



## Irish households during the crisis: Insights from a survey of mortgage holders

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Central Bank of Ireland

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## Disclaimer

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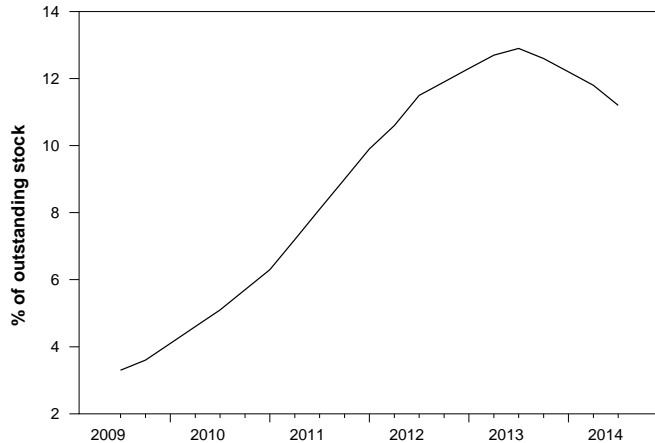
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## The Crisis: Mortgage Arrears (PDH, 90+dpd)





## What did we know about this?

- ▶ **Not a lot!**
- ▶ Aggregate mortgage arrears statistics only available from September 2009 (or later for investment properties)
- ▶ How did we respond?
  - ▶ Loan-level data from the FMP banks
  - ▶ **Great!**
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## A survey of mortgage holders

- ▶ **Primary goal:** collect up-to-date information on borrower characteristics and circumstances
- ▶ The survey was conducted by IPSOS mrbi and was designed to be representative of the Irish mortgage market
- ▶ Fieldwork: May 2012 - February 2013
- ▶ Sample size: approx. 2,000 households
- ▶ **Key:** Survey data could be linked back to the loan-level data (LLD) provided respondent gave permission for this
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## Key issue: Heterogeneity of crisis effects across households

- ▶ **Mortgage arrears: New insights on primary drivers**
- ▶ Deleveraging: Affordability matters. Deleveraging has negative implications for household consumption (McCarthy and McQuinn, 2014)
- ▶ Housing wealth: Important link with consumption, but expectations matter (McCarthy and McQuinn, 2013a)
- ▶ Credit conditions: Overall, marked increase in supply of credit but the extent of easing during the boom varied across households (McCarthy and McQuinn, 2013b)
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## Mortgage Arrears\*

\*McCarthy, Y., 2014. “Disentangling the Mortgage Arrears Crisis: The Role of the Labour Market, Income Volatility and Negative Equity”, *The Journal of the Statistical and Social Inquiry Society of Ireland*, Vol.43, pp. 71 - 90.



## What Drives Mortgage Arrears? The Literature

### Housing Equity

- ▶ Mortgage as an option contract
- ▶ Driven by negative equity

### Ability-to-Pay

- ▶ Cashflow problems (Income)
- ▶ Job loss, illness, separation

- ▶ ‘Double trigger’ hypothesis: some combination of both factors
  - ▶ Foote et al. (2008), Bhutta et al. (2011), Lydon and McCarthy (2013)
- ▶ However, existing studies proxy for affordability shocks using aggregate measures (e.g. regional unemployment)
  - ▶ May underestimate the impact (Gyourko and Tracy (2013))
  - ▶ The true relationship is likely to be more complex
  - ▶ In Irish case - lots of changes in the labour market not yet accounted for
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## But is there more to the story?

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  - ▶ Eased credit conditions; strong economy; incomes growing
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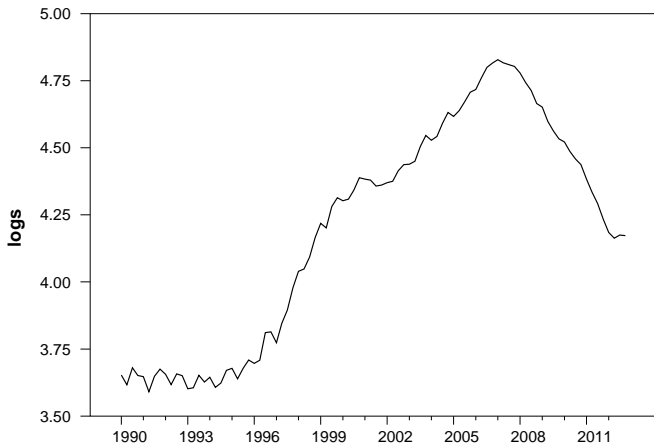
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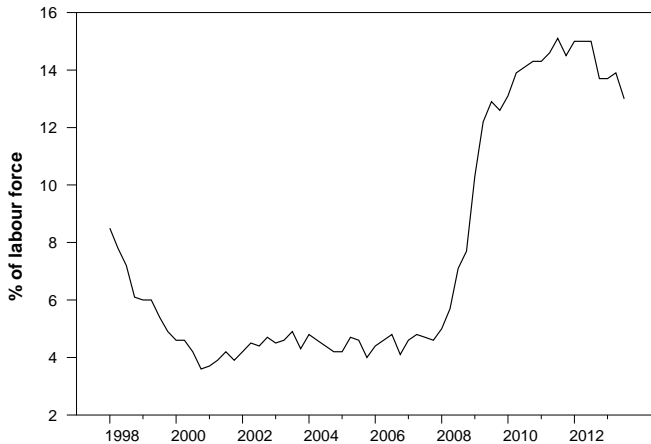


## Real Irish House Prices: 1990 - 2012





## Unemployment Rate





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- ▶ Impact of the economic and financial crisis on the labour market has been dramatic
  - ▶ Marked reductions in labour income (Callan et al. (2013))
  - ▶ Increase in involuntary part-time work
  - ▶ Deterioration in employment conditions (Bergin et al. 2012)
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## OVERVIEW OF ARREARS





## Household Characteristics (2)

<i>Labour Market Characteristics</i>		No Arrears (%)	Any Arrears (%)
Work Status (HOH)	Unemployed	3.6	14.6
	Inactive	8.0	10.4
	Employed	88.1	75.0
Employment Characteristics	Permanent Contract	86.4	75.6
	Job Tenure <2yrs	6.2	16.2
	Previously Unemployed	8.1	19.5
	Fragile Employment	25.0	40.0
N		1,042	164



## Affordability and Housing Equity

		No Arrears (%)	Any Arrears (%)
Median Income	Euros	65,000	35,000
Median MRTI Ratio	% of Gross Income	16.7	27.7
Housing Equity	Negative	36	43
N		1,042	164



## Affordability Shocks

		No Arrears (%)	Any Arrears (%)
Income Change (past year)	<b>Significant Fall</b>	<b>33.7</b>	<b>51.8</b>
	Moderate Fall	35.0	28.1
	No Change	23.7	15.9
	Moderate Increase	5.9	1.8
	Significant Increase	1.4	1.8
Labour Market	<b>Deterioration in Employment</b>	<b>54.2</b>	<b>64.9</b>
N		1,042	164



## Summary

- ▶ Distressed borrowers quite different from performing borrowers
- ▶ Differences along a number of dimensions:
  - ▶ Affordability (Income and MRTI)
  - ▶ Housing equity
  - ▶ Labour market characteristics and shocks
- ▶ Next step: Assess importance of these factors in a multivariate setting



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## Model of Arrears

$$Pr(\text{Arrears} = 1) = F(\beta'x_i + \epsilon_i), i = 1, 2, \dots, n$$

Where: The dependent variable is “Any Arrears at June-12”,  $x$  comprises controls for the  $i$ th household’s characteristics and financial information,  $\beta$  is a set of parameters to be estimated and  $\epsilon_i$  is the error term.



# AFFORDABILITY AND EQUITY



## Probability of Arrears - Regression Results

Dependent Variable=Any Arrears	Marginal Effect	Std. Error
Log Current LTV	0.08***	0.0241
Log Household Income	-0.08***	0.0257
Log MRTI	0.05**	0.0233
Log Outstanding Debt	-0.03	0.0265
Buy-to-Let	0.10***	0.0410
SVR Mortgage	0.07***	0.0217
Fixed Rate Mortgage	-0.02	0.0259
Equity Release	0.05**	0.0219
Male	-0.01	0.0180
Age: 35-44	-0.01	0.0256
Age: 45-54	0.05*	0.0331
Age: 55-64	-0.02	0.0351
Age: 65+	-0.01	0.0576
Medium Education	-0.05**	0.0249
High Education	-0.08***	0.0282
Widowed/Divorced/Separated	0.03	0.0414
Single	-0.03	0.0287
Dependent Children	0.05**	0.0215
N		1,179
LR chi <sup>2</sup>		177.47
Prob>chi <sup>2</sup>		0.0000
Pseudo R <sup>2</sup>		0.1888

**Note:** \*\*\* Significant at 1 per cent level; \*\* Significant at 5 per cent level;  
\* Significant at 10 per cent level. Omitted categories for dummy variables are:  
Interest Rate-Tracker; Age: 25-34 yrs; Low Education and Married.



## LABOUR MARKET AND SHOCKS





## Incorporating Labour Market Information

Dependent Variable=Any Arrears	Model 1		Model 2		Model 3	
	Marg. Effect	Std. Error	Marg. Effect	Std. Error	Marg. Effect	Std. Error
Unemployed	0.09**	0.0546			0.11**	0.0608
Inactive	0.03	0.0424	0.03	0.0424	0.04	0.0478
Fragile Employment	0.05**	0.0264	0.05**	0.0264	0.05**	0.0267
Recently Unemployed			0.11	0.0944		
Longer Term Unemployed			0.08*	0.0625		
Employment Deterioration					0.02	0.0192
N	1,179		1,179		1,179	
LR chi <sup>2</sup>	184.35		184.40		185.38	
Prob>chi <sup>2</sup>	0.0000		0.0000		0.0000	
Pseudo R <sup>2</sup>	0.1961		0.1962		0.1972	

**Note:** \*\*\* Significant at 1 per cent level; \*\* Significant at 5 per cent level; \* Significant at 10 per cent level.



## Incorporating Income Shocks

Dependent Variable=Any Arrears	Marginal Effect	Std. Error
Unemployed	0.09**	0.0548
Inactive	0.03	0.0428
Fragile Employment	0.05**	0.0264
<b>Significant Income Drop</b>	<b>0.03*</b>	<b>0.0191</b>
N	1,175	
LR chi <sup>2</sup>	189.41	
Prob>chi <sup>2</sup>	0.0000	
Pseudo R <sup>2</sup>	0.2025	

**Note:** \*\*\* Significant at 1 per cent level; \*\* Significant at 5 per cent level; \* Significant at 10 per cent level.



## Incorporating Household Wealth

Dependent Variable=Any Arrears	Marginal Effect	Std. Error
Unemployed	0.07*	0.0515
Inactive	0.02	0.0394
Fragile Employment	0.04**	0.0254
Regular Saver	-0.03*	0.0191
Has Unsecured Debt	0.03**	0.0170
N	1,163	
LR chi <sup>2</sup>	189.68	
Prob>chi <sup>2</sup>	0.0000	
Pseudo R <sup>2</sup>	0.2060	

**Note:** \*\*\* Significant at 1 per cent level; \*\* Significant at 5 per cent level; \* Significant at 10 per cent level.



## Summary and Conclusions

- ▶ **Survey combined with administrative data = a rich dataset**
- ▶ Household deleveraging, housing wealth, credit conditions
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- ▶ Results confirm importance of unemployment and housing equity - supports previous research
- ▶ But, new insights on importance of other factors:
  - ▶ Significant income drop
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THANK YOU