Graduate Research Plan Statement: Evaluating the Impact of Homebuyer Education and Financial Benefits on Loan Performance for Low- and Moderate-Income Borrowers

Homebuyer education and counseling (HEC) programs increase financial literacy of low- and moderate-income borrowers to reduce default rates. However, 62% of all defaults are the result of inability to pay, and half of those who default do so because making mortgage payments would have left them unable to meet immediate needs for food and other necessary expenses[1]. While increased financial literacy can improve budgeting and saving habits, it cannot directly prevent negative income shocks. Typically, HEC programs do not provide financial benefits beyond the initial purchase and are evaluated by comparing default rates of participants and non-participants. The impact of HEC programs is unclear, and there is no evidence about the interaction between financial education programs and more flexible forms of financial assistance. I propose evaluating HomeReady® (HR), an affordable mortgage product offered by Fannie Mae, to understand the impact of homebuyer education on delinquency related outcomes when paired with a continuous financial benefit. This research will address academic questions about the roles of information compared to credit constraints in mortgage default and will have direct implications for the design of HEC and mortgage assistance.

Background on HomeReady® Mortgages: Since 2015, Fannie Mae has offered HomeReady®, an affordable mortgage, to households with income at or below 80% of their area's median income and completion of homebuyer education prior to closing. Unlike other mortgage programs, HR caps the risk-based fees that increase the price of a loan (LLPA). Mortgage lenders can keep these benefits as profit or transfer the benefit to borrowers through a better rate. Intuitively, I will evaluate the program by comparing three groups: (1) Eligible borrowers who did not participate or receive HEC, (2) HR borrowers whose rate at origination is at or above the market rate, and (3) HR borrowers whose rate at origination is below the market rate and who thus enjoy a financial benefit in addition to HEC. I will compare the effects of HEC alone and combined with a financial benefit on delinquency, respectively, to learn about the role of financial literacy in delinquency and payment choices for low-income households.

Methodology: The internal Fannie Mae acquisition data containing borrower and loan characteristic information, combined with loan-level monthly performance data are ideal for this purpose and can be requested for academic research. Merging the datasets allows me to build a credit profile and payment history for each borrower. I can then construct binary response variables indicating early delinquency (90 days delinquency within the first 6 months/1 year etc.). Early delinquency is a precursor to default, and therefore a suitable proxy for default risk.

Those who select into HR are likely fundamentally different from those who do not. To avoid bias in my estimates, I can construct MSA-level proxies for access to HR by calculating the share of lenders in the MSA who make HR loans, or the fraction of eligible loans that use HR. Even though an individual's take-up of HR might be correlated with other characteristics that affect delinquency, area lenders' likelihood of recommending HR is unlikely to be correlated with individual borrower delinquency. I can estimate the reduced form relationship at the MSA level, or in exploring a two-stage least squares strategy, instrumenting for individual borrowers' use of HR with the use of HR by lenders in their MSA. I can untangle the effects of homebuyer education and lower rates by controlling for the difference between the borrower's rate and the local average rate at the time of loan origination, and interacting that gap with my proxy for participation in HR.

For the second strategy, I will estimate the effect of HEC combined with financial incentives using the following specifications:

$$\widehat{HR_{i,t}} = \alpha_0 + \alpha_1 LendPart_{MSA,t} + u$$

$$Y_{i,t+h} = \beta_0 + \beta_1 \widehat{HR}_{i,t} + \beta_2 SPD_{i,t} + \beta_3 (\widehat{HR_{i,t}} * SPD_{i,t}) + \beta_4 X_{i,t}$$

In the first equation I will regress HR participation at the borrower level on local lenders' probability of recommending, as an instrument. In the second stage, Y is one of the delinquency response variables as of time t + h, X is a vector of borrower and loan characteristics at the time of acquisition, $\widehat{HR}$ is the fitted values from the first stage, SPD is the difference between note rate and average note rate of similar loans in the MSA, and HR * SPD is an interaction effect.

Since HomeReady® began in 2015, there is a limited history of the product which inhibits my ability to study the effect of HEC later in the loan lifecycle. Additionally, the economic conditions since 2015 have been favorable, so I will not be able to speak to borrower behavior and mortgage loan programs during adverse economic conditions. Additional outcome variables that could be tested include delinquency cure rates (catching up on payments after 90 days of delinquency), and modification rates. Delinquency cure rates and modification rates are possibly noisy proxies for financial literacy of a borrower, given that a financially savvy borrower more likely to establish a budget for making up payments or pursue modification options available to them. Using these response variables could allow for estimations of the effect of HEC on financial literacy, controlling for financial benefits.

Intellectual Merit: This proposal would evaluate the effectiveness of HEC on early delinquency when used in conjunction with continued financial benefits. The previous literature focuses on the direct impact of financial education on eventual default but does not address the role of financial constraints or complementarities between financial education and lower interest rates. Therefore, I evaluate a more comprehensive bundle of treatments with different potential mechanisms.

Broader Impacts: On average, the homeownership rate for low-income individuals is 15 percentage points lower than the national rate and low-income homeowners experience higher mortgage default rates[2]. It is important to evaluate programs designed to reduce default and increase access to home ownership because home ownership is a recognized path to asset accumulation and long-term economic stability, and to better schools, safer neighborhoods, and other amenities associated with the opportunity gap for minority youth[3]. My own work as an analyst at Fannie Mae has made me aware of the lack of evidence about the effect of existing programs and about the margins at which large-scale programs could be adjusted. I am committed to continuing to work to expand housing access and financial stability for minority communities through research that builds on my years of practical experience in the low-income housing field. I also look forward to advocating for the inclusion of these research questions in the agendas of my future classmates, and eventually, to offering my own students a view of how economists can use their tools to study this fundamental question of access and equity in America.

References (1) Ohanian, L. E. (2017, September 13). Who Defaults on Their Mortgage, and Why? Policy Implications for Reducing Mortgage Default. Retrieved from https://www.minneapolisfed.org/research/economic-policy-papers/who-defaults-on-their-mortgage-and-why-policy-implications-for-reducing-mortgage-default.
(2) Fout, Hamilton & Li, Grace & Palim, Mark & Pan, Ying. (2018). Credit risk of low income mortgages. Regional Science and Urban Economics. 10.1016/j.regsciurbeco.2018.07.013.
(3) Chetty, Raj, Nathaniel Hendren, and Lawrence Katz. 2016. "The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Project." American Economic Review 106 (4).