The effect of the financial crisis on default by Spanish households☆

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ABSTRACT

We analyse the default behaviour of Spanish households immediately before and after the recent financial crisis. Using several waves of the Survey of Household Finances (a tri-annual survey of financial position of Spanish households), we show that younger, poorer and less well educated households are most likely to default. A key contribution is to explain the change in arrears since the onset of the crisis. Using information on credit applications and acceptances we decompose the change in arrears among all households into a contribution from four parts: (i) changes in characteristics; (ii) changes in applications; (iii) changes in acceptances; (iv) changes in arrears among borrowers. We show the last is the most important contribution.

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1. Introduction

The aim of this paper is to explore the borrowing and repayment behaviour of Spanish households since 2002 using household data. The recent international financial crisis has affected a number of developed economies and Spain constitutes a particularly interesting country to study due to the severity of the crisis and its aftermath. During the span of this study, Spain experienced a boom followed by a severe crash ensuing from the sub-prime crisis. Unemployment more than doubled from 2007 to 2009, and households default rates experienced even larger increases in these years. Bernardino and Gutiérrez (2012) and Igan et al. (2014) show household credit in Spain has mirrored these changes in the macroeconomy. Crook (2006) shows that credit to the household sector has expanded more rapidly than in other EU countries in the years prior to the crisis, as Spanish households have become as heavily indebted as households in Northern Europe (see Cecchetti et al.,

2011; or Bover et al., 2016). Default rates on mortgages and consumer loans increased dramatically over this period, and a key aim of this study is to explore the causes of this increase. It will investigate whether the increase was due to changes at the household level in income and unemployment, and whether it was the result of credit being extended to previously excluded households.

This paper will use the Survey of Household Finances (EFF), a household level dataset available for four different waves in the period 2002–2011. This survey was commissioned by the Bank of Spain to collect detailed information about the financial position of Spanish households and hence it provides a rich source to study the debt holding and repayment behaviour of a representative sample of Spanish families. Using household data enables us to understand the differences across households in their responses to the crisis. This paper will also discuss the changes in the borrowing and arrears behaviour of Spanish households before and after the financial crisis.

By building on the approach of Grant and Padula (2016), we will use a decomposition exercise to understand the changes in arrears among Spanish households since 2002 (which rose sharply over the survey period). Christelis et al. (2013) similarly employ a decomposition exercise when looking at differences in asset holding in Europe and the US. Their exercise investigates whether characteristics or coefficients explain these differences. In our decomposition exercise, we will note that between any two years the overall change in arrears in the population can be split into four parts: (i) changes in characteristics; (ii) changes in applications; (iii) changes in acceptances; (iv) changes in arrears among borrowers. We will

investigate the relative importance of each in explaining the rise in arrears since 2002. Thus our exercise investigates whether changes in characteristics (such as unemployment and income changes) can explain the increase in arrears during the Great Recession. And since there will be separate regressions for credit applications, for bank acceptances, and for arrears among borrowers, the effect of changes in the coefficients in each of these three regressions can be separately explored. Thus we will be able to investigate whether the rise in arrears was caused by an increase in applications for loans which was accommodated by lenders, or whether it caused by a weakening in lending standards.

We proceed by first describing existing literature and some background information about the Spanish credit market in Section 2 before proceeding with the main part of the paper. Section 3 describes the Survey of Household Finances, the household data set which will be used for the main analysis in the paper. The results are reported in Section 4. In Section 5 we propose a decomposition exercise which we will use to understand the cause of the change in arrears. Our conclusions are reported in Section 6.

2. Literature review

There is already an extensive literature on household arrears as well as the role of arrears in explaining the Great Recession. For example, Gerlach-Kristen and Lyons (2015) explore the role of 'affordability' and negative equity in explaining mortgage arrears among European households. For Spain, Ampudia et al. (2016) argue that unemployment and low wealth are among the most important determinants of default, while Sánchez-Martínez et al. (2016) find that Spanish households whose family head is female, married or self-employed are at higher risk of missing mortgage payments. More interesting is to explore how changes in characteristics explains the crisis. For example, Foote et al. (2009) and Elul et al. (2010) argue that unemployment and unexpected falls in income have driven the increase in default among US households. Similarly Blanco and Gimeno (2012) have argued that changes in unemployment explain the surge in Spanish household default between 2007 and 2009.

Not all papers have attributed the increase in arrears to changes in households characteristics. Much of the US literature has focused on the expansion of credit prior to the crisis. Mian and Sufi (2009), Demyanyk and Van Hemert (2011) and Mayer et al. (2009) argue that the records of US lenders show that there was a deterioration of lending standards which precipitated the sub-prime crisis, which Keys et al. (2010) attributed to the reduced incentive to screen applicants which arose with the securitization of mortgage lending in the US market. Similarly, both Crook (2006) and Duygan and Grant (2009), in cross-European studies, showed there had been a large increase in borrowing by Spanish households in the years prior to the crisis. Using lending records supplied by a Spanish real estate company, Akin et al. (2014) and Díaz-Serrano (2015) showed there was softening of lending standards in the Spanish market, while Maddaloni and Peydró (2011) reach a similar conclusion (especially for mortgage loans) analysing the Bank Lending Survey, a quarterly survey of Euro area banks on their lending practises for 2002–2008.

This review of the literature suggests two different explanations of the rise in arrears during the crisis. In the first, the rise in arrears is the concomitant consequence of the deterioration in labour market conditions; while in the second, the increase in arrears is the consequence of the increase in lending to households hitherto excluded from borrowing due to low income and poor credit scores. While these are the two most popular explanations of the rise in arrears during the Great Recession, two other rarer arguments have also been suggested in the literature on US households. Dell'Arricia et al. (2012), by looking at the pool of mortgage applicants, argue there was an increase in credit demand which was at least as important as changes in lending policy in the US. While Guiso et al. (2013) argue that survey evidence suggests that American households became more willing to default regardless of their circumstances during the sub-prime crisis.

2.1. The Spanish credit market

This study covers the period 2002–2011, the years immediately prior to and following the outbreak of the 2008 financial crisis. This crisis had severe effects on the Spanish financial sector and the Spanish economy, with important consequences for the household sector. Spanish households typically hold 25-year or 30-year variable rate repayment mortgages (which move with the Eurozone interest rate), and this has not changed over the crisis years. Bernardino and Martín de Vidales (2014) discuss how in the years preceding the crisis there was a rapid expansion in credit to the household sector, which they associated with the liberalisation of the regulation of savings banks which started in 1990. However, these organisations were newly regulated following the crisis when it became apparent that many savings banks were undercapitalized.

Fig. 1a provides information on the household default rate for the mortgage (housing) loans and for consumer (non-housing) loans. Campbell and Cocco (2015), in a US context, show that households are likely to default on their mortgage when they have little or no equity in the property (which will be during the first few years of the mortgage agreement). Schwartz and Torous (1993) provide evidence that mortgage defaults among US households peak within 16 quarters of the initiation of the loan (the household would have entered arrears considerably earlier). The most important constituents of consumer loans among Spanish households are "unsecured personal loans", "credit lines" and "credit cards". The first is an agreed loan with an agreed repayment plan, typically over a period of up to three years; the second is an agreed borrowing limit, which is repayable on demand; while credit cards debt is typically repayable over several months when making minimum repayments. Saurina (2009), classifying loans to the Spanish household sector by their riskiness, shows mortgages are the least risky loan type (especially those with a loan-to-value ratio below 80 percent), while credit cards and credit lines are the most risky. The figure shows that the default rate on consumer loans is considerably higher than on mortgages, but that the default rate for both mortgages (solid line) and consumer loans (dashed line) increased during 2007 and 2008, which plateaued between 2009 and 2011, before again increasing in the following years. Fig. 1b shows a sharp increase in mortgage disclosures rates during the survey period, while the Instituto Nacional de Estadística report a several-fold increase in individual insolvency procedures since 2004.

In the rest of the paper we will explore this increase in household default, and assess how household arrears differs between household types. We will also investigate the extent to which the overall change in arrears that can be attributed to changes in credit applications and/or credit acceptances (as well as exploring other factors that may have contributed to changes in arrears). This will enable us to assess by how much more the increase in arrears would have been if there had not been change in the supply and/or the demand for credit.

3. Data

The data used in this paper is taken from the Survey of Household Finances (EFF) developed by the Bank of Spain. This is a survey of Spanish households which is collected every three years start-