



Do households with debt problems spend less?

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Abstract

At the end of 2012, almost one-fifth of owner-occupier mortgages were in arrears. A further five per cent not in arrears were classified as “restructured” loans. This *Economic Letter* looks at the impact of financial distress on household expenditure patterns by comparing the behaviour of households in mortgage distress with similar households in the general population. It finds that, controlling for a wide range of observable household characteristics, including income levels and household composition, households with debt problems spend 18 per cent less on average. We conclude that the mortgage arrears problem exerts a significant drag on aggregate consumption in the economy.

1 Introduction

In-line with the decline in employment and income since 2008, mortgage arrears has increased steadily over the last five years. Central Bank mortgage arrears data for December 2012 indicated that 18 per cent of owner-occupier mortgages were in arrears. Consumption, amounting to 50 per cent of GDP, declined in 13 of 20 quarters from 2008:01 to 2012:04, and at the end of 2012 was 8 per cent below its peak. Given these trends, it is important to understand the extent to which mortgage distress has contributed to the weakness in consumption.

Much has been written as to the reasons for the increase in arrears (Lydon and McCarthy, 2011), and the characteristics of borrowers in distress (McGuinness, 2011; Kennedy and McIndoe-Calder, 2012; Kelly 2011). This *Economic Letter* considers the impact of mortgage distress on aggregate domestic demand, and household expen-

diture in particular. It does this by comparing the expenditure patterns of households who are having difficulty repaying their mortgage debt with similar households in the general population.

Section 2 looks at the literature on household debt, distress and consumption. Section 3 describes the data used in the analysis and presents the key results. Section 4 considers how informative the results are for thinking about the macroeconomic impact of the mortgage arrears crisis.

2 Household debt and consumption

As discussed in Dynan (2012), households' ability to service (or not service) their debt is just one of many determinants of household consumption. Other important factors are leverage and net wealth, life-cycle effects and liquidity constraints.

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The paper argues that household level panel data on consumption, debt and income is a prerequisite for disentangling these various effects. Using U.S. data on a panel of households from 2007 to 2009, the paper found that more highly leveraged households experience a larger decline in consumption, all other factors held constant. In another study of U.S. households, Johnston and Li (2007) found that the consumption patterns of households with a high debt-service burden and low liquid assets were more sensitive to changes in incomes.

Mian and Sufi (2011) and Mian et al. (2011) use panel data on U.S. counties to show that, controlling for differences in employment, counties with higher leverage tend to exhibit larger declines in consumption. Dynan (2012), arguing the case for the use of micro data, points out that changes in leverage are highly correlated with changes in house prices in this dataset. Therefore, it is not possible to disentangle traditional wealth effects from debt overhang effects with this data.

In a closely related paper Gerlach-Kristen (2013) looks at the effect of unemployment, arrears and negative equity on consumption using Irish Household Budget Survey data (see below). The paper finds that the *risk* of unemployment and negative equity has a much larger effect on aggregate consumption than actual negative equity, and that arrears and actual employment appear to be less of a factor. The paper concludes that the primary impact of negative equity on the economy is through consumption, and a rise in house prices in the future would help in this respect.

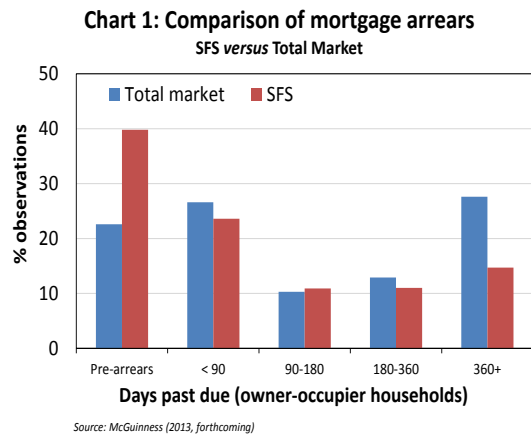
3 Data and results

The analysis combines the information from two datasets. For data on consumption and expenditure by households in the general population, we use the 2009/10 Household Budget Survey (HBS). The HBS data is a nationally representative household survey of 8,000 households conducted between August 2009 and September 2010. We restrict the HBS sample to owner-occupier households with a mortgage (2,190 observations).²

For information on the consumption patterns of borrowers in distress we used *Standard Finan-*

cial Statement ('SFS') returns provided by borrowers to their lenders. The SFS is a self-reported financial statement, including detailed expenditure figures, completed by co-operating borrowers who are experiencing financial difficulty. Many of these borrowers are yet to fall into arrears, but require assistance to meet future debt repayments. The information is collected by the borrower's primary dwelling mortgage provider as part of the "Mortgage Arrears Resolution Process" or "MARP". The mortgage provider is also responsible for the validation of the borrower's information, where possible. The SFS sample includes detailed information on income, expenditure, assets and liabilities for approximately 50,000 households during 2012.³

There are two factors to bear in mind when analysing the SFS figures. The first relates to sample selection issues, with the most obvious problem being that the SFS under-samples the population of borrowers in very deep arrears, i.e. greater than 360 days (Chart 1). The under-representation of households in deep arrears may lead to sample selection bias, particularly if the under-representation arises from a desire on the part of some borrowers to avoid the scrutiny of the SFS process.



The second issue relates to the reliability of the expenditure information in the SFS. Unlike the HBS, it is not clear to what extent SFS borrowers are required to document the expenditure information they report. This may lead to either upward or downward bias in the reported expenditure data. Borrowers who wish to obtain some debt relief may

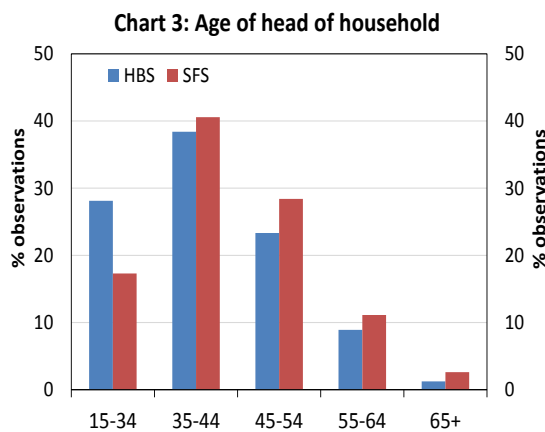
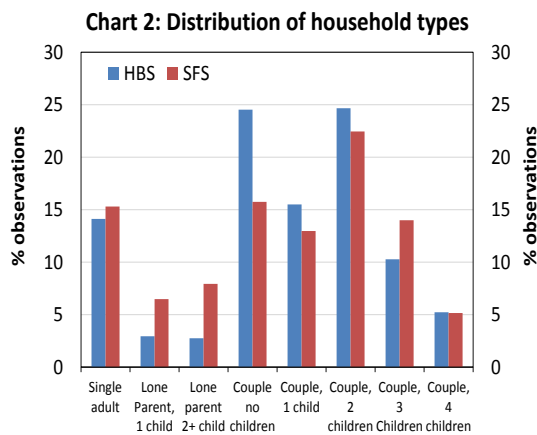
²The HBS records *weekly* household expenditure for over 500 items, which is aggregated up to monthly figures to compare with the SFS by multiplying by (52/12). For further information on the HBS, see the [Central Statistics Office website](#).

³I thank Anne McGuinness of the Financial Stability Division in the Central Bank for providing the SFS data for this exercise. For further information on the HBS, see the [Central Bank of Ireland website](#).

be incentivised to over-report spending (relative to income), whereas other borrowers could mistakenly under- or over-report spending which occurred in the past.

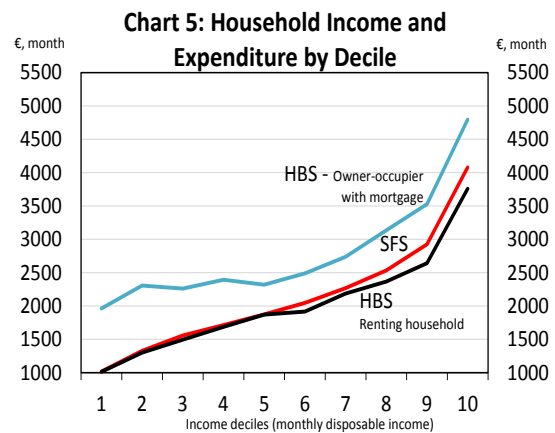
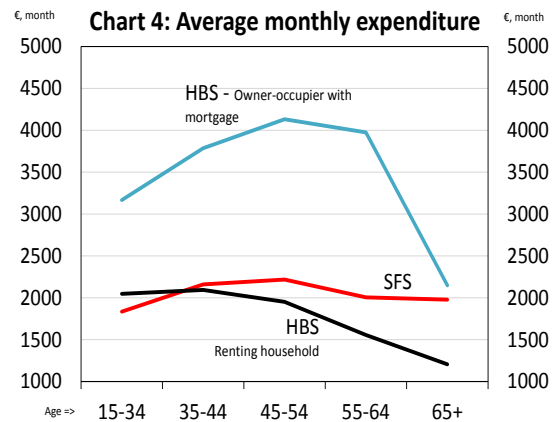
3.1 Characteristics of households

Charts 2 and 3 compare the distributions of household type and age (of head of household) in the HBS and SFS samples. Relative to the population of mortgaged households (HBS), couples with no children are under-represented in the SFS sample. This could be indicative of the over-concentration of certain demographic groups in the population of distressed borrowers, i.e. borrowers who bought at the peak of the property boom from 2005 to 2007; see Kennedy and McIndoe-Calder (2012).



Charts 4 and 5 compare monthly expenditure by age of head of household and household disposable income decile. The expenditure figures ex-

clude mortgage or rental payments (for any properties) and pension contributions (which are treated as an expenditure item in the HBS but not in the SFS). Given the time-lag in the surveys (SFS/2012 and HBS/2009), the SFS figures are rebased to 2009 prices using the consumer price index less mortgage interest payments.



The evidence from both charts indicates that distressed households in the SFS spend significantly less than owner-occupier households with a mortgage in the HBS. The age-expenditure distribution shows that SFS households are actually most similar to households who rent in the HBS, although the correlation is weaker for older people. The comparisons across the income distributions show a very similar pattern: lower average monthly expenditure for distressed households in the SFS sample. The next section tests for differences more formally in a regression framework.

3.2 Expenditure regressions

The literature on the determinants of household expenditure, and the evidence above, points to a range of factors which can affect household consumption, such as preferences, credit constraints and income. In this section, we control for all of these factors at once by estimating a regression model to explain the log of monthly household expenditure. The factors we control for are net disposable income, debt-service ratios (Figure A1), age, unemployment, state welfare payments (transfers in levels), household type, and an urban/rural dummy variable. We include a dummy variable for households in the SFS sample. The full set of results are shown in Table A1 in the appendix to this note.

The coefficient on the log of income (0.59) is consistent with previous estimates of the consumption function for mortgaged households in Ireland (see Gerlach-Kristen, 2013). In line with the results in the literature, we observe that expenditure is hump-shaped in age. Expenditure is lower for households with higher debt service ratios, with the exception of very high burdens (greater than 80 per cent).⁴ Over 60 per cent of borrowers in this latter group are unemployed and the proportion in deep arrears (360+ days) is double the sample average (24 per cent versus 12 per cent). An interaction term with unemployment wipes out the effect, as shown in the results table. It could be that households' incentive or ability to trade-off debt repayment for monthly expenditure decreases with income and time in arrears. Expenditure is also lower for households that receive social welfare payments⁵, and where one or both of the adults in the household is unemployed. Monthly expenditure is also increasing in household size: relative to a single adult household, a couple with no children will spend 18.5 per cent more per month (on average), and a couple with three children will spend 37 per cent more per month. The high R-squared of 0.61 implies that a significant amount of the cross-sectional variation is explained by the regression.

⁴The coefficients on this variable should be interpreted with care, as it measures the ratio of *actual* monthly mortgage payment to household disposable income. For many households in the SFS sample in particular, these are interest-only payments, or lower. That said, the average payment in the SFS is €1,050, compared with €850 in the HBS. The average repayment ratio in the SFS is 41 per cent, compared with 20 per cent in the HBS.

⁵'State Transfers' enters in levels so as to capture households where this takes a zero value.

⁶It is worth pointing out that personal spending in the national accounts was practically unchanged from 2009 to 2012. Therefore it is unlikely that the SFS dummy variable is reflecting a downward trend in consumption.

⁷The full set of regression results are available on request.

The regression includes two "distress" controls. The first ("Missed payment/Arrears") is a dummy variable equal to one if a household has either missed a mortgage payment in the last month (HBS data) or is in any arrears (SFS data). This is measured quite imprecisely as it is not obvious from the HBS data that a "missed" payment actually represents distress. Notwithstanding this, the coefficient is insignificant and the general result is not changed by the inclusion or exclusion of this variable. Having controlled for all of the factors described above, we also include a "Distressed-SFS" dummy variable equal to one for SFS households. The coefficient on this variable is both statistically significant and large. It implies that relative to HBS households, SFS households spend 18 per cent *less* per month on average.⁶

Next, we analyse which categories of expenditure explain the 18 per cent figure in the previous regression. This basically involves re-estimating the expenditure regression for sub-categories of monthly expenditure.⁷ We focus on four types of expenditure which together account for 43 per cent of expenditure by the average owner-occupier household with a mortgage, as shown in Table 1. These categories were chosen not only because they account for a large share of expenditure, but because they map directly to reported expenditure category totals in the SFS.

Table 1: Monthly expenditure by category

	% household expenditure ^(a)	Coefficient on "Distressed-SFS" in regression (t-statistic)	Regression R-squared
Total monthly household expenditure	100	-0.1833 (-5.76)	0.614
Food, household & personal care ^(b)	19.9	-0.1988 (-4.68)	0.425
Clothing & footwear	4.5	-0.2201 (-2.97)	0.231
Transport	13.9	-0.0486 (-0.90)	0.299
Medical services	4.5	0.0490 (0.38)	0.132
Medical services & health insurance		-0.6404 (-5.78)	0.187

Notes: (a) Percentages for an owner-occupier household with a mortgage. See CSO (2012), Tables D and F. (b) Includes the following HBS categories: Food, Alcoholic Drink and Tobacco, and Household non-durables.

Table 1 reports the coefficient on the SFS dummy variable and the R-squared from each regression. The first row repeats the regression for the log of total expenditure. The second row shows the difference in reported average expenditure on Food, Household and Personal Care for SFS households, controlling for all of the factors mentioned previously. After housing costs, which are not considered here, this category accounts for the largest share of the average household's monthly expenditure (one-fifth). In line with the result for total expenditure, SFS households spend around 20 per cent less per month on items in this category. We get a similar result, if not slightly larger, for the Clothing and Footwear category. Both of these results are statistically significant, as shown by the shaded cells in the Table.

Expenditure on transport, both public and private (including motoring costs), account for just under 14 per cent of the average household's budget. We observe no difference in expenditure on transport for SFS households versus HBS households, although the explanatory power of the regression has declined significantly relative to the earlier results.

Expenditure on medical services is split into two categories, one that includes health insurance and one that excludes it. Excluding health insurance, we observe no difference between expenditure on medical services between the two samples. When we include health insurance in monthly medical expenditure, the story changes entirely: the average household in the SFS spends *65 per cent* less than their HBS counterpart. Clearly, a large proportion of households in mortgage distress either do not have, or do not report expenditure on, health insurance.

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4 Conclusion

To a certain extent, the results presented here confirm what is already widely known or suspected: that households who took out a lot of debt during the property boom and subsequently experienced an income shock spend less. The obvious follow-on question is why? Having controlled for differences in income and debt service ratios, we find that distressed households in the SFS sample still spend significantly less. This suggests that factors other than just income and the debt burden play a role. If being in arrears (or the risk of arrears) is negatively correlated with housing equity, as suggested in Lydon and McCarthy (2013), then the results imply a housing wealth effect on consumption, and the potential for a house price recovery to impact on domestic demand in the future. This is consistent with the results in Gerlach-Kristen (2013) and Dynan (2012).

The solution to the mortgage arrears problem will not only deliver financial stability benefits, but it will also have a significant positive impact on the macroeconomy, not to mention social benefits for households currently experiencing hardship arising from tighter budget constraints. How the mortgage arrears problem is resolved, and over what time period, will have a bearing on the wider macroeconomic impact. For example, the pace of change in incomes or house prices will be important. The mortgage crisis may have also led to changes in household preferences, which could mean that spending patterns exhibited prior to experiencing debt repayment problems might not be repeated in the future.

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Table A1: Regression results

Log monthly household expenditure	Coefficient	t-statistic
Log disposable income	0.5846	179.54
Ratio of mortgage payments to income		
1-<10%	Omitted	
10-<20%	-0.0255	-3.51
20-<30%	-0.0409	-5.90
30-<40%	-0.0632	-9.01
40-<50%	-0.0689	-9.38
50-<60%	-0.0624	-7.91
60-<70%	-0.0546	-6.24
70-<80%	-0.0525	-5.44
80%+	0.0687	6.78
80% debt/disposable income*UNEMP	-0.0513	-5.22
Missed payment/Arrears	0.0072	0.24
Distressed_SFS	-0.1840	-6.13
age		
15-34	Omitted	
35-44	0.0336	8.82
45-54	0.0651	16.24
55-64	0.0670	13.35
65+	0.0625	7.07
Unemployment	-0.0605	-19.65
State transfers	-0.000003	-2.84
Household type		
Single adult	Omitted	
Lone Parent, 1 child	0.1543	26.37
Lone parent 2+ child	0.2917	52.10
Couple no children	0.1797	38.25
Couple, 1 child	0.2620	52.30
Couple, 2 children	0.3233	71.49
Couple, 3 Children	0.3647	70.88
Couple, 4 children	0.4389	59.83
Other	0.4922	4.39
Urban	-0.0108	-3.22
Constant	2.8910	54.47
Observations (total)	59,284	
Observations (SFS)	57,094	
Observations (HBS)	2,190	
Adjusted R-squared	0.6276	

