# *Review Comments*
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"An Analysis of Default Risk in the Home Equity Conversion (HECM) Program"

And

"Before and After Bank Ownership: An Analysis of Single-Family REO Housing Units"

# *Disclaimer*

These comments reflect the thoughts of David Rodda alone and not his employer, Freddie Mac, or any regulatory agency.

# An Analysis of Default Risk in the HECM Program

- Reverse mortgages provide a critical financing option for elderly homeowners who are house rich, but income poor.

- Uncertainty about reverse mortgage long-run performance, especially in housing downturns, has discouraged private investors from this market.

- A key element of the uncertainty has been the lack of reliable performance data.

- The authors have provided great value by combining credit counseling data with accumulated default data.  Now we know much more about the financial conditions of the owners before they decided to take out a HECM loan.

- A key limitation of the default data is that we don't have reliable dates as to when the defaults occurred.  So the authors could not estimate the time to default, but only whether or not there was a default outcome in the sampling timeframe.

# An Analysis of Default Risk in the HECM Program

- The model jointly estimates the probability of a HECM origination and the probability of default dependent on the owner's initial withdrawal amount.

- The truncated bivariate probit model allows for the joint decisions of whether to get a HECM loan and how much can be borrowed at closing.  Conditional on those decisions, the model estimates the subsequent probability of default by failure to pay hazard insurance or property taxes.

- Simulations of the model project the impact from tighter underwriting or the escrowing of funds for future insurance and tax payments.  The goal is to decrease the rate of defaults without reducing demand from elderly homeowners.

- Put differently, the goal is to keep the HECM program solvent so that it can serve needy homeowners by avoiding households with predictably high default rates.

# *An Analysis of Default Risk in the HECM Program*

- To **convince the reader** that the model is a good fit, we need to see measures of model performance on data held out from the estimation sample.
    - With 30,000 observations, the finding of significant coefficients is not sufficiently convincing, though reassuring.
    - Out of sample testing is demanding, but much more realistic.
    - For example, a good measure would be the percentage of the actual defaults in the top 3 deciles of predicted probability of defaults.

- **Sensitivity testing** on the impact of missing and incomplete data is another test of the reliability of the model.
    - Default rates in the estimation sample are low (7.2%) relative to the actual defaults (9.4%).
    - Control for sample selection bias for incomplete records left out.
    - Defaulters seem to have the biggest problem with missing data.
    - Are the results robust to multiple imputation?

# *An Analysis of Default Risk in the HECM Program*

- To **convince policymakers** to rely on the simulated results, the predictions should include confidence intervals around the point estimates.

  - The predictions to 2 decimal places probably exaggerates the precision.

  - For example, is the 2.57 point decrease in default rates from rejecting borrowers with FICO below 580 significantly different from the 3.11 point reduction in default rates from requiring a set-aside for FICOs less than 580?

  - Estimating the confidence intervals may require bootstrapping.

- Question:  Does the lack of correlation in errors between the default equation and the other equations suggest there is little benefit from including default in the joint estimation?
  - Would a recursive set-up work better?

# *Before and After Bank Ownership*

- Innovative idea to match AHS with RealtyTrac foreclosure data.

- Young, metro, burdened and minority borrowers are more likely to go into REO.
  - Similar pattern to mortgage defaults as REO, but lacks standard controls like credit history and LTV.

- Difficult to verify double-trigger hypothesis without more information about family shock events and local housing market conditions  (but roughly consistent).

- Vacancy may be endogenous – more an indication of the progress towards foreclosure and the state foreclosure rules than an explanatory variable.

- 3 data points in time make it difficult to tell a story about the market cycle.
  - Changing signs and significance of renter variables could fit many stories.