Regulating Secondary Loan Markets: Evidence from Small Business Lending *

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Abstract

Markets for loans with standardized terms may be more liquid because they are more easily securitized and sold on the secondary market but may also restrict access to credit for borrowers that fall outside those terms. We study how regulation that increases standardization in secondary markets impacts loan originations, characteristics, pooling, and performance. Utilizing novel data on government-guaranteed Small Business Administration (SBA) 7(a) loans and their secondary market, we study the 2017 tightening of the Minimum Maturity Ratio (MMR) which restricts differences in loan maturities within a pool. We document new stylized facts showing that securitized pools that are more exposed to MMR regulation are more standardized and loans in those pools tend to sell at lower premia in the secondary market. To assess the causal effect of the reform on originations, we compare the effect of MMR reform on lenders with more or less dependence on securitization prior to 2017. Results demonstrate that the reform decreases loan maturity by over a year. The reform also lowers the probability that a loan is securitized, increases interest rates, and decreases charge-off rates. The reform changed the composition of borrowers, away from physical-capital-intensive sectors and from majority Black counties. Our results suggest that standardization of secondary loan markets significantly impacts pool performance and changes the composition of lending in the primary market.

Keywords: Small Business, Securitization, Lending, SBA, Minimum Maturity Ratio, Maturity
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1 Introduction

Small businesses are widely considered the backbone of the US economy, comprising nearly 60% of net new jobs and 44% of GDP.[1] They rely heavily on loans to acquire assets like real estate and machinery, and for working capital to fund day-to-day operations, with total small business debt in the United States valued at over $1.4 trillion.[2] Underwriting small business loans is complex, since collateral can include company assets and the entrepreneur's personal property and default risk varies with both company and personal financials. To address concerns about fair lending law violations, Dodd-Frank Section 1071 required the Consumer Financial Protection Bureau to impose standardized reporting requirements on small business lenders. The CFPB's proposed rule sparked a deep debate, with lenders objecting that standardization could decrease access to credit for firms with special needs. On the other hand, standardization in other credit markets, such as mortgages, has made the market more liquid by enabling securitization.

Despite the size and importance of this market for the US economy, there remains relatively little work exploring how regulations that encourage increased standardization of loans impact the volume and distribution of credit in the economy. In this paper, we study secondary market regulation that required loan maturities to match within a pool of securitized Small Business Administration (SBA) guaranteed loans, referred to as the "minimum maturity ratio" or MMR reform. Like in other debt markets, the SBA securitizes pools of business loans and sells them onto the secondary debt markets to increase liquidity in small business lending by decreasing both investor risk and lenders' costs of origination.[3] Regulators can intervene in secondary loan markets, for example, by imposing criteria governing securitized pools' composition or payout structure. In the mortgage market, these regulatory interventions have been shown to have varying impact. For example, DeFusco & Paciorek (2017) demonstrates an impact of the GSE's choice of maximum loan amount on borrower welfare but other components of secondary market regulation, such as guarantee fees, appear to have little effect (Alexandrov et al. (2024)). If there is an effect of regulation, the distributional impact is also important. Huh & Kim (2023) shows that increasing standardization by restricting the more varied "specified-pools" in favor of the more standardized "to-be-announced" pools in the the MBS market can increase efficiency but is regressive, increasing cross-subsidies away from low-income borrowers.

We study the impact of regulating secondary loan markets in the context of SBA 7(a) loans. Questions of standardization are deeply relevant to secondary market pools of small

[1] See, e.g., https://advocacy.sba.gov/2019/01/30/small-businesses-generate-44-percent-of-u-s-economic-activity/

[2] Consumer Financial Protection Bureau, Key Dimensions of The Small Business Lending Landscape (May 10, 2017), https://www.consumerfinance.gov/data-research/research-reports/key-dimensions-small-business-lending-landscape/.

[3] https://www.morganstanley.com/im/en-us/individual-investor/insights/articles/look-to-securitized-markets-for-alternative-sources-of-yield.html

business loans because they have different sources of collateral and highly varied risk across industries (*U.S. Department of the Treasury Releases Policy Brief on Small Business Financing* (2025)).[4] An active secondary market exists for 7(a) loans, which are originated by private lenders but partially guaranteed by the SBA in an effort to limit risk to the investor.[5] Lenders typically retain an interest in the unguaranteed portion and sell the guaranteed portion to be pooled into a securitized vehicle. The structure therefore reflects other markets, where risk retention rules combat incentives for lenders to take significant risk. The SBA also promulgates a variety of rules about the formation of a pool, which are intended to create a diversified but profitable pool with minimal risk exposure. Among these rules is the MMR, which places a lower bound on the ratio between the shortest and longest maturity of loans in a pool.

We utilize a change in the MMR ratio announced in July of 2017 and applicable to all loans securitized as of October that year, intended to help the SBA structure their guarantee payouts more effectively. There are two types of SBA securities, Weighted Average Coupon (WAC) or Standard pools, and the change shifted the MMR differently on these pool types, increasing from 76% to 94% on WAC pools and from 80% to 94% on Standard pools. For example, pre-reform WAC pools that included a 10 year maturity loan could also include an 7.6 year loan, but post-reform could only include a 9.4 year loan as the shortest maturity. This effectively required all loans in a pool to share the same maturity structure in the post-period. MMR reform is a natural experiment that required pooled loans to be more similar to each other, tightening the criteria needed to be securitized. No similar reform impacted loans that were held entirely on lenders' balance sheets, allowing us to use unsecuritized loans as a control group.

We obtained SBA data on the price and age of loans sold into the secondary market through a Freedom of Information Act (FOIA) request and merged these data to the universe of 7(a) loans originated, both those securitized and unsecuritized. We further augmented our data by merging on loan performance data from the Fiscal Transfer Agent (FTA) Wiki data. We first document a new stylized fact: following the policy change, the volume and number of WAC loans fell sharply relative to Standard loans. Standard loans increased in volume and number, but did not compensate for the decrease in WAC loans, causing the pre-period upward trend in total SBA market securitized lending to plateau following the policy change.

Our research design first establishes the differential effect of the MMR reform on WAC pools relative to Standard pools. We estimate a difference-in-differences research design centered at the policy change and find that, as expected, WAC pools experience a disproportionate decrease in the standard deviation of loan maturities relative to Standard pools.

[4] Recent regulatory developments, such as the rule making pursuant to Section 1071 of Dodd Frank that requires standardized reporting of small business loans, may move small business lending towards a new equilibrium.

[5] Nearly 50% of the SBA 7(a) loan market is securitized.

The results show that the reform also decreased the variance of interest rates in WAC pools, increasing standardization overall. WAC pools shifted toward shorter maturity loans, while Standard pools included more longer-term loans, without fully compensating for the change in WAC pool maturities. The reform caused WAC pools to have higher certificate interest rates and spreads, suggesting that lenders passed increased cost of originating WAC loans on to the borrowers. We also find that the change decreased loans' sale prices, increased the time it took to sell WAC loans on the secondary market, and increased defaults on loans sold into WAC pools. These results are consistent with the MMR reform decreasing the value of WAC loans in the secondary market, suggesting WAC pools decreased in quality either from adverse selection or distortions to origination behavior.

We then study whether the policy change impacted primary market credit provision, to capture how the reform affected the loans sold into securitization and its extensive margin effect on loan supply to industry sectors and demographic groups. We estimate a difference-in-differences regression on 7(a) data using loans originated between 2014Q4 and 2019Q4, to study the effect of the policy change on loan maturities and characteristics of securitized loans, as the treated group, relative to unsecuritized loans, as the control group. We find that following the policy change, the maturity of securitized loans decreased significantly by 14.4 months relative to unsecuritized loans.

However, the reform could also impact selection into securitization, meaning that the impacts could be driven by differential loans selecting into securitization in the post period. To test this, we generate a predicted measure of securitization based on whether the lender was more reliant on securitization in the pre-period. To predict securitization, we regress an indicator for securitization on fixed effects for each lender, along with other controls, in the period prior to the reform. We then use the lender fixed effects to predict each lender's mean propensity to securitize during the entire sample period. This model relies on the fact that lenders, potentially with higher cost of capital, have a higher propensity to securitize for reasons outside each borrower's demand. Replacing the indicator for securitized with a predicted propensity to securitize based entirely on the lender's identity, we show that 14.4 month decrease in maturity following the MMR reform remains consistent – changing predicted securitization from 0% to 100% drives a significant decrease in maturity of 19.6 months.

We then use the MMR reform to study how loan and borrower characteristics shifted following the policy change. We document that the MMR reform decreased charge offs, or defaults, and increased interest rates. Moreover, the reform shifted the composition of borrower industry. By regressing an indicator for NAICS sector on the difference-in-differences model, we show that the reform shifted the industries which received 7(a) financing. Fewer firms in the Accommodation and Food Service sector and more firms in the Professional, Scientific, and Technical Services sector receiving financing. This shift represents a move

away from highly capital intensive industries toward businesses without significant physical capital needs. The results are consistent with the MMR reform, which standardized maturities on small business loans, increasing the difficulty of procuring a real estate loan relative to a working capital loan. The results remain consistent using both actual and predicted securitization, alleviating selection concerns.

Finally, we study the incidence of the MMR reform. Aggregating our data to the county-lender quarter level, we merge in Census variables including demographic composition of each county. We find that the MMR reform shifted securitized lending away from majority Black counties. Using our predicted securitization measure, we show that the shifts in loan characteristics and borrower composition were not driven by selection into securitization. Taken together, the results show that regulatory reform in secondary loan markets can have significant real impacts in the primary market.

Our results suggest that the increase in the MMR ratio makes Standard pools a better substitute for WAC pools, but reduces assemblers' incentives to search for non-standard loans that will perform well. This leads to reduced diversity both in industry and socio-economic regions receiving SBA loans.

Our analysis has several implications. First, it shows that regulation which gives incentives for loans to be standardized can significantly impact originations, suggesting that rules that standardize loan products, such as the CFPB's 1071 rule making, may shift lending behavior directly. Second, the results provide additional evidence that regulations that impact loan maturity can have significant impacts, since short maturity loans are less likely to be subject to adverse selection than long maturity loans. Third, it demonstrates that the structure of secondary markets can shift losses, investor returns, and market equilibria. After the MMR reform, the SBA guarantee was cheaper to provide due to lower charge off rates on total securitized loans, even though it was higher on WAC pools. Finally, our analysis shows that regulating secondary markets can shift credit differentially across sectors and demographic groups, with wider implications for local economies.

Literature Review

Our work builds on several lines of scholarship. Important work done around the financial crisis established the tradeoffs in incentives created by secondary loan markets. The development of securitization contributed to the expansion of the originate-to-distribute intermediation model, making lending less reliant on balance sheet financing DeMarzo (2005). Financial services have become unbundled by securitization, leading to a large literature on the costs and benefits of the originate-to-distribute model. See, for example, Keys et al. (2010).

Within the broader literature on secondary markets, our work relates to similar work on the structure of GSE securitization (DeFusco & Paciorek (2017), Alexandrov et al. (2024)). We also draw on literature about the SBA 7(a) loan program (see for example, Bachas et al. (2021), Cespedes et al. (2024), Hotchkiss et al. (2024), Pan et al. (2021), Ortiz-Molina & Penas (2008), Stillerman (2024)). Bickmore et al. (2024) studies the role that online lenders play in small business lending and uses the MMR change as a shifter to credit supply of online lenders, arguing that online lenders are more exposed to securitization and thus differentially affected by the change. We build on this work by carefully documenting the comprehensive impacts of the policy change on the SBA market, including loan maturity and loan characteristics such as loan default and interest rates. We then establish the implicit "industrial policy effects" of the change, which we show channeled lending away from more-capital intensive industries and toward less-capital intensive industries. Finally, we document aggregate effects that the policy change has on demographic groups that are more exposed to securitized small business lending.

2 Data and Institutional Details

2.1 Data

SBA 7(a) Data. Our data comes from the Freedom of Information Act (FOIA) data obtained from the SBA listing all 7(a) loans, limited to 2014Q4-2019Q4. For each loan, we observe information about borrower, such as zip and NAICS code, the identity of the lender, and loan characteristics including maturity in months (sometimes referred to below as loan term) and initial interest rate. We also observe charge off rates by 2024. Charge off is defined as a loss written off by the SBA, meaning that the lender has been made whole under the SBA guarantee and interest in the loan has passed to Treasury, where collections attempts are made to cover the SBA's losses. Most importantly, we observe an indicator for the loan being securitized, or sold into the secondary market. Table 1 reports summary statistics of loans in our sample.

[Table 1 about here.]

Information on county level demographics and income were obtained from the US Census Bureau. The 2023 Census data was matched to the SBA 7(a) data using a point-in-polygon method to assign each borrower address to a 5 digit county FIPS code. The 7(a) data was then averaged at the lender-county-quarter level and merged by county and quarter to the Census data.

SBA 1086 and 1454 Data. We also submitted a Freedom of Information Act (FOIA) request for the novel 1086 data used to document the initial transfer of the loan and collect information recording the sale of the guaranteed portion the loan and 1454 data used to collect essential details from pool assemblers on SBA-guaranteed loan pools. These data allow us to observe pricing details of the loans sold into the secondary market. We observe each loan's sale price, age at sale, SBA user fee, net spread, and certificate interest rate. We use these data to study how the change the MMR affects the sale of SBA loans into the secondary markets.

FTA Wiki Data. To study loan performance, we utilize the Fiscal Transfer Agent (FTA) Wiki data published by the SBA which allows us to study paid off loans. We pull data on loans paid off in October 2022 through January 2026. We merge the FTA Wiki data to our 1086 data using an exact match on the variables: Base (If Variable Rate), Date of Note, Maturity Date, and a fuzzy join that determines the closest pair on Face Amount.

2.2 Institutional Details

Our institutional setting is SBA 7(a) program includes both securitized and unsecuritized loans. Loans in the flagship 7(a) program are originated and funded by private lenders, but the loan is guaranteed up to a cap by the SBA. Therefore, the lender's loss is limited to the unguaranteed portion of the loan, which is commonly about 15% of the loan in many cases. Securitization of 7(a) loans occurs when pool assemblers, private third parties approved to create loan pools, purchase the guaranteed portion of the loan and combine it with their portfolio to create a pool. Pools must satisfy a number of criteria, including a minimum total volume, maximum concentration in loan size and parallel interest rate reset patterns. Among the criteria is the MMR, which is defined as the ratio between the shortest and longest maturity loan in a particular pool. Loan maturity is therefore the characteristic most directly impacted by the MMR reform.

The SBA announced on July 19, 2017 that, effective on October 1, 2017, all the guaranteed portions of loans in a pool will be required to have a minimum maturity ratio of at least 94% for both Standard Pools and WAC Pools:

> For pools formed from October 2005 through September 2017, the MMR was 80%. For WAC pools that began in January 2009 up until to September 2017, the MMR was 76%. For all pools formed in fiscal year 2018 the MMR was 94%.
> -SBA Secondary Market Program and Securitizations Guide pg. 20

The policy change was intended to lower the SBA's costs associated with their timely payment guarantee. The timely payment guarantee requires that the SBA covers timely

payments to investors even if a loan defaults. Increasing the MMR lowers the SBA's costs because it increases predictability of the amortization schedule of loans in a pool. When loans have varied maturities, the pool's amortization schedule is difficult to compute and required guarantee payouts in the face of loan default are difficult to predict. Unpredictability increases the SBA's cost of funding these payment guarantee payouts, for example by decreasing ability to match investment income with the guarantee payouts, or to fund them with a stable funding source. Increasing MMR makes the amortization schedule of loans more predictable and thus makes guarantee payments more predictable thereby, decreasing costs of financing payouts. Increasing the MMR also decreases the administrative costs of estimating the amortization schedule of loans in a pool.

Loans originated in the SBA's 7(a) program can be securitized into two types of pools, Standard pools or Weighted Average Coupon (WAC) pools. The policy change affected WAC and Standard pools differently: the MMR increased from 80% to 94% for Standard pools, but from 76% to 94% for WAC pools. Both for WAC and Standard pools, the underlying loans must be either all fixed rate or all variable rate loans, and if the pool has all variable rate loans, all loans must have the same base rate (i.e. the Wall Street Journal Prime Rate, the LIBOR Base Rate). All pools are closed-end securities. No Loans may be added to a pool once the pool has been issued and substitution of loans in pools already established is also prohibited, such that underlying loans that prepay or default cannot be replaced.

Standard Pools. Standard pools can have a minimum of 4 loans in a pool. The initial coupon interest rate on a pool certificate (pool rate) is equal to the lowest borrower's note rate (less all fees) on an underlying loan in the pool. If a loan has higher net rate than the pool rate, either the originator or the pool assembler is able to take a fee on the loan that adjusts the interest rate down to the initial net rate of the pool, resulting in very similar net rates across loans in the guaranteed portion of the pool. The largest underlying loan in the pool cannot constitute more than 25% of the total pool principal amount.

Weighted Average Coupon (WAC) Pools. WAC pools can have a minimum of 10 loans in a pool. The largest underlying loan in a pool cannot constitute more than 10% of the total pool principal amount. The coupon of the pool is calculated using the weighted average interest rate of the loans in a pool, weighted by principal balance. There is a 75 basis point maximum differential between the lowest net coupon rate and the highest net coupon rate for all underlying loans in a WAC pool. This differential gives pool assemblers the flexibility to pool loans with slight differences in the net interest rate yet prevents large swings in the pool coupon due to the prepayment or default of any one of the loans in the pool. The WAC on pool certificates will reset monthly based on the balance on the pool's underlying loans, which will be affected by principal prepayments and default of the

underlying loans.[6] Since prepaid or defaulted loans cannot be replaced, this helps ensure that if for example the largest loan in the pool prepays and the coupon is recalculated based on the remaining loans' interest rates, investors' coupon does not swing wildly.

3 Empirical Analysis of the Secondary Market

3.1 Stylized Facts

In order to understand how the policy change affects the sale of small business loans into the secondary market, we begin by utilizing our novel 1086 and 1454 data to study loans sold into Weighted Average Coupon (WAC) pools versus those sold into Standard pools.

Weighted Average Coupon and Standard pools are both collections of the guaranteed portion of SBA 7(a) loans, but they differ in coupon rate structure and composition. Standard pools have a pool coupon rate equal to the loan with the lowest rate in the pool. This convention often requires loans in a pool to have similar interest rates. Whereas WAC pools use a weighted average coupon based on the principal balance of the loans in the pool, thus allowing for greater variety in interest rates within the pool. However, if a loan in a WAC pool prepays or defaults, it can cause the pool's weighted average coupon rate to change overtime.[7] While in contrast, the similar terms on loans in Standard pools suggests that if a loan prepays or defaults, the coupon on the pool will follow its original schedule closely.[8] Thus WAC pools are likely to be more affected by increased standardization, as loans in these pools have larger potential to differ from each other.

As background, WAC pools are likely to be more varied. They have a larger minimum number of loans in a pool (10 instead of 4) and their net interest rates can differ by 75 basis points between the lowest and highest net rate in the pool. While the loans securitized in Standard pools have very similar net rates, since either the assembler or the originator is able to take a fee on loans to adjust the rate down to the net rate of the pool – which in practice is always taken.

Given both that the WAC pools are more specialized in structure and that the MMR tightening is more severe for WAC pools, the tightening differentially increases the cost of originating WAC pools relative to Standard pools. Additionally, the MMR change also in-

[6] See e.g., https://ctaggl.com/wp-content/uploads/2019/04/Secondary-Market-7a-Karen-Bean.pdf.

[7] SBA permits a 75 basis point maximum differential between the lowest net coupon rate and the highest net coupon rate for guaranteed portions in an individual WAC pool. This gives pool assemblers flexibility to handle loans with slight differences in the net interest rate yet prevents large swings in pool level interest payments due to the prepayment or default of one of the loans in the pool. See: https://www.sba.gov/sites/default/files/2020-06/Secondary%20Market%20Program%20Guide%20June%202020%20%28508%20Compliant%29.pdf

[8] See: https://catran.sba.gov/ftadistapps/ftawiki/pdf/p.cfm?a=Secondary%20Market%20for%207%28a%29%20Loans%20Handout%2Epdf

creases the standardization of WAC pools, making the Standard pools better substitutes for WAC pools. Consistently, in Figure 1 we find that, following the policy change, originations decline for loans pooled into WAC pools both in terms of number and total balance of loans originated. The decrease in WAC originations is largely offset by an increase in loans pooled into Standard pools, such that the total volume of originations remains relatively similar to immediately prior to the policy change. However, the strong upward trajectory of pre-period small business lending plateaus following the change, consistent with the policy change dampening total loan originations.

[Figure 1 about here.]

3.2 Empirical Approach and Results

To causally link the above results to the tightening of the MMR ratio, we employ a difference-in-differences research design to test differential effects of the MMR change for WAC versus Standard pools. The treatment group consists of WAC pools while the control group consists of Standard pools. This design measures the differential change in outcome variables for loans in WAC pools relative to loans in Standard pools, post- relative to pre-policy change. We estimate the specification:

$$Y_{p(i)} = \delta WAC_{p(i)} + \beta Post_t \times WAC_{p(i)} + \theta_t + \varepsilon_{p(i)}. \tag{1}$$

We first estimate the specification at the pool level (p) and then at the individual loan level (i). At the pool level, the $Y_{p(i)}$ variable of interest is standard deviation of maturity of loans in a pool. At the individual loan level, Y_i is $AgeAtSale_i$ or the number of days that it takes the loan to sell in the secondary market, $PricePaid_i$ or the price paid as a percent of par, $NetSpread_i$ or the net spread of the loan, $CertificateInterestRate_i$ or the certificate interest rate on the loan, $SBAUserFee_i$ or the SBA retained fee on a loan. $WAC_{p(i)}$ is an indicator equal to one if a pool is a WAC pool, or if a loan is in a WAC pool, and equal to zero otherwise. $Post_t$ is an indicator variable for whether a pool was formed, or a loan was originated in the period following the MMR change. θ_t denotes quarter fixed effects for the quarter of pool creation or loan origination. Pool creation date is constructed as the year–quarter corresponding to the latest note date among loans in the pool.[9] Standard errors

[9] We also estimate the dynamic version of Equation 1 here:

$$Y_{p(i)} = \delta WAC_{p(i)} + \sum_T \beta_T \, WAC_{p(i)} \times \mathbb{1}_{t=T} + \theta_t + \varepsilon_{p(i)}. \tag{2}$$

are heteroskedasticity-robust and are computed using the Eicker–Huber–White estimator.

To understand the pool level effect, we first study the standard deviation of loan maturities in both Standard and WAC pools, which should decline in the post-period since the MMR change was intended to standardize the maturities of loans in a pool. Figure 2 and Table 2 report, separately for WAC and Standard pools, the standard deviation of maturity within a pool pre- versus post-policy change. Figure 2(a) shows that although post-reform, the standard deviation of maturities within pool falls for both Standard and WAC pools, it falls disproportionately more for WAC pools. The sharp decline among WAC pools suggests that pre-reform, loans in WAC pools were more varied in term and thus following the change, needed to reform by more to meet the tighter 94% MMR. In panel (b) we causally estimate the effect by estimating the difference-in-differences research design in Equation 2. The figure confirms that the standard deviation of loan maturities within a pool falls disproportionately more for WAC pools, relative to Standard pools, following the policy change.

[Figure 2 about here.]

[Table 2 about here.]

In Figure 3, we show that the number of loans in WAC pools halves in the post period, shedding close to 12,000 loans. Standard loans increase in volume partially substituting the loss of WAC loans but are an incomplete substitute, only compensating for about half the number of loans lost. The majority of the WAC pool decline is concentrated among 300 month loan terms, while the Standard pool increase is concentrated among 120 month loans terms, suggesting that longer-term loans receive less total access to funding from the secondary market.

[Figure 3 about here.]

These results are consistent with the MMR tightening disproportionately increasing the cost to create WAC pools, which experienced an MMR increase from 76% to 94%. Additionally WAC pools require a minimum of 10 loans in a pool, while Standard pools require a minimum of 4. This makes it mechanically harder to closely match maturities on 10 loans, such that assemblers may have to shorten or lengthen maturities suboptimally to securitize a pool of loans in a timely manner. For example, originators (anticipating the effect of the policy change in the secondary market) may give a 10 year loan to a borrower who wanted an 11 year loan, simply to fulfill the 94% maturity ratio when many of the other loans in its pool have a 10 year maturity.

Table 3 and Figure 4 report the loan level results of Equation 1 and Equation 2, which analyzes the effect of the MMR change on loan characteristics. Following the policy change,

Figure 4(a) and (b) show that loans in WAC pools experience a significant 6.6 and 7.8 basis point (bp) increase in certificate interest rate and net spread respectively. These results are consistent with originators increasing interest rates in order to pass-through their increased costs of securitizing loans in WAC pools. Panels (c) and (d) show that loans in WAC pools experience a statistically significant 47 bp and 22 bp decrease in both price paid as a percent of par and SBA user fee, respectively. The SBA user fee falls because the price falls, particularly on WAC loans.[10] This indicates that even though the MMR reform was made to decrease costs to the SBA's, they in fact lose money via reduced user fees. Given that the certificate interest rates increase on the pools, the concurrent decrease in price paid as a percent of par is consistent with a decline in the quality of the loans, or the significant decline in the term shown in Figure 3. A reduction in quality could be due to having a more constrained set of maturities to offer borrowers, or due to reduced screening induced by increased standardization. Panel (e) indicates that following the policy change, loans in WAC pools experienced a significant 40 day increase in age at sale, relative to loans in Standard pools – consistent with WAC pools taking longer to sell due to a decline in quality of the pool. These results suggest that increased standardization binds more for WAC loans, relatively decreasing their value and increasing the amount of time that they take to sell.

[Figure 4 about here.]

[Table 3 about here.]

The higher pre-period variation in loan characteristics in WAC pools suggests that WAC loan originators have more market power than Standard pools, since even if borrowers found out who they were pooled with, they would have less ability to compare the prices they received across different terms. This mechanism is reminiscent of Becker et al. (2025), which shows that more varied "specified-pools" in the mortgage-backed security market generate rents from customization and exhibit more market power in their pass-through of secondary market conditions relative to more standardized "to-be-announced" pools. In the small business setting, increased market power may incentivize WAC originators to assert effort in screening novel loans in expectation of increased rents generated by passing-through secondary market costs or refusing to pass-through profits. Petersen & Rajan (1994, 1995) show that lenders have incentive to lend to young and small firms, that are harder to screen, if the lenders are able to capture future rents from firms that perform well. This theory predicts that increasing standardization – which makes a loan more transparent and decreases WAC lenders' market power over borrowers – will reduce rents which incentivize assemblers to exert effort screening loans.

[10] According to Form 1086, the SBA user fee is a fee that the SBA is entitled to, equal to 50% of the portion of the sale price in excess of 110 percent of the outstanding principal amount of the loan's guaranteed portion.

Additionally, pre-policy change, when the MMR was 76% for WAC pools, originators may have been more incentivized to allocate better loans to WAC pools and worse loans to Standard pools via a disciplining mechanism of the WAC coupon's recalculation. This is because loan performance (prepayment or default) more directly affects the coupon rate of WAC pools than Standard pools, as discussed in the Institutional Details in Section 2. To understand how loan performance affects the weighted average coupon on a deal imagine a 7.6 year loan pooled with a 10 year loan. Figure 6(d) shows that loans with 7.6 year (or 91 month) terms have much higher average interest rates than loans with 10 year (or 120 month) terms. This suggests that if 7.6 year loan defaulted and was removed from the pool, the weighted average coupon of the pool would decrease, lowering the price of the deal. This price effect could feed back on the originator's reputation more quickly for WAC pools than for Standard pools and thus affect the ease of securitizing future loans.

In this way, the resetting WAC coupons could create a disciplining effect, incentivizing originators to allocate better loans to WAC pools and worse loans to Standard pools, where loan performance could be more easily shrouded to the investor – since the net rate on all loans are the same and thus loan performance does not affect the pool's coupon.[11] The incentive to pool better loans in the WAC pools could additionally increase rents from customization that lenders are able to receive on harder-to-screen but ultimately better performing loans.

Following the tightening of the MMR, we show that pools with more homogeneous maturities are more likely to have more homogeneous interest rates. Figure 5 reports, separately for WAC and Standard pools, the standard deviation of net spread within a pool pre- versus post-policy change. Panel (a) shows that post-reform, the standard deviation of net rates within pool falls disproportionately more for WAC pools than for Standard pools. The relative decline among WAC pools suggests the standardization of maturities post-reform also increased standardization of net rates disproportionately for WAC pools. In panel (b) we causally estimate the effect by estimating the difference-in-differences research design in Equation 2 at the pool level. The figure confirms that the standard deviation of net rate within a pool falls disproportionately more for WAC pools, relative to Standard pools, following the policy change. This increase in homogeneity of interest rates suggests a reduced disciplining effect of recalculating a pool's weighted average coupon each month, since the exit of a loan from the pool will no longer create large swings in the pool's weighted average coupon rate. Extensive literature finds that increased standardization in the to-be-announced mortgage market increases adverse selection (see e.g., Fusari et al. (2022), Huh & Kim (2023), An et al. (2025), Becker et al. (2025)). The coincidence of increased standardization with a deterioration in both the price and age at sale of WAC pools (as shown

[11] Due to the practice of allowing either the assembler or originator to take a fee on loans pooled in a Standard pool to bring the net rate down to the lowest net rate in the pool and the coupon rate of the deal is set as the lowest net rate in the deal.

in Figure 4(c) and (e)), is consistent with a relative decline in the value of these pools, which could be due, in part, to increased adverse selection in WAC pools post-reform.

[Figure 5 about here.]

To understand whether WAC loan performance deteriorated disproportionately relative to Standard loan performance following the reform, we utilize the Fiscal Transfer Agent (FTA) Wiki data – published by the SBA which allows us to study paid off loans – merged to our 1086 data, which allows us to identify WAC versus Standard loans.

We estimate Equation 1 and Equation 2 both at the loan level and at the pool level. At the loan level, default rate is captured using an indicator equal to one if a loan defaults and is coded as zero if the loan is coded as prepaid (borrower repurchase) or loan matured. At the pool level, the default rate is calculated as the sum of face amount that is coded as "Lender Repurchase," scaled by the pool's total face amount, which is calculated by summing the face amount on all loans from the same pool as found in FTA Wiki.

Table 3 and Figure 4(f) report the results. The research design isolates the differential response of default for WAC pools relative to Standard pools post- relative to pre-policy change. We find that at the loan level WAC loans experience a disproportionate increase in the level of default following the policy change. These results are consistent both with WAC loans experiencing a relative increase in adverse selection due to an increase in the standardization of loans, decreasing the "customization rents" which may previously have incentivized lenders to originate difficult-to-screen but high performing loans. The results are also consistent with lenders originating suboptimal loan terms for borrowers in order to accommodate the tighter MMR ratio in the post-period.

4 Empirical Analysis of the Primary Market

We hypothesize that increased regulation on the more varied WAC pools makes WAC pools more similar to Standard pools. We draw an analogy to the U.S. securitized mortgage market which features both more standardized to-be-announced pools and more varied specified-pools. We hypothesize that restricting WAC pools will have a regressive effect on borrowers – decreasing the amount of funding provided to hard to screen borrowers – consistent with Huh & Kim (2023), which find that restricting the specified-pools in the MBS market is regressive. To study the causal effect of the policy change on the primary market, we estimate a difference-in-differences research design centered at the policy change to understand the reforms' impact on loan characteristics, industries, and demographic groups.

4.1 Effect of the Reform on Loan Maturity

We assess whether the MMR reform affects primary market originations of securitized versus unsecuritized loans, consistent with lenders being forward looking and internalizing changes in their ability to sell loans to pool assemblers in the secondary market. If lenders are not forward looking or do not coordinate lending behavior with secondary market activity, SBA rules on securitization, like MMR, may have no impact on the primary lending market.

If however, lenders are forward looking, such that they internalize the effect of the MMR change on their ability to sell a loan into the secondary market, there may be impacts on the primary market. However, the magnitude and direction of the effect are theoretically uncertain. A tighter MMR may cause lenders to decrease maturity, if it is easier to match maturities among shorter-term loans, or increase maturity if the opposite is true. The effect of MMR on primary-market maturities therefore reveals how maturity is valued in the secondary market: by revealed preference, a maturity shortening implies that lenders view longer-maturity loans as harder to sell in secondary markets. However, even if loans selected into securitization have different maturities following the policy change, there may be a countervailing effect on unsecuritized loans, such that the two effects offset eachother. In this way the magnitude of the effect on the primary market is also ambiguous.

To understand the direction and magnitude of the MMR change, we first document stylized facts about loan maturities. Figure 6(a) shows that maturities for securitized loans shifted downward, while maturities for unsecuritized loans shifted upward during 2013Q3 through 2020Q1, converging closer to securitized loans. This pattern is also observed in Figure 6(b), which also shows that securitized and unsecuritized maturities converged post-2017, especially toward 10-year, or 120-month, loan terms. Pre-2017, unsecuritized loans had larger mass at terms 100 months and below, this mass decreased post-reform and larger mass points appeared at longer terms such as 120 and 300 months. Pre-2017, securitized loans had bi-modal mass points at 120 months and 300 months. Post-reform, the mass at 300 months shrank while the mass at 120 months increased.

Anecdotally, many SBA loans fit into two categories, working capital and real estate loans. Real estate loans typically have longer maturities and likely comprise many of the 300 month maturities, while working capital loans typically have shorter maturities. Consistent with shorter maturities being used for unsecured working capital loans and longer maturities being used for secured real-estate loans, Figure 6 shows that maturity also co-varies with other loan characteristics: Figure 6(c) shows that short maturity loans have higher charge off rates and Figure 6(d) shows that they have higher interest rates. These stylized facts are consistent with shorter-term working capital loans having higher charge off rates and higher interest rates than longer-term secured loans.

[Figure 6 about here.]

To study the causal effect of the MMR policy change on the loan maturities of securitized relative to unsecuritized loans, we estimate the following difference-in-differences (DiD) regression on the 7(a) data using securitized loans as the treated and unsecuritized loans as the control group:

$$\begin{aligned} Term_i &= \kappa Securitized_i + \beta Post_t \times Securitized_i + \upsilon GrossApproval_i \\ &+ \omega InterestRate_i + \lambda JobsSupported_i + \theta_t + \gamma_z + \delta_j + \eta_{3DigNAICS} + \epsilon_i. \end{aligned} \quad (3)$$

Where $Term_i$ is the maturity of loan i. $Post_t$ is an indicator variable for whether a loan was originated in 2017Q3 or after (inclusive),[12] and $Securitized_i$ is an indicator variable for whether the loan was securitized. $GrossApproval_i$ is the logged loan amount, $InterestRate_i$ is the interest rate on a loan, $JobsSupported_i$ is the number of jobs created and retained by loan i. θ_t are fixed effects for the quarter of loan origination, γ_z are fixed effects for the borrower zip code, δ_j are fixed effects for the j^{th} lender on a loan, and $\eta_{3DigNAICS}$ are fixed effects for the three digit NAICS sub-sector of a loan. Standard errors are clustered at the borrower ZIP code level.

[Table 4 about here.]

[Figure 7 about here.]

The results are reported in Figure 7(a) and Table 4. Following the policy change, relative to unsecuritized loans, the maturity on securitized loans decreased significantly and sharply by 18 months in column 4, the most saturated specification corresponding to Equation 4. This specification controls for interest rate, loan amount, jobs supported, and includes fixed effects for 3 digit NAICS code, quarter, borrower zip code, and lender fixed effects. The fixed effects strip out industry, geographic, and time trends in borrower demand as well as lender specific characteristics. Our results also hold in the less saturated specifications reported. Figure 7(a) plots the coefficient of interest from Equation 4 and exhibits pre-period parallel trends, mitigating the concern that that pre-trends among securitized loans are driving the result. The plot shows that immediately following the policy change, securitized loans experience an instantaneous drop in maturity of over a year.

[12] We also estimate the dynamic version of Equation 3 here:

$$\begin{aligned} Term_i &= \kappa Securitized_i + \sum_T \beta_T Securitized_i \times \mathbb{1}_{t=T} + \upsilon GrossApproval_i + \omega InterestRate_i + \lambda JobsSupported_i \\ &+ \theta_t + \gamma_z + \delta_j + \eta_{3DigNAICS} + \epsilon_i. \end{aligned} \quad (4)$$

4.2 Effect of Predicted Reform Exposure on Loan Characteristics

4.2.1 Predicting Exposure to the Reform

The regression above reports the impact of the reform on loans that are selected to be securitized. However, the choice of a lender to securitize a loan is not random. To separately identify the effect of the MMR reform on loan originations, holding constant securitization behavior, we calculate a loan's predicted securitization based on pre-period lender fixed effects (δ_j). This predicts a loan's pre-period securitization propensity and we then regress outcomes of interest on this predicted measure. To do this we estimate the following regression using only pre-period loan originations:

$$Securitized_i = \delta_j + \epsilon_i. \tag{5}$$

Where $Securitized_i$ is an indicator for whether loan i was securitized or not and δ_j are fixed effects for the j^{th} lender on a loan. The regression is estimated using loans originated from 2013Q3 through 2017Q2. We use the lender fixed effects from this regression to predict a given loan's pre- and post-period securitization. By predicting securitization given lender fixed effects, δ_j, we capture predicted securitization driven entirely by supply side factors without selection on loan characteristics. The interpretation of our results is that once we predict securitization using lender fixed effects, we isolate the part of securitization that is influenced by the lender's need to securitize a loan due, for example, to cost of capital and need for the additional liquidity that the secondary market provides. We plot a histogram of our predicted securitization measure in Figure 8. Standard errors are clustered at the borrower ZIP code level.

[Figure 8 about here.]

As a robustness to Equation 6, we estimate the following regression, again only on the pre-period data:

$$\begin{aligned} Securitized_i &= \delta_j + \omega InterestRate_i + \upsilon GrossApproval_i + \lambda JobsSupported_i \\ &+ \theta_t + \eta_{3DigNAICS} + \gamma_z + \epsilon_i. \end{aligned} \tag{6}$$

Where $Securitized_i$ is an indicator variable for whether loan i was securitized or not, δ_j are fixed effects for the j^{th} lender on a loan, $InterestRate_i$ is the interest rate on a loan, $GrossApproval_i$ is the logged loan amount, $JobsSupported_i$ is the number of jobs created and retained by loan i, θ_t are fixed effects for the quarter of loan origination, $\eta_{3DigNAICS}$ are fixed effects for the 3-digit NAICS sub-sector that a loan is in, and γ_z are fixed effects for the borrower zip code. After stripping out all other variables, we remove factors that may be

driven by borrower demand. Standard errors are clustered at the borrower ZIP code level. Figure 9 plots the predictions generated by both Equations 5 and 6 and shows that they are highly correlated. Thus we use Equation 5 as our main specification.

[Figure 9 about here.]

To understand the MMR reform's implications for borrowers' access to credit supplied by the secondary markets, we test whether loans that are predicted to be securitized experience shifts in actual securitization probability after the MMR reform. Equation 7 estimates the difference-in-differences regression in Equation 3 but replaces securitization on the right hand side with predicted securitization. The dependent variable is actual securitization. By predicting securitization, the specification removes any potential confounding effect of observable characteristics that may be correlated with securitization. Specifically, we estimate the following regression. For robustness we estimate the following analyses using prediction methods from both Equations 5 and 6, but only report results using the prediction method in Equation 5 because the results match closely.

$$Y_i = \kappa \widehat{Securitized}_i + \beta Post_t \times \widehat{Securitized}_i + \theta_t + \gamma_z + \delta_j + \epsilon_i \tag{7}$$

Where Y_i is $Securitization_i$, the actual securitization status of loan i, and $Term_i$, the maturity of loan i. $\widehat{Securitized}_i$ is securitization probability predicted using the lender fixed effects generated in Equation 5. All other variables are defined as in Equation 3. Standard errors are clustered at the borrower ZIP code level.

We report the effect of predicted securitization on actual $Securitization_i$ in Table 5 and the dynamic effects[13] in Figure 10(a). The results show that a given loan is significantly 10% less likely to be securitized after the reform in our most staurated specification in column 2 with quarter, borrower zip code, and lender fixed effects. This impact is consistent with a higher cost of securitizing a loan driven by the MMR reform making it more challenging for a lender to create a compliant pool of securitized loans in the post period.

[Figure 10 about here.]

[Table 5 about here.]

[13] We estimate the dynamic version of Equation 7 here:

$$Y_i = \kappa \widehat{Securitized}_i + \sum_T \beta_T \widehat{Securitized}_i \times \mathbb{1}_{t=T} + \theta_t + \gamma_z + \delta_j + \epsilon_i \tag{8}$$

We report the effect of predicted securitization on $Term_i$ in Table 5 and the dynamic effects in Figure 10(b). Using predicted securitization in Equation 7 isolates the plausibly-exogenous effect of lenders changing the loan terms in response to the policy change and alleviates potential concerns that the policy change alters borrower demand for securitization in a way that changes loan terms demanded. The results show that a 100% increase in predicted securitization drives a 19.6 month decrease in maturity, consistent with the 18 month decrease in response to an actual change in securitization, documented in Figure 7 and Table 4. These results are consistent with significant impacts of the MMR reform on both the rate of securitization and on the maturities of loans originated.

4.2.2 Effect of the Reform on Loan Characteristics

We now seek to understand the effect of the MMR policy change on other loan characteristics. If loan characteristics like interest rate are sticky, they may be unaffected by the MMR reform. On the other hand, we document above that the MMR change shifts access to secondary markets which could change the cost of lending and thus alter interest rates. To study the impact of the reform on loan characteristics, we estimate the following regression on actual securization status:

$$Y_i = \kappa Securitized_i + \beta Post_t \times Securitized_i + \theta_t + \gamma_z + \delta_j + \epsilon_i. \quad (9)$$

Where Y_i represents $InterestRate_i$, the interest rate on loan i, and $ChargeOff_i$, the default status of loan i. All other variables are defined as in Equation 3.[14]

Table 6 and Figure 11(a) report the results for $InterestRate_i$. Column 3 reports the most saturated regression specification including quarter, borrower zip code, and lender fixed effects and shows that interest rates on securitized loans experience a significant 18.6 basis point increase following the reform. The results in our less saturated regressions reported show interest rates increase up to 26.3 bp. These results are consistent with the MMR change increasing costs to securitize loans and lenders passing those costs through to borrowers.

[Figure 11 about here.]

[Table 6 about here.]

[14] We estimate the dynamic version of Equation 9, where $\mathbb{1}_{t=T}$ is an indicator for the quarter, here:

$$Y_i = \kappa Securitized_i + \sum_T \beta_T Securitized_i \times \mathbb{1}_{t=T} + \theta_t + \gamma_z + \delta_j + \epsilon_i. \quad (10)$$

Table 6 and Figure 11(b) report the results for $ChargeOff_i$. Following the policy change, our most saturated specification in column 3 shows that securitized loans experience a significant 1.0 pp decrease in loan defaults relative to unsecuritized loans, despite there traditionally being a correlation between short maturity loans (which increase following the policy change) and high charge off. The decrease in default as maturity decreases is thus consistent with theories that short debt maturity is associated with lower levels of asymmetric information, allowing lenders to screen more effectively on the loans that are originated – consistent with lenders shifting toward loans that are easier to screen.

The results in the previous sections suggest that tightening the MMR increased the standardization of both Standard and WAC pools. The evidence is consistent with increased standardization, especially on WAC pools, increasing adverse selection from pooling by lowering "customization rents" – which pre-reform incentivized originations of harder-to-screen but high performing loans. While this leads to increased defaults on WAC pools as shown in Figure 3, our result suggest that securitization as a whole (across both Standard and WAC pools) move toward easier-to-screen, shorter maturity, larger loan balance loans. The results in Figure 11(b) show that the policy change decreases charge offs on securitized loans as a whole. However, we test whether this seems to be regressive (consistent with Huh & Kim (2023)) by increasing lending to larger (easier-to-screen) loans at the expense of smaller loans.

In order to test that our results are not driven by different borrowers selecting into securitization following the policy change, we estimate the following regression which replaces actual securitization in Equation 9 with predicted securitization:

$$Y_i = \kappa \widehat{Securitized}_i + \beta Post_t \times \widehat{Securitized}_i + \theta_t + \gamma_z + \delta_j + \epsilon_i. \quad (11)$$

Where Y_i represents $InterestRate_i$, the interest rate on loan i, and $ChargeOff_i$, the default status of loan i. All other variables are defined as in Equation 3. Standard errors are clustered at the borrower ZIP code level.

Table 7 reports the results and shows that the effects documented in Table 6 remain largely unchanged when actual securitization is replaced with predicted securitization. Table 7 column 1 reports the result for interest rate controlling for quarter, borrower zip code, and lender fixed effects and shows that interest rates on loans with higher predicted securitization experience a significant 9.3 basis point increase following the reform. These results are consistent with the effects documented in Table 6, suggesting the MMR change increases costs to securitize loans and lenders pass those costs through to borrowers. Table 7 column 2 reports the results for charge off. Following the policy change, securitized loans experience a significant 2.0 pp decrease in charge offs relative to unsecuritized loans. These results are consistent with the effects documented in Table 6.

[Table 7 about here.]

4.3 Industrial Effects

We study whether the policy change differentially affects specific industries by altering access to the SBA lending market for borrowers from different industries. Certain industries require longer maturity or capital intensive loans. Thus, if tightening the MMR ratio increases lenders' cost of lending for longer maturity loans such that the securitization market moves away from that maturity (suggested by Figure 6(b)), this may more harshly impact industries that rely on longer maturity loans and benefit industries that rely on shorter maturity loans.

To test the effect of the MMR policy on industries, we study indicators for the following two digit NAICS sectors: Accommodation and Food Services, Administrative Support Waste Management and Remediation Services, Agriculture Forestry Fishing and Hunting, Arts Entertainment and Recreation, and Professional Scientific and Technical Services. We estimate the static regression in Equation 9 and it's dynamic equivalent Equation 10, as well as the equivalent regressions using predicted securitization in Equation 11, with indicators for these two digit NAICS codes as the dependent variable.

The dynamic results from Equation 10 are reported in Figure 12 and in the static results from Equation 9 are reported in Table 8. The Accommodation and Food Services sector and the Agriculture Forestry Fishing and Hunting sectors both experience an overall decrease in loan originations in the post-period. Following the policy change, our most saturated specification in column 3 reports 1.6 pp and 0.2 pp fewer loans are made to these sectors respectively. Conversely, the Professional, Scientific, and Technical Services sector, the Administrative Support Waste Management and Remediation sector, and the Arts, Entertainment, and Recreation sector all experience an overall increase in loan originations in the post period. Specifically, 1.1 pp, 0.8 pp, and 0.86 pp more loans are made to these sectors respectively. These results are consistent with real estate heavy industries such as hospitality and agriculture focused sectors receiving relatively less credit from the secondary market, while industries that may rely less on longer-term real estate loans receiving relatively more credit.

[Figure 12 about here.]

[Table 8 about here.]

To alleviate the concern that the results are driven by shifts in the composition or borrowers who select into being securitized in the post-period, we estimate the specification in Equation 11. This regression replaces the indicator for securitization with the predicted probability of securitization, predicted by lender fixed effects in Equation 5.

Table 9 reports the results. The results utilizing our measure of predicted securitization remain consistent with the results reported in Table 8. The second column for each sector reports the most saturated specificaiton and we find that moving from 0% to 100% predicted securitization significantly decreases post-period lending to the Accommodation and Food Services sector and the Agriculture Forestry Fishing and Hunting sector by 1.4 and 0.3 pp, respectively. Conversely, the same change in predicted securitization significantly increases lending to the Professional Scientific and Technical sector, the Administrative Support Waste Management and Remediation sector, and the Arts Entertainment and Recreation sector by 0.8, 1.2, and 1.2 pp, respectively. The shift that we document is consistent with loans being channeled away from highly capital intensive industries, like accommodation and agriculture, into industries with less reliance on real estate and other physical capital.

[Table 9 about here.]

4.4 Aggregate Effects

To study the aggregate effect of the policy change, we aggregate the data to the lender-county-quarter level and study whether the policy change has distributional effects on the borrowers who receive loans. If unsecuritized loans compensate for changes among securitized loans, simply aggregating to the county-quarter level alone could mask the effect of treatment in the post period – for example lenders who often securitize loans reduce lending, but lenders who rarely securitize expand lending such that total originations do not change. Thus, we aggregate the data to the lender-county-quarter level and utilize our predicted securitization measure to create a treatment intensity research design that studies more- versus less-treated lenders' originations in a given county and quarter, post- relative to pre-policy change.

We collapse our data to the lender-county-quarter level and utilize the following difference-in-differences setting, which allows us to compare a lender's originations in a given county in the post-period relative to the same lender's lending in that county in the pre-period. The design studies whether following the policy change, lenders with higher predicted securitization disproportionately change their lending, relative to their pre-period lending in a given county. We estimate the following regression:

$$\begin{aligned} Y_{j,c,t} &= \kappa \widehat{Securitized}_j + \beta Post_t \times \widehat{Securitized}_j + \upsilon GrossApprovalAvg_{c,t} \\ &+ \omega InterestRateAvg_{c,t} + \lambda JobsSupportedAvg_{c,t} + \theta_t + \delta_j + \epsilon_{j,c,t}. \end{aligned} \tag{12}$$

Where $Y_{j,c,t}$ is $Black_{j,c,t}$, an indicator equal to one for a lender-county-quarter pair if a lender originates one or more loan in a county that is majority Black, in a quarter. Where majority Black is defined as having a 30% or higher share of Black inhabitants, less than 70% share of white inhabitants, and the share of Black inhabitants is greater than the share of

Latino inhabitants in a given quarter.[15] $\widehat{Securitized}_j$ is securitization probability predicted using the lender fixed effects generated in Equation 5. It is assigned to a county if the lender operates in that county. $GrossApprovalAvg_{c,t}$ is the logged average loan amount across loans in a county, $InterestRateAvg_{c,t}$ is the average interest rate weighted by total loan amount across loans in a county, $JobsSupported_{c,t}$ is the average number of jobs created and retained, weighted by total loan amounts across loans in a county. All other variables are defined as they are in Equation 3.[16]

We report our results in Figure 13 and Table 10. Aggregating to the county-lender-quarter level reveals that counties that are more heavily populated with Black inhabitants receive a significant and disproportionate decrease in SBA lending following the MMR policy change. Counties that are more heavily populated with white inhabitants receive no significant change in SBA lending following the MMR rule change. Taken together, the results in this paper suggest that by increasing standardization in the secondary market, the reform increases interest rates and decreases lending to longer-maturity loans, which has a disproportionately negative net effect on lending in majority Black counties, relative to majority white counties. Thus, our results show that secondary market reforms can cause significant distributional consequences for the primary market.

[Figure 13 about here.]

[Table 10 about here.]

4.5 Discussion

The results of our analysis shed light on the mechanisms by which secondary market regulation impact primary markets. The evidence is consistent with lenders being forward looking and strategic in originations, since maturities, as well as loan and borrower characteristics, shifted with the MMR reform. The direction of the effect, namely the decrease in maturity, suggests that short maturity loans are easier to pool than long maturity loans. They may be more profitable, in part due to the lower levels of asymmetric information

[15] The data on the racial makeup of a county is from the 2023 Census data. We merge the racial makeup variables to the SBA 7(a) loan origination data by 5 digit FIPS code.

[16] We estimate the dynamic version of Equation 12 here:

$$\begin{aligned} Y_{j,c,t} &= \kappa \widehat{Securitized}_j + \sum_T \beta_T \widehat{Securitized}_j \times \mathbb{1}_{t=T} + \upsilon GrossApprovalAvg_{c,t} \\ &+ \omega InterestRateAvg_{c,t} + \lambda JobsSupportedAvg_{c,t} + \theta_t + \delta_j + \epsilon_{j,c,t} \end{aligned} \tag{13}$$

previously documented in short maturity lending. Changes in loan characteristics demonstrate that lenders reprice in response to MMR reform, and either implicitly or explicitly target different borrower populations as a result. The evidence suggests that lender welfare increases, since interest rates increase while defaults decrease. Borrower welfare is less clear, since prices increase and some industries and demographic groups have decreased access to small business loans.

We have demonstrated how secondary market regulations impact lending in the government-guaranteed SBA 7(a) lending markets. These impacts are likely to be even larger if they are implemented in non-guaranteed markets, such as asset-backed securities pooling auto loans, student loans, and other assets, or if they are implemented in other guaranteed markets, for example regulating the market for specified pools (spec-pools) of GSE mortgages so that they more closely resemble TBA pools.

The example of the MMR regulation provides a case study where standardizing loan products within a pool can can stabilize coupon payments to investors and increase originations among easier-to-screen borrowers. However, it comes at the cost of decreased incentive to extend credit to difficult-to-screen, but profitable borrowers, or at the cost of restricted ability for lenders to engage in profitable activity – such as small business lending with maturities that are hard to pool under strict MMR rules. If regulation such as the CFPB's 1071 rule are implemented, further standardization of the loan market may occur exacerbating these effects.

5 Conclusion

We study the effect of secondary market regulation that standardizes securitized pools of small business loans. We find that WAC pools are differentially affected by the policy change causing a disproportionate decrease in the creation of WAC pools relative to Standard pools. Standard pools attempt, but fail to fully compensate for WAC pools, leading to an overall decline in secondary market volume, relative to its pre-period increasing trend. The loans that are sold into WAC pools sell at lower prices, take longer to sell, and have higher default rates consistent with decreased value of loans in WAC pools. We find that WAC loans have higher interest rates consistent with lenders passing increased cost of securitization through to borrowers. The results demonstrate the requiring loans sold into the same pool to have similar maturities decreases the loan maturity of new originations, driven by a shift in lender behavior rather than a shift in borrowers selecting into securitization. As a result, fewer loans are securitized, there are fewer total charge offs, and higher interest rates on securitized loans after the reform. Ultimately, the reform shifts small business lending away from real estate-reliant sectors such as hospitality and towards low-capital-needs sectors like professional, scientific, and technical services. Finally, the reform shifts the allocation of

loans away from Black counties. Secondary market regulation has significant real impacts, both on loan characteristics and borrower composition.

References

Alexandrov, A., Conkling, T. S. & Koulayev, S. (2024), 'Changing the Scope of GSE Loan Guarantees: Estimating Effects on Mortgage Pricing and Availability', *The Journal of Real Estate Finance and Economics* **69**(3), 409–451.
URL: *https://doi.org/10.1007/s11146-022-09910-3*

An, Y., Li, W. & Song, Z. (2025), 'Tba trading and security issuance in the agency mbs market', *Real Estate Economics* **53**(3), 607–642.

Bachas, N., Kim, O. S. & Yannelis, C. (2021), 'Loan guarantees and credit supply', *Journal of Financial Economics* **139**(3), 872–894.

Becker, J., Clark, R., Hendricks, K. & Houde, J.-F. (2025), 'Differential returns to securitization: Evidence and impact'.

Berger, A. N., Espinosa-Vega, M. A., Frame, W. S. & Miller, N. H. (2005), 'Debt maturity, risk, and asymmetric information', *The Journal of Finance* **60**(6), 2895–2923.

Bickmore, E., MacKinlay, A. & Tellez, Y. (2024), 'Old program, new banks: Online banks in small business lending', *New Banks: Online Banks in Small Business Lending (March 31, 2024)* .

Brown, J. D. & Earle, J. S. (2017), 'Finance and growth at the firm level: Evidence from sba loans', *The Journal of Finance* **72**(3), 1039–1080.

Cespedes, J., Jiang, E. X., Parra, C. & Zhang, J. (2024), 'Branching out inequality: The impact of credit equality policies', *Available at SSRN* .

Custódio, C., Ferreira, M. A. & Laureano, L. (2013), 'Why are us firms using more short-term debt?', *Journal of financial economics* **108**(1), 182–212.

Defusco, A. A., Johnson, S. & Mondragon, J. (2020), 'Regulating Household Leverage', *The Review of Economic Studies* **87**(2), 914–958.
URL: *https://doi.org/10.1093/restud/rdz040*

DeFusco, A. A. & Paciorek, A. (2017), 'The Interest Rate Elasticity of Mortgage Demand: Evidence from Bunching at the Conforming Loan Limit', *American Economic Journal: Economic Policy* **9**(1), 210–240.
URL: *https://www.aeaweb.org/articles?id=10.1257/pol.20140108*

DeMarzo, P. M. (2005), 'The pooling and tranching of securities: A model of informed intermediation', *The Review of Financial Studies* **18**(1), 1–35.

Fusari, N., Li, W., Liu, H. & Song, Z. (2022), 'Asset pricing with cohort-based trading in mbs markets', *The Journal of Finance* **77**(6), 3249–3287.

Hotchkiss, E., Iverson, B. & Zheng, X. (2024), 'Can small businesses survive chapter 11?', *Available at SSRN* .

Huh, Y. & Kim, Y. S. (2023), 'Cheapest-to-deliver pricing, optimal mbs securitization, and welfare implications', *Journal of Financial Economics* **150**(1), 68–93.

Keys, B. J., Mukherjee, T., Seru, A. & Vig, V. (2010), 'Did securitization lead to lax screening? evidence from subprime loans', *The Quarterly journal of economics* **125**(1), 307–362.

Ortiz-Molina, H. & Penas, M. F. (2008), 'Lending to small businesses: The role of loan maturity in addressing information problems', *Small Business Economics* **30**, 361–383.

Pan, G., Pan, Z. & Xiao, K. (2021), 'The shadow cost of collateral', *Available at SSRN 3984585* .

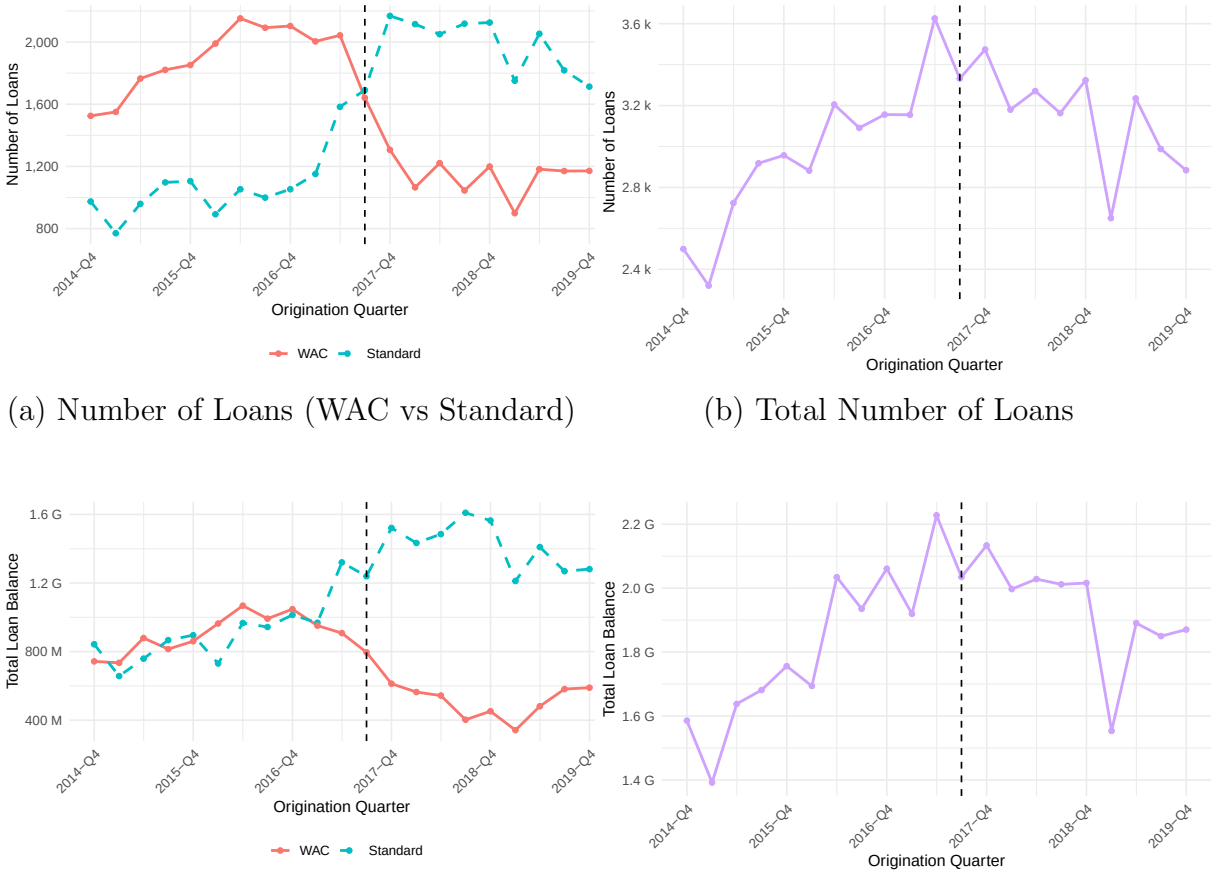
Petersen, M. A. & Rajan, R. G. (1994), 'The benefits of lending relationships: Evidence from small business data', *The journal of finance* **49**(1), 3–37.

Petersen, M. A. & Rajan, R. G. (1995), 'The effect of credit market competition on lending relationships', *The Quarterly Journal of Economics* **110**(2), 407–443.

Stillerman, D. (2024), 'Loan guarantees and incentives for information acquisition', *Available at SSRN 4411553* .

U.S. Department of the Treasury Releases Policy Brief on Small Business Financing (2025). **URL:** *https://home.treasury.gov/news/press-releases/jy2781*

Figure 1. WAC vs Standard Pool Loan Origination



(a) Number of Loans (WAC vs Standard)

(b) Total Number of Loans

(c) Loan Balance (WAC vs Standard)

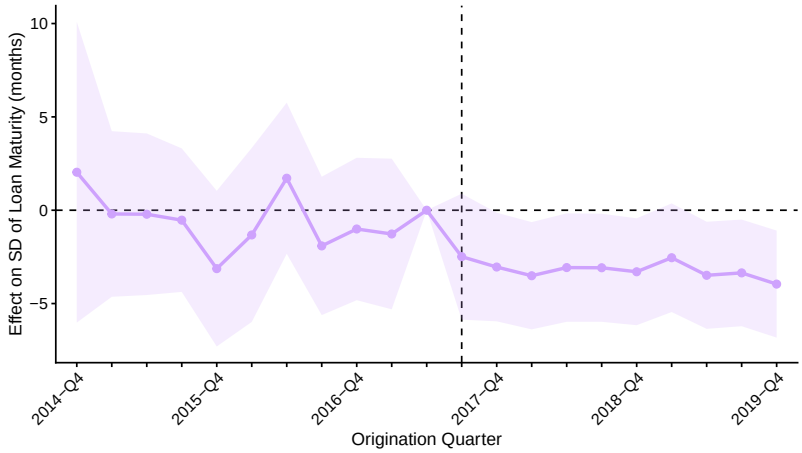
(d) Total Loan Balance

Notes: This figure presents the total number of loans and total loan balance originated in WAC versus Standard pools as well as the sum across both types, centered around the policy change.

Figure 2. WAC vs Standard Pool Maturity



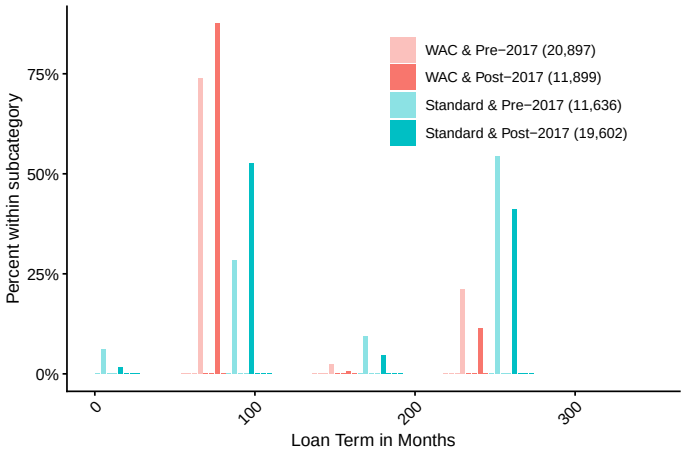
(a) Standard Deviation of Maturity - Data



(b) Standard Deviation of Maturity - DiD

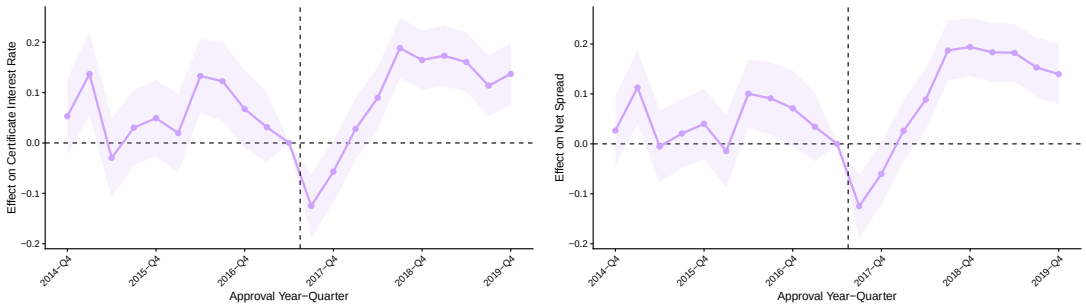
Notes: This figure presents summary statistics and dynamic estimates of the dispersion of loan maturity for WAC and Standard pools during 2014Q4-2019Q4. Panel (a) shows the standard deviation of loan maturity (in months), computed at the pool level from loan-level data drawn from SBA Forms 1086 and 1454 and aggregated by pool issue year–quarter and pool type. The vertical dashed line marks the implementation of the 2017 policy change. Panel (b) reports dynamic difference-in-differences estimates of the effect of WAC pool status on the standard deviation of loan maturity. Coefficients are obtained from pool-level regressions interacting WAC status with pool issue year–quarter indicators, controlling for pool issue quarter fixed effects. Shaded areas denote 95% confidence intervals constructed using heteroskedasticity-robust standard errors.

Figure 3. WAC vs Standard Pool Maturity Distribution



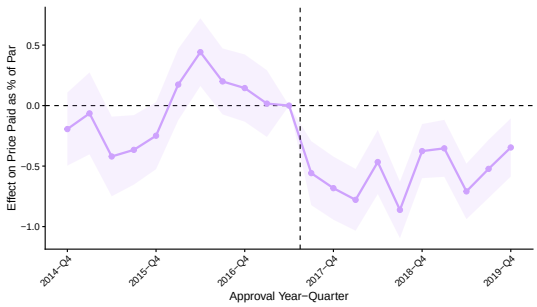
Notes: This figure shows the density of loan maturities grouped by whether the loan was in a WAC or Standard pool.

Figure 4. MMR Effect on Loans in WAC Pools

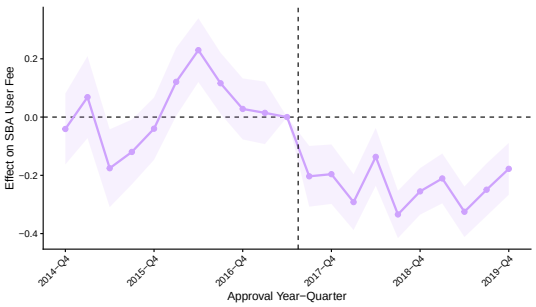


(a) Certificate Interest Rate

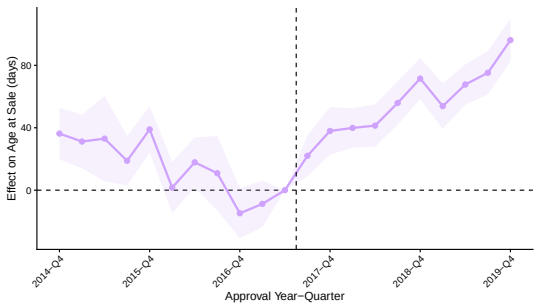
(b) Net Spread



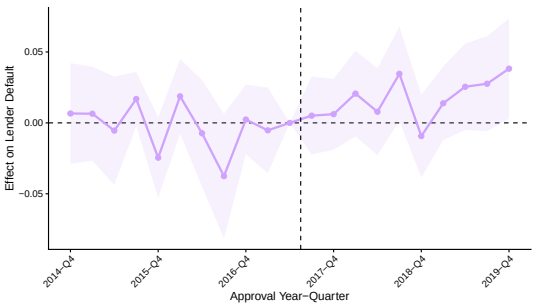
(c) Price Paid as Percent of Par



(d) SBA User Fee



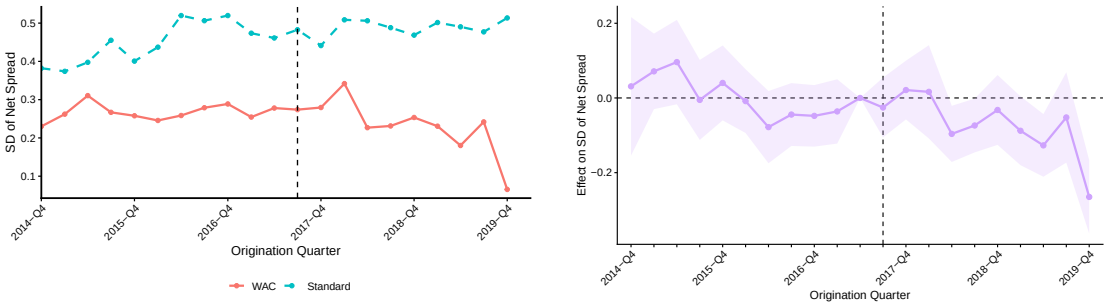
(e) Age at Sale



(f) Lender Default

Notes: Figure plots the dynamic response of the coefficient of interest β_t from Equation 2, the dynamic equivalent of regression Equation 1 by subcategory during 2014Q4-2019Q4. Figures (a)-(e) utilize data from forms 1086 and 1454 FOIA requested from the SBA. Panel (f) reports loan level default for loans in WAC versus Standard pools utilizing data on loan payoffs from FTA Wiki from October 2022 through January 2026 and merging these data to the loans originated during 2014Q4-2019Q4 in our 1086 data. Regressions are estimated at the loan level.

Figure 5. WAC vs Standard Pool Net Spread

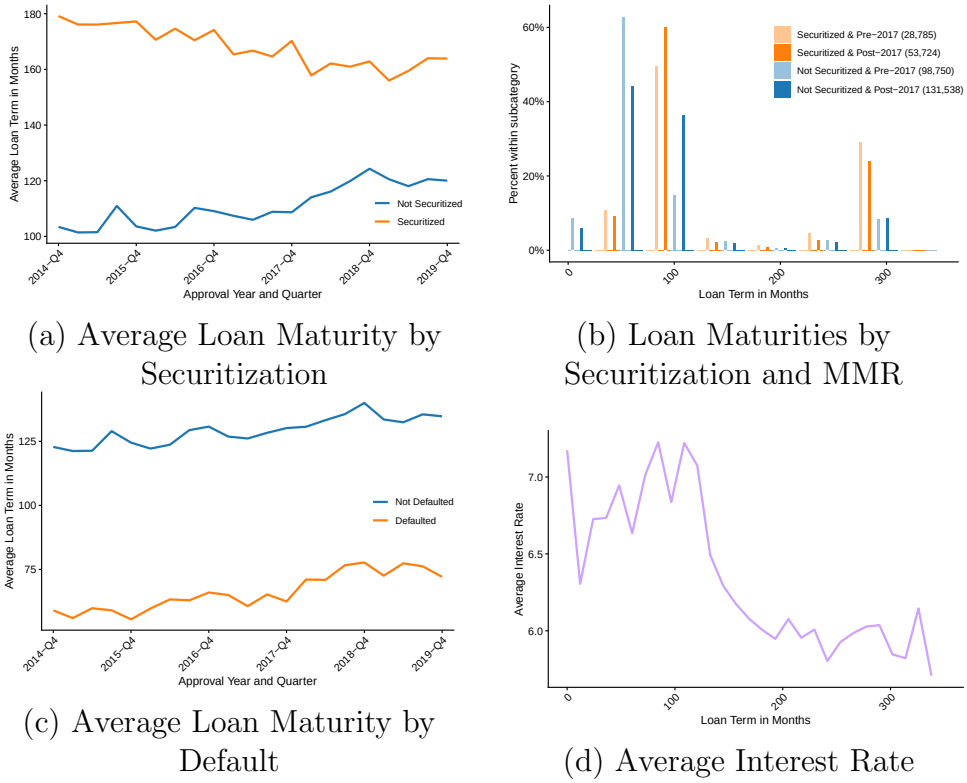


(a) Standard Deviation of Net Spread - Data

(b) Standard Deviation of Net Spread - DiD

Notes: This figure presents summary statistics and dynamic estimates of the dispersion of net spread of WAC and Standard pools during 2014Q4-2019Q4. Panel (a) shows the standard deviation computed at the pool level from loan-level data drawn from SBA Forms 1086 and 1454 and aggregated by pool issue year–quarter and pool type. The vertical dashed line marks the implementation of the 2017 policy change. Panel (b) reports dynamic difference-in-differences estimates of the effect of WAC pool status on the standard deviation of net spread. Shaded areas denote 95% confidence intervals constructed using heteroskedasticity-robust standard errors.

Figure 6. Descriptive Statistics on 7(a) Loans



(a) Average Loan Maturity by Securitization

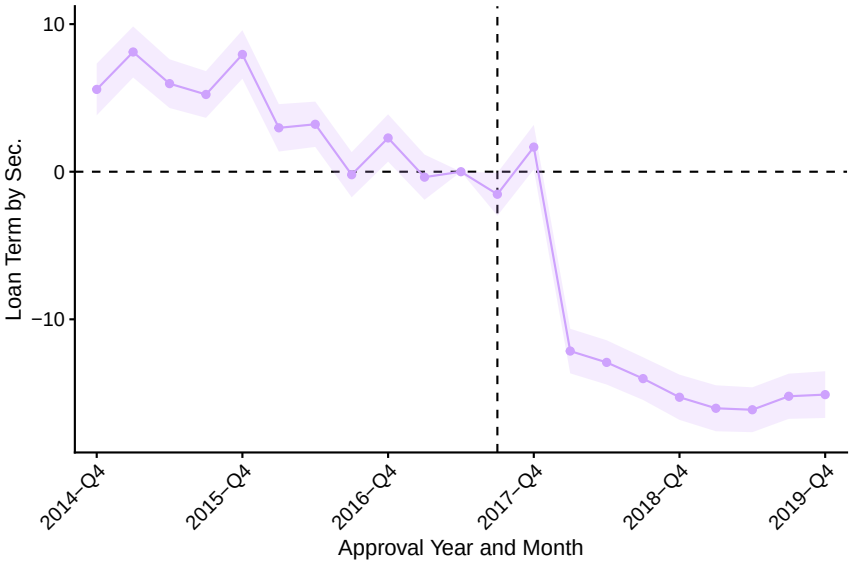
(b) Loan Maturities by Securitization and MMR

(c) Average Loan Maturity by Default

(d) Average Interest Rate

Notes: This figure presents loan characteristics for all loans approved in the period 2014Q4-2019Q4. Panel (a) shows the average loan maturity on the quarterly time series grouped by whether the loan was securitized. Panel (b) shows the density of loan maturities grouped by whether the loan was securitized and whether the loan was originated after MMR. Panel (c) shows the average loan maturity on the quarterly time series grouped by whether the loan was defaulted. Panel (d) shows the average interest rate across loan maturities for all samples. The average interest rate likely decreases for longer term loans due to segmentation of loan type by term. Shorter term loans are more likely to be working capital loans which may not be secured while longer term loans are more likely to be real estate loans, secured by the real estate asset.

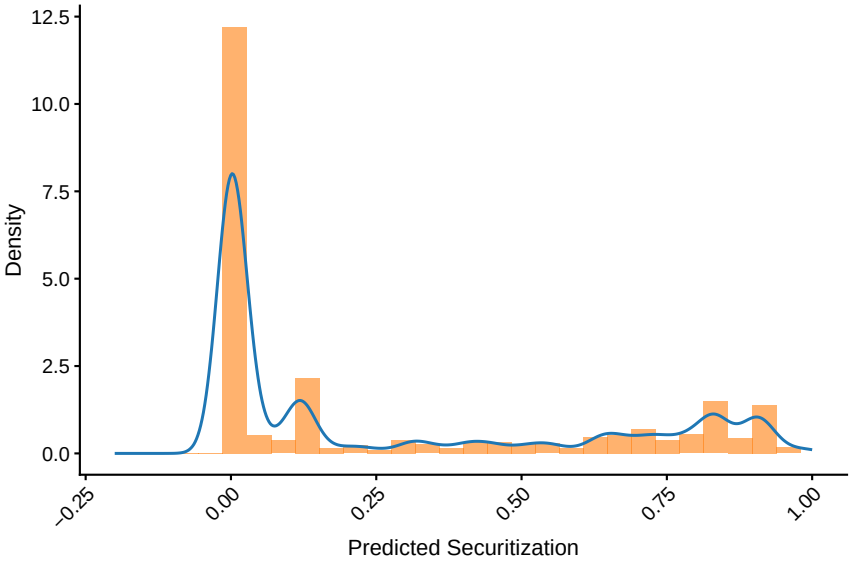
Figure 7. Loan Term on Actual Securitization



(a) Loan Maturities

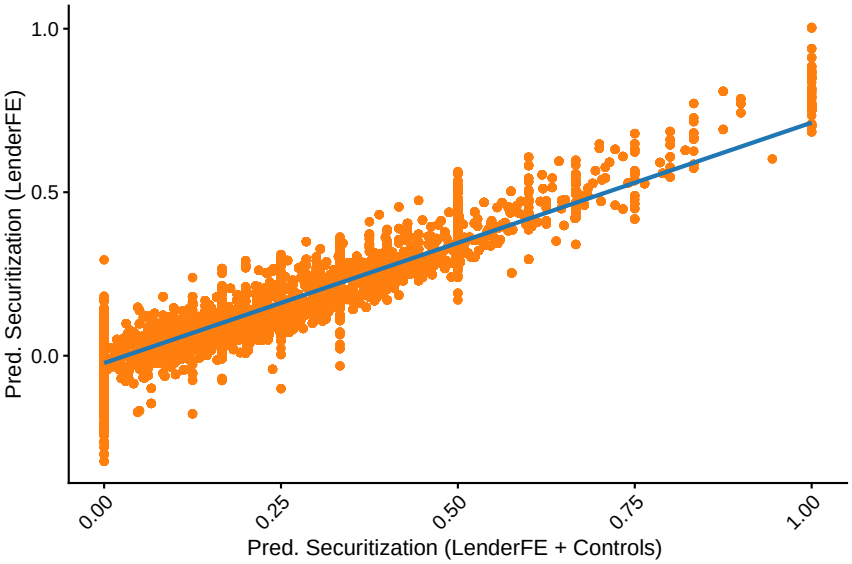
Notes: This figure presents the point estimates and the associated standard errors of Y_i from Equation 3 capturing the changes in loan characteristics before and after the policy change in quarter 3 of 2017 during 2014Q4-2019Q4. The estimation controls for the quarter of loan origination fixed effects, NAICS sub-sector fixed effects, loan borrower zip code fixed effects, and loan lender fixed effects. 95% confidence intervals are included for each quarterly point estimate and standard errors are clustered at the zip code level.

Figure 8. Predicted Securitization



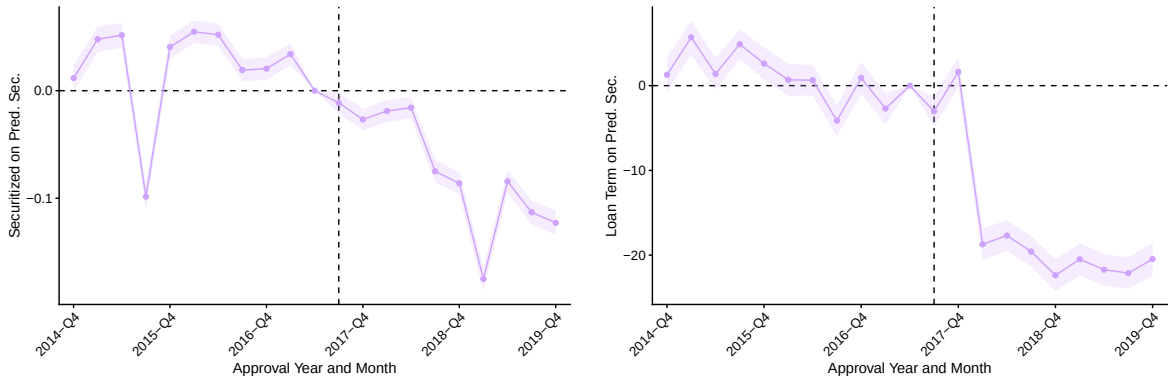
Notes: This figure shows the density of point estimates for $Securitized_i$ from Equation 5 for all samples approved during 2014Q4-2019Q4.

Figure 9. Endogenous DiD



Notes: This figure shows the point estimates for $Securitized_i$ from Equation 6 and Equation 5 for all samples approved during 2014Q4-2019Q4. The Equation 5 estimation controls for lender fixed effects only. The Equation 6 estimation controls for lender fixed effects, the quarter of loan origination fixed effects, NAICS sub-sector fixed effects, and loan borrower zip code fixed effects.

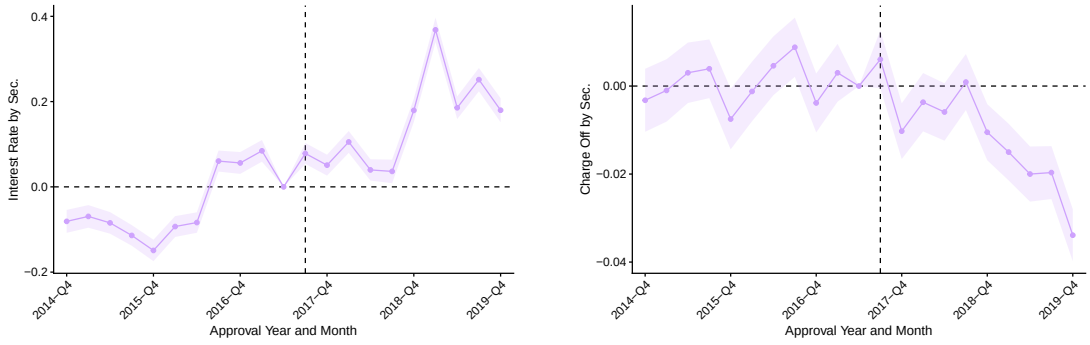
Figure 10. DiD with Predicted Securitization



(a) Actual Securitization (b) Loan Maturities

Notes: Panel (a) presents the point estimates and the associated standard errors of Y_i from Equation 7 capturing the changes in loan characteristics before and after the policy change in quarter 3 of 2017 during 2014Q4-2019Q4. The estimation controls for the quarter of loan origination fixed effects, loan borrower zip code fixed effects, and loan lender fixed effects. 95% confidence intervals are included for each quarterly point estimate and standard errors are clustered at the zip code level.
Panel (b) presents the point estimates and the associated standard errors of Y_i from Equation 7 capturing the changes in loan characteristics before and after the policy change in quarter 3 of 2017 during 2014Q4-2019Q4. The estimation controls for the quarter of loan origination fixed effects, NAICS sub-sector fixed effects, loan borrower zip code fixed effects, and loan lender fixed effects. 95% confidence intervals are included for each quarterly point estimate and standard errors are clustered at the zip code level. Panel (a) shows the average change in the loan maturities on the quarterly time series.

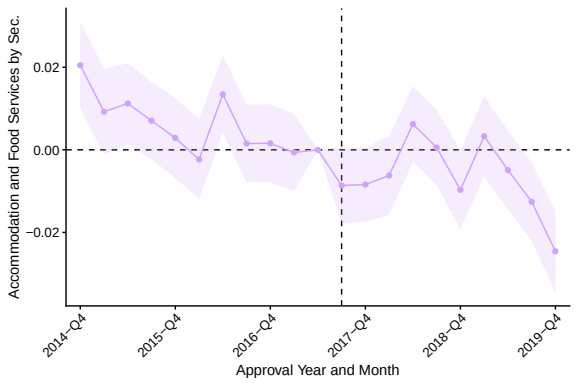
Figure 11. Loan Characteristics on Actual Securitization



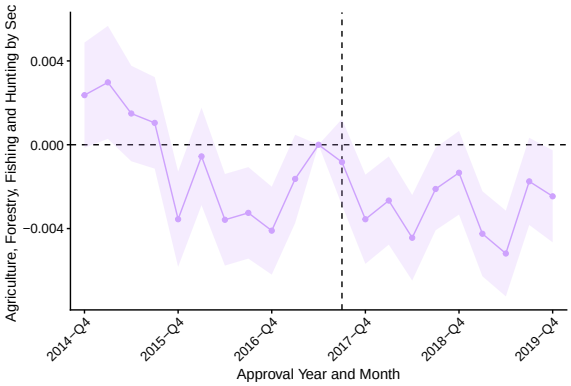
(a) Loan Interest Rate (b) Default Loan Status

Notes: This figure presents the point estimates and the associated standard errors of Y_i from Equation 9 capturing the changes in loan characteristics before and after the policy change in quarter 3 of 2017 during 2014Q4-2019Q4. The estimation controls for the quarter of loan origination fixed effects, NAICS sub-sector fixed effects, loan borrower zip code fixed effects, and loan lender fixed effects. 95% confidence intervals are included for each quarterly point estimate and standard errors are clustered at the zip code level. Panel (a) shows the average change in loan interest rate on the quarterly time series. Panel (b) shows the average change in whether the loan was defaulted on the quarterly time series.

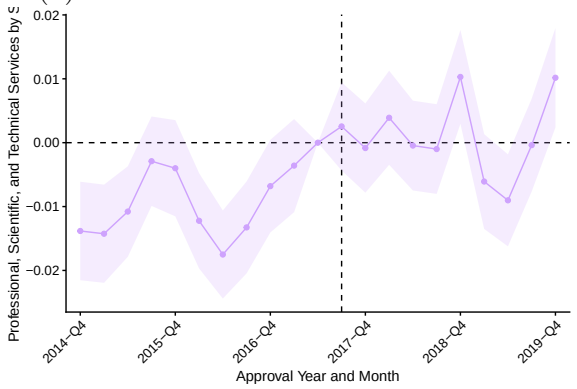
Figure 12. NAICS Sector on Actual Securitization



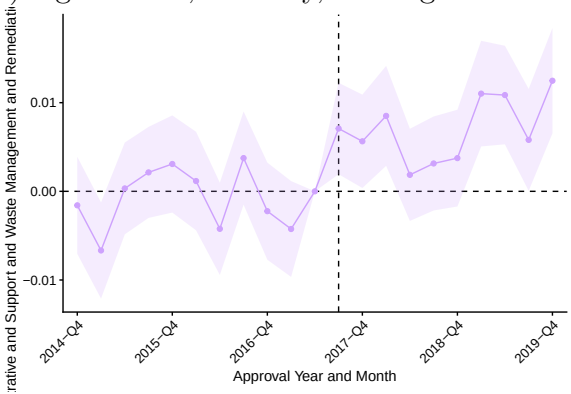
(a) Accommodation & Food Services



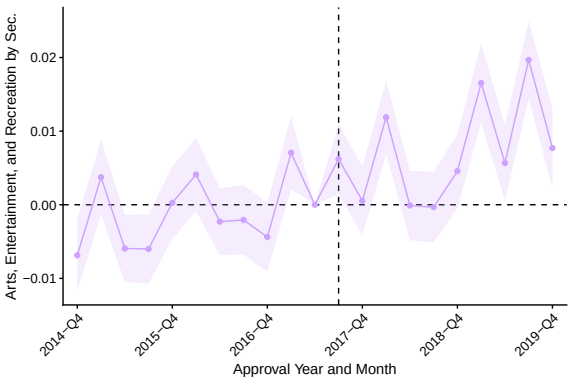
(b) Agriculture, Forestry, Fishing & Hunting



(c) Professional, Scientific, & Technical Services



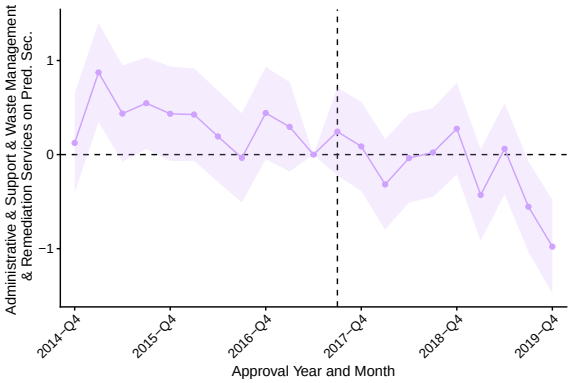
(d) Administrative Support & Waste Management



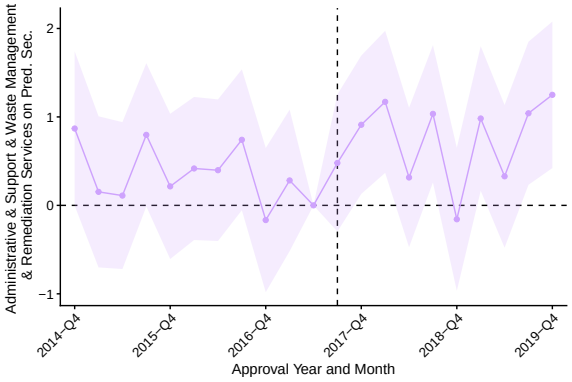
(e) Arts, Entertainment, & Recreation

Notes: This figure presents the point estimates and the associated standard errors of Y_i from Equation 9 capturing the changes in loan's NAICS sectors before and after the policy change in quarter 3 of 2017 during 2014Q4-2019Q4. The estimation controls for the quarter of loan origination fixed effects, loan borrower zip code fixed effects, and loan lender fixed effects. 95% confidence intervals are included for each quarterly point estimate and standard errors are clustered at the zip code level.

Figure 13. DiD Lender-County-Quarter Level



(a) Majority Black Counties by More- vs Less-Treated Lenders



(b) Majority White Counties by More- vs Less-Treated Lenders

Notes: This figure presents the point estimates and the associated standard errors of Y_i from Equation 12 capturing the changes in racial makeup before and after the policy change in quarter 3 of 2017 during 2014Q4-2019Q4. The estimation controls for the quarter fixed effects and lender fixed effects. 95% confidence intervals are included for each quarterly point estimate and standard errors are calculated to be heteroskedasticity-robust.

Table 1 Summary Statistics Table

Variable	Mean	Median	10%	90%
Loan Term	125.36	120.00	60.00	300.00
Charge Off	0.06	0.00	0.00	0.00
Securitized	0.26	0.00	0.00	1.00
Interest Rate	6.81	6.50	5.00	9.45
Loan Amount	404511.32	136000.00	20000.00	1104000.00
SBA Guaranteed Loan Amount	296594.57	87805.00	10000.00	831060.00
Jobs Supported	10.00	4.00	0.00	25.00
Accommodation and Food Services	0.14	0.00	0.00	1.00
Administrative and Support and Waste Management and Remediation Services	0.05	0.00	0.00	0.00
Agriculture, Forestry, Fishing and Hunting	0.01	0.00	0.00	0.00
Arts, Entertainment, and Recreation	0.03	0.00	0.00	0.00
Professional, Scientific, and Technical Services	0.09	0.00	0.00	0.00

Notes: This table reports summary statistics - mean, median, 10th percentile, and 90th percentile - for all samples in the SBA 7(a) loan data during 2014Q4-2019Q4.

Table 2 DiD WAC vs Standard Pool Level Characteristics

Variable	Maturity	Net Spread
WAC	1.909***	-0.184***
	(0.482)	(0.012)
WAC & Post	-2.363***	-0.056***
	(0.518)	(0.017)
Quarter FE	Yes	Yes
R^2	0.18498	0.30117
N	1,438	1,438

Notes: This table reports static difference-in-differences estimates of the effect of Actual WAC pool status on the standard deviation of loan maturity (in months) and the standard deviation of net spread at the pool level during 2014Q4 - 2019Q4. Pool-level moments are constructed from loan-level data drawn from SBA Forms 1086 and 1454 and aggregated by pool issue quarter. The post-treatment indicator corresponds to the implementation of the 2017 policy change. All specifications include quarter fixed effects. Heteroskedasticity-consistent standard errors are reported in parentheses. ***, **, and * represent 1%, 5%, and 10% significance levels, respectively.

Table 3 DiD Loan Level Characteristics

	Certificate Interest Rate	Net Spread	Price Paid (% Par)	SBA User Fee	Age at Sale (days)	Lender Default
WAC	0.151***	0.141***	0.494***	0.055***	-67.769***	-0.007
	(0.009)	(0.008)	(0.034)	(0.013)	(2.268)	(0.005)
WAC & Post	0.028**	0.049***	-0.547***	-0.256***	41.622***	0.024***
	(0.011)	(0.010)	(0.043)	(0.016)	(2.749)	(0.007)
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.02377	0.01744	0.14069	0.13455	0.02661	0.00783
N	64,034	64,034	64,034	64,034	64,034	14,718

Notes: This table reports static difference-in-differences estimates of the effect of Actual WAC pool status on loan pricing and sale characteristics. The FTA Wiki data is used to estimate the results for default, all other regressions are estimated at the loan level using data from SBA Forms 1086 and 1454 over the period 2014Q4–2019Q4. The post-treatment indicator corresponds to the implementation of the 2017 policy change. All specifications include quarter fixed effects. Heteroskedasticity-consistent standard errors are reported in parentheses. ***, **, and * represent 1%, 5%, and 10% significance levels, respectively.

Table 4 Loan Term on Securitization

Variable	(1)	(2)	(3)	(4)
Securitized	67.5669***	17.4390***	13.8558***	17.5006***
	(0.6112)	(0.5001)	(0.4811)	(0.5575)
Securitized & Post	-21.9276***	-15.6620***	-15.0227***	-14.4322***
	(0.6759)	(0.5298)	(0.5297)	(0.5262)
Interest Rate		2.3829***	1.6607***	-1.2329***
		(0.0893)	(0.1005)	(0.1138)
Loan Amount Logged		29.1628***	28.5583***	27.7470***
		(0.1689)	(0.1665)	(0.1619)
Jobs Supported		-0.4345***	-0.4125***	-0.3934***
		(0.0095)	(0.0093)	(0.0090)
NAICS FE		Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes
Zip FE			Yes	Yes
Lender FE				Yes
R^2	0.11	0.43	0.46	0.52
N	312797	312795	308643	308373

Notes: This table reports loan level difference-in-differences regression results for loan maturities ($Term_i$) from Equation 3. Securitized ($Securitized_i$) denotes whether the loan was securitized. Post-treatment ($Post_t$) denotes whether the loan was originated after MMR. Interest Rate ($InterestRate_i$) denotes the logged loan amount. Jobs Supported $JobsSupported_i$ denotes the number of jobs supported by the loan. The sample consists of loans originating during 2014Q4-2019Q4 with information on the originating entity. The additional covariates are included as controls. Standard errors are clustered at the zip code level in the regressions where zip code level fixed effects are included. ***, **, *, . represent 0.1%, 1%, 5%, and 10% significance, respectively.

Table 5 Securitized and Maturity on Predicted Securitization

Variable	Maturity	Securitized
$\widehat{\text{Securitization}}$ & Post	-19.5777***	-0.0867***
	(0.8244)	(0.0038)
Quarter FE	Yes	Yes
Zip FE	Yes	Yes
Lender FE	Yes	Yes
R^2	0.33	0.62
N	308,375	308,375

Notes: This table reports loan-level difference-in-differences regression results for two dependent variables: loan maturity and an indicator for actual securitization. The coefficient shown corresponds to the interaction term between Predicted Securitization ($\widehat{Securitized_i}$) generated in Equation 5 and Post-treatment ($Post_t$), where $Post_t$ denotes loans originated after the implementation of MMR. The sample consists of loans originated during 2014Q4–2019Q4 with available information on the originating entity. Standard errors are clustered at the zip code level. ***, **, *, and . denote statistical significance at the 0.1%, 1%, 5%, and 10% levels, respectively.

Table 6 Charge Off and Interest Rate on Securitization

Variable	Interest Rate	Charge Off
Securitized	0.0615***	0.0403***
	(0.0083)	(0.0018)
Securitized & Post	0.1749***	-0.0110***
	(0.0098)	(0.0021)
Quarter FE	Yes	Yes
Zip FE	Yes	Yes
Lender FE	Yes	Yes
R^2	0.49	0.10
N	308,375	308,375

Notes: This table reports loan-level difference-in-differences regression results for two dependent variables: a charge-off indicator and the loan interest rate. Securitized ($Securitized_i$) denotes whether the loan was securitized. Post-treatment ($Post_t$) denotes whether the loan was originated after the implementation of MMR. The coefficient on Securitized captures the pre-MMR difference between securitized and non-securitized loans, while the coefficient on Securitized × Post captures the differential post-MMR effect for securitized loans. All specifications include quarter, zip code, and lender fixed effects. The sample consists of loans originated during 2014Q4–2019Q4 with information on the originating entity. Standard errors are clustered at the zip code level. ***, **, *, and . denote statistical significance at the 0.1%, 1%, 5%, and 10% levels, respectively.

Table 7 Charge Off and Interest Rate on Predicted Securitization

Variable	Interest Rate	Charge Off
$\widehat{\text{Securitization}}$ & Post	0.0926***	-0.0198***
	(0.0146)	(0.0028)
Quarter FE	Yes	Yes
Zip FE	Yes	Yes
Lender FE	Yes	Yes
R^2	0.49	0.10
N	308,375	308,375

Notes: This table reports loan-level difference-in-differences regression results for loan charge-off rates ($ChargeOff_i$) and loan interest rates ($InterestRate_i$). Predicted Securitization ($\widehat{Securitized_i}$) denotes the predicted securitization using the lender fixed effects generated in Equation 5. Post-treatment ($Post_t$) denotes whether the loan was originated after MMR. The sample consists of loans originating during 2014Q4-2019Q4 with information on the originating entity. The additional covariates are included as controls. Standard errors are clustered at the zip code level in the regressions where zip code level fixed effects are included. ***, **, *, . represent 0.1%, 1%, 5%, and 10% significance, respectively.

Table 8 NAICS Sector on Securitization

Variable	Accommodation and Food Services	Agriculture, Forestry, Fishing and Hunting	Professional, Scientific, and Technical Services	Administrative & Support & Waste Management & Remediation Services	Arts, Entertainment, and Recreation
Securitized	0.0443***	-0.0037***	-0.0140***	-0.0062***	0.0022
	(0.0030)	(0.0007)	(0.0021)	(0.0015)	(0.0015)
Securitized & Post	-0.0115***	-0.0019**	0.0095***	0.0074***	0.0078***
	(0.0032)	(0.0007)	(0.0024)	(0.0018)	(0.0017)
Quarter FE	Yes	Yes	Yes	Yes	Yes
Zip FE	Yes	Yes	Yes	Yes	Yes
Lender FE	Yes	Yes	Yes	Yes	Yes
R^2	0.17	0.51	0.11	0.10	0.09
N	308,375	308,375	308,375	308,375	308,375

Notes: This table reports loan-level difference-in-differences regression results for NAICS sector loan shares across industries, including Accommodation and Food Services; Agriculture, Forestry, Fishing and Hunting; Professional, Scientific, and Technical Services; Administrative and Support and Waste Management and Remediation Services; and Arts, Entertainment, and Recreation, based on Equation 9. Securitized ($Securitized_i$) denotes whether the loan was securitized. The interaction term Securitized × Post captures the differential change in sectoral loan composition for securitized loans after the implementation of MMR relative to non-securitized loans. Post-treatment ($Post_t$) denotes whether the loan was originated after MMR. The sample consists of loans originating during 2014Q4–2019Q4 with information on the originating entity. All specifications include quarter, zip code, and lender fixed effects. Standard errors are clustered at the zip code level. ***, **, *, and . denote statistical significance at the 0.1%, 1%, 5%, and 10% levels, respectively.

Table 9 NAICS Sector on Predicted Securitization

Variable	Accommodation and Food Services	Agriculture, Forestry, Fishing and Hunting	Professional, Scientific, and Technical Services	Administrative & Support & Waste Management & Remediation Services	Arts, Entertainment, and Recreation
$\widehat{\text{Securitization}}$ & Post	-0.0133***	-0.0030***	0.0076**	0.0120***	0.0110***
	(0.0042)	(0.0010)	(0.0034)	(0.0025)	(0.0023)
Quarter FE	Yes	Yes	Yes	Yes	Yes
Zip FE	Yes	Yes	Yes	Yes	Yes
Lender FE	Yes	Yes	Yes	Yes	Yes
R^2	0.17	0.51	0.11	0.10	0.09
N	308,375	308,375	308,375	308,375	308,375

Notes: This table reports loan-level difference-in-differences regression results for NAICS sector loan shares across industries, including Accommodation and Food Services; Agriculture, Forestry, Fishing and Hunting; Professional, Scientific, and Technical Services; Administrative and Support and Waste Management and Remediation Services; and Arts, Entertainment, and Recreation, based on Equation 7. The coefficient reported corresponds to the interaction term Predicted Securitization × Post, where Predicted Securitization ($\widehat{Securitized}_i$) is constructed using lender fixed effects generated in Equation 5. This interaction captures the differential post-MMR change in sectoral loan composition attributable to predicted securitization exposure. Post-treatment ($Post_t$) denotes whether the loan was originated after MMR was posted. The sample consists of loans originating during 2014Q4–2019Q4 with information on the originating entity. All specifications include quarter, zip code, and lender fixed effects, along with additional control variables. Standard errors are clustered at the zip code level. ***, **, *, and . denote statistical significance at the 0.1%, 1%, 5%, and 10% levels, respectively.

Table 10 Fraction Black and White on Predicted Securitization

Variable	Black	White
$\widehat{\text{Securitization}}$ × Post	-0.4578**	0.3901
	(0.1608)	(0.2658)
Quarter FE	Yes	Yes
Lender FE	Yes	Yes
R^2	0.23	0.37
N	139104	139104

Notes: This table presents lender-county-quarter level difference-in-differences regression results for Black and White counties based on Equation 12. The main variables of interest are Predicted Securitization ($\widehat{Securitization}$) and its interaction with Post. The interaction term $\widehat{Securitization} \times Post$ captures the differential post-MMR change associated with predicted securitization exposure across counties. The sample consists of loans originating during 2014Q4–2019Q4 with information on the originating lender. Standard errors are heteroskedasticity-robust. ***, **, *, . represent 0.1%, 1%, 5%, and 10% significance, respectively.