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## Specialisation in mortgage risk under Basel II

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\*Any views expressed are those of the author and do not necessarily reflect those of the ECB.

## Contribution

The paper contributes to three key questions with high policy relevance each:

1. How do regulatory minimum capital requirements affect **bank behaviour**?
2. How do banks **pass on** to their customers costs arising from (monetary and) prudential policies?
3. Can the **specialization effect** be observed in practice, i.e. that it is optimal for banks to specialize in either high risk or low risk lending? (see Repullo, Suarez, 2004, JoFI)

### Main Findings

- Lenders that adopted (more risk sensitive) IRB models after 2008 ...
  - reduced relative prices for low- LTV mortgages by about 31 basis points;
    - ➔ pass-on of regulatory costs
  - increased the relative portfolio share of low-LTV mortgages by an additional 11 pp
    - ➔ Behavioural impact of regulation
    - ➔ Specialization effect
- IRB lenders increase their portfolio shares with respect to SA lenders on low-LTV mortgages relative to high LTV after Basel II
  - Shift of more risky loans to banks with less sophisticated risk measurement methodology may increase concentration risk
- One pp increase in risk weight translates on average into 1 bp increase in interest rate (pass-through effect)
  - For mortgages with  $LTV < 50\%$ , average difference in RW IRB vs SA is 30pp: implying a price gap IRB vs SA interest rates of 30bp

### Approach (1)

- **Idea:** Use granular / loan level data to test impact of risk-based regulation
  - Similar to Behn, Haselmann, Wachtel (2015), JoF
  - Triple difference (DDD) approach
- Consider **UK mortgage market**
  - But of wider relevance: Mortgage markets often large share of bank lending to the economy (4 trillion € or 23% of total loans in EA)
- **Data sources** (matched):
  - FCA Product Sales Database (PSD), loan-level
  - Survey (?) covering detailed information on lenders' risk-weights
  - Historical regulatory data held by the Bank of England
- Dependent variable: initial interest rate

### Approach (2)

- **First Identification strategy** to test the hypothesis of specialisation by LTV under Basel II: triple difference estimator
  - Regime change from Basel I to Basel II, IRB vs. SA bank, high vs. Low LTV threshold
- Several tests of the robustness of results to specification assumptions and inclusion of additional controls (capital buffers, granularity of LTV bands, ...)
- **Second identification strategy** to measure the effect of risk weights on mortgage rates
- Focus on post-Basel II period (2009 – 2015) and differences within IRB lenders controlling for bank-time fixed effects (e.g. funding costs), bank LTV band (e.g. business model, pricing strategy), time LTV band (e.g. industry-wide variation in competition, risk)

### General remark

- **Adverse selection** in loan markets because of IRB introduction was recognized as an issue from very early on in Basel II discussions
  - Comment from FRB Chicago to BCBS 2001: „banks comparing the requirements under alternative approaches choose the approach with the lowest amount of regulatory capital. Aggregating across a banking system this adverse selection can substantially reduce capital levels and thereby elevate the overall risks of that system“.
  - Their suggested solution: via supervisory process
- Contribution: **Empirical evidence** that this actually happens in practice
- Not inconsistent with regulatory findings: see BCBS Regulatory Consistency Assessment Programme (2013)
  - 77% of the observed IRB RW dispersion coming from credit risk in the banking book
  - Up to 75% of that dispersion is explained by the underlying differences in the risk composition of banks' assets

## Policy implications (1)

- Findings highly relevant for currently discussed reforms in the Basel capital framework that seek to reduce the variability in risk weights
- Observed specialization effect may imply that
  - Lower capital requirements observed for IRB vs. SA banks may partly be explained by indeed lower risky borrowers, weakening one argument behind the reform
  - Larger (IRB) banks will take on higher risk in the future
- If risk weights are pro-cyclical than incentives for specialization are stronger in boom than in trough
- Macro-prudential measures (e.g. counter-cyclical capital buffers) can magnify this effect

## Policy implications (2)

- But: Given that adverse selection is not new but was anticipated already during Basel II discussions, its adverse implications need to be balanced with the desirable implications of a risk-based framework, i.e.
  - Closer alignment between regulatory and internal risk measurement reduces scope for capital arbitrage
  - More risk-sensitive regulatory approaches incentivise better risk management practices within banks

### Technical remarks

- [major] (acknowledged by authors): Coincidence of
  - Introduction of Basel II
  - Financial crisis
  - Mitigated by various robustness checks
- [minor] Page 2: „Basel II agreement allowed banks to use their internal risk models to set risk weights“. Not true: Only risk components such as PD, LGD are estimated by banks; Dependence structure hardwired into risk weight functions