

EXTENDED ABSTRACT

Title: Club classification of foreclosure rates in Spain

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Extended abstract:

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).

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 (Blanco et al., 2016). 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 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). Starting in 2008, when the unemployment rate increases rapidly as a result of the economic crisis, the number of foreclosures raised (doubling in just the two years from 2008 to 2010)

and it reached a maximum in 2015 that was four times the figure for the year 2008. Obviously, the maximum number of foreclosures also coincided with the peak in evictions. After 2015, both foreclosures and evictions declined over time.

This situation generated a strong social tension. 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. Recent research (González-Val, 2021) has examined 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 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. Although some later rules modified the Royal Decree-Law 6/2012, we can identify this rule as the first serious attempt by the government to reduce the number of foreclosures and evictions.

Using 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), those results revealed 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. Nevertheless, the same study suggests that, although the change in the law affected all regions at the same time, the spatial impact of the law reform was uneven across units.

To disentangle the regional differences across regions in the effectiveness of the law reform, this paper studies the evolution of the Spanish foreclosure rates (defined as the number of judicial foreclosures per 1,000 inhabitants) across the 50 Spanish provinces (NUTS III regions) during the period 2001(Q1) to 2019(Q4), using a cluster algorithm. The data sources are the judicial statistics by the General Council of the Judiciary (*Consejo General del Poder Judicial*, CGPJ). We use data from completed foreclosure procedures in the courts of first instance. 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.

Our empirical methodology allows us to determine the existence of foreclosures convergence among the Spanish provinces. We use the Phillips and Sul (2007, 2009) panel convergence method. Phillips and Sul (2007, 2009) develop a cluster procedure based on a log t -test, which focuses on the evolution over time of idiosyncratic

transitions in relation to the common component. The method of Phillips and Sul concentrates on the evolution over time of foreclosure rates relative to the average, rather than on individual foreclosure rates by province. Thus, their methodology enables us to identify the relative transitions that occur within subgroups, and to measure these transitions against the correlative of a common trend (Phillips and Sul, 2009).

The convergence method does not require specific assumptions concerning the stationarity of the foreclosure rate, our variable of interest, and/or the existence of common factors. In addition, the nonlinear form of the model proposed by Phillips and Sul (2007, 2009) is sufficiently general to include a wide range of possibilities in terms of time paths and their heterogeneity. This cluster algorithm has recently been used in the economic literature, for instance, to explore convergence in the cost of living across US cities (Phillips and Sul, 2007, 2009), price convergence (Fischer, 2012), the historical population convergence of US cities (González-Val and Lanaspa, 2016), the income convergence of member states of the European Union (Fritsche and Kuzin, 2011; Bartkowska and Riedl, 2012), outcome convergence within the US (Choi and Wang 2015), and even the happiness club convergence in Europe (Apergis and Georgellis, 2015), among others. We add to this literature by exploring whether foreclosure rates converge across Spanish provinces.

Results show that the Spanish province-level foreclosure rates do not converge in only one convergence club; rather, we identify ten foreclosures convergence groups when all the period is considered. Nevertheless, during this period there was a major negative shock, the global financial crisis in 2008. As a consequence, there was a dramatic increase in foreclosures in all regions. The main governmental response to this crisis was the legal reform passed in 2012 to protect mortgage debtors mentioned above. To explore the possible effects of these events, we split the sample in two sub-periods (pre-crisis, 2001(Q1)–2008(Q4), and post-crisis, 2009(Q1)–2019(Q4)). We observe strong differences in the number of groups and their composition when using the entire sample and the post-crisis period. Surprisingly, in the post-crisis period no club classification is obtained, as all provinces are classified in the same club. Therefore, there were different paths across regions before the crisis, but after the shock foreclosure rates in all provinces converged to the same path.

Supplementary analysis of the possible factors related to the club classification in the pre-crisis period is carried out. Furthermore, the cluster analysis is also applied to the relative number of loans loans (defined as the number of mortgage loans per 1,000 inhabitants) for the period 2007(Q1) to 2019(Q4). Loans data at the regional level come from the General Council of the Notary (*Consejo General del Notariado*, CGN). 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 a 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. In this case, data is only available for the post-crisis period, and results support convergence in the relative number of mortgage loans within six convergence clubs, pointing to six different patterns across the Spanish regions.

Keywords: Foreclosure rate, mortgage loans, default, law reform, convergence club, cluster algorithm

JEL codes: C12, C23, K00, R21