bears to the total due;
- c) A reduction equivalent to half the difference between the current value of the residence and the value resulting from subtracting from twice the initial appraised value the difference with the loan granted, as long as the first value is lower than the latter.

Third, if the restructuring plan and additional measures are not viable, the mortgagor may within 12 months from the application for restructuring, request payment in kind of his residence as a means of definitively discharging the debt, where the lender is obliged to accept the handover of the mortgaged property. Moreover, the debtor is allowed to stay in the residence as a tenant for two years, paying an annual rent of 3% of the total amount of the debt at the time of the payment in kind, thus avoiding eviction even after foreclosure.

Although some later rules modified the Royal Decree-Law 6/2012,<sup>6</sup> we can identify this rule as the first serious attempt by the government to reduce the number of foreclosures and evictions. Between 2012 and 2019(Q2), 115,475 applications were received by banks adhering to the Code. Of these, only 57,885 (50.1%) were accepted and processed. The most common reason for a rejected application was that the mortgage debtor did not meet the income threshold. Among the accepted applications, 49,725 (85.9%) were solved through changes in the terms of the loan agreement, in thirteen (0.0%) cases the bank accepted a reduction of the debt, and, finally, the bank acquired possession of the property securing the mortgage loan in payment of the loan 8,147 (14.1%) times.

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<sup>6</sup> For instance, the Royal Decree-Law 1/2015 slightly modifies the Code of Good Practice.



Other European countries that also faced a dramatic increase in foreclosures and evictions passed similar law reforms (Domurath et al., 2014). For instance, the Greek Law 4161/2013 introduced the ‘facilitation scheme for performing borrowers’, which can only be applied to debts arising from housing or credit or ‘repair’ loans that have a mortgage lien to the primary residence of the debtor. And in Portugal, in case of default of a debtor in a harsh economic situation, under Law No. 58/2012 the credit institution is obligated to present a plan for restructuring the mortgage loan and offer additional measures, such as credit consolidation, if necessary.

However, what is relevant from the perspective of this economic analysis of the law is that this new set of rules introduces a new mechanism of incentives that can lead to undesirable results. Lacruz Mantecón (2014) indicates that this new overprotection of debtors (i) may cause a reduction in mortgage credit, especially for those groups that the law seeks to protect (individuals at risk of economic exclusion), and (ii) can induce strategic defaults (when the appraisal value of the property is higher than the current market value —i.e., underwater mortgage). To these negative effects we could add that it is not clear whether these “urgent” measures have really contributed to a significant reduction in the number of foreclosures in the short term. For example, Figure 1 shows a decrease in judicial foreclosures and evictions in recent periods, but the reason could be the economic recovery rather than the new legal measures. In this paper we test all these hypotheses empirically.

We use panel data models considering quarterly regional data. One potential limitation of the analysis is that the law reform affected all regions at the same time, and thus we do not have a control group within Spain. Nevertheless, we include regional, year, and quarter fixed effects, linear and quadratic region-specific time trends, along with other relevant control variables at the regional level, and our empirical strategy distinguishes between the static and the dynamic effects of the law reform.

The remainder of the paper is organized as follows. Section 2 presents the data used. In Section 3, we describe the methodology and the main results. Section 4 concludes.

## **2. Data**

We consider quarterly data from the 50 Spanish provinces (NUTS III regions).<sup>7</sup> The available judicial foreclosures data cover the period 2001 to 2017 (General Council of the Judiciary, *Consejo General del Poder Judicial*, CGPJ). We use data from completed foreclosure procedures in the courts of first instance.<sup>8,9</sup> Chapter V of the Law of Civil Procedure 1/2000 (Articles from 681 to 698) regulates the foreclosure process in Spain. The execution of the foreclosure process is a civil procedure under Spanish law. The process is based on a debt enforcement of the mortgage deeds by filing a lawsuit. Article 681 regulates the process for demanding payment of a debt secured by a pledge or mortgage. The article states that “enforcing the payment of debts secured by pledge or mortgage may be executed directly over the property”. The main requirement for the action is the existence of a public mortgage deed that has been signed at a notary’s office and filed at the land registry. The deed must include specific requirements for the lender’s rights to be executed over the mortgaged property, namely the price at which the mortgage property is valued (based on an official appraisal), which serves as a base price for the auction, and the debtor’s domicile for the purpose of notices and requests.

The data on evictions are more recent; the data series starts in 2013. As the time span of the series is short (data are only available for 27 quarters, from 2001(Q1) to 2019(Q3)), and the law reform took place in 2012, before the first data are available, we restrict our analysis to the foreclosures data. Nevertheless, the correlation between the two variables (foreclosures and evictions) at the regional level is quite high (0.9),<sup>10</sup> so we expect that our conclusions regarding the effect of the law on judicial foreclosures can be extended to evictions.

House prices are new house prices (i.e., recently built houses) measured in euros per m<sup>2</sup> (Spanish Government, *Ministerio de Fomento*). Regional house prices are available for a longer time span (1994-2017), but foreclosures data are only available from 2001 onwards, which restricts our sample to the 2001-2019(Q3) period. The house price variable allows us to detect possible opportunistic behaviour of debtors, telling us whether changes in house prices could have led to strategic defaults when, after a fall in the current market value of a property, the new house price is lower than the equity (i.e.,

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<sup>7</sup> Ceuta and Melilla, located on the African coast, are excluded.

<sup>8</sup> The courts of first instance are the basic courts of civil jurisdiction assigned to judicial districts.

<sup>9</sup> In Spain almost all foreclosures are judicial, although the law allows for non-judicial foreclosures before a notary.

<sup>10</sup> Spearman’s rho = 0.9358 with 1,350 observations.

the value of the property less the balance of the outstanding mortgage loan on the home).

The spatial scale is an important issue. Figure 2 plots judicial foreclosures by region, and significant differences across regions can be observed (Parreño Castellano et al., 2019). As Méndez et al. (2015) indicate, the increase in foreclosures showed a spatial pattern: coastal regions (Mediterranean regions, specifically) exhibit higher than average increases in foreclosures, while northern regions, along with some inland provinces, had lower than average increases in the number of foreclosures. The two most populated regions (Madrid and Barcelona) and their surrounding areas also recorded a higher than average rise in judicial foreclosures. This regional variation becomes even more apparent when we consider house prices, as Figure 3 shows. Blanco et al. (2016) studied the existence of convergence clusters among Spanish regions, on the basis of house price trends from 1995 to 2007, concluding that some degree of segmentation in the Spanish housing market exists. For instance, their results confirm that the housing boom was much more pronounced in coastal provinces, particularly on the Mediterranean coast.

We also want to study whether the legal reform had any effect on the mortgage loans market. Loans data at the regional level come from the General Council of the Notary (*Consejo General del Notariado*, CGN). We have quarterly information on the total number and average amount of regional mortgage loans from 2007 to 2019(Q3). This data set is comprehensive and reliable because, in Spain, the notary intervention is mandatory in order to get access to the Land Register. Thus, a notary has to witness the deeds of sale so that the private sale contract is turned into a public deed that can be inscribed in the official property register, and registration is always requested when the mortgage lender is a bank or financial institution.

We also collect data on two macroeconomic variables that may have an influence on foreclosures and loans: the unemployment rate and the inflation rate. We use unemployment to control the regional business cycle, and inflation is related to the cost of living. Unemployment data come from the Spanish Labor Force Survey. As mentioned in the introduction, there have been considerable fluctuations in unemployment in Spain, and the variations at the regional level are also relevant and persistent over time (Jimeno and Bentolila, 1998).

Regarding inflation, Spain reports consistently higher inflation rates than other European Union (EU) countries. Lopez and Papell (2012) studied the behaviour of inflation rates among several EU countries during recent decades: until 2008, Spain was one of the Euro countries reporting the highest inflation rates, then Spain was one of the countries most affected by the 2008 crisis and, finally, after the crisis Spain's inflation rate shows a moderate decrease. Our measure of the inflation rate is the rate of change in the consumer prices index.

Finally, we also use data on population at the regional level to calculate relative measures for foreclosures and loans per capita. Population data are available at the regional level for two dates per year, in the first and the third quarters. We fill in the data for the other two quarters using linearly interpolated values.

Table 1 shows the regional average values by year for all these variables over the period under consideration. If we focus on the years around 2008 (at the beginning of the Great Recession), we can identify different dynamics: unemployment and foreclosures increase from 2008, while house prices, inflation, and the number and average amount of loans decrease from that date but recover in recent years.

### 3. Methodology and Results

The main hypothesis that we wish to test is whether the recent law reforms of the Spanish mortgage market to protect mortgage debtors without resources had a significant effect on the number of foreclosures. Our empirical strategy distinguishes between the static and the dynamic effects of the law reform. Initially, to capture the effects of the law reform, we estimate the following expression:

$$\begin{aligned}
 Y_{it} = & \alpha_i + \beta_1 \cdot \ln(HP_{it}) + \beta_2 \cdot UNEMP_{it} + \beta_3 \cdot INF_{it} + \gamma \cdot LawReform_t + \theta_i + \delta_t \\
 & + T_{it} + u_{it}
 \end{aligned}
 \tag{1}$$

where  $Y_{it}$  is the dependent variable, a measure of the number of judicial foreclosures in region  $i$  at time  $t$ . We consider two measures: the log-number of judicial foreclosures and the number of foreclosures per 1,000 inhabitants.  $HP_{it}$ ,  $UNEMP_{it}$ , and  $INF_{it}$  represent the house prices, unemployment, and inflation rates in region  $i$  at year  $t$ , respectively.  $LawReform_t$  is a dummy variable that takes a value of "1" after the

mortgage law reform, and “0” otherwise. As explained in the introduction, among the different rules introduced in recent years, the most important was the Royal Decree-Law 6/2012; thus, we set the law reform date at March 11, 2012, when this rule entered into force.

The estimate of the parameter  $\gamma$  in Eq. (1) informs us about the average change in the dependent variable after the law reform, controlling for fixed and time-specific shocks (year and quarter fixed effects are included), represented by  $\theta_i$  and  $\delta_t$ , respectively.  $T_{it}$  is a matrix of time variables, incorporating region-specific linear time trends  $(\sum_{i=1}^{n-1} Region_i \cdot Time_t)$  and quadratic region-specific time trends  $(\sum_{i=1}^{n-1} Region_i \cdot Time_t^2)$ , allowing us to control for unobserved regional characteristics that vary over time.

However, the law reform may also have induced gradual changes in the number of foreclosures because the banks and financial institutions only gradually joined the new Code of Good Practice. To tackle this issue, we also estimate the dynamic response of foreclosures to the 2012 law reform using the following econometric model:

$$\begin{aligned}
 Y_{it} = & \alpha_i + \beta_1 \cdot \ln(HP_{it}) + \beta_2 \cdot UNEMP_{it} + \beta_3 \cdot INF_{it} + \\
 & + \sum_{k \geq 1} \beta_k \cdot d_k Years\ since\ law\ reform_{,it} + \theta_i + \delta_t + T_{it} + u_{it}
 \end{aligned}
 \tag{2}$$

This model differs from the previous one because we introduce dummies to capture the dynamic effect of the shock. Thus, the variable  $LawReform_t$  is now a set of dummies  $d_k$  equal to “1” when the law reform has been effective in year  $t$  for  $k$  periods, and “0” otherwise. We include dummy variables for the first two years of the new legal regime, and for years 3 and 4, 5 and 6, and 7 and 8 (until Q3 in 2019).<sup>11</sup>

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<sup>11</sup> As the law reform became effective after the beginning of the year 2012 and we have quarterly data, this allows us to include the set of time dummies along with year and quarter time fixed effects (the timing of the law reform did not coincide with the change in calendar year).

Therefore, the  $\beta_k$  coefficients are intended to capture the entire dynamic response of foreclosures to the new legal regime, while the country-specific time trends identify pre-existing trends. The estimates of these coefficients allow us to determine the average effect of the law reform on regional foreclosures, and to test whether the effect declines (a negative coefficient) or grows (a positive coefficient) over time. Again, we also add region fixed effects and year and quarter fixed effects, in addition to the region-specific controls, and linear and quadratic region-specific time trends, as in Eq. (1).

This empirical strategy is similar to that proposed by Wolfers (2006) to analyze the effect of the unilateral divorce law reforms in US states; the only difference between our approach and Wolfers' strategy is that in our case the law reform affected all regions at the same time (it was a national rule).<sup>12, 13</sup>

We estimate Equations (1) and (2) by OLS, with robust standard errors clustered by region. Table 2 reports the estimates of the effect of the 2012 law reform on judicial foreclosures in absolute (columns 1 and 2) and relative terms (columns 3 and 4). All models include all controls. The results for the static model (columns 1 and 3) provide contradictory conclusions: while the number of foreclosures declined after the law reform, the effect on the ratio of foreclosures per 1,000 inhabitants is positive and significant. How is this possible? An explanation could be the decrease in population: the total population of Spain significantly reduced from 2012 to 2016. Overall, the considerable reduction of almost 400,000 inhabitants (a decrease in 0.8% of the total population) was mainly driven by immigrants returning to their countries of origin during the recession, and these immigrants were particularly concentrated in those regions severely hit by the bursting of the housing market bubble. Therefore, although the number of foreclosures declined after the reform, the decrease in regional populations pushed the ratio up in some regions.

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<sup>12</sup> Marcén (2016) uses this same methodology for considering a legal reform that affected all units simultaneously to examine the effect of the Bosman ruling on the presence of native football (soccer) players in their home league.

<sup>13</sup> We do not have a control group within Spain because all units were affected by the law reform at the same time. One possible alternative could be to build a synthetic control group following the synthetic control method (Abadie et al., 2015). It consists of the comparison of outcomes between units representing the case of interest (the Spanish provinces in our case), defined by the occurrence of a specific event or intervention that is the object of the study (the law reform), and otherwise similar but unaffected units. Comparison units are intended to reproduce the counterfactual of the case of interest in the absence of the event or intervention under scrutiny. For instance, Abadie et al. (2015) used a weighted average of European countries as a synthetic control for Germany. Nevertheless, in our case it is not easy to find comparable units, because, as mentioned in the introduction, many European countries passed similar law reforms in that period.

Nevertheless, the results for the dynamic effect of the law reform (columns 2 and 4) are consistent across both measures of foreclosures. Our time dummies reveal a negative and significant effect of the law reform on regional foreclosures in the first six years after the reform (although for the log-number of foreclosures the effect is only significant at the 10% confidence level in years 3 and 4 after the law reform). Furthermore, the coefficients indicate that the negative effect increased over time. However, from the seventh year onward the coefficient becomes non-significant at the 5% confidence level in column 2, and even changes to become positive and significant for foreclosures per capita in column 4. This suggests that the effectiveness of the policy reform vanished seven years after the reform. Therefore, although the law reform contributed to a reduction in foreclosures (and evictions), this effect was transitory.

Regarding the control variables, only the coefficient picking up the effect of house prices is significant in all models. Its negative sign points to opportunistic behaviour by mortgage debtors: a decrease in house prices in this period implied a rise in the number of foreclosures. The impact of the unemployment and inflation rates is positive but not significant.

Next, we explore the impact of the law reform on the mortgage loans market, so we re-run Eqs. (1) and (2) considering loans data at the regional level as the dependent variable. In particular, we use the log-number of mortgage loans, the number of mortgage loans per 1,000 inhabitants, and the log of the average amount of the loan. Data on loans are only available from 2007, so our sample size is slightly reduced to 2,550 observations. Table 3 shows the results for both the static (columns 1, 3 and 5) and dynamic (columns 2, 4 and 6) effects of the law reform. The results are quite similar for the three measures of mortgage loans. We obtain a negative and significant static effect of the law reform in all cases, and the dynamic effects are also negative and significant in all the years after the law reform, pointing to a non-transitory effect. Moreover, it seems that not only is the effect permanent but the estimated coefficients for the time dummies also indicate that the negative effect increases over time.

Neither of the control variables has a significant effect on the log-number of loans. For the loans per capita ratio, the impact of unemployment is negative and significant, as expected. A high unemployment rate implies that debtors may have more difficulties in making their scheduled payments, and thus financial institutions are more

cautious about giving credit. The inflation rate has a positive effect on loans, but it is only significant for the average amount of the loan, possibly by means of its influence on the real interest rate.

Figure 4 provides information about the spatial dimension of the impact of the law reform on both foreclosures and mortgage loans. Although the change in the law affected all regions at the same time, the effect was uneven across units. Figure 4(a) shows the average growth in foreclosures after the law reform (from 2012(Q2) to 2019(Q3)) by region. The blue areas represent regions with lower than average growth (negative growth in all cases) in foreclosures, while brown regions are provinces with higher than average growth after the law reform. The map reveals an interesting spatial pattern, as most of the areas with a growth in foreclosures below the average are located in the north (and part of the east) of the country. Nevertheless, provinces that had a higher than average growth in foreclosures (after the law reform that diminished foreclosures) were those located in the south of the country (with some exceptions). This result is fully consistent with the north-south pattern observed in Spain in last decades, in which the southern regions (basically, Extremadura and Andalusia) are the poorest regions, with the highest unemployment rates. Therefore, although the law reform transitorily reduced the number of foreclosures, the regions still showing the highest growth in foreclosures were those regions with more low-income individuals.

Figure 4(b) displays the average growth in loans in the same post-law reform period by region. Although in this case the spatial pattern is not so clear, this map can be interpreted as an inverse reflection of Figure 4(a) because it shows that the regions in which the decrease in loans was higher than average were located, basically, in the south (and west) of the country, whereas in the north of the country we find those regions with a higher than average growth (even positive in some cases) in mortgage loans. Again, the explanation could be related to the lower per-capita income in southern regions. If mortgage loans were reduced after the law reform because low-income individuals were excluded from the credit market, this map indicates that this process was especially intense in the poorest regions.

#### **4. Conclusions**



From 1999 to 2005 the Spanish housing market was characterised by an extraordinary boom, which increased house prices (in euros per m<sup>2</sup>) by 117%. This housing bubble had a crucial role in the impact of the international financial crisis, which began in 2008, on the Spanish economy. After 2008, during the Great Recession, house prices dramatically decreased and unemployment increased. At the same time, the number of defaults on the repayment of mortgage loans, and the number of foreclosures and evictions, rose significantly.

The governmental reaction to the wave of foreclosures and evictions was the law reform passed in 2012 to protect mortgage debtors, which introduced a new Code of Good Practice for banks and financial institutions. After this legal reform, low-income debtors who meet certain requirements can rarely be evicted and, in case of default, the bank is forced to offer the debtor a restructuring of the debt, or the debtor can even, as a last resort, transfer the property over to the bank as an alternative to having the lender foreclose on it, thus being allowed to stay in the property as a tenant and paying a reduced rent, and avoiding eviction even after foreclosure.

In this paper, we empirically examine the economic consequences of this legal reform. We consider quarterly data from 50 Spanish provinces (NUTS III regions) from 2001 to 2019(Q3). We use panel data models with regional, year, and quarter fixed effects, linear and quadratic region-specific time trends, and other relevant control variables at the regional level (house prices, inflation, and unemployment rates), and our results reveal that the reform significantly reduced the number of foreclosures, but that this effect was transitory, fading six years after the reform.

Why was the effect on foreclosures not permanent? One possible explanation is that the poorest individuals are not owners anymore. Although last years the number of owners' evictions has decreased over time, today it is still larger than the pre-crisis level. However, since 2016 there has been a worrying rise in renters' evictions (in 2019 the number of renters' evictions was almost three times that of owners), and this dynamic has been observed in different cities (for instance, González-Pérez et al. (2020) study on the case of Palma). Taking into account that after foreclosure owners usually turn to being renters, this may suggest that low-income individuals are still at severe risk of eviction, because when they lose the status of mortgagor debtor they move to the rent market, in which tenants can be evicted more easily. Although the Royal Decree-Law 6/2012 states that the mortgagor can transfer the property of his residence as a

means of definitively discharging the debt, and the debtor is allowed to stay in the residence as a tenant for two years paying a reduced annual rent, this way avoiding eviction after foreclosure, in practice after those two years the rent usually rises dramatically. Many of these homes end up being managed by Real Estate Investment Trusts (REIT), which have proliferated in Spain since 2012 (from zero REITs in 2012 to 72 in 2019, see Méndez (2019)), and after the legal period of two years in many cases the rent increases by 100% (or even more), forcing the tenant to move or to be evicted in the end. Nevertheless, all these movements are not captured by our judicial foreclosures data.

The law reform also reduced access to the credit market, and the negative effects on the mortgage loans market are permanent and remain today. As the credit institutions tried to accommodate to the post-financial crisis situation by restructuring their financial portfolios, reducing the importance of mortgage loans (whose weight was oversized during the previous housing boom), new actors have appeared in the Spanish housing market last years (Méndez, 2019). Since 2013, and especially from 2017, agreements between the most important Spanish banks and foreign capital funds (such as BlackRock, Vanguard, Brookfield Asset Management, Cerberus, and Blackstone, among others) have facilitated the irruption of these private funds (called in the social media ‘vulture funds’) into the Spanish housing market. To diversify their portfolios, these funds have bought large packages of housing stocks that banks previously acquired after judicial foreclosure. Today, 10 out of the 15 most important property developers in the country are controlled by foreign funds (mostly American), closely linked to the REITs managing renting in these housing units. Whether the increasing market power of these funds in the Spanish housing market is desirable from an economic or social point of view is an issue beyond this study.

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**Table 1. Regional average values by year**

Year	House price	Unemployment rate	Inflation rate	Foreclosures	Evictions	Loans	Average loan amount
2001	877.42	10.09	3.58	315.24			
2002	984.78	11.11	3.46	314.02			
2003	1,108.66	11.22	2.89	344.14			
2004	1,271.78	10.81	2.92	345.42			
2005	1,439.82	9.32	3.30	327.58			
2006	1,598.26	8.58	3.53	321.94			
2007	1,690.56	8.04	2.73	348.04		21,815.80	237,793.81
2008	1,705.13	11.00	4.19	410.98		14,317.84	201,955.84
2009	1,581.79	17.02	-0.57	753.54		14,343.02	162,838.44
2010	1,538.93	19.10	1.79	1,085		12,177.44	149,741.09
2011	1,468.96	20.75	3.30	1,295.40		7,814.64	147,045.91
2012	1,361.19	24.36	2.44	1,507.50		7,035.06	123,621.41
2013	1,260.83	25.83	1.38	1,469.96	516.22	5,113.68	117,404.98
2014	1,213.63	24.43	-0.23	1,636.74	577.54	5,399.76	120,586.54
2015	1,216.32	21.90	-0.68	1,681.88	584.50	6,063.78	130,999.09
2016	1,220.50	19.44	-0.28	1,454.98	527.94	6,522.36	133,591.98
2017	1,230.06	17.15	1.99	1,346.08	446.60	6,799.18	138,273.95
2018	1,247.08	15.20	1.67	1,177.66	378.90	7,438.58	142,761.03
2019*	1,268.39	14.10	0.73	763.46	213.46	5,486.9	145,407.52

Notes: House prices in euros per m<sup>2</sup>. \*Data in year 2019 until Q3.

**Table 2. Static and dynamic effects of the 2012 law reform on foreclosures**

Dependent variable:	ln(Foreclosures)		Foreclosures per 1,000 inhabitants	
	(1)	(2)	(3)	(4)
2012 Law reform	-0.254** (0.106)		0.162*** (0.022)	
First 2 years		-0.254** (0.106)		-0.135*** (0.017)
Years 3-4		-0.286* (0.159)		-0.148*** (0.026)
Years 5-6		-0.550** (0.252)		-0.255*** (0.042)
Years 7-8 (until 2019Q3)		-0.562* (0.310)		0.162*** (0.022)
Unemployment rate	0.002 (0.004)	0.002 (0.004)	0.001 (0.001)	0.001 (0.001)
Inflation rate	0.013 (0.026)	0.013 (0.026)	0.006 (0.006)	0.006 (0.006)
ln (House price)	-0.792*** (0.206)	-0.792*** (0.206)	-0.546*** (0.071)	-0.546*** (0.071)
Regional fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Quarter fixed effects	Yes	Yes	Yes	Yes
Year x Quarter fixed effects	Yes	Yes	Yes	Yes
Region x Time	Yes	Yes	Yes	Yes
Region x Time <sup>2</sup>	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.960	0.960	0.889	0.889
Observations	3,748	3,748	3,750	3,750

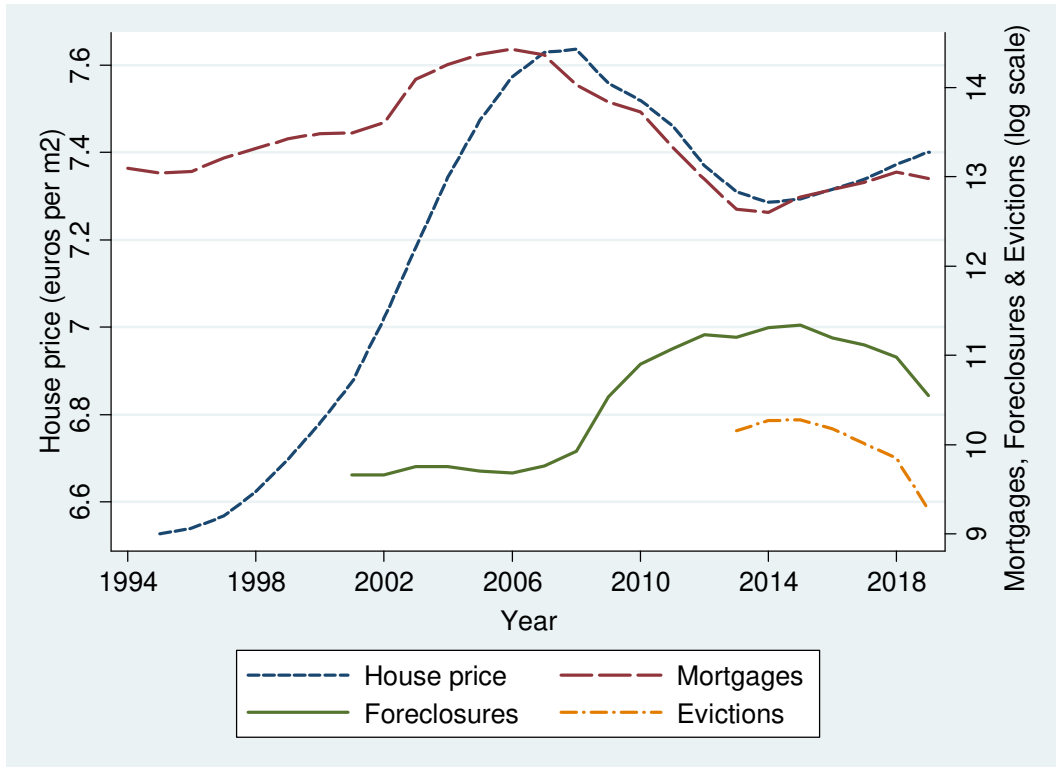
Notes: Dependent variables: ln(foreclosures) (Columns 1 and 2) and foreclosures per 1,000 inhabitants (Columns 3 and 4). Quarterly data from 2001 to 2019(Q3). All the models include a constant. Robust standard errors clustered by region. Significant at the \*10%, \*\*5%, \*\*\*1% level. The log-foreclosures sample has a different number of observations because one region (Teruel) reported zero foreclosures in two quarters.

**Table 3. Static and dynamic effects of the 2012 law reform on loans**

Dependent variable:	ln(Loans)		Loans per 1,000 inhabitants		ln(Average loan amount)	
	(1)	(2)	(3)	(4)	(5)	(6)
2012 Law reform	-0.171*** (0.040)		-0.384*** (0.099)		-0.126** (0.056)	
First 2 years		-0.405*** (0.019)		-1.469*** (0.050)		-0.285*** (0.026)
Years 3-4		-0.675*** (0.025)		-2.622*** (0.083)		-0.336*** (0.036)
Years 5-6		-0.858*** (0.042)		-3.562*** (0.135)		-0.386*** (0.050)
Years 7-8 (until 2019Q3)		-1.081*** (0.037)		-4.786*** (0.132)		-0.565*** (0.038)
Unemployment rate	-0.001 (0.002)	-0.001 (0.002)	-0.013** (0.005)	-0.013** (0.005)	-0.002 (0.002)	-0.002 (0.002)
Inflation rate	-0.005 (0.013)	-0.005 (0.013)	0.055 (0.039)	0.055 (0.039)	0.031** (0.012)	0.031** (0.012)
ln (House price)	0.016 (0.141)	0.016 (0.141)	-0.862* (0.441)	-0.862* (0.441)	-0.104 (0.140)	-0.104 (0.140)
Regional fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Quarter fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year x Quarter fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Region x Time	Yes	Yes	Yes	Yes	Yes	Yes
Region x Time <sup>2</sup>	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R <sup>2</sup>	0.994	0.994	0.970	0.970	0.847	0.847
Observations	2,550	2,550	2,550	2,550	2,550	2,550

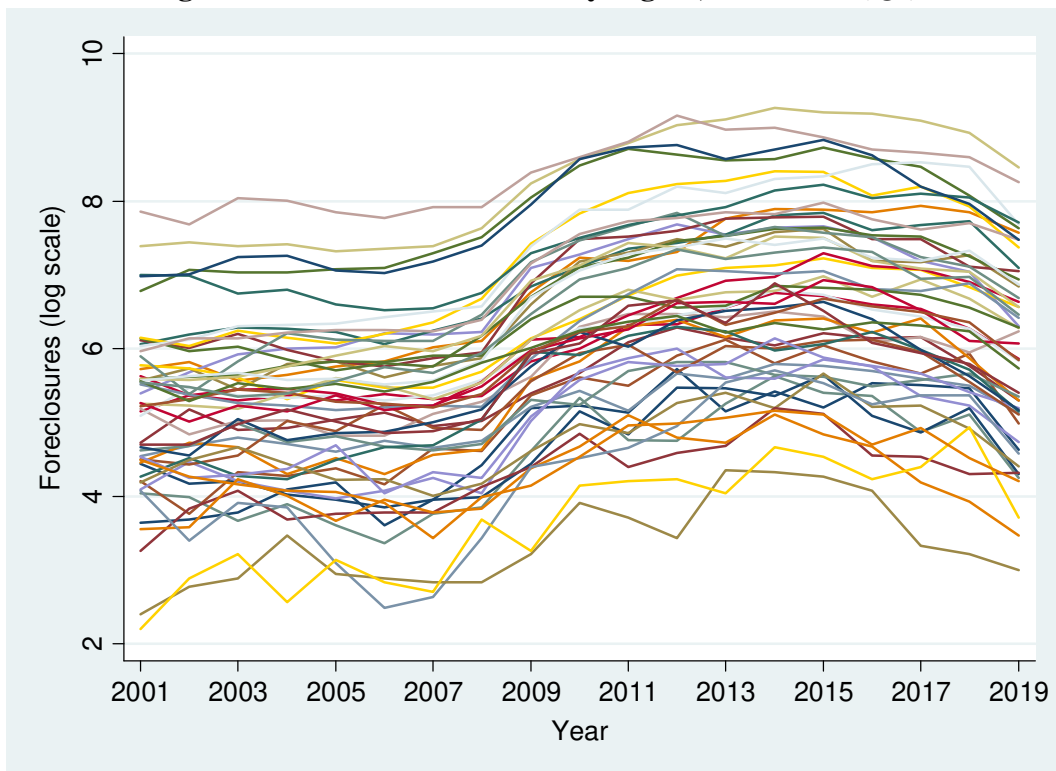
Notes: Dependent variables: ln(loans) (Columns 1 and 2), loans per 1,000 inhabitants (Columns 3 and 4) and ln(average loan amount) (Columns 5 and 6). Quarterly data from 2007 to 2019(Q3). All the models include a constant. Robust standard errors clustered by region. Significant at the \*10%, \*\*5%, \*\*\*1% level.

**Figure 1. House prices, new mortgages, judicial foreclosures, and evictions**



Notes: New mortgages constituted on urban properties. Data sources: *Instituto Nacional de Estadística (INE)*, *Ministerio de Fomento* and *Consejo General del Poder Judicial (CGPJ)*. Data in year 2019 until Q3.

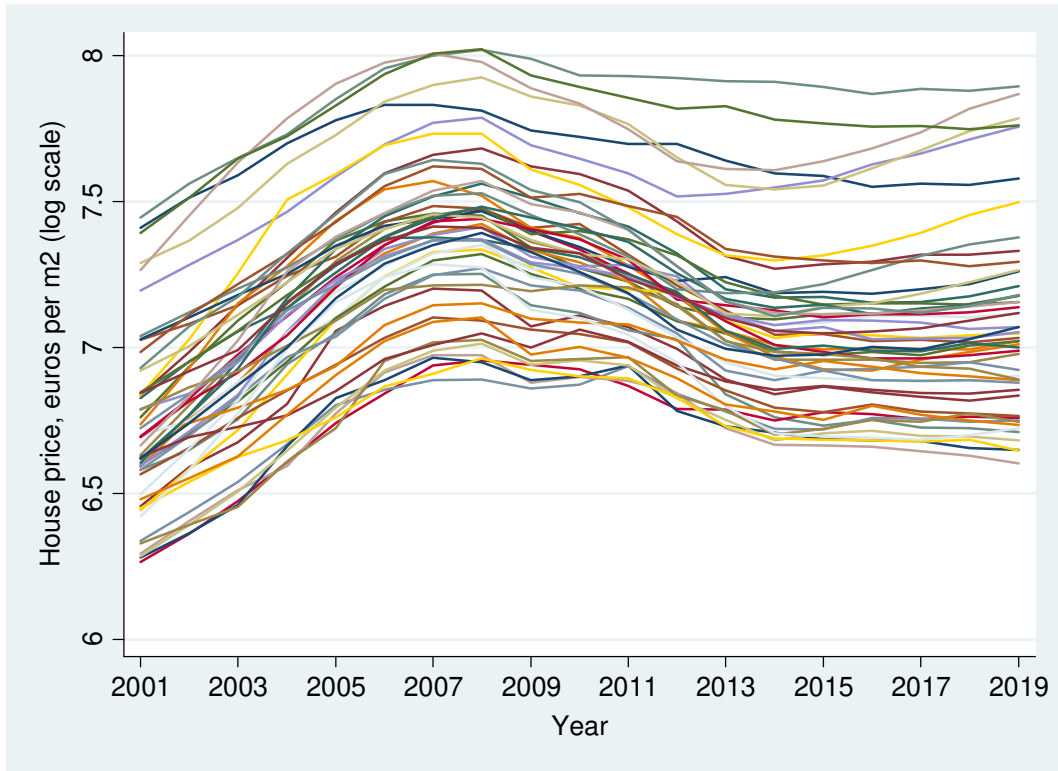
**Figure 2. Judicial foreclosures by region, 2001–2019(Q3)**



Notes: Data source: *Consejo General del Poder Judicial (CGPJ)*.

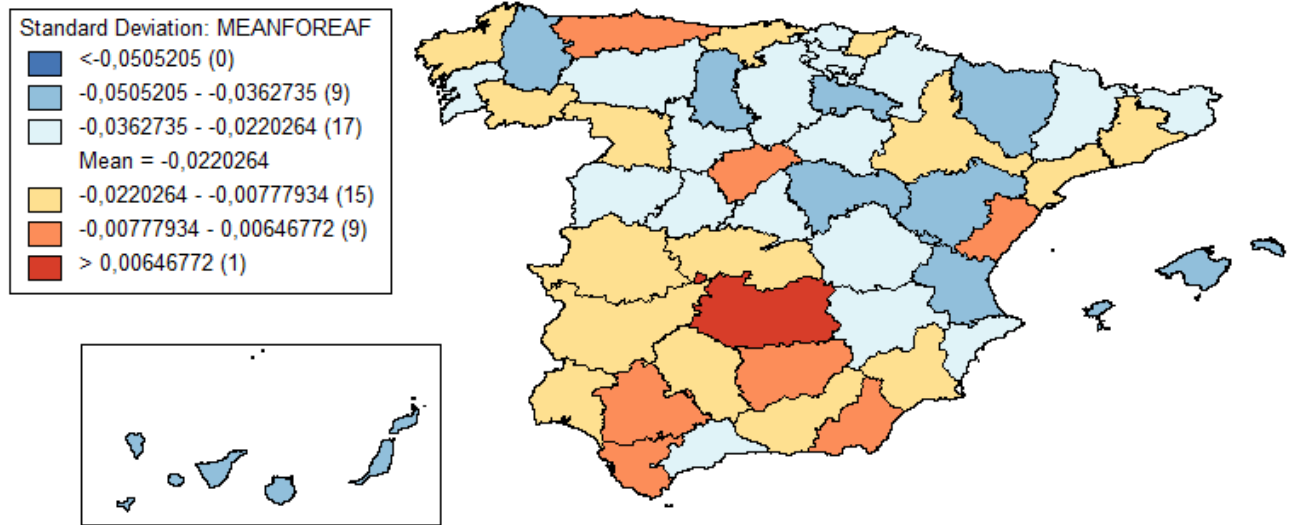


**Figure 3. House prices by region, 2001–2019(Q3)**

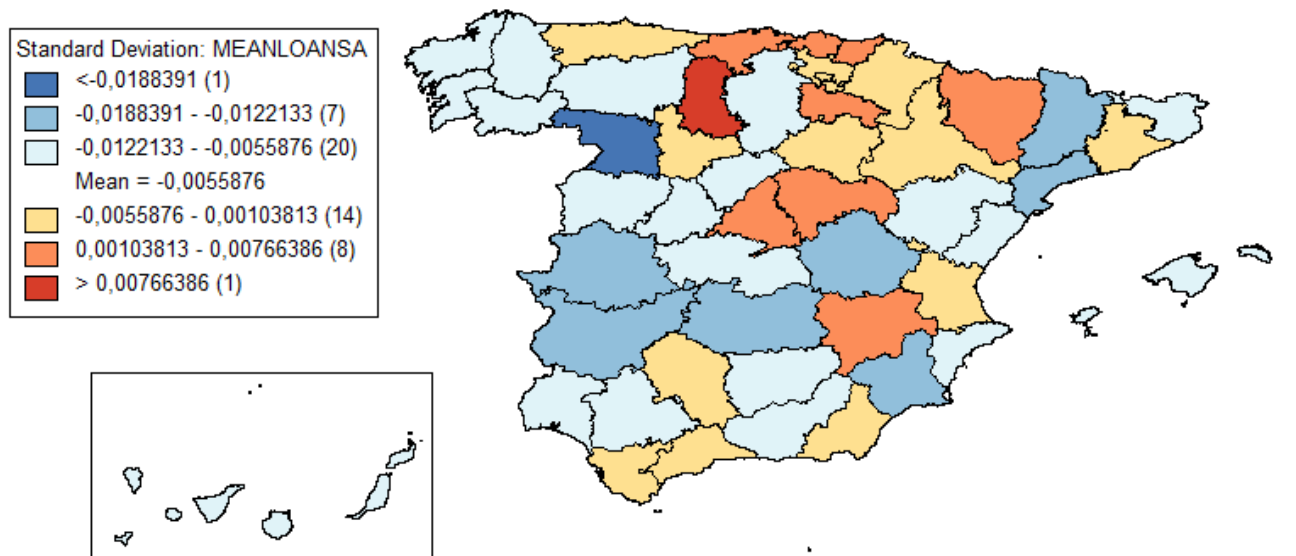


Notes: Data source: *Ministerio de Fomento*.

**Figure 4. Average growth in foreclosures and loans after the law reform by region**



(a) Foreclosures



(b) Loans

Note: Average quarterly growth in  $\ln(\text{foreclosures})$  and  $\ln(\text{loans})$  after the law reform (2012(Q2)–2019(Q3))