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Discussion: Residual Mortgage Debt, Insurance, and Defaults in the Netherlands. Optimal stopping within a microsimulation model.

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Workshop on Microsimulation modelling

What the paper does

Goal:

1. To determine whether a public insurance on the residual debt of mortgages, the Nationale Hypotheek Garantie (NHG), has effectively reduced defaults (helping struggling families) or
2. has introduced moral hazard, encouraging some borrowers to strategically default because they are protected.

Where the NHG acts as a state guarantee: if the borrower is unable to fully repay the mortgage due to adverse events (unemployment, divorce, etc.), a public fund covers the uncovered residual debt.

The NHG is only available for properties valued below a predetermined threshold (which varies over time), thus creating a natural distinction between 'covered' and 'non-covered' mortgages.

Methodology and results (1)

Optimal stopping model

The model interprets insolvency as a rational choice when the expected long-term benefits of default outweigh the costs.

Two scenarios:

- Continuing to pay: preserving homeownership and potential equity gains.
- Defaulting: giving up the home but being relieved from residual debt through NHG coverage (if the case meets the criteria).

Main results:

- Marginal utility of housing acts as a deterrent to default.
- Effect of NHG on utility – The NHG increases the marginal utility of consumption (insured borrowers feel more secure in their current spending) without, however, increasing the tendency to default under normal conditions.
- Default triggers – Situations such as negative equity or severe shocks (job loss, family breakdown) remain the main drivers of simulated insolvencies.

Methodology and results (2)

Regression Discontinuity Design (RDD)

The NHG eligibility threshold is used as a causal identification tool, mortgages just below (insured) and just above (uninsured) the threshold are compared.

$$Default = \alpha + \beta_1(Underwater) + \beta_2(NHG) + \beta_3*(NHG \times Underwater) + \beta_4*(NHG \times Separated) + \beta_5(Separated) + \ldots + \varepsilon.$$

Main results

- NHG has a negative and significant effect on default probability
- Among borrowers experiencing separation, the interaction with NHG shows a positive effect on default → suggests possible moral hazard
- The impact of NHG remains stable even after accounting for control variables like income, wealth, DSTI, LTV, and underwater status
- Compared to NHG, other factors such as unemployment, separation, and negative home equity (underwater status) show stronger effects on default risk.

Main findings and Policy implications

- NHG reduces defaults without encouraging strategic behavior → Strong case for maintaining or expanding such guarantees.
- Institutional design matters → Default remains a last resort when accountability and support coexist
- “Divorce effect” is notable → Refine NHG procedures

Overall comments on the paper

- Addresses a highly relevant question with academic and policy implications.
- Strong methodological design: → Combines theoretical modeling with empirical analysis.

✅ **Overall**: A rigorous and thoughtful contribution → Congratulations to the authors!

I will report few suggestions that can be included in the next version of the paper.

Comments – Structural model

- **Model specificity**

- Due to limited observed data over the full 30-year mortgage horizon, the model adopts a **forward-looking structure** (option to default) rather than backward recursion as in dynamic programming.
- Future utility is **simulated** based on plausible assumptions for unobserved years.

- **Assumption sensitivity**

The **validity and predictive power** of the model depend critically on the realism of these assumptions.

- **Country context:** model assumptions anchored in the Netherlands

- Income growth capped at **+3% annually**, reflecting a historically stable labor market.
- Macroeconomic shocks after 2018 and changes in individual behavior (e.g. preference shifts) are not accounted for.

Comments - External validity

- The model demonstrates strong internal validity when applied to the Dutch context (e.g., income growth trends support the 3% cap).

- However, it could show limited external validity if applied to other countries like Italy, where income growth is historically lower — risking an overestimation of borrowers' repayment capacity unless key assumptions are adjusted.

Comments - RDD and sample coverage

No evidence of manipulation around the NHG threshold—mortgage values do not cluster just below the cutoff.

Interpretation: Suggests the threshold is exogenous and perceived as such by market participants.

Limitations of current data: Analysis focuses only on mortgages originated in 2014.

- In that year, the NHG threshold exceeded the average home purchase price.
- NHG take-up rate was particularly high.

Suggested extension: Include mortgages originated in different years to strengthen and update the analysis; examine eligible loans not actually insured under NHG.

Comments - Empirical robustness

Robustness and placebo check: extension to interaction NHG*Separated

Regression robustness check : leverage multiple years of data in a panel, to include fixed effects. That would control for any constant factors specific to borrowers or locales, ensuring the observed effect is truly due to NHG.

About data: What about mortgages under the NHG threshold without insurance coverage?

Thank you!

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