

A recent working paper has made unsupported policy conclusions about homeownership and borrowers of color using a flawed methodology. In their paper for the National Bureau of Economic Research, “The Vulnerability of Minority Homeowners in the Housing Boom and Bust”, authors Patrick Bayer, Fernando Ferreira and Stephen Ross analyze the performance of loans originated between 2004 and 2008 and find that mortgages made to African-American and Latino borrowers performed worse than those made to white borrowers. Though their model suffers from important methodological flaws, the more critical problem is their conclusion that the higher default rates of minority borrowers “raise serious concerns about homeownership as a vehicle of reducing racial wealth disparities.” Such a conclusion is unreasonable given the limited scope of their analysis. Below are brief descriptions of the paper’s shortcomings:

**First, the paper suffers from significant methodological flaws:**

- **Incorrect Type of Analysis:** The authors interpret their models as estimating differences in the probability of default (as measured by delinquencies and foreclosures over 12 months) for different racial and ethnic groups. However, in order to accurately estimate the probability of default, a “competing hazard model”, where all loan outcomes (i.e. loan is active, loan was prepaid, and loan defaulted) are modeled simultaneously, is needed. Instead, the authors used an ordinary-least squares (OLS) model, looking only at the number of delinquencies/defaults experienced by each borrower over a given time frame.<sup>1</sup> By ignoring prepayments, the authors may be introducing significant bias into their estimates.<sup>2</sup>
- **Key Variables Not Accounted For:** The product terms that are controlled for in the report are limited to: (1) whether a loan had an adjustable or fixed rate; and (2) whether the loan was higher rate (as indicated by the reporting of rate-spread in HMDA). The authors do not control for several other terms that we know were correlated with both the likelihood of default and the race/ethnicity of the borrower.<sup>3</sup> These include:
  - ***Loan terms and underwriting:*** The analysis does not account for whether different groups were more likely to have received loans with risky product features, such as prepayment penalties, teaser rates, interest-only or negative amortization payment schedules, or low- or no-documentation requirements regarding income or assets.<sup>4</sup> The lack of controls for these loan terms is critical because these features are correlated with both race and loan performance.<sup>5</sup> Therefore, their omission likely causes the estimated disparities in loan performance between races to be overstated, since at least some of the increase in defaults experienced by minority borrowers was likely attributable to these product features.

- **Wealth:** The authors rightfully acknowledge that they do not control for differences in household wealth. It is understandable that wealth could not be controlled for given data limitations; however, given the enormous differences in wealth between white and non-white households,<sup>6</sup> and the powerful effect of household wealth on default rates, it is likely that the differences in default rates would be reduced drastically or disappear if wealth controls were possible.

**Second, there are fundamental problems with the authors' conclusions:**

- **Misunderstanding of Financial Reform:** The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 restricts (and, in some cases, outright bans) the use of the risky loan features that contributed to high defaults, particularly among families of color. As discussed above, many of these features, such as prepayment penalties, interest-only payment schedules, teaser rates, and low documentation of assets and income, are not included in the authors' analysis. Therefore, the authors are wrong when they conclude that "tighter underwriting standards and increased financial oversight arising from recent financial reforms" are unlikely to address disparities because "the observed differences arise after controlling for all traditional underwriting variables"<sup>7</sup>—their model simply does not control for many of the market abuses addressed by the Dodd-Frank Act.
- **Scope of Analysis Too Limited to Support Conclusion:** Despite the fact that the authors describe their ultimate goal as providing "a better understanding of the benefits and risks associated with homeownership as a vehicle for building wealth", their research is not designed to evaluate the costs and benefits of homeownerships in general or for minority homeowners specifically.
  - **Limited time frame:** Homeownership has been a primary wealth generator for minority families for decades, yet the authors' analysis is focused only on the last boom-bust cycle. The authors acknowledge that "there is a chance that the recent housing market boom and bust may be unique in history,"<sup>8</sup> yet they use this brief time period to call into question homeownership's role in reducing wealth disparities.
  - **No analysis of the benefits of homeownership:** It is unclear why the authors think that the existence of a disparity in default rates would, in itself, be sufficient to question the value of homeownership. Owning a home has long been the most accessible way to build wealth in the United States. Although not without financial risks, homeownership provides several important financial benefits. First, over the long term, housing prices tend to appreciate. Nominal home values have increased, on average, about 5.5% annually between 1977 and 2011.<sup>9</sup> Although adjusting for inflation lowers

the real price appreciation to 0.5-1.5% per year,<sup>10</sup> homeowners realize returns on the entire value of the home, not just their initial down payment, making homeownership one of the few leveraged investments available to families with low-wealth. Consequently, borrowers' overall rate of return is actually higher than real price appreciation rates would suggest.<sup>11</sup> In addition, homeownership bestows a host of non-financial benefits on individuals and families.<sup>12</sup> Finally, the advantages of homeownership extend beyond the direct benefits to homeowners. Neighborhoods with high homeownership rates tend to have higher property values and, consequently, higher levels of tax revenues. These resources can then be used to support community assets that benefit all residents such as schools, parks and recreational facilities, and public safety programs.<sup>13</sup> *Therefore, even if default rate disparities were found, the proper policy response would be to identify and address the root causes of such disparities, such that all racial and ethnic groups and communities could fully achieve the benefits of homeownership.*

In summary, there are several fundamental flaws with the analysis, including misspecification and omitted-variable bias. These flaws are significant enough to call into question all of the model results found by the authors. However, even if their analysis were constructed correctly and minority borrowers were found to default at higher rates, there mere existence of disparate default rates would be entirely insufficient to question the value of homeownership, particularly given the rich literature on the financial and nonfinancial advantages of owning a home.

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<sup>1</sup> The incorrect choice of OLS instead of a competing hazard model when estimating default rates is an example of “misspecification”. It is worth noting that OLS is also inappropriate given the authors’ choice of dependent variable (i.e. number of delinquencies or foreclosures over a twelve month period), which is constrained between zero and 12 and significantly clustered at zero. This dependent variable, is not normally distributed, a basic requirement of OLS. This misspecification likely explains why the models get very low R-squared values, which shows that the vast majority of the variation in the dependent variable is not captured by the model.

<sup>2</sup> If, for example, white borrowers prepaid more often than minority borrowers (because minority borrowers were more likely to have loans with prepayment penalties), then even if the two groups of borrowers have the same likelihood of default, the defaults of white borrowers will not be observed as frequently because their observations will be dropped due to higher prepayment.

<sup>3</sup> When models do not control for variables that are correlated with both the dependent variable (in this case, incidence of delinquencies or foreclosures) and the variable of interest (in this case, race/ethnicity), it is called “omitted variable bias”.

<sup>4</sup> Though they do try specifications that include controls for lenders, such lender controls are likely insufficient to control for the damaging loan terms that we know were disproportionately targeted at minority borrowers.

<sup>5</sup> For a summary of the evidence of the targeting of these types of loan features at communities of color, see “Lost Ground, 2011: Disparities in Mortgage Lending and Foreclosures”, page 11, available at <http://www.responsiblelending.org/mortgage-lending/research-analysis/Lost-Ground-2011.pdf>

<sup>6</sup> In 2009 the median wealth of white families was 20 times that of African-American families and 18 times that of Latino Families. See “Twenty-to-One: Wealth Gaps Rise to Record Highs Between Whites, Blacks and Hispanics”, Pew Research Center, July 2011, available at [http://www.pewsocialtrends.org/files/2011/07/SDT-Wealth-Report\\_7-26-11\\_FINAL.pdf](http://www.pewsocialtrends.org/files/2011/07/SDT-Wealth-Report_7-26-11_FINAL.pdf).

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<sup>7</sup> Bayer, Ferreira and Ross, p.23.

<sup>8</sup> Bayer, Ferreira and Ross, p. 7.

<sup>9</sup> This rate is a CRL calculation derived from the monthly CoreLogic housing price index from January 1976 through March 2012. The index is not adjusted for inflation.

<sup>10</sup> Estimates of inflation-adjusted annual returns range from 0.5–1.5% (McBride, 2012). See <http://economistsview.typepad.com/economistsview/2012/04/is-there-a-long-run-upward-trend-in-housing-prices.html>.

<sup>11</sup> For example, if homes increase, on average, one percent annually after inflation, a borrower who purchased a \$200,000 home would realize a \$2,000 gain in one year. Assuming a ten percent downpayment of \$20,000, that \$2,000 represents a ten percent return on investment. In addition, although the relative cost of owning a home compared with renting depend on a host of factors (e.g., rental prices, prevailing interest rates, property taxes, homeowners' insurance premiums, home maintenance costs, etc.), there are federal tax deductions for mortgage interest, mortgage insurance and property taxes. These tax deductions, as well as the special treatment of capital gains for primary residences, provide considerable public subsidies for homeownership that enhance its financial benefits.

<sup>12</sup> For example, research suggests that children who grow up in home-owning households perform better academically, are more likely to graduate from high school, and are less likely to become teen mothers. See Dietz, R.D. (2003). "The Social Consequences of Home Ownership." Columbus, OH: Ohio State University. Retrieved from <http://www.scribd.com/doc/18332673/The-Social-Consequences-of-Homeownership>.

<sup>13</sup> Rohe, W., & Stewart, L. (1996). "Home Ownership and Neighborhood Stability. *Housing Policy Debate*, 7(1). Fannie Mae Foundation.