

Discussion Paper

Reverse Mortgage Retrospective: How Recent Policy Changes Affected Government-Insured Reverse Mortgage Originations and Performance

Lauren Lambie-Hanson

Federal Reserve Bank of Philadelphia
Consumer Finance Institute

Stephanie Moulton

Ohio State University and
Federal Reserve Bank of Philadelphia
Consumer Finance Institute Visiting Scholar

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Reverse Mortgage Retrospective: How Recent Policy Changes Affected Government-Insured Reverse Mortgage Originations and Performance

Lauren Lambie-Hanson*
Federal Reserve Bank of Philadelphia

Stephanie Moulton
Ohio State University

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Abstract

This discussion paper analyzes the outcomes of recent policy reforms to the federally insured reverse mortgage program. Prior to these reforms, more than one out of 10 older adults with a Home Equity Conversion Mortgage (HECM) was reported to be in default on the loan for failure to pay property taxes or homeowner's insurance payments. We study the effect of two major types of policy reforms: one that restricted the amount of funds available to a borrower, and the other that introduced underwriting requirements through a financial assessment for the first time in the program's history. Our primary data set includes HECM loans originated between 2012 and 2015, with monthly loan performance through May 2019. We observe a significant reduction in the three-year rate of tax and insurance default before and after the policy reforms, from 8.7% to 2.2%. However, some of this reduction is offset by a corresponding increase in lender payment of these expenses out of a borrower's line of credit. We also observe that about two-thirds of HECM borrowers are fully drawn on their line of credit within three years of origination, placing those with unscheduled draws at risk of future default. In addition to changes in default and draw behavior, policy reforms during this time period slowed the speed at which HECM borrowers could withdraw equity and reduced the total amount of equity that can be withdrawn by the borrower. We document these facts and discuss implications for policy.

Keywords: reverse mortgages, Home Equity Conversion Mortgage, mortgage default, property taxes, homeowner insurance

JEL codes: G21, G28, G51

*Lauren Lambie-Hanson is an advisor and research fellow at the Federal Reserve Bank of Philadelphia's Consumer Finance Institute: lauren.lambie-hanson@phil.frb.org. Stephanie Moulton is an associate professor of the Ohio State University's John Glenn College of Public Affairs: moulton.23@osu.edu. The authors thank Joshua Miller and Josephine Stangle of the U.S. Department of Housing and Urban Development for helpful comments.

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I. Introduction

As of February 2012, nearly one out of 10 older homeowners with a federally insured reverse mortgage was in default for failure to pay property taxes or homeowner's insurance (Consumer Financial Protection Bureau (CFPB), 2012). Although only a small share of Home Equity Conversion Mortgage (HECM) borrowers who default ultimately wind up in foreclosure, defaults still trigger costly loss mitigation for servicers and can ultimately pose a drain on the HECM insurance fund. This motivated Congress to pass the Reverse Mortgage Stabilization Act in 2013, which authorized U.S. Department of Housing and Urban Development (HUD) to design and enact a series of policy changes intended to reduce default and shore up the program. By April 2020, industry analysts reported the overall serious default rate for loans originated after the policy changes to be 75% lower than loans originated prior to the policy changes, providing preliminary evidence that the policy changes were a success (New View Advisors, 2020). But these policy changes also come with tradeoffs, restricting the amount of home equity that can be borrowed and the speed at which it can be withdrawn. It is thus important to take stock of how these policy changes affected both access and performance in the HECM program. This is the goal of this discussion paper.

Reverse mortgages are loans made to older homeowners with no expected repayment until the borrower exits the home, typically at the time of death. Unlike a traditional forward mortgage in which the balance declines as borrowers make monthly payments, the balance on a reverse mortgage grows over time with the accrual of interest and fees. In the U.S., most reverse mortgages are insured by the federal government through the HECM program.¹ Federal insurance on reverse mortgages through the Federal Housing Administration (FHA) mutual mortgage insurance fund (MMI) protects borrowers and lenders from negative equity.²

¹ There is a small but growing market of non-HECM proprietary reverse mortgages. Proprietary reverse mortgages are most common among high-value properties that exceed the property value limits for a HECM, which was \$765,600 in 2020. As of 2019, proprietary reverse mortgages comprised less than 10% of all originations but 25% of the total dollar value of reverse mortgage originations (Mayer and Moulton, 2020).

² Prior to loan termination, borrowers still have access to available proceeds on the HECM even if the loan balance grows to exceed the value of the home. When the HECM loan terminates, borrowers or their heirs may purchase the home for the lesser of the outstanding balance on the HECM or 95% of the current appraised value. If the sales price of the home is less than the current appraised value, the lender may file a claim to HUD for the loss of up to the maximum claim amount (typically equal to the appraised value at the time of the HECM origination), as long as the loan is in good standing.

Reverse mortgages can be an important source of liquidity for the growing share of older adults with a substantial portion of their wealth tied up in the equity in their homes (Goodman et al., 2017; Moulton and Haurin, 2019). Reverse mortgages can also play a countercyclical role in providing access to home equity when other channels of mortgage borrowing are constrained. For example, uncertainty regarding home values and income shocks associated with the COVID-19 pandemic led many large banks to halt originations of home equity loans and home equity lines of credit (Lerner, 2020), contributing to elevated volumes of HECM originations during the pandemic (Clow, 2020).

Despite their benefits, reverse mortgages also carry risks — to homeowners, lenders, the federal government, and taxpayers. While there is no monthly payment for reverse mortgage borrowers, they are required to occupy the home as a principal residence, keep up with required repairs, pay property taxes, and maintain homeowner’s insurance. If a borrower fails to meet these obligations, the loan is considered to be in “technical default,” triggering a series of actions that in the most extreme cases can result in foreclosure. The loan servicer must resolve the default to avoid losses that would otherwise be covered by federal insurance, either through working out a repayment plan with a borrower or foreclosing on the property.³ HECMs that end in default-related foreclosures sell for substantially less than nondistressed terminations, often incurring large draws against the FHA mortgage insurance fund (Begley et al., 2019; CBO, 2019). Property tax and insurance defaults are costly for all parties involved.

The policy reforms enacted between 2013 and 2015 were intended to reduce the risk of default and the probability of large draws against the FHA mortgage insurance fund. As announced by then-Federal Housing Commissioner Carol Galante, “Our goal here is to make certain our reverse mortgage program is a financially sustainable option for seniors that will allow them to age in place in their own homes” (U.S. Department of Housing and Urban Development, 2013). The first set of policy changes restricted the amount of home equity available to HECM borrowers and slowed the rate at which they could withdraw funds. The second major policy change required a financial assessment of a homeowner’s income and credit. Homeowners failing the financial assessment can still receive a HECM if they can set

³ Loss mitigation requirements are detailed in a series of mortgagee letters issued by HUD, including Mortgagee Letters 2015-11 and 2016-7, available online at <https://www.hud.gov/sites/documents/15-11ML.PDF> and <https://www.hud.gov/sites/documents/16-07ML.PDF>.

aside enough equity in an escrow account to pay for future property taxes and insurance payments, or if they have other compensating factors.

In this paper, we explore the varying effects of these policies using HECM origination and performance data from HUD from December 2012 to May 2019. We focus on a subsample of 116,000 borrowers with loans originated immediately before and immediately after each of the policy changes from 2013 through 2015, following each loan's performance for the 36 months after it was originated. Our empirical strategy assumes that the relative timing of the policy changes within our narrow timeframe may be considered exogenous to a borrower's decision to default. Based on this assumption, we compare simple differences in mean outcomes before and after each policy change.

We find a significant reduction in the three-year rate of tax and insurance (T&I) default before and after the policy reforms, from 8.7% to 2.2%. However, some of this reduction is offset by a corresponding increase in unscheduled lender payments of these expenses out of a borrower's line of credit. This reliance on the line of credit may not be sustainable over the long term, given that over 40% of HECM borrowers have exhausted their line of credit within 13 months of origination, and nearly two-thirds have exhausted their line within 36 months. Optimistically, post the financial assessment, our results show a reduction in both default and unscheduled draws from the line of credit to pay for T&I. This more targeted policy change to identify at-risk borrowers and create an intentional set-aside to cover future expenses may be more effective in the long run than across-the-board reductions to accessible home equity.

We show that borrowers who use their HECM proceeds to pay off existing forward mortgage debt are more likely to experience T&I default. This is likely attributable to a selection effect because these borrowers are more highly leveraged, but it is also attributable to a treatment effect: These borrowers are not subject to the same draw restrictions at origination. If they wish, they are able to extract all their available line of credit at closing. If they do so, no funds are available to cover taxes and insurance if needed, leading these borrowers to be at greater risk of default.

In addition to reducing default, HUD's policy changes from 2013 through 2015 lowered the amount of equity the typical new HECM borrower can extract. Draw restriction changes in 2013 slowed the rate at which borrowers could withdraw their equity, while other changes in principal limit factors affected the total amount that could be withdrawn over the life of the loan.

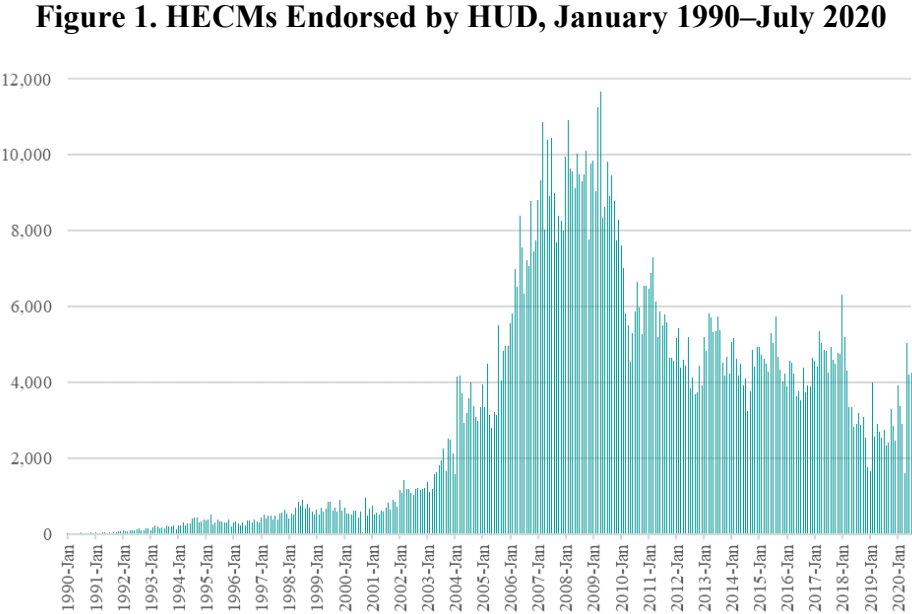
We show that a typical borrower who takes out a HECM today could access over the life of the loan only about 70% of the home equity that was available prior to the policy changes.

In the next section, we provide background on the HECM program and the policy changes designed to improve the program’s solvency. In Section 3, we discuss the data and compare the characteristics of borrowers who took out new HECMs before and after the policy changes. In Section 4, we examine changes in loan performance before and after each policy change, including T&I defaults as well as unscheduled draws to pay for T&I. In Section 5, we describe the effects of the policy changes on the amount of home equity available to homeowners under a HECM and explore changes in draw behaviors before and after the policy changes. In Section 6, we summarize our key findings and suggest avenues for future research.

II. Background

2.1 HECM Basics

Nearly 1.2 million federally insured HECM loans have been originated since the program’s inception in late 1989 through July 2020, with only about 2% of the eligible population of homeowners age 62 and older holding a reverse mortgage at a given point in time (Moulton and Haurin, 2019). Figure 1 graphs the number of HECM endorsements by month over time.



Note: Displays loans by date of endorsement, which is usually within one to three months of the loan closing.

Source: Authors’ tabulations of publicly available U.S. Department of Housing and Urban Development Single Family Portfolio Snap Shot data

HECMs allow older adults to liquefy a portion of their home equity. The amount of money a person can get from a HECM typically ranges between 40% and 75% of the value of their home, depending on a borrower's age and the expected interest rate on the loan.⁴ HUD sets the maximum loan-to-value (LTV) ratio — called the *principal limit factor* — at the origination of a HECM, so that it is higher for older borrowers and higher when interest rates are lower. This limit is set to reduce the risk that the balance on the HECM loan will grow to exceed the value of the home over time. HUD also sets a maximum property value called the *maximum claim amount*. As of January 1, 2020, this limit was \$765,600. If a homeowner's property value is in excess of the limit, she can still get a HECM, but the maximum LTV is as a proportion of the limit rather than the home's value.

HECM borrowers can receive money in a variety of ways. First, borrowers can take out a lump sum of money up front as cash or to pay off other debt, including any forward mortgage debt held by the borrower as the HECM can be the only mortgage on the property. About half of all HECM borrowers use at least a portion of the proceeds to pay off a forward mortgage (Moulton, Loibl, and Haurin, 2017). Converting forward mortgage debt into reverse mortgage debt frees up cash flow for the homeowner by eliminating the burden of the monthly mortgage payment.

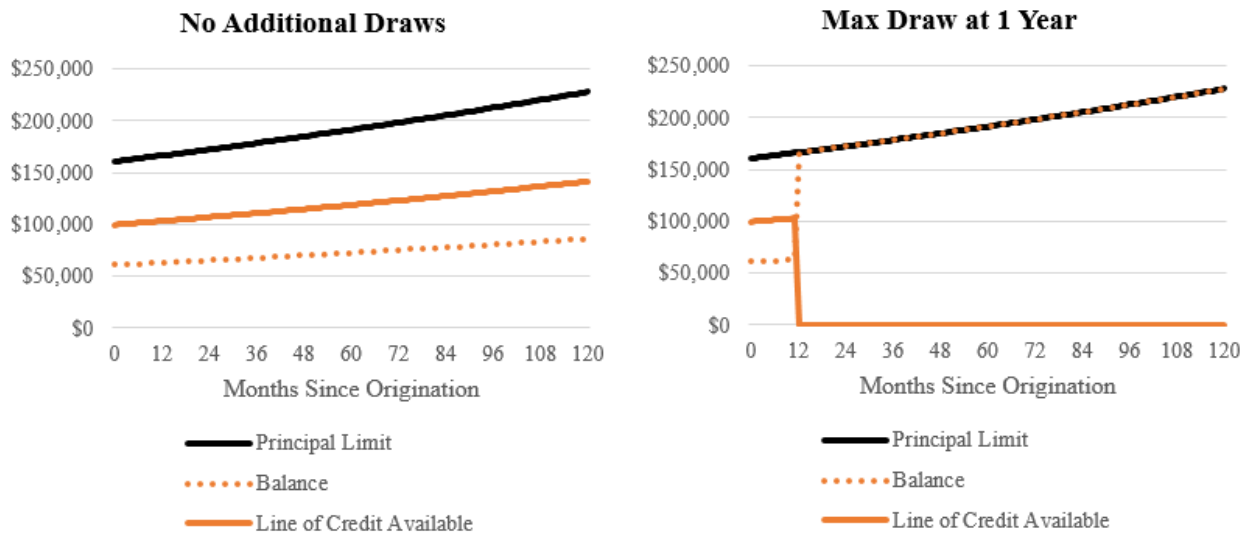
After repaying forward mortgage debt and withdrawing desired cash up front, most HECM borrowers structure remaining available HECM funds as a line of credit — similar to a home equity line of credit (HELOC). The amount of money remaining on the line of credit grows at the same rate as the balance on the loan, corresponding to the interest rate and monthly fees. This growth feature of the line of credit has been promoted as a benefit of HECMs by financial planners and brokers (Hopkins, 2017; Pfeiffer and Evensky, 2012), as the growth is not tied to the underlying value of the home. Locking in a HECM line of credit at today's home value plus the expected growth rate can thus serve as a hedge against future house price risk. An alternative structure is to take some or all of the HECM funds as a scheduled monthly disbursement, similar to an annuity, for either a set term (e.g., 10 years) or for the borrower's remaining life. From 2011 through 2019, only about 6% of HECM borrowers chose to structure

⁴ Estimates based on an expected rate of 5% for a 62-year-old borrower and 99-year-old borrower, respectively, using the principal limit factors effective on and after October 2, 2017; see https://www.hud.gov/program_offices/housing/sfh/hecm.

even a portion of their HECM proceeds as an annuity-like monthly tenure or term payment (Pinnacle, 2019).

Figure 2 provides a stylized example of how a HECM balance grows over time relative to funds remaining on a line of credit and the value of the home. In this example, the borrower is a 72-year-old widow with a home value of \$270,000 when she closes on a HECM loan on January 1, 2020. At that time, based on her age and an expected annualized interest rate of 3%, her maximum LTV is 59.5%, or \$160,650 in drawable home equity. She had an existing home equity loan balance of \$50,000 that she was required to pay off with the HECM, as the HECM can be the only lien on the property. She also rolls the \$5,500 in closing costs and \$5,400 up-front mortgage insurance premium into the loan balance. This brings her initial loan balance to \$60,900 at the time of origination, with a remaining line of credit of \$99,750.

Figure 2. Example of Funds Available to a Typical Borrower



Source: Authors' tabulations of data from the U.S. Department of Housing and Urban Development

The balance and the line of credit on the HECM grow at a rate equal to the interest rate plus an annualized 0.5% mortgage insurance premium, paid monthly. Assuming the adjustable interest rate remains at 3%, the balance on the loan will grow at an annualized rate of 3.5%, or about 0.29% per month. In 10 years, if she does not make any additional draws on the line of credit, as shown in the left panel, the loan balance will grow to \$86,377, and the amount available to draw on the line of credit will grow to \$141,480. On the other hand, as shown in the right panel, if she draws the remaining available money on the line of credit after the first year,

by the time she is 82, the balance on the loan will grow to \$227,857, with no remaining equity on the line of credit.

Assuming house prices continue to appreciate at a rate of 2% per year as they have been nationally in recent years, the balance on her HECM loan should not grow to exceed the value of her home during her expected lifetime in either scenario. However, if the value of her home were to drop by 16% or more by the time she turns 82 — either because of an economic downturn or if her home depreciates in value because of lack of maintenance or other idiosyncratic factors — the balance on her HECM loan could grow to exceed the home value. In these cases, the federal mutual mortgage insurance fund typically assumes the loss. While crossover risk appears to be a low probability event in the current market environment, this was not uncommon during the Great Recession when house values decreased by as much as 50% to 60% in some states (CoreLogic, 2018). This contributed to large projected losses to the FHA mutual mortgage insurance fund, with a projected \$9.5 billion deficit in net worth for the HECM portion of the fund in 2019 (Pinnacle, 2019).⁵

There are two primary policy levers that HUD uses to reduce the risk of losses to the federal insurance fund. The first is to lower the maximum LTV (principal limit factor) at the time of origination so the probability that the balance exceeds the value of the home over time is reduced. The second is to set the amount of the up-front and monthly mortgage insurance premiums high enough to offset any losses to the federal insurance fund. Both of these policy levers have been used multiple times since the Great Recession. The principal limit factor was adjusted three times between 2013 and 2017, significantly affecting the amount of home equity available through a HECM.⁶ The mortgage insurance premiums were adjusted twice during the same period, with the current premium being 2% of the maximum claim amount at the time of origination, and 0.5% of the balance monthly through the life of the loan.⁷ These premiums

⁵ Projected losses (or gains) to the HECM portion of the mutual mortgage insurance fund have been extremely volatile over time, in part because of the uncertainties associated with HECMs, such as the term of the loan and the expected home value and loan balance at the time of loan termination. Different assumptions about these uncertainties, such as default rates and future home values, can substantially influence projected losses. Further, actuarial estimates may fail to account for the extent to which newer HECM cohorts will perform better than HECM cohorts prior to the 2013–2015 policy reforms. Housing policy experts have advocated for the HECM portion of the MMI fund to be separated from the forward portion of the FHA MMI fund in part because of these complexities (Golding and Goodman, 2017).

⁶ See Mortgagee Letters 2013-27, 2014-12, and 2017-12.

⁷ See Mortgagee Letters 2013-27 and 2017-12.

contribute to the perceived high costs of HECMs compared with traditional mortgage loans, yet they also protect borrower and their heirs from negative equity.

2.2 Default in the HECM Context

HECM borrowers are typically not required to repay their mortgage balance until they die or no longer live in the property as their primary residence. However, a HECM is called “due and payable” if the borrower defaults on the obligations of the loan related to occupancy, maintenance, property taxes, or insurance payments. When a HECM is called due and payable, the borrower is required to repay the balance (often through home sale or foreclosure) or work out a repayment plan with the lender. In a report to Congress, the U.S. Government Accountability Office (GAO) estimated that, while the majority of HECM terminations were due to death or relocation of the borrower, about 15% of the 272,155 HECM loans terminated between 2015 and 2018 were terminated because of default. Of the default related terminations, the majority (73%) were due to occupancy violations, with 27% because of delinquent property taxes or homeowner’s insurance, and less than 1% because of maintenance violations (GAO, 2019).

Not all defaults result in terminations, and not all cases of missed property tax and insurance payments result in default. Each year, HECM borrowers are required to submit documentation to their lender showing proof of homeowner’s insurance and a certificate of occupancy indicating they lived in the property at least six months of the year. With regard to property taxes, the lender verifies with the taxing jurisdiction that borrowers are up to date on property taxes. If a borrower fails to provide proof of homeowner’s insurance or has not paid property taxes to the taxing jurisdiction, the lender notifies the borrower. The lender then purchases force-placed homeowner’s insurance or pays the property taxes on behalf of the borrower. If the borrower has money remaining on the HECM line of credit, these expenses are paid out of the line of credit as an “unscheduled draw.” If the borrower does not have money remaining on the line of credit, the lender adds the expenses to the balance of the loan.

Adding property taxes and homeowner’s insurance expenses to the balance of a loan that is already fully drawn accelerates the growth in the balance and therefore the risk that the balance will exceed the value of the home. This creates additional losses to the government insurance fund when the HECM eventually becomes due. Beginning in 2011, HUD issued a

series of mortgagee letters requiring lenders to report borrowers who were in default on their taxes or insurance and to recoup funds that were advanced by the lender, either through a repayment plan with the borrower or foreclosure.⁸ Failure to take such actions would result in a HECM being ineligible for assignment to HUD, increasing exposure of the lender to potential financial loss. However, foreclosing on HECM borrowers for past-due property taxes or insurance presented a substantial reputational risk to lenders. Tax and insurance defaults were cited as one of the primary reasons Wells Fargo exited the HECM market in 2011.⁹ Alternatives were needed to reduce the risk of tax and insurance default in the HECM program.

2.3 Reducing HECM Tax and Insurance (T&I) Defaults

A HECM is only considered to be in default for property taxes or homeowner's insurance if two conditions are satisfied: (1) the borrower fails to pay property taxes or maintain homeowner's insurance, *and* (2) the borrower is out of funds on the HECM line of credit. Policies to reduce default can target either condition. The first set of policy changes were structural, designed to slow the rate of spend-down from the line of credit. These changes were intended to not only reduce T&I defaults, but also to reduce the probability that HECMs would end up underwater and require large draws from the federal insurance fund. The second set of policies targeted borrower capacity to pay taxes and homeowner's insurance and introduced risk-based underwriting for the first time in the program's history.

Draw Restrictions

HECMs are typically structured as adjustable-rate mortgages (ARMs) because of the open-ended nature of the loan and uncertainty about the amount and timing of future draws. In 2009, an alternative fixed-rate HECM entered the market. To offset the uncertainty of future draws, the fixed-rate product was structured as a closed-end loan, with any funds borrowed to be drawn at

⁸ The specific HUD policies regarding technical defaults have changed over time, beginning in 2011 (Mortgagee Letter 2011-1). As of April 23, 2015 (Mortgagee Letter 2015-11), lenders are required to call a loan "due and payable" if funds are advanced by the lender on behalf of the borrower to pay past due property taxes or homeowner's insurance. After a loan is called due and payable, the lender must initiate the foreclosure process if the borrower is unable to repay the HECM loan balance in full (e.g., through home sale). If the borrower enters a repayment plan, the lender can request an extension to the foreclosure timeline. For details, see Mortgagee Letter 2016-7, <https://www.hud.gov/sites/documents/16-07ML.PDF>.

⁹ See <http://business.time.com/2011/06/20/mortgage-giants-wells-fargo-and-bank-of-america-opt-out-of-reverse-mortgage-business/>.

the time of origination. Investors preferred the fixed-rate option because of reduced draw uncertainty and were willing to pay a higher premium to purchase securities of fixed-rate HECMs. A portion of this higher premium was often passed on to the borrower in the form of waived origination costs, making the fixed-rate HECM a more attractive option for borrowers than adjustable-rate HECMs.

The fixed-rate HECM quickly became the dominant type of reverse mortgage, with 70% of borrowers choosing this option by 2010. A drawback of the fixed-rate HECM, however, was that it required borrowers to withdraw all of their available funds up front, leaving no remaining money on a line of credit for future draws. If borrowers failed to pay their property taxes or insurance, they were immediately in default with no money on the line of credit to cover these expenses. On January 1, 2013, HUD issued a mortgagee letter that limited the origination of fixed-rate, full-draw HECMs to the “saver” version of the product that had a lower LTV at origination.¹⁰ In September 2013, HUD eliminated the saver version of the product altogether and limited HECM withdrawals to 60% of available funds in the first year unless a higher amount was needed to pay off a forward mortgage.¹¹ Shortly after these changes, alternative fixed-rate products emerged that circumvented the policies, requiring a full draw after one year or allowing future draws with considerable interest rate risk. In June 2014, HUD announced that it would no longer insure fixed-rate HECMs that allowed for future draws or that did not comply with the up-front draw limits.¹²

Financial Assessment

In parallel to the structural changes to the HECM program, HUD introduced new financial assessment criteria to determine borrower eligibility for a HECM. While the financial assessment was first announced in September 2013 with the up-front draw limits, the implementation was delayed until April 2015.¹³ Prior to the financial assessment, eligibility for a HECM was based entirely on the characteristics of the property and not the borrower, other than being age 62 or older. Similar to underwriting for traditional mortgages, the financial assessment evaluates a

¹⁰ See HUD Mortgagee Letter 2013-01, <https://www.hud.gov/sites/documents/13-01ML.PDF>.

¹¹ See HUD Mortgagee Letter 2013-27, <https://www.hud.gov/sites/documents/ML13-27.PDF>.

¹² See HUD Mortgagee Letter 2014-11, <https://www.hud.gov/sites/documents/14-11ML.PDF>.

¹³ See HUD Mortgagee Letter 2015-06, <https://www.hud.gov/sites/documents/15-06ML.PDF>; *Revised Financial Assessment Guide*, <https://www.hud.gov/sites/documents/14-22ML-ATCH2.PDF>.

borrower’s credit history and residual income to determine a borrower’s capacity to pay future property taxes and homeowner’s insurance.

Table 1 provides a summary of the financial assessment requirements. If a prospective borrower fails to meet the requirements, she may still take out a HECM but must set aside sufficient funds from the proceeds of the HECM to pay future property taxes and homeowner’s insurance.¹⁴ This life expectancy set aside (LESA) is essentially a “carve out” from the HECM proceeds and is projected to grow at the same rate as the line of credit. Only funds drawn from the LESA to pay for property taxes or homeowner’s insurance are added to the balance of the loan. When the HECM terminates, the outstanding balance is repaid with any unused equity available to the borrower or his or her heirs. According to our analysis of HUD data, in the six months after the policy took effect, 16% of new HECM borrowers had a LESA, and the median value of their accounts was nearly \$31,000.

Table 1. HECM Financial Assessment Criteria

Criteria	Description
<i>Credit and Payment History</i>	
Rent, mortgage, and non-housing installment debt	Payments on time in the prior 12 months, with no more than two 30-day late payments in prior 24 months
Revolving debt (e.g. credit cards)	No major derogatory revolving credit in prior 12 months
Collections, charge-offs, judgments and delinquent federal debt	No collections or charge-offs not due to extenuating circumstances; delinquent federal debt must be resolved
Chapter 7 and Chapter 13 bankruptcy	HECM for purchase only; must be two years since Chapter 7 was discharged and 12 months since start of Chapter 13
Property taxes and property charges	All current and no arrearages in prior 24 months
Extenuating circumstances	Events such as temporary unemployment, death or divorce of spouse, or emergency expenses (medical, property damage) may allow for waiver of credit payment history criteria if the event is resolved and payments were on time prior to event
<i>Residual Income Analysis</i>	
Residual income	Monthly income less monthly debt payments (includes property taxes, insurance, and utilities) is below residual income limits by household size and geographic region
Compensating factors	Additional sources of income available to the household, including expected payments from the HECM, can supplement residual income if documented

Notes: The criteria in this table are derived from HUD’s *HECM Financial Assessment and Property Charge Guide*, last revised July 13, 2016, and available online at <https://www.hud.gov/sites/documents/16-10ML-ATCH.PDF>.

¹⁴ In some cases, the borrower simply will not have enough equity to receive a HECM. In particular, if the borrower has mandatory obligations that must be paid off prior to the origination of a HECM (such as existing mortgage debt), there may not be enough equity remaining to “fund” the LESA.

The policies enacted between 2013 and 2015 are expected to reduce default, but through different mechanisms, and with different consequences for the accessibility of home equity. Draw restrictions and lower principal limit factors effectively act as a structural mechanism to mechanically reduce default, requiring a cushion of residual equity for all borrowers. This cushion can be used to pay for property taxes and insurance payments if the homeowner fails to meet these obligations, but only until the funds are depleted. The financial assessment, on the other hand, is a more targeted intervention designed to identify borrowers who may lack the capacity to keep up with property-related expenses. Those with limited capacity are required to set aside an equity cushion that is intentionally calculated to cover remaining property tax and insurance payments for the life of the loan.

In a prior study, Moulton, Haurin, and Shi (2015) simulated the expected effect of the policy changes on T&I default using HECMs originated between 2006 and 2011. Had both policies been in place between 2006 and 2011, their estimates suggest T&I default rates would have been cut in half — from 16% of borrowers ever defaulting on taxes or insurance, to less than 8% ever defaulting. They estimate that the initial draw limit would reduce expected T&I defaults by about 18%, with the financial assessment reducing default by an additional 34%. Their simulations also indicate a reduction in HECM volume of about 13%, excluding homeowners failing financial assessment criteria with insufficient home equity for a LESA. This discussion paper provides the first empirical test of the effects of the policy changes on actual HECM defaults, as well as exploring implications for the accessibility of home equity.

III. Data Sample Construction and Borrower Characteristics

3.1 Data and Sample Construction

Our primary data are from HUD, including all HECM originations endorsed by HUD through December 2018. The data include static loan and borrower characteristics at the time of origination, as well as dynamic transaction data on all withdrawals, charges, and payments through May 2019. We restrict our analysis to originated HECM loans with case numbers assigned between December 1, 2012, and November 30, 2015.¹⁵ We follow each loan's

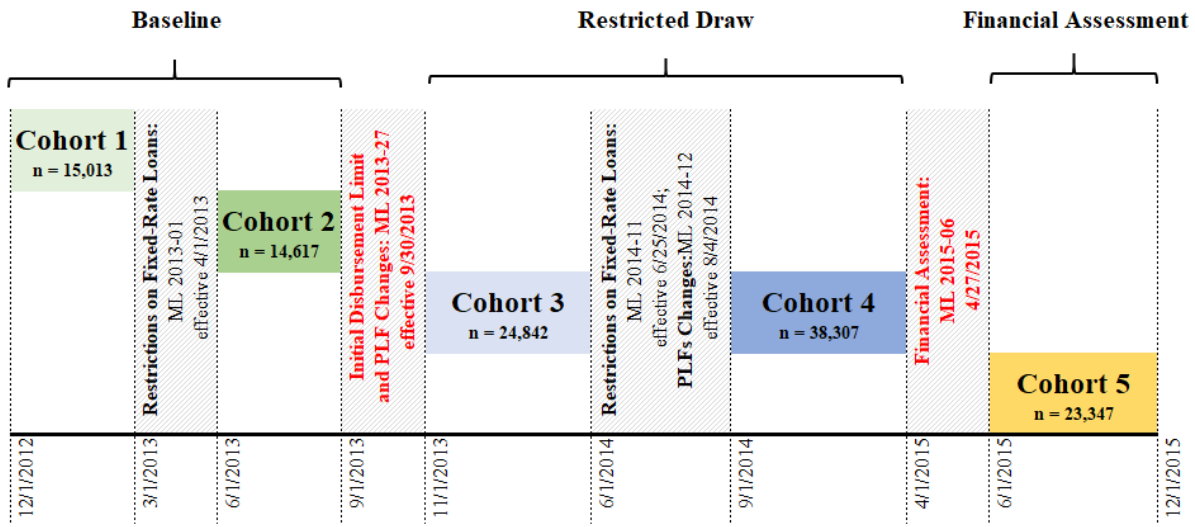
¹⁵ In order for a HECM to be insured by HUD, the loan originator must seek approval from HUD and obtain a case number prior to the loan closing. The effective date for most policy changes, including those we study in this analysis, is based on the case number assignment date rather than the loan closing date. On average, the time between case number assignment and loan closing is about 30 days.

performance for 36 months after origination, collapsing transaction-level data into monthly account summaries.

To analyze the outcomes associated with different policy changes, we divide the sample into cohorts, based on case number assignment dates relative to the major policy changes. As shown in Figure 3, this results in five distinct cohorts of borrowers. Cohorts 1 and 2 are the *baseline cohorts*, prior to the draw restrictions or the financial assessment. We split the baseline cohort before (cohort 1) and after (cohort 2) the restrictions on fixed-rate HECMs. Cohorts 3 and 4 are the *restricted draw* cohorts, occurring after the initial draw limit went into effect. We split this cohort before (cohort 3) and after (cohort 4) additional changes to the principal limit factors, that affected the amount of funds available to borrowers. Cohort 5 is the *financial assessment* cohort, including loans with case numbers assigned immediately after April 27, 2015, the effective date for the financial assessment.

Through its mortgagee letters, HUD notifies the public weeks (and in some cases months) before policies take effect, making it possible for lenders and borrowers to “game” the changes, either being sure to secure a case number assignment before a policy takes effect or, if the policy change is advantageous to borrowers, delay receiving a case number until after the policy is effective. As we will show, borrowers do appear to act strategically with respect to when they receive their case numbers, usually piling up in the week just before or after the policy change takes effect. For this reason, within each cohort, we exclude HECMs with case numbers assigned near (within several weeks before or after) each policy change. These “black-out periods” in our sample are shown in the gray bands in Figure 3. Although we cannot rule out the possibility that there is some selection of borrowers to different cohorts, we believe this filters out the majority of strategic actors, who may be at different default risk from a typical HECM borrower. These restrictions result in a final sample of 116,126 HECM loans with case numbers assigned between December 1, 2012, and November 30, 2015.

Figure 3. Policy Cohorts



Note: HUD Mortgagee Letters (MLs) are available at https://www.hud.gov/program_offices/administration/hudclips/letters/mortgagee.

The primary source of data for this discussion paper is the HUD origination and loan performance data. Although these data include detailed information on the loan, information on borrower characteristics is limited, particularly prior to the financial assessment that requires more consistent and detailed reporting of borrower financial characteristics. Thus, to better explore borrower characteristics before and after each policy change, we supplement the HUD data with zip code level data on borrower demographics and credit characteristics. We use the Federal Reserve Bank of New York/Equifax Consumer Credit Panel to construct aggregate indicators of credit characteristics of older adults at the zip code level, in addition to census tract-level data on income, home values, and neighborhood racial and ethnic composition from the American Community Survey.

3.2 Loan and Borrower Characteristics

Table 2 provides summary statistics for characteristics of loans in our sample, by cohort. We first separate HECMs that were used to purchase a home and HECMs that were refinanced from another HECM (HECM-to-HECM refinance) from traditional HECMs. The remainder of the summary statistics in the table are for Traditional HECMs, as these comprise the majority of HECM originations.

Table 2. Loan Characteristics

	1. Pre-FRM	2. Pre-IDL	3. Post-IDL	4. Pre-FA	5. Post-FA	All Cohorts
Total Loans	15,013	14,617	24,842	38,307	23,347	116,126
Traditional HECM	95%	92%	93%	86%	85%	89%
HECM for purchase	3%	4%	3%	4%	5%	4%
HECM-to-HECM refinance	3%	5%	3%	10%	12%	7%
<i>Characteristics of Traditional HECMs</i>						
Median max claim amount	\$205,329	\$208,656	\$214,293	\$231,487	\$247,693	\$224,508
Percent with appraisal > max claim amount	5%	6%	6%	7%	8%	7%
Median initial principal limit	\$136,826	\$132,954	\$118,004	\$134,905	\$147,044	\$133,405
Median principal limit factor at origination	0.66	0.64	0.55	0.58	0.58	0.59
Percent of loans with fixed interest rate	72%	7%	24%	12%	8%	22%
HECM type						
LOC	23%	86%	69%	81%	85%	72%
Full draw at closing	72%	7%	24%	12%	8%	22%
Term annuity	0%	1%	1%	1%	1%	1%
Tenure annuity and LOC	1%	1%	1%	1%	1%	1%
Term annuity and LOC	2%	3%	3%	3%	3%	3%
Tenure annuity and LOC	1%	2%	2%	2%	2%	2%
Has LESA					16%	
Median amount					\$30,881	
Median percent of principal limit extracted at origination	100%	98%	60%	60%	60%	60%
Percent extracting at least 90% of principal limit at origination	74%	56%	23%	25%	21%	35%
Percent paying off forward mortgage debt at origination	47%	42%	44%	49%	44%	46%
Median LTV on forward mortgage prior to HECM	36%	33%	24%	27%	25%	28%

Note: *Characteristics of Traditional HECMs* excludes borrowers refinancing previous HECMs and HECM-for-purchase loans. *Lump sum* indicates strictly loans with lump sum features; some borrowers with lines of credit effectively took out lump sums at origination, despite having a line. All dollar values are inflation adjusted to May 2020 dollars.

Source: Authors' tabulations of data from the U.S. Department of Housing and Urban Development

Some of the differences in loan characteristics between the cohorts are striking, and together they suggest that loans originated in later cohorts carried less risk, on average. First, the median maximum claim amount of HECM borrowers increased over time (in 2020 constant dollars), from \$205,539 prior to the policy changes (cohort 1) to \$247,693 post the financial assessment (cohort 5). Further, the proportion of borrowers receiving a HECM whose home values were in excess of the maximum claim amount also increased over time, from 5% prior to the policy changes to 8% after the financial assessment. During the same period, the median principal limit factor declined from 0.66 to 0.58, reducing the proportion of home equity available to borrowers.

The structure of HECM loans also changed over time. We separate HECMs structured as open-end lines of credit from closed-end HECMs requiring a full draw at origination, or HECMs with annuity features that provide a monthly payment to borrowers. Recall that by policy, borrowers selecting a fixed-rate product are required to extract all available home equity at closing. Prior to the HUD limits on the full-draw fixed-rate HECM, the majority of borrowers in cohort 1 (72%) received a fixed-rate, full-draw, closed-end loan. However, after the moratorium, the majority of borrowers in cohort 2 (86%) structured their HECM as a line of credit.

Predictably, borrowers in the baseline cohorts (cohorts 1 and 2) drew markedly greater percentages of their initial principal limit at the time their loans closed — at the median, these borrowers drew about 100% of their principal limit, which, for all intents and purposes, precluded them from future draws on their loan. In contrast, after the draw restrictions went into effect, borrowers in cohorts 3 through 5 withdrew 60% of their principal limit at origination, primarily on a line of credit. Importantly, this indicates that most borrowers still drew the maximum available to them, but this amount was now bounded at 60% for most borrowers under draw restrictions.

Another notable change over time is in the percentage of borrowers paying off existing mortgage debt with their HECM. In cohort 1, 47.2% of Traditional HECM borrowers used their proceeds to discharge prior mortgages at baseline, declining to 43.6% post the financial assessment.¹⁶ Over time, Traditional HECM borrowers who used the HECM to pay off prior mortgage debt were also less leveraged, at the median, on their prior mortgages. Specifically,

¹⁶ This difference is statistically significant, with $p < 0.0001$.

conditional on using the HECM to pay off mortgage debt, the existing debt divided by the property's appraised value at the time of the HECM origination was a median 36% for borrowers in cohort 1 as compared with 25% in cohort 5.¹⁷

Table 3 describes borrower and neighborhood characteristics for Traditional HECMs. Over time, HECMs have become more concentrated among non-Hispanic White borrowers, who made up 81% of borrowers post the financial assessment (cohort 5). From cohort 1 to cohort 5, the share of HECMs going to Black, non-Hispanic borrowers fell from 12% to 8%.¹⁸

Later-cohort borrowers were also older when taking out their HECMs; in particular, fewer borrowers were in their early 60s (just 17% in cohort 5, compared with 24% in cohort 1). Note that HECM-to-HECM refinances are excluded from these calculations, so these statistics indicate that, in recent years, borrowers are older when taking out their first HECM, and this aging effect is not simply an artifact of the increasing prevalence of borrowers refinancing their HECMs into new reverse mortgages.

¹⁷ Using a Fisher's exact test, we find the difference in the medians between the cohorts is significant, with $p < 0.0001$.

¹⁸ This difference in the percentage Black between the two cohorts is statistically significant, with $p < 0.0001$. Some of the 4% of HECM loans that lacked race information may have been taken out by non-Hispanic Black borrowers, but this share of total borrowers is the same between the two cohorts. Although White, non-Hispanic borrowers took out a greater share of HECMs in cohort 5 than cohort 1 (75.9% versus 81.2%), their share of owner-occupied homes overall in the U.S. fell slightly during this time, from 78.0% to 77.0% (according to the 1-Year American Community Survey for 2012 versus 2015).

Table 3. Borrower and Neighborhood Characteristics

	1. Pre-FRM	2. Pre-IDL	3. Post-IDL	4. Pre-FA	5. Post-FA	All Cohorts
Total Loans (Traditional HECMs)	14,144	13,362	23,189	33,086	19,252	103,033
<i>Borrower Characteristics</i>						
<i>Age of youngest borrower</i>						
61-64	24%	23%	22%	22%	17%	22%
65-74	47%	48%	47%	48%	49%	48%
75-84	23%	23%	23%	23%	26%	24%
85+	6%	7%	7%	7%	8%	7%
Median age of youngest borrower	69	69	70	70	71	70
<i>Sex and Number of Borrowers</i>						
2 (borrowers)	40%	39%	38%	39%	42%	39%
1 borrower (male)	22%	21%	21%	22%	21%	22%
1 borrower (female)	36%	38%	39%	38%	36%	38%
1 borrower (unknown)	2%	2%	2%	1%	0%	1%
<i>Borrower race and ethnicity</i>						
Hispanic/Latinx (any race)	7%	8%	7%	6%	6%	7%
White	76%	75%	77%	78%	81%	78%
Black	12%	11%	11%	10%	8%	10%
Asian	1%	1%	1%	1%	1%	1%
American Indian	0%	0%	0%	0%	0%	0%
Unknown	4%	5%	4%	4%	4%	4%
<i>Borrower income (in May 2020 \$)</i>						
None or unknown	24%	24%	21%	28%	0%	20%
\$1-19,999	25%	25%	27%	23%	24%	25%
\$20,000-39,999	30%	30%	32%	29%	51%	34%
\$40,000-59,999	11%	11%	11%	11%	17%	12%
\$60,000-79,999	5%	5%	5%	5%	5%	5%
\$80,000+	5%	4%	4%	5%	3%	4%
<i>FICO Score</i>						
< 680					27%	
680-739					21%	
740+					47%	
No score available	100%	100%	100%	100%	5%	
<i>Census Tract Averages</i>						
Percent nonwhite or Hispanic/Latinx	35%	36%	35%	35%	34%	35%
Median household income (aged 65+)	\$47,013	\$46,390	\$46,627	\$47,050	\$47,587	\$46,964
Median home value (homeowners aged 65+)	\$264,484	\$261,224	\$262,556	\$263,564	\$269,608	\$264,289
<i>Zip Code Averages for Consumers Aged 62+</i>						
<i>Mean Equifax Risk Score</i>						
National mean	751	751	753	754	756	753
Percent with Equifax Risk Score < 680	19.1%	19.2%	18.6%	18.0%	16.9%	18.2%
National percent < 680	18.5%	18.3%	18.3%	17.5%	17.2%	
Percent located in California	13%	14%	16%	17%	18%	16%

Note: Table excludes HECM-to-HECM refinance loans and HECM-for-purchase loans. Information on borrower incomes is incomplete for cohorts before the financial assessment, and because of differences in underwriting practices, caution should be exercised when comparing income data over time.

Source: Authors' tabulations of data from the U.S. Department of Housing and Urban Development, the U.S. Census Bureau's 2016 5-Year American Community Survey, and the Federal Reserve Bank of New York/Equifax Consumer Credit Panel

Information on borrower income is incomplete for cohorts before the financial assessment, as this data was not collected in a standardized fashion prior to the financial assessment. For cohorts 1 to 4, income information is missing for about one out of four loans. For those with (nonzero) incomes reported in the HUD data, 33% of borrowers in the baseline cohorts had incomes below \$20,000 per year. Post the financial assessment, however, just 24% of borrowers reported having incomes this low. It is important to caution that the way in which income data is collected for the financial assessment may skew income toward the amount necessary to meet the residual income test. Prior to the financial assessment, there was no need to document a minimum level of income, and thus the income reported to HUD may exclude supplemental income sources that would be more likely to be reported to pass the residual income test. This may in part explain the higher levels of income reported post the financial assessment. The financial assessment itself may also discourage homeowners with lower incomes from applying for a HECM loan.

Because borrower credit scores were not collected by HUD prior to the adoption of the mandatory financial assessment, we proxy for this using neighborhood credit scores (Equifax Risk Scores), calculated from the Federal Reserve Bank of New York/Equifax Consumer Credit Panel for borrowers aged 62 or older in the same zip code as the HECM borrower at the time of origination.¹⁹ These data indicate that the typical borrower in cohort 5, after the financial assessment took effect, was located in a tract with fewer nonprime older consumers and higher average FICO scores.²⁰ But the effect has been gradual over time and is only slightly more pronounced than the national trend of improving credit scores among all U.S. consumers aged 62 and older.

Census tract-level information based on the population aged 65 and older show that borrowers post the financial assessment were located in neighborhoods with seniors who had slightly higher incomes and more valuable homes, perhaps in part because a greater share of loans were originated in California (18%). Although there is a notable decline in HECMs originated to Black borrowers (and a concomitant increase in the share of loans to non-Hispanic

¹⁹ The Federal Reserve Bank of New York/Equifax Consumer Credit Panel is a nationally representative 5% anonymized random sample of adult consumers with Social Security numbers and a credit history, provided at a quarterly frequency by the credit bureau Equifax. The data set includes information on open and closed accounts, as well as public records of collections that appear on consumers' credit reports.

²⁰ Both differences are statistically significant at $p < 0.05$.

White borrower), the *neighborhood* racial and ethnic makeup between cohorts is relatively similar.²¹

IV. Results: HECM Policy Changes and Loan Performance

4.1 Measuring Default and Unscheduled Draws for Property Taxes and Insurance

We use the dynamic HECM transaction data from HUD to identify funds advanced by the lender or drawn by the lender from the line of credit to pay for a borrower's property taxes or homeowner's insurance each month. We can also identify if a borrower had a set-aside for taxes and insurance, and if funds were advanced from the set-aside for these expenses. We define a loan as in default if a lender advanced a net cumulative total of \$1,000 or more to pay for property taxes or homeowner's insurance expenses, *and* the borrower is out of remaining funds on the line of credit.²² We define a loan as having an unscheduled tax and insurance draw if the lender advanced a net cumulative total of \$1,000 or more to pay for property taxes or homeowner's insurance out of a borrower's line of credit and the borrower did not have a set-aside (LESA) for property taxes and insurance. Borrowers who *request* a draw from their line of credit, which could be used to pay for property taxes or homeowner's insurance, are not included in our definition of unscheduled draw.

It is actually quite common to observe unscheduled draws for property tax or insurance payments from a borrower's line of credit. On one hand, this could simply indicate that borrowers treat their line of credit like an escrow account to pay for these expenses. (However, unlike a traditional escrow account used in a forward mortgage that is prepaid by the borrower, if either a borrower or a servicer draws from a HECM line of credit or LESA to pay taxes and insurance, the corresponding balance begins to accrue interest.) On the other hand, the

²¹ Unfortunately, standard census age groupings do not allow us to slice the data for the populated aged 62 and older, the HECM age cutoff.

²² Note that an alternative method of distinguishing loans in default is if a loan enters due and payable status because of taxes and insurance. However, in the early cohorts of our study period, loans were not called due and payable at the time of default for property taxes or homeowner's insurance if a borrower was working with the lender on a repayment plan. For a consistent, reliable measure of entry into default over our entire sample period, we use the net cumulative \$1,000 threshold instead. We use the net total amount of funds advanced in a given month to exclude from our definition of default charges that are immediately reversed by the lender. We use the cumulative amount of funds advanced to not include as default small dollar amounts (<\$1,000) advanced that are subsequently repaid by the borrower. At the same time, a borrower can enter default status after a series of smaller advances for tax and insurance default without repayment when the total is greater than or equal to \$1,000. To not overcount defaults, we exclude from consideration any \$1,000 or greater advances that occur two or more months after a due and payable event not tied to taxes or insurance. Servicers generally stop using a borrower's available line of credit to pay T&I if the account has become impaired for some other reason, such as the occupancy certificate not being returned.

unscheduled draw indicates that the borrower did not pay their expenses on her own (by definition, the draw was made by the lender), and she did not establish a set aside (LESA) for these expenses in advance. It is not clear what will happen when the borrower runs out of available funds on the line of credit. As we show in this paper, most borrowers exhaust over 90% of their lines of credit within the first 13 months of origination, even after HUD's policy changes to discourage borrowers from aggressively drawing down their equity. There is a risk that some borrowers become reliant on the lender paying their property taxes and insurance as unscheduled draws from their line of credit and will enter default when that line runs dry. To quantify this risk, we measure the percentage of borrowers with unscheduled tax and insurance draws.

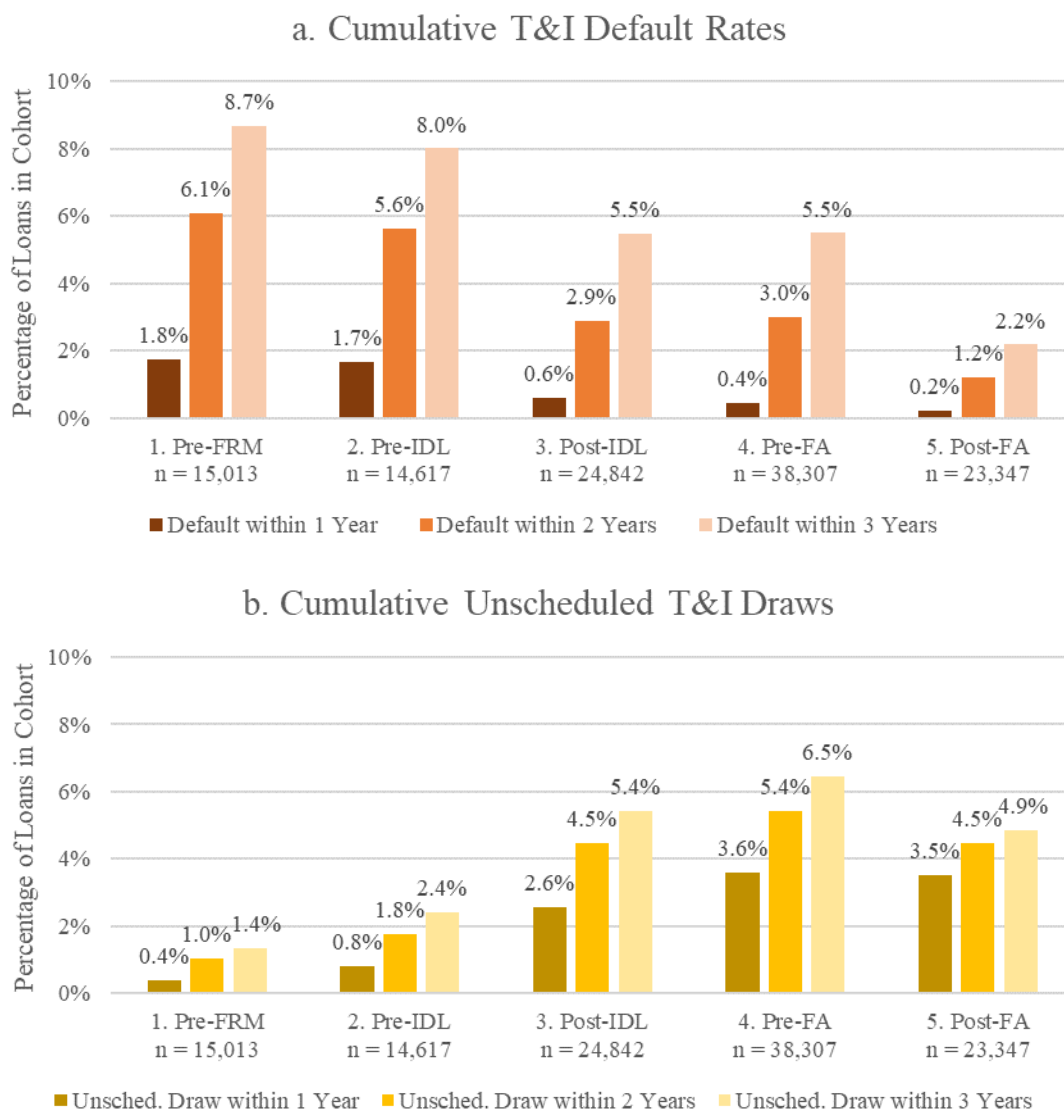
4.2 Tax and Insurance Defaults and Unscheduled Draws

We first plot the share of borrowers ever entering into default because of unpaid property taxes or homeowner's insurance (Figure 4a), followed by those experiencing unscheduled draws totaling \$1,000 or more to pay for property taxes or insurance (Figure 4b). The baseline cohorts (cohorts 1 and 2), experienced a three-year cumulative default rate of 8.7% and 8.0%, respectively, with nearly 2% of each cohort's borrowers defaulting in the first year alone (Figure 4a). In contrast, default rates are starkly lower for the restricted draw cohorts (cohorts 3 and 4), in which most borrowers could draw only 60% of their lines of credit in the initial year after origination: The three-year default rate was 5.5% for each cohort, and the one-year default rate fell about two-thirds, to just 0.4-0.6%. Cumulative default rates further declined post financial assessment (cohort 5). In that cohort, only 0.2% of borrowers defaulted in the first year, and just 2.2% defaulted in the initial three years.

Although these reductions in default rates are encouraging, there is reason for pause. The default reductions for the restricted draw cohorts (3 and 4) were completely offset by increases in the share of borrowers who were relying on their servicers to make their property tax and insurance payments through their lines of credit (Figure 4b). Eventually, some of these borrowers will exhaust their lines, making this way of life potentially unsustainable and opening them up to default risk. As for cohort 5 post the financial assessment, the results are slightly more encouraging. T&I draws are more common than in the baseline cohorts, but they actually fell relative to the restricted draw cohorts. The use of the LESAs by 14% of this cohort, including some of the most at-risk borrowers, is partly attributable. LESAs are created with the

express purpose of funding these periodic borrower expenses and cannot be used for other purposes. Thus, they are likely to protect borrowers who use them from default, unless lifetime T&I payments ultimately exceed actuarial estimates.²³

Figure 4. Cumulative Incidence of Tax and Insurance Default and Use of Line of Credit to Pay Taxes and Insurance in Initial 3 Years of Loan



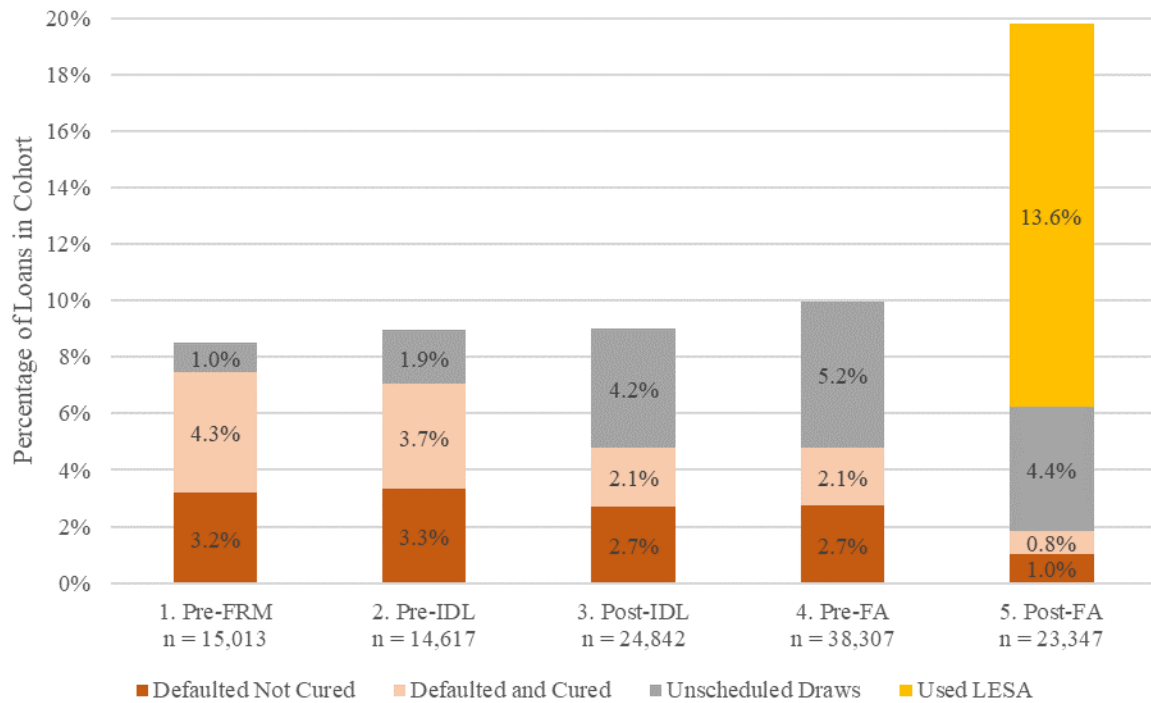
Note: *T&I Default* is defined as being \$1,000 or more past due on property taxes or homeowner’s insurance payments. *Unscheduled T&I Draw* is defined as the mortgage servicer making a draw of \$1,000 or more from the borrower’s lien of credit to pay property taxes or homeowner’s insurance.

Source: Authors’ tabulations of data from the U.S. Department of Housing and Urban Development

²³ Evidence in our data seems to suggest that only a few borrowers are rapidly depleting their LESAs. Of the nearly 2,200 cohort 5 HECMs that had LESAs and were still active in May 2019 (nearly three years postorigination), 91% had at least 50% of their LESA remaining. Only 2.6% (57 borrowers) had less than 25% remaining.

Figure 5 provides more detail regarding how borrowers paid their T&I within the first three years after origination. We separate default into two types: those who default but subsequently repay the delinquent T&I payments and cure the default, and those who default and do not cure within the three-year period. We code those who have unscheduled draws to pay T&I but who do not end up in default within the first three years as having an unscheduled draw. We also code those who have LESAs to pay for T&I expenses. The omitted group is borrowers who paid their T&I on their own — either by scheduling a draw from their line of credit or using funds available to them that were not associated with their HECM.

Figure 5. How Borrowers Paid Their Taxes and Insurance in Loan’s Initial Three Years



Note: Loans are classified in a waterfall. If a loan defaulted in the initial 36 months of the loan, it is classified in one of the default groups, regardless of whether the borrower previously used a LESA or had an unscheduled draw. Defaulted loans are classified as having cured if the cure occurred within the initial 36 months. If a loan went into default for taxes and insurance two or more years after being marked as due and payable by the lender for some other reason, it is classified in the residual (“other”) status (not displayed in figure).

Source: Authors’ tabulations of data from the U.S. Department of Housing and Urban Development

As shown in Figure 5, each subsequent cohort has a higher reliance on the line of credit for T&I payments, either as unscheduled draws or through the LESA. Post the financial assessment (cohort 5), nearly one out of five borrowers were reliant on their lines of credit in the initial three years to make these payments, but the majority of these used a LESA. From a default perspective, use of a LESA is preferable to unscheduled draws for T&I, as the LESA is established with a goal of setting aside sufficient equity to pay T&I payments for the expected life of the loan. It is encouraging that the combined rate of T&I default or unscheduled draws fell from 10% of all borrowers prior to financial assessment, to just over 6% post the financial assessment.

Figure 5 also points out that many borrowers who default do cure, repaying the servicer for the advanced tax and insurance payments. In fact, in the baseline cohorts (1 and 2), more than half of those who defaulted in the initial three years also cured their defaults by 36 months of origination. The cure rate among defaulters fell slightly over time as the overall default rate declined, with a cure rate of about 44% post the financial assessment (cohort 5). The high rate of cure is important for understanding the extent to which default signals serious trouble for homeowners.

4.3 Heterogeneity in Tax and Insurance Default and Unscheduled Draws

There are particular groups of HECM borrowers who may be at greater risk of default. In this section, we consider how the policy changes affected T&I payment outcomes for two groups of at-risk borrowers: (1) those who used the proceeds of the HECM to pay off a forward mortgage, and (2) those who refinanced their HECM into a new HECM to access additional home equity. Both groups of borrowers may be at higher risk of default because they have less remaining funds on their line of credit, as a large portion of their HECM funds may be used to pay off prior forward or HECM mortgage debt. The up-front draw restriction of 60% is relaxed for those using HECM proceeds to pay off prior mortgage debt; they are permitted to draw up to their full available credit up front if needed to pay off the prior debt.

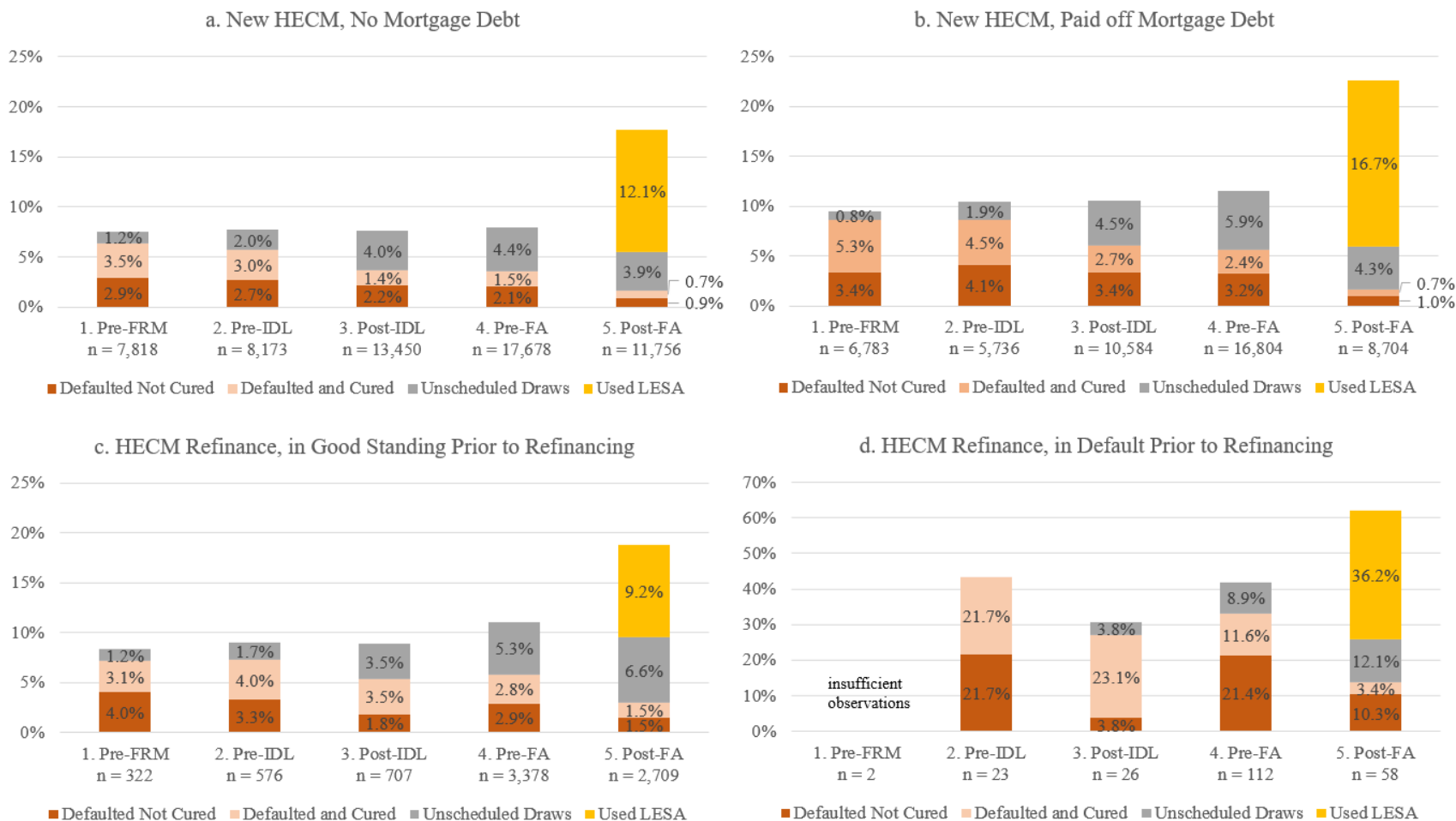
In addition, HECM borrowers with a prior forward mortgage may not be in the habit of paying their T&I payments on their own, as the majority of forward mortgages include an escrow as part of the monthly payment that is used to pay for these expenses. A recent study demonstrates that simple reminders about their responsibility to pay for T&I reduces the risk of default for this group of borrowers (Moulton et al., 2019). Thus, these borrowers may be more likely to experience unscheduled draws and default for T&I.

Figure 6 plots the rate of default and unscheduled draws for those without (panel a) and with (panel b) prior forward mortgage debt that they paid off with the proceeds of the HECM. Across all cohorts in our study period, borrowers who used their HECM proceeds to pay off existing forward mortgage debt had higher rates of default and unscheduled draws for T&I than borrowers who did not extinguish forward mortgage debt with their HECMs. Unlike the steady decline across cohorts for those without prior mortgage debt, the rate of uncured default for borrowers with prior mortgage debt remained relatively constant from the baseline cohorts up to the financial assessment cohort. This is in line with the draw restrictions (cohorts 3 and 4) not being a binding constraint for those with prior mortgage debt. Post the financial assessment (cohort 5), the rate of uncured default for this group fell to 1%. It is also interesting to note that a higher share of those with prior mortgage debt established a LESA at closing, relative to HECM borrowers without prior mortgage debt (16.7% compared with 12.1%). (This is consistent with HECM borrowers who had prior mortgage debt being more financially constrained.)

²⁴ Another common reason for borrowers to refinance is to add an additional coborrower or nonborrowing spouse living in the property to the mortgage. This provides formal protections for those occupants of the home, such as in case the primary HECM borrower dies.

Not all HECM borrowers in our sample are using the HECM program for the first time — 7% had prior HECMs that they refinanced into a new HECM. Borrowers can refinance for a number of reasons, such as to lower their interest rate or to draw more equity if their home has appreciated significantly since their first HECM was originated.²⁴ Lenders also use HECM-to-HECM refinances as a loss mitigation option for borrowers who are having trouble making their T&I payments. Panels c and d of Figure 6 break out the HECM-to-HECM refinance population by whether the borrowers had defaulted on the prior HECM within 12 months prior to refinancing. Not surprisingly, those loans in default prior to the refinance (panel d) perform much worse on the subsequent HECM loan than do borrowers who refinanced while having been in good standing (panel c). Even after the financial assessment (cohort 5), more than 10% of these refinances end up with an uncured default on T&I within three years after the refinance. Just over one-third of these borrowers have a required LESA — which is not surprising, given that all of these borrowers had a prior history of T&I default on their HECM loan. In fact, we might expect LESAs to be present for nearly all of these borrowers. These “troubled refinances” are relatively rare, however, as noted by the small sample sizes on the horizontal axis labels for panel d.

Figure 6. How Borrowers Paid Their Taxes and Insurance in Loan’s Initial Three Years, by Type of Loan



Note: Loans are classified in a waterfall. If a loan defaulted in the initial 36 months of the loan, it is classified in one of the default groups, regardless of whether the borrower previously used a LESA or drew from her line of credit. Defaulted loans are classified as having cured if the cure occurred within the initial 36 months. If a loan went into default for taxes and insurance two or more years after being marked as due and payable by the lender for some other reason, it is classified in the residual (“other”) status (not displayed in figure). Refinance HECMs are coded as “in default prior to refinancing” if the borrower was \$1,000 or more past in default on property taxes and insurance in the 12 months prior to the refinance.

Source: Authors’ tabulations of data from the U.S. Department of Housing and Urban Development

V. Results: Access to Home Equity and Draw Behaviors

5.1 Effects of HECM Policy Changes on Access to Home Equity

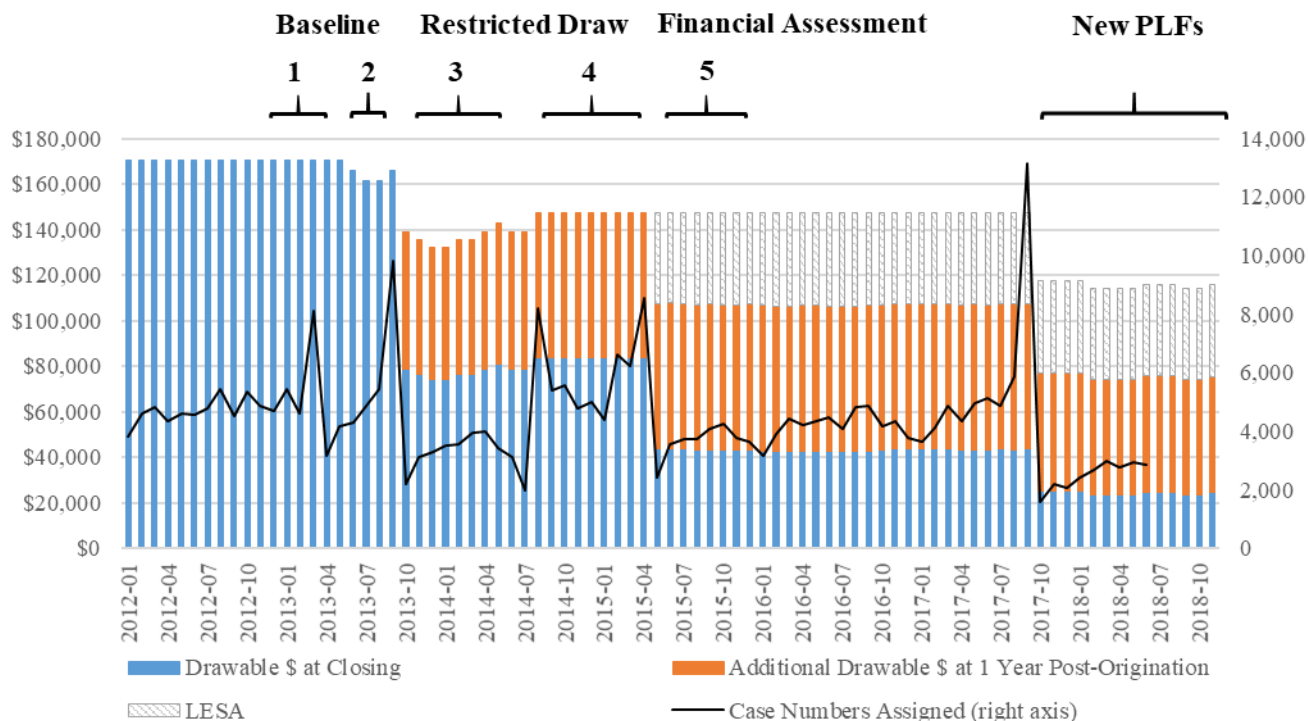
Thus far, our analysis indicates that the HECM policy changes are having promising effects on reductions in T&I defaults. However, these changes come at a cost to borrowers in the form of restricted access to home equity — both in terms of the intensive margin, or how much home equity borrowers can access through a HECM, and in terms of the extensive margin, or who gets a HECM in the first place. To understand the magnitude of the policy changes' impacts on how much home equity borrowers can access, we constructed a stylized example in Figure 7. We restrict our prior analysis to HECM borrowers with loans originated through December 2015 so that we can observe their loan performance for at least three years after origination. For this example, we relax this restriction and consider changes in the available equity for HECM borrowers with loans originated through November 2018, which includes an additional policy change that reduced the principal limit factor — and thus available equity — in October 2017.

In this example, we assume a 72-year-old, single borrower has a home appraised at \$270,000 and has no existing forward mortgage debt to pay off with the HECM. We examine how much home equity she could draw at closing, conditional on taking out her HECM in month t , ranging from January 2012 (prior to any policy changes) to November 2018. We assume she will pay typical closing costs of \$6,700 and an up-front mortgage insurance premium of 2%. We also assume she will receive the median interest rate for borrowers at time t .

Under these assumptions, a prototypical borrower in cohort 1 or 2, before the restricted draw policy took effect, could draw approximately \$171,000 at closing. At the start of cohort 3, after the restricted draw policy, the borrower could withdraw only about \$79,000, with another \$68,000 being made available one-year after origination. At the start of cohort 4, this prototypical borrower could draw slightly more, thanks to an increase in the principal limit factor that took effect in August 2014. But starting in cohort 5, her available cash at origination would be significantly depleted if she needed (or voluntarily opted for) a fully funded LESA (depicted in gray). After the October 2017 reduction in the principal limit factor, this same borrower (without a LESA) could borrow only about \$60,000 in the first year with an additional \$60,000 being made available one year after origination. For borrowers with a LESA post-October 2017, this typical borrower could draw only about \$20,000 at closing, with \$60,000 available one year

later and a \$40,000 LESA available for payment of future property taxes and homeowner's insurance.

Figure 7. Stylized Example of Available Home Equity and Estimated LESA Under Different Program Rules



Note: The example assumes appraised value = \$270,000, age = 72, closing costs = \$6,700, up-front mortgage and insurance premium = 2% of appraised value. Interest rate set to median effective rate for fixed-rate mortgages until March 2013 and then to median expected rate for adjustable-rate mortgages thereafter. PLF = principal limit factor.

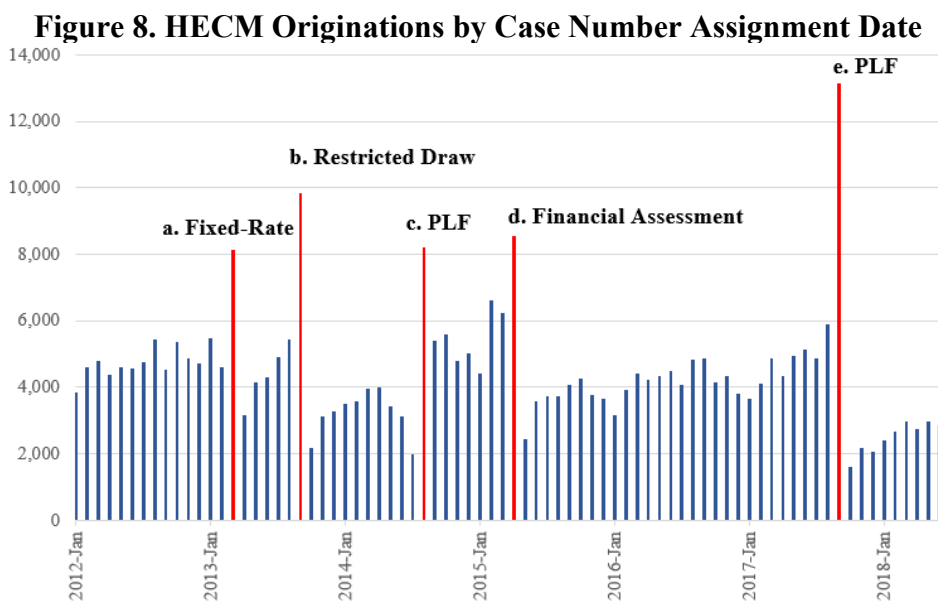
Source: Authors' tabulations of data from the U.S. Department of Housing and Urban Development

In addition to restricting the amount of drawable home equity, the policy changes may also affect who gets a HECM in the first place. The reduction in available home equity from a HECM could deter potential borrowers who desire access to more funds. The lower limits on drawable home equity can also make it infeasible for a homeowner with prior forward mortgage debt in excess of the loan limit to obtain a HECM. Post the financial assessment, a portion of borrowers who fail the credit or residual income test will have insufficient home equity available through a HECM to afford a LESA (plus pay off other mandatory obligations as applicable) and thus will be unable to take out a HECM. Further, the additional transaction costs associated with financial assessment may shift lender marketing strategies away from borrowers who are not likely to pass financial assessment or who would require more extensive documentation (e.g., of

compensating factors or extenuating circumstances). Thus, both selection and treatment effects associated with the policy changes can affect who gets a HECM.

While a detailed analysis of demand for HECMs is beyond the scope of this discussion paper, descriptive trends are illustrative. First, we consider the overall relationship between the policy changes and HECM loan volume over time. As we showed in Figure 1, HECM originations have fallen significantly since their precrisis peaks. However, some of this reduction was already occurring before HUD began its stream of policy changes we investigate in this paper. Thus, the reduction in volume should not be attributed solely to the policy changes.

Next, we consider changes in HECM volume immediately before and immediately after a policy change. Figure 8 graphs origination volume by case number assignment month from January 2012 to June 2018 to highlight changes in volume alongside the timing of the policies. Around the time each policy change takes effect, there are dramatic shifts in case number assignment volume (the red bars indicate spikes in loan volume in a single month). This suggests that the policy changes are salient to homeowners and lenders and that volume shifts in response to the changes.



Note: The policies displayed are: a. Mortgagee Letter 2013-01 (the end of most fixed-rate HECMs, taking effect for cases assigned on/after 4/1/2013); b. Mortgagee Letter 2013-27 (implementation of the restricted draw, also known as the *initial disbursement limit* and a simultaneous reduction in principal limit factors, taking effect on 9/30/2013); c. Mortgagee Letter 2014-12 (increase in principal limit factors and implementation of new factors for borrowers with nonborrowing spouses, taking effect on 8/4/2014); d. Mortgagee Letter 2015-06 (implementation of financial assessment, taking effect on 4/27/2015); and e. Mortgagee Letter 2017-12 (reduction in principal limit factors taking effect on 10/2/2017).

Source: Authors' tabulations of data from the U.S. Department of Housing and Urban Development

In four out of five of the policies displayed (a, b, d, and e), the change would result in “undesirable” outcomes from the perspective of the borrower: reduced availability of fixed-rate loans, restricted draws, a financial assessment requirement, or a reduced principal limit factor. In these cases, case number assignments surged in the month just before the policy took effect. In fact, in an analysis of daily data (not displayed), we see that the uptick in case number assignments generally took place in the three to five business days immediately before the change. The remaining policy change (c) is a principal limit factor *increase*, which took effect for case numbers assigned on or after August 4, 2014, through Mortgagee Letter 2014-12. For this change, borrowers had an incentive to wait until August 4 to receive their case number, so they could draw more of their equity. Indeed, we see a spike in cases assigned in the month just after the policy takes effect.

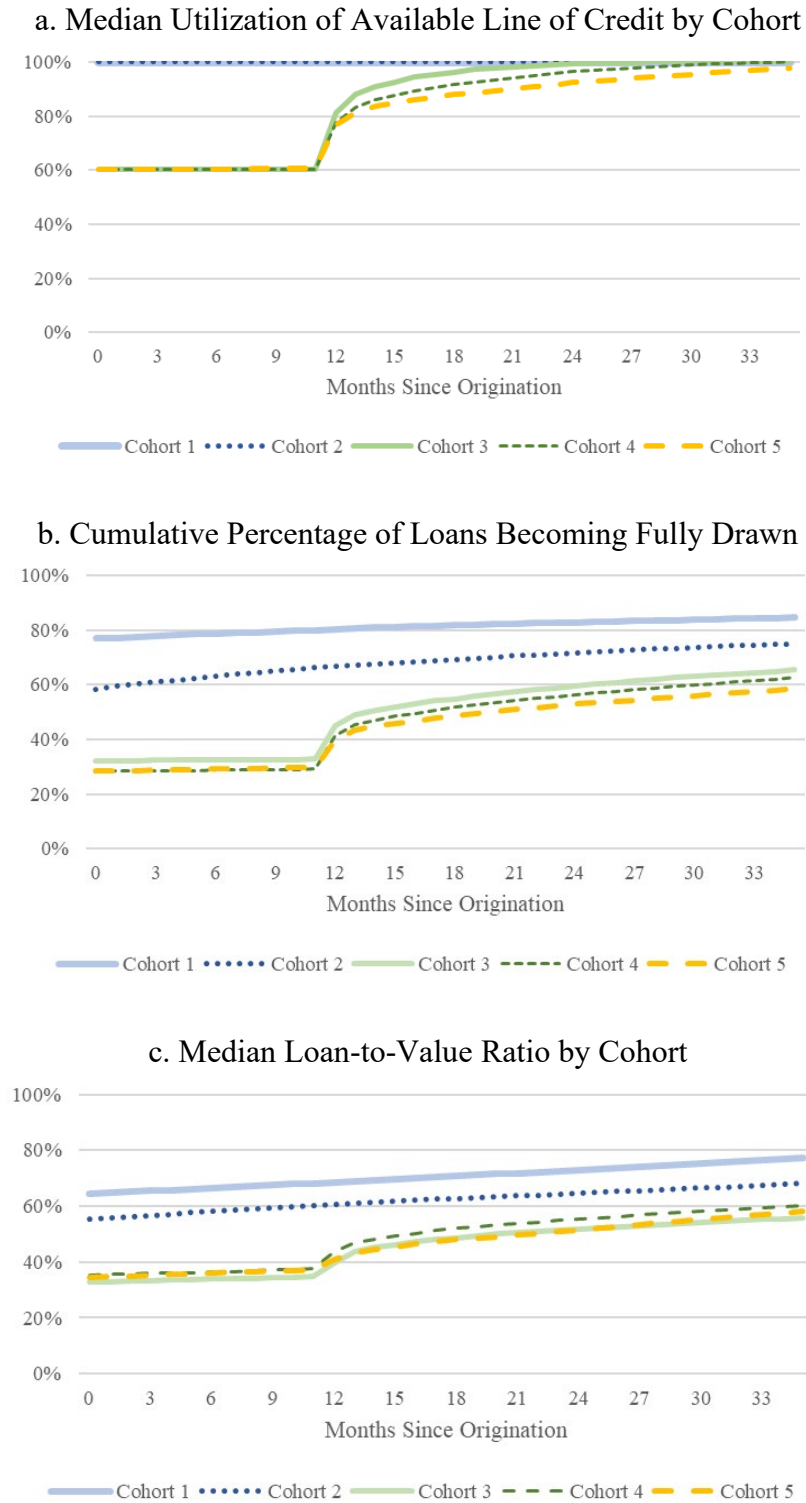
5.2 Effects of HECM Policy Changes on Draw Behavior

An assumption of the policy changes that restrict draws in the first year is that HECM borrowers will have a larger equity cushion to cover unscheduled draws for T&I in the future, thereby reducing default. However, this assumption depends on the draw behavior of borrowers after the first year, when the 60% draw limit is no longer in effect. One year after originating the loan, HECM borrowers are permitted to draw any remaining funds on their line of credit at any time. Figure 9 graphs the draw behavior of HECM borrowers by cohort over time for their first three years after origination.

We first graph the median utilization of the available line of credit (Figure 9, panel a). This is a measure of the total cumulative amount of funds drawn by a HECM borrower as of a given month divided by the maximum amount of total funds on the line of credit in that month.²⁵ There are stark differences between cohorts, with the median borrower in the baseline cohorts (1 and 2) drawing 100% of their available equity at closing. Post the restricted draw policy (cohorts 3 and after), the median borrower draws up to the limit of 60% in the first 12 months, and then draws all of the remaining available funds by 24 to 36 months post origination.

²⁵ The denominator (the maximum amount of funds on the line of credit) at any given point is the initial principal limit, adjusted monthly at a rate of $(\text{interest rate} + 0.5\%) / 12$.

Figure 9. Actual Utilization and LTVs of HECM Borrowers over Time



Source: Authors' tabulations of data from the U.S. Department of Housing and Urban Development

Panel b of Figure 9 visualizes this in a different way, considering the cumulative percentage of borrowers drawing 90% or more of their line (near full-draw status) in a given month. Along this measure, we see that about one-third of borrowers in the cohorts post the restricted draw policy (cohorts 3–5) reached 90% utilization immediately at origination, having been permitted to borrow more than the 60% of the limit because they discharged mortgage debt with their HECM proceeds. At the one-year anniversary of their HECM originations, we again see a significant, immediate increase in full draws, but some additional borrowers phase into full-draw status in later months. By 36 months, nearly 60% of cohort 3–5 borrowers have high utilization, making it questionable whether they will be able to rely on their lines much (if at all) longer for tax and insurance payments. Unlike panel a, here we see suggestive evidence of a persistent effect of the restricted draw policy. By the 36-month mark, borrowers in cohorts 3–5 were significantly less likely to have high utilization.

Panel c of Figure 9 shows the amount drawn in terms of LTV ratio, where monthly loan balances are divided by the property’s appraised value at origination (assuming no appreciation or depreciation from that time).²⁶ In some sense, this is the most meaningful metric for policymakers who are considering the actual soundness of the HECM program. Here we see that the policy changes have indeed resulted in lower median LTVs, although initial gains at origination are partly offset by the additional draws by borrowers in years 2 and 3 of the loan.

VI. Discussion

The federally insured reverse mortgage program provides older adults a vehicle to access the equity in their homes without required repayment until the loan terminates. Because no monthly payments are required, there is no risk of default because of a failure to make monthly loan payments. However, borrowers must pay their property taxes and keep their homeowner’s insurance payments current or they face the risk of default and foreclosure. This discussion paper explores the outcomes of a series of policy reforms enacted between 2013 and 2015 that were intended to reduce the risk of HECM T&I default for and the probability of large draws against

²⁶ On one hand, during our sample period, most areas of the U.S. were experiencing economic recovery and house price appreciation. On the other hand, we know from prior studies that HECM appraisals often suffer from significant, systematic upward bias (Park, 2017); older homeowners are less likely to maintain their homes, making them depreciate faster (Begley and Lambie-Hanson, 2015), and homes sold by older owners after death fetch lower prices (Campbell, Giglio, and Pathak, 2011).

the FHA mortgage insurance fund. Below, we highlight four key findings that emerged from our analysis and suggestions for future research.

Finding #1: Lower Rates of T&I Default but Higher Rates of Unscheduled T&I Draws

Our analysis of the HECM loan data finds a significant reduction in the proportion of HECM borrowers ever experiencing a T&I default of \$1,000 or more within the first three years after originating their loan. Specifically, prior to the policy changes, the three-year default rate was 8.7%, dropping to 5.5% after the restricted draw policy change, and to 2.2% after the financial assessment policy change. This is promising and is in line with industry reports of reduced rates of default. However, unique to our study, we also observe an increasing proportion of borrowers with unscheduled draws for T&I. In fact, the combined rate of default or unscheduled draws for T&I held steady at 8% to 10% of borrowers, even after the restricted draw limit went into effect, prior to the financial assessment. Essentially, the restricted draw limit substituted default for unscheduled draws. This is problematic because eventually the line of credit will run out, particularly given the high rate of cumulative draws on the line of credit by three years after origination. Borrowers with unscheduled draws are not in the habit of paying their T&I on their own and are at risk of default when the line of credit runs dry. These borrowers may benefit from targeted reminders when their line of credit is running low so that they can set aside funds to pay for T&I on their own. Optimistically, the financial assessment is associated with a reduction in the combined rate of default and unscheduled draws (at 6%), with 15% of borrowers holding a LESA to pay for future T&I.

Finding #2: HECM Borrowers Paying Off Mortgage Debt Are at Higher Risk of T&I Default

Our subsample analysis indicates that those who used a portion of the HECM proceeds to pay off a forward mortgage are at higher risk of subsequent default than those who did not have prior mortgage debt. Structurally, those paying off mortgage debt have less remaining equity for unscheduled draws, thus pushing them into default if they miss a T&I payment. Indeed, the restricted draw policy change did not lower the rate of uncured default for borrowers with a prior mortgage — as the restrictions were not binding for this group. Borrowers with prior mortgages may also not be in the habit of paying T&I on their own, as most forward mortgages include an escrow for these expenses. The financial assessment policy is associated with a significant

reduction in the rate of uncured default for those with a mortgage, with a default rate of just over 4% prior to the financial assessment dropping to just under 2% for this group after financial assessment went into effect. Notably, a larger share of those with a prior mortgage established a LESA at closing — 16.7%, compared with only 12.1% of those without a prior mortgage. This may indicate that those with prior mortgages are more likely to be liquidity constrained.

Unique to our study, we also observe that HECM-to-HECM refinanced loans are at higher risk of default than new HECM loans. This is driven in large part by borrowers who had a history of default for T&I prior to refinancing their HECMs. Refinancing a HECM can be part of a loss mitigation strategy to cure a prior T&I default. We observe that these borrowers are persistently at higher risk of default on their newly refinanced HECM loan. Post the financial assessment, a larger share of refinance borrowers with a history of prior default have a LESA than other HECM borrowers — yet two-thirds do not, which is concerning given that they demonstrated a prior history of not being able to pay the T&I while holding a HECM. Future policy reforms may consider requiring LESAs for this particularly at-risk group of HECM borrowers. More aggressive policy proposals have been suggested, including even abolishing the HECM-to-HECM refinance entirely (U.S. Department of Housing and Urban Development, 2019). However, to do so would limit borrowers' ability to take advantage of lower interest rates or house price appreciation.

Finding #3: Marked Increase in HECM Draws After the One-Year Time Limit

The restricted draw policy change limited the amount of home equity accessible to borrowers within the first year after origination to 60% of their available HECM line of credit. This policy change is indeed associated with a one-year reduction in median draw percentage and in the proportion of HECM borrowers who are fully drawn on their line of credit. However, our results indicate that a large share of HECM borrowers draw all of their remaining home equity as soon as the one-year limit expires. This is problematic as there is no longer an equity cushion to allow for unscheduled T&I draws; those unable to pay their T&I without remaining funds on the line of credit end up in default. Not all of the HECM borrowers cash out after their loan's one-year anniversary — the proportion of HECM borrowers drawing all funds within three years of origination is 20% lower after the restricted draw policy change took effect than prior to the change, suggesting that for some, the draw restriction is sticky.

Finding #4: Reduced Access to Home Equity Through a HECM After Policy Changes

There are tradeoffs to almost any policy change, and the HECM policy changes are no exception. For the HECM policy reforms, tradeoffs include who gets access to their home equity and how much they can access. The restricted draw reforms affected the timing of when borrowers can access their home equity, but they did not affect the total amount that could be borrowed. However, the draw limit changes were accompanied by changes to the principal limit factor, which directly affect how much of a homeowner's equity can be accessed through a HECM. The biggest reduction to the principal limit factor occurred outside of our main study period, in October 2017. This reduction is associated with a notable drop in the volume of HECM originations — a larger reduction in volume than is observed after the 2013–2015 policy reforms. Of course, other factors may contribute to this drop in volume. Nonetheless, it raises an important question about how much of a cut to the principal limit factor is necessary to shore up the program in light of the prior policy changes including financial assessment. An answer to this question is beyond the scope of our discussion paper, but it is certainly an important question to consider alongside the outcomes achieved through the prior series of policy reforms.

Future Research

This discussion paper is largely descriptive, documenting trends in HECM outcomes over time in conjunction with key policy reforms. Our results are unable to tease out the “treatment effects” of a given policy change, systematically accounting for changes in borrower selection into the program. Indeed, we expect that the differences in outcomes we observe are the net result of both selection and treatment effects. Future research can employ causal modeling techniques to better isolate the specific effects of a given policy change on loan outcomes. Nonetheless, from a policy perspective, the net change in rates of T&I default is informative.

The findings from our analysis raise additional questions that can be the subject of additional exploration. For example, we observe sharp discontinuities in the number of HECM loan applications right before and right after the effective date for a given HECM reform. This raises questions about strategic borrower and lender behavior. Which borrowers are more likely to strategically take out a HECM in anticipation of a policy change? On one hand, borrowers who respond strategically may be those more likely to be negatively affected by the policy

change and thus their strategic behavior may signal increased risk of future default. On the other hand, it likely takes some level of financial sophistication to recognize an impending change and its consequences on one's financial situation, resulting in those with strategic behavior being less risky. Prior research focusing on Philadelphia found evidence that HECM default rates are higher in lower-income neighborhoods, especially those with a greater percentage of homeowners of color (Begley, Lambie-Hanson, and Witowski, 2017). One important consideration for future research is how borrowers of different racial, ethnic, and income groups fared as a result of the policy changes.

From a policy perspective, it will also be interesting to analyze the use of HECMs during the COVID-19 pandemic. Other options for home equity borrowing largely dried up during the pandemic, which could increase the option value of a HECM for a homeowner who might otherwise have borrowed funds from another forward mortgage, such as a HELOC. Further, homeowners with a HECM during the COVID-19 pandemic may exhibit different draw behaviors on their line of credit than prior to the pandemic, particularly if they faced liquidity constraints because of a limited supply of other forms of borrowing or shocks to their income or cash flow because of the pandemic itself.

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