

HOUSE PRICES, UNEMPLOYMENT AND IRISH MORTGAGE LOSSES

Robert Kelly (Central Bank of Ireland)

Discussion by Ernesto Villanueva (BdE)

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All views and opinions are my own, and do not represent those of the BdE,.

A short summary

- **The relative contribution of regional unemployment and estimated Loan-to-Value on arrear duration**
 - Loan-level data (500,000 observations)
 - Controlling for vintage
- **Impressive dataset**
 - Loan-level data (500, 000 cases) between Dec. 2009-Dec. 2011
 - Distinguish between “Primary Residence” and “Residential Investment”
- **Careful analysis of transitions between arrears duration**
 - Default difficult to define.
 - 57% of delays in payments for 30-60 days eventually catch up
- **Predictions of losses of the Irish loan book (period 2012-2013).**

Methods/results.

- **Looks a lot like a multiple exit duration model**
 - Each state of arrears (30-60, 60-90, 90-360, 360+) is a different state
 - Model (most) monthly transitions between those states.
 - Proportional hazard models: log-hazard separable time from other covariates
- **Covariates:**
 - “Unemployment rate ” (ability to pay)
 - Outstanding balance / “current” price (strategic motives).
 - Vintages
- **Unemployment increases accelerate deterioration and stop upgrades .**
 - Specially among secondary houses
- **Higher loan-to-values as well**
 - Claim that to a lower extent.
 - May need to qualify, though, as lag of Urate was chosen to maximize fit



This discussion

- **Strengths of the paper**
- **A few comments**

Some technical comments.

Interpreting the “vintage” effect

Disentangling between “ability to pay” and “strategic” explanations.

- **Forecasting vs determinants?**

1. Strengths

- **Rich descriptive analysis of the dynamics of different duration of arrears**
 - Able to study what makes households step out from arrears
- **Combines a study of determinants of going into arrears and a study on forecasting losses**
- **Very important: estimates of expected losses between 2011 and 2013: 4.6% (baseline) vs 6% (adverse)**
 - Useful to have a decomposition of the relative contributions of each covariate?
 - Useful to put confidence bands around the 4.6% and 6% estimates?

3. Analyzing the vintage effect.

- 1. Arrears seem to be concentrated in the early years of the life mortgage.**

A “time” effect (Figure 5)

- 2. The composition of the pool of Irish borrowers has changed over time, with 2005-2007 being “lower quality”.**

A “cohort” effect, likely to persist over the life of a mortgage.

Recent cohorts have unobserved traits making them more likely to default

Difference matters for prediction, as a “time effect” may vanish quicker than a “cohort” effect.

1. The estimated vintage effect may be misleading

- 1. May be wrong, but the Irish loan book seems to have information on the income of the borrower at origination (Lydon and McCarthy).**

1. Income at origination should be a close correlate of “quality of the borrower”

Figure 5
3Yr Default Probability for Performing Mortgages by Loan Type

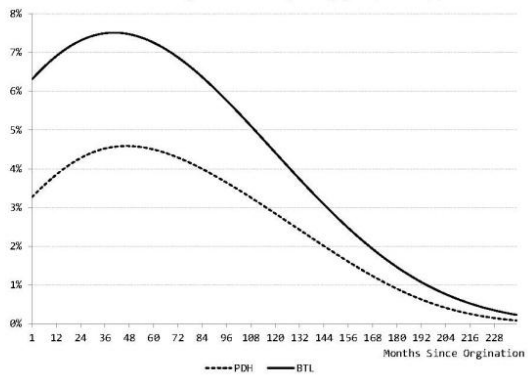
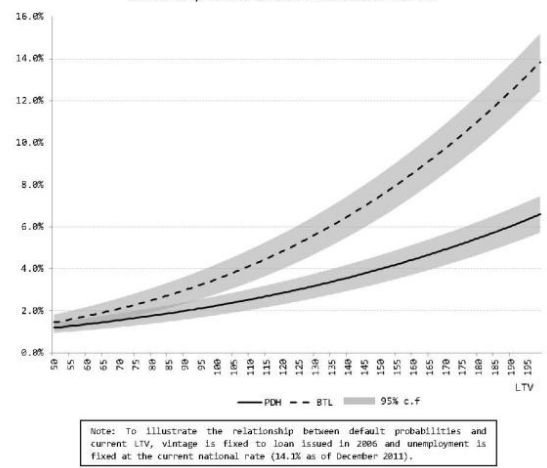


Figure 6
Relationship between Default Probabilities and LTV



4. Testing alternative explanations

Some literature has worried about two competing explanations for arrears

- Distinction matters for policy purposes, not so much for prediction
- 1. “Strategic” arrears: “Mortgages as an American option”.**
 - Fay et al. (2001), Elul et al. (2012) In a world without recourse and limited housing costs, optimal to default when housing equity negative
 - Issue about expectations of future housing prices.
 - 2. “Ability to repay” Idiosyncratic income shocks.**
 - Duygan and Grant (2009), Elul et al. (2012)
- **The paper includes (regional) U and outstanding LTV to control for each**
 - Most likely, both variables are likely to interact.

4. The heterogeneity in the link income shock-arrears (Duygan and Grant, 2009)

Table 10: The Incidence of Household Arrears (s.e. in parenthesis)

	Unempl.	Percentage Fall in Income	Large Fall in Income	Negative Health Shock	Income Situation Worse
Shock	0.343*** (0.045)	0.253*** (0.024)	0.253*** (0.022)	0.281*** (0.053)	0.365** (0.022)
Shock*					
Denmark	0.047	0.389**	0.187**	0.284	0.116
Netherlands	-0.212	0.014	-0.024	0.269	0.043
Belgium	0.381**	0.536***	0.444***	0.439***	0.750***
France	0.568***	0.446***	0.496***	0.551***	0.664***
Ireland	0.583***	0.634***	0.323***	0.302	0.372***
Italy	0.307***	0.226***	0.198***	0.224*	0.199***
Greece	0.669***	0.459***	0.475***	0.173	0.816***
Spain	0.284**	0.165***	0.157***	0.455***	0.196***
Portugal	-0.071	-0.034	-0.254***	-0.345*	-0.253***

ECHP: 1995-2000

4. Strategic behavior vs ability to pay

- **Duygan and Grant (2009) argue that quality of the judicial system correlates with sensitivity of mortgage arrears to income shocks.**
- **Good to know the consequences of delays in mortgage payments in Ireland**
 - For borrowers and banks
- **For borrowers:**
 - Bankruptcy law? / Full recourse?
- **A negative loan to value may not be a sufficient determinant.**
 - Borrower's expectations about house price increases.
- **Even if borrowers could repay debt with the collateral, the interaction between ability to pay and LTV may matter**
 - Elul et al (2010)
 - Explore interactions between U and LTV?

3. Strategic behavior vs Ability to Pay (ii)

- **For banks?**
 - After what length of non-repayment do banks need to provision losses?
 - What is the magnitude of provisions?
- 1. If the interest lies in modelling monthly transitions, it would be good to know if the incentives to renegotiate increase at some point.**
- 2. Could it be the case that banks with lower capital asset or liquidity ratios try to renegotiate or to avoid arrears?**
 - The dataset seems to contain information on banks
 - Interact the measures of ability to pay or LTV with bank-specific measures?

2. Technical issues

- 1. Unclear running separate Primary Dwelling (PDH) and Buy-To-Let houses (BTL) is the only specification one should look at**
 - Most likely the driver of the decision is the joint burden of all mortgages
- 2. In the BLT, what is the relevant geography of unemployment measure?**
 - 1.The one where the PDH is (ability to repay of the owner)
 - 2.The one where the “renter” lives? (if the renter does not pay)

ISSUES WITH MONTHLY TRANSITIONS

- 3. Reverse causality an issue with the LTV regressor?**
 - If I stop paying, mechanically the loan-to-value becomes larger.
 - Not an issue if the main aim is forecasting (more on this below).
- 4. The dynamics between LTV, 12 month-lagged U and monthly transitions are complex.**

2 . Econometric specifications and prediction

1. Good to discuss if housing prices affect arrears only through the Loan to Value channel

- The model implies that any house price change must affect arrears
- Probably best to have house prices as a separate regressor-

2. Kind of standard in the literature to split LTVs in bands

1. A strategic motive is likely to kick in at specific values (80%), 100%
- 2.The non-linearities embedded in a “duration” model likely to blur this.

3. Forecasting non-repayment

- 1.Having more covariates?
- 2.Confidence intervals relatively large (1.5 pp)
- 3.Interest rate fixation mode? Borrower characteristics?

5. Summary

- **A policy relevant study on determinants and the consequences of payments.**
 - Detailed study of the timing and evolution of arrears.
- **May benefit from further discussion of some issues:**
 - “Cohort” vs “time” evolution of arrears.
 - Non-linearities in LTV, as well as interactions with measures of “ability to repay”.
 - Institutional setting in Ireland.
- **“Forecasting losses” vs “determinants of arrears”**
 - The main aim may determine the specification chosen.
- **But the relevant information is there!**