Employee Forgivable Loans*

PRELIMINARY

Alexandru Barbu† Yiran Wang

We study compensation in markets for expert advice. We document how a large class of client-facing professionals (lawyers, financial advisers, real estate agents) have employee forgivable loans — compensation advances structured as debt that employers can accelerate upon underperformance and separation. Analyzing millions of regulatory filings from the US securities industry, we illustrate how forgivable loans have become pervasive, large and long-dated, yet remain undisclosed to customers and credit bureaus. Financial advisers systematically spend the loan proceeds. Loans shape competition for advisory talent as they advantage large deep-pocketed firms and act as shadow non-competes preventing labor mobility towards entrepreneurship and smaller firms. At the same time, loans default, being the largest source of financial advisor delinquencies, and are conflicted, as advisers fund the resulting liquidity demands by defrauding their clients. Using a regression discontinuity design, we estimate that up to a third of all misconduct at large securities firms after the financial crisis is attributable to forgivable loans.

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†INSEAD and Wharton School at the University of Pennsylvania. Email: alexandru.barbu@insead.edu

Expert advice is key to household decision-making. We turn to doctors for medical advice, we turn to lawyers for legal advice, we use real estate agents to access the housing market, and financial advisors to access the financial markets. We rely on experts to diagnose our needs, we let them guide our choices as we navigate complexity, and often grant them with legal authority to take decisions on our behalf. Naturally, a large literature in finance and economics (Campbell 2006, Egan, Matvos, and Seru 2019, Griffin and Kruger 2024) tries to understand what drives the quality of expert services and advice.

In this paper, we examine a common yet understudied class of compensation structures that has wide-ranging implications for the way in which firms compete for expert advisory talent and the allocation of property rights in expert advisory industries, as well as for the financial resilience of advisers and the quality of the service that they provide.

In particular, we document how a large class of highly-skilled client-facing professionals (financial advisors, real estate agents, lawyers) have employee forgivable loans. These are compensation contracts where advisers receive large advances on future unearned state-contingent bonuses (often hundreds of thousands of dollars), structured as loans that are forgiven as long as the advisers stay with the firm, meet their performance targets and earn those bonuses, but can accelerate if they do not, often under onerous terms. Failure to repay, and the employer can legally seize their clients and even their professional license. Forgivable loans help firms establish residual control rights over a key productive asset (client relationships) in industries where this asset belongs to the expert advisor. At the same time, forgivable loans allow experts to borrow against their future labor income, and often do so at scale, by credibly pledging a portion of their human capital with the firm.

Focusing on the US securities industry, we show how employee forgivable loans are large and pervasive, yet remain entirely undisclosed to either clients or credit bureaus. By 2023, the average financial advisor in the securities industry had $70,000 in employee forgivable loans. Historically, some 70% of the total employment in the securities industry had access to a forgivable loan at some point in their career.

At the same time, forgivable loans are surprisingly long-dated, with vesting schedules reaching up to 14 years. However, advisers often treat them as income and spend discretionarily the loan proceeds. Combining employee surveys with data on personal property records, we illustrate how advisors use the resulting liquidity to buy cars, boats, or housing, replace existing debt whose repayment schedule was not as onerous, or pledge it as down payment for additional borrowing via mortgages or business loans, fundamentally changing the nature and the amount of their personal leverage.

As a result, loan delinquencies are common. Over the past 34 years, we identify at least 27,000 cases where securities firms have filed for external mediation, arbitration, or litigation to recover unpaid amounts on employee forgivable loans (many cases settle which we do not observe). The amounts involved are sizable. By 2023, the average delinquent loan balance exceeded $600,000. In fact, we show how forgivable loan delinquencies have grown to become the largest source of employment disputes in the securities industry, and the primary source of financial distress for securities brokers, on par only with residential mortgages.

Following loan delinquency, financial advisers are substantially more likely to seek compromises with other creditors, file for bankruptcy protection or leave the securities industry altogether. Unconditionally, brokers are 2.5 times more likely to seek creditor protection when exposed to forgivable loans compared to when they are not. Among brokers with loan delinquencies, brokers are up to 16 times more likely to file for bankruptcy protection after the loan delinquency, compared to before. In fact, we zoom into the 3 years surrounding a loan delinquency date to illustrate how the timing of bankruptcy filings systematically follows the enforcement of forgivable loans. All in all, 9% of delinquent brokers file for bankruptcy, and another 21% who neither pay nor qualify for creditor protection get indefinitely suspended from the securities industry.

Outside bankruptcy, delinquent brokers strike compromises with other creditors at higher rates. What is interesting is that up to 95% of these compromises come from cases where brokers fully repay their forgivable loans. By revealed preference, these brokers must have prioritized paying off their employer loans to paying back other debt. In other words, brokers default on their credit cards, bank loans and mortgages to keep their clients and their securities license intact. This suggests that when a creditor has a claim on a borrower's human capital (as the employer has here), it endogenously becomes senior to all other creditors whose repayment relies on that human capital. Such displacement is unlikely to be priced ex-ante, as most employer debt is not reported to credit bureaus.

Importantly, loan-related financial constraints are incremental. We show how loan-related constraints do not just substitute for constraints originating elsewhere on brokers balance sheets, but rather come on top of what would arise absent forgivable loans. By borrowing against their human capital, brokers expand their borrowing capacity. Using that extra borrowing capacity to lever up generates additional financial constraints.

Distress from employee forgivable loans spills over to the quality of expert advice. In particular, loan default turns out to be one of the main predictors of financial advisory misconduct in the data. We propose two mechanisms for this finding. First, advisors may fear

the prospect of termination and loan acceleration due to their bad performance. Misconduct, which can increase performance if undetected, may arise as a form of risk-shifting that gives them a chance at keeping their job, their clients and their license. Second, once loans accelerate and demand liquidity, advisors may resort to misconduct (steal from customer accounts) to generate that liquidity. Misconduct can act as a liquidity of last resort that advisors can use to repay the loans when borrowing constrained. We find evidence consistent with both mechanisms, and establish the second one causally.

On average, brokers delinquent on forgivable loans have a 76% chance of reporting at least one misconduct allegation, which is 5 times larger than for brokers who do not. Conditional on a loan getting into delinquency, for the same broker across time, the likelihood of misconduct is 4 times larger on or after delinquency, compared to before. In fact, we zoom into the 3 years surrounding a loan delinquency date to show that the timing of misconduct (we consider both regulatory-initiated actions and consumer-initiated complaints) aligns exactly with the enforcement of delinquent forgivable loans.

The relationship holds both on the extensive margin – loan delinquency is associated with a spike in the incidence of misconduct – and the intensive margin – a larger loan balance is associated with a proportionally larger spike in consumer damages, and the damages reported are comparable in size to delinquent balances, reinforcing the possibility that brokers commit misconduct to fund loan repayment. The spike in misconduct is stronger in periods when credit availability is scarce and for brokers whose borrowing capacity is reduced, probably as brokers substitute credit access with misconduct as a source of borrowing to relax liquidity constraints. The pattern is not explained by reverse causality – is it not that brokers commit misconduct first which causes the employer to accelerate the loan leading to delinquency – and is entirely absent for brokers vacating their repayment obligations in arbitration or in court, again consistent with forgivable loan enforcement as a source of misconduct. Finally, the higher incidence of misconduct at the time of delinquency is not offset by a lower incidence at other points over the term of the loan, suggesting that loans overall are associated with more misconduct.

We establish causality in two ways. First, we note that firms occasionally extend wholesale loan offers to a large part of their advisor populations, and the eligibility conditions in these offers imply sharp discontinuities in loan availability for otherwise similar brokers. We exploit these sharp discontinuities in a regression discontinuity design to pin down the net effect of loan supply on broker financial distress and misconduct. Second, we exploit a regulatory change that induced cross-broker and cross-time variation in the ability of securities

firms to enforce repayment on pre-existing delinquent employee forgivable loans. We use this variation in a triple difference in differences design to show specifically how employers demand for payment generates misconduct.

Our causal estimates imply that being eligible for an employee forgivable loan is associated with a tripling in the incidence of financial disclosures (bankruptcies and compromises with other creditors) and a doubling in the incidence of misconduct over the subsequent duration of the loan and up to 3 years afterwards. Collectively, we estimate that up to a third of all misconduct at large securities firms after the financial crisis can be attributed to employee forgivable loans.

Misconduct is only one aspect of service. To get a more holistic view, we also consider other dimensions of service quality and quantity. We do not find that loans make advisors more productive overall (in terms of fees, commissions, or assets under management). We also do not find that advisors invest more in long term client relationships, adopt fee-based advising models or customer friendly licenses and professional designations, or at least not in a causal sense. This is perhaps not surprising – loans weaken their ownership on client relationships which should reduce their incentives to invest – but it also raises the possibility that loans may worsen service quality overall.

We then turn to the supply of employee forgivable loans. In expert advisory industries, client lists and relationships are a key productive asset. However, in many of these industries, firms lack control rights over these assets. For instance, in the legal or securities industries, non-solicitation and non-compete agreements are often unenforceable. This means that if a good broker leaves the firm, it is often very hard to prevent him from taking his client relationships outside the firm. Alternatively, if a bad broker misuses the client relationships, it is often very hard to fire the broker but keep the clients and reallocate those clients to a more productive broker inside the firm. By structuring their employee compensation as debt, expert advisory firms can enforce restrictions on labor or client mobility that would otherwise be unenforceable. In places like the securities industry, where firms can also take away licenses to enforce debt, these debt contracts can grow particularly large.

The supply of forgivable loans is broadly consistent with a property rights view of the world. In the cross-section, firms that control the client account data, that are more concerned clients would follow the broker upon departure, and lack the ability to retain the clients through other legal means are more likely to issue forgivable loans. Second, firms decide which employees qualify for forgivable loans. In practice, experienced brokers, with established books of clients who can credibly threaten to go into entrepreneurship, can bor-

row up to 3-4 times their annual income. Rookie brokers get nothing. Third, firms seem to time their loan issuance. In the time series, loans spike around large corporate mergers, when firms engage in misconduct or experience financial distress – periods when talent is most likely to abandon ship. This suggest that firms may strategically use loans as a talent retention device. However, not all firms afford making forgivable loans. Large wirehouses such as Merrill Lynch, UBS or Morgan Stanley have historically lent out $500,000 to their average broker. Yet loans require financing, and smaller brokerage firms, whose main assets are intangibles, lack the funding capacity to compete. This induces inequality in firms ability to enforce property rights in a way that the legal system would not.

We study the implications of forgivable loans for labor mobility. Having spent the money, brokers are unable to leave for a smaller company or open an independent practice unless they repay the balance on the loan. The only option is to roll over the loan with another large company that has the capacity to fund the loan. As a result, forgivable loans act as effective shadow non-competes, taking talent away from small companies and locking it up in larger companies, and they do so in industries (such as expert advice) where standard restrictions on labor mobility are otherwise notoriously hard to enforce.

The data is consistent with this view. In the cross-section, higher employee loan balances are associated with higher current employee retention rates and predict lower future employee departure rates. Second, for the same current employer across destination firms, departures fall the most towards smaller firms. And finally, firms extending forgivable loans retain more surplus from the employment relationship, in line with these loans acting as shadow non-competes.

We hypothesize conditions under which our results may generalize to different industries, provide suggestive evidence that similar patterns have been detected among lawyers, healthcare professionals, and real estate agents, and discuss implications for policy.

Related Literature

This paper contributes to three strands of literature at the intersection of labor economics and household finance. Primarily, our paper contributes to a literature on expert advice. By their nature, experts hold an informational advantage over clients. Advisory relationships are often based on trust (Gennaioli, Shleifer, and Vishny 2015; Dulleck, Kerschbamer, and Sutter 2011; Gurun, Stoffman, and Yonker 2021), and concerns that advisors may use this advantage to exploit their clients are widespread among financial advisors (Egan, Matvos, and Seru 2019), insurance brokers (Barbu 2023), loan officers and real estate agents (Griffin

and Maturana 2016; Piskorski, Seru, and Witkin 2015) and healthcare professionals (Erel, Ge, and Ma 2025). Indeed, misconduct is too concentrated to be random, is contagious (Dimmock, Gerken, and Graham 2018), consistent with sorting (Egan, Matvos, and Seru 2019), and is broadly rational (Becker 1968), reflecting the incentives and constraints of the experts or those of their employers. Markets do not discipline misconduct, suggesting a role for regulation (Egan, Ge, and Tang 2022; Bhattacharya, Illanes, and Padi 2025). We add to this literature by proposing a new source of misconduct and highlighting a new role for misconduct. In our paper, misconduct, by generating liquidity today at the expense of penalties with some probability in the future, acts as a liquidity of last resort that experts can use to relax compensation-related borrowing constraints.

In settings closest to ours, Dimmock, Gerken, and Van Alfen 2021 and Erel, Ge, and Ma 2025 show how personal real estate shocks generate professional misconduct among financial advisors and healthcare workers. However, the mechanism is very different. There, a wealth shock reduces the value of collateral, which adversely affects the cost and availability of credit, and increases the relative attractiveness of borrowing via misconduct, instead. Their papers are silent as to where the demand for credit is coming from. Here, loans generate large, immediate, and explicit liquidity shocks that advisors whose borrowing constraints are plausibly binding relax through misconduct.

We also talk to an emerging literature on household debt and financial distress (Ganong and Noel 2020; Indarte 2023) and its implications for service quality (Maturana and Nickerson 2020). We show how workers can borrow large amounts against their human capital with enough enforcement. We identify employer debt as a new and important source of household financial distress and illustrate how it spills over to other unsuspecting creditors.

Finally, we add to a literature on labor mobility restrictions and non-competes. Restrictions on labor mobility are widespread in the US labor force (Starr, Prescott, and Bishara 2021) and their use remains highly debated (Jeffers 2024). However, in many advisory industries (securities industry, legal industry), standard labor restrictions have historically been unenforceable. We propose forgivable loans as an alternative mechanism that firms may use to enforce retention where standard labor market restrictions cannot. We raise the possibility that if labor market restrictions were banned more broadly (as the FTC has proposed), the industry may endogenously switch to shadow non-competes.

I. Institutional Background

In this section, we describe employee forgivable loans in the context of the securities industry, with the understanding that the contract structure, firms incentives to provide them and employee behavior likely generalizes to other high-skilled client-facing professions where these contracts are common.

Securities firms hire financial advisors to help consumers access financial markets and provide investment advice. In exchange for these services, financial advisors generate fees on the assets they manage and advice they provide, and commissions on the products they intermediate. Securities firms collect these fees and commission revenues, pay out a portion to the financial advisor as compensation and retain the rest. Given the importance of broker human capital in generating revenues (Gurun, Stoffman, and Yonker 2021), firms compete aggressively to attract and retain high-producing brokers.

One key recruiting and retention tool used by brokerage firms is the employee forgivable loan, which provides advisors with a large upfront cash payment structured as a loan. This loan is forgivable over a fixed period of time, typically between three and fourteen years, conditional on continued employment and satisfactory performance. If the advisor leaves the firm, whether voluntary or involuntary, or fails to meet performance requirements, the outstanding balance becomes immediately repayable with interest. Firms sometimes structure forgivable loans as a combination of a standard repayable loan agreement and a bonus agreement, where the bonus is contingent on continued employment and performance. In this structure, the contingent bonuses are designed to exactly match the scheduled loan repayments over time. Economically, the forgivable loan functions as an advance on future, unearned, state-contingent bonuses. A close analogue is borrowing against restricted stock units.

Since firms recover loan amounts through the future production of their advisors, loan size increases with advisor productivity, the stability of recurring revenue, and loan term. The loan amount is typically tied to a broker's trailing twelve-month (T12) gross production, with loan multiples ranging from 100% to over 300%, depending on market conditions, firm strategy, and the value of the broker's client assets. Forgiveness schedules are often linear but may be backloaded or include performance-based triggers. In many cases, annual forgiveness is contingent on meeting revenue benchmarks that escalate over time, for example by 20% of the T12 base each year. Even when performance thresholds are not contractually specified, they are implicit because continued employment and thus loan forgiveness depend

on meeting future production expectations. Similarly, at the time of signing the forgivable loan agreement, the broker also signs a conditional non-solicitation agreement barring itself from contacting the clients conditional on non-payment, whose ownership would pass to the employer. As a result, a broker's clients constitute the collateral for forgivable loans.

Forgivable loans are generally not disclosed to consumers and are governed by contract law rather than direct regulatory mandate. Efforts to enhance transparency have met resistance. FINRA's proposed Rule 2243, which would have required detailed disclosure of recruitment compensation, including forgivable loans, was ultimately withdrawn following industry opposition. Notably, while the Sarbanes-Oxley Act prohibits employee loans to executive officers of public companies, it does not apply to rank-and-file employees.

Finally, unlike most traditional debt, forgivable loans have tax implications upon forgiveness. While the initial loan is not taxed, each year the portion that is forgiven—including any accrued interest—is treated as taxable income and taxed at the applicable income tax rate. Brokers who are unaware of or unprepared for these tax consequences may face unexpected liabilities when the forgiveness occurs.

II. Data

A. Loan Balances

We get data on financial advisor forgivable loans from three sources. First, we extract firm-level data on forgivable loan balances and availability from securities firms' annual financial statements with the SEC over the period 2001-2021. As mandated by Section 17 of the Securities Exchange Act of 1934 (Rule 17a-5), all SEC-registered brokerage firms must file an annual financial conditions report known as the Form X-17A-5 Focus report. Under 17 CFR § 210.5-02, brokerage firms are required to disclose the aggregate amount of loans and notes receivable from employees, whether these loans are forgivable or not, as well as any allowances for doubtful accounts, provided these loans exceed 10 percent of total receivables. We manually identify and extract this information from the balance sheet or accompanying footnotes of these reports for all securities firms that employed more than 100 registered representatives at any point during their operating history (246 firms). We find these firms to capture the quasi-universe of forgivable loans, as smaller firms rarely issue.

B. Loan Characteristics

Second, some of the largest firm-level loan balances originate from standardized or wholesale loan offers that securities firms occasionally extend to all or a sizable portion of their employment. As these loan programs target thousands of advisors, their details invariably percolate in the public domain through press, arbitration and litigation. This gives us additional information on the eligibility criteria for the loans (tenure and production requirements), loan amounts (as percentage of past production), loan term and interest rates, and forgiveness criteria (including performance targets to be met).

C. Loan Performance

Finally, we obtain information on loan delinquency from the securities industry dispute resolution forums. Since 1987, any employment dispute between a registered broker and its securities firm, including those relating to unpaid employee forgivable loans, must go through an arbitration process administered by a securities industry arbitration forum. Historically, securities arbitration was administered separately by the National Association of Securities Dealers (NASD) and New York Stock Exchange (NYSE), and more rarely Chicago Board of Options Exchange (CBOE) and American Stock Exchange (AMEX). In 2007, all securities industry dispute resolution was taken over by FINRA. FINRA stores statistics on the number of delinquent loans that trigger temporary restraining orders, external mediation, arbitration, or litigation, as well as detailed case records for cases that conclude in an arbitration award all the way back to 1988. For each case, we scrape information on the parties and arbitrators involved, detail case information such as the number of loans involved, the loan signing dates, the outstanding balance, the interest rate, and a complete history of the dispute resolution process, including the outcome (whether the broker was obligated to pay or not, or whether the arbitration was challenged and later confirmed or vacated in court).

D. Employment and Conduct

We match this with data on the universe of financial advisors since FINRA and the SEC started electronic reporting in 1987 and 2001, respectively. For each broker, we extract their career-long employment histories, including exact employment dates, the identity of their employers and their branch office location, the license under which they were operating (broker or investment advisor), and a complete history of personal and professional conduct. Records of personal conduct include financial disclosures such as bankruptcies and compro-

mises with third party creditors outside bankruptcy, as well as civil or criminal violations in outside employment. Records of professional conduct include consumer initiated complaints or regulatory actions taken in relation to their professional activity intermediating financial products or providing advice, as well as unilateral employment terminations and license suspensions. For each consumer initiated complaint and regulatory action (which will constitute our main definition of misconduct), we observe the date when the action was initiated, its status (final, pending, or on appeal), the allegations being made, the products involved, the adjudicating authority (court, regulator, or arbitrator), and the resulting outcomes, such as sanctions, fines, penalties, or monetary awards.

E. Personal Characteristics

We extract additional financial advisor characteristics, such as its residential address, date of birth, gender, education, employment structure (employee or independent contractors) and role (involved in sales or management) from Discovery Data, a private provider. To learn more about each financial advisor's likely demographics, preferences and beliefs, we map their residential addresses to tract-level demographics from the American Community Survey and precinct-level electoral results from the MIT Election Lab. To learn more about financial advisors client base, we map advisors branch office location histories to county level demographics from the American Community Survey, under the assumption that households seeking advice with an office location would be representative of the adult population in the county that office is located in. Finally, to learn more about financial advisors loan uses, we match their names and residential address locations with housing transactions and liens from CoreLogic.

III. Facts on Employee Forgivable Loans

A. A Representative Example

We establish novel facts about the size and prevalence of employee forgivable loans in the US securities industry, and their allocation across brokers and firms and over time. We begin with a representative example. On September 14, 2008, one day before Lehman failure, Bank of America announced it would purchase Merrill Lynch in an all equity transaction. By October 2008, Bank of America announces the Advisor Transition Program, a wholesale loan offer aimed at retaining advisor talent through the acquisition. About 6,200 advisors, or 37 percent of all Bank of America Merrill Lynch financial advisors, qualified for the loan.

A reported 95 percent of these eligible advisors signed. Loans were forgivable over 7 years on a straight basis and were granted on a sliding scale based on each advisor's annualized production through September 2008. Advisors generating $1 million in production or more over the previous 12 months could take 75% of that amount ($750,000 or more) upfront in cash. Advisors producing $750,000 to $1 million got 50 percent. Those producing $500,000 to $750,000 got 25 percent. Advisors producing less than $500,000 got nothing. All outstanding principal and interest would become immediately payable upon termination for any reason. All in all, Bank of America paid out some $2.8Bn in forgivable loans, for an average of $451,000 per broker.

B. Prevalence and Concentration

The case of Bank of America Merrill Lynch is not unique. Over the last decade, the largest US securities firms consistently reported billions of dollars in forgivable loans towards their financial advisors. For instance, in 2022, Morgan Stanley, UBS and Wells Fargo had $4.2bn, $2.3bn in $2.2bn employee forgivable loans outstanding. These translate into average loan balances of $170,000, $189,000 and $115,000 per broker, respectively. Nor are forgivable loans restricted to a few large firms. We estimate that at least 68.7% of the overall employment in the securities industry has been associated, at some point in their careers, with a securities firm extending forgivable loans. The average loan across all brokers and firms, conditional on the firm reporting a balance, was $70,000 in 2022 (Figure 1). The unconditional average was $33,000. This is a lower bound, as firms with small balances do not report.

Second, as the Bank of America example suggests, these average loan balances mask substantial cross-broker heterogeneity. Not all brokers have loans. Experienced brokers, with established track records in the securities industry and established books of clients can borrow up to 3-4× their annual income. Rookie brokers rarely qualify. This suggests that a broker's loan collateral (the book of clients) and outside options may be important determinants of loan size.

Third, there are systematic differences in average loan balances across firms (Table I). On average, larger securities firms and generally firms which are affiliated with a large financial intermediary lend out more than small and unaffiliated firms. This is true on average – brokers at large affiliated securities firms can borrow more – as well as when controlling for employee productivity – brokers at large affiliated securities firms can borrow at larger multiples of their current production. A potential explanation is firm funding constraints matter. Paying compensation in advance requires financing. Yet expert advisory firms lack

tangible assets, primarily lease their office space, and their largest asset is often their human capital, which is hard to borrow against, particularly over a long term. To the extent that loan size matters in brokers job search (as we will argue later on), such funding constraints may restrict a firm's ability to compete for talent ex-ante and retain talent ex-post.

Finally, when looking at the timing of loan issuance, a pattern emerges. Loan balances spike around episodes of corporate restructuring (loans spiked as Smith Barney was sold to Morgan Stanley, Wachovia was sold to Wells Fargo, Merrill Lynch was acquired by Bank of America during the financial crisis) and more generally during episodes of perceived financial distress (AIG, Credit Suisse, Lehman Brothers extended large amounts of forgivable loans before being bailed out or going under). Abnormally high loan balances (relative to firm size and time) predict the revelation of corporate fraud. Some of the largest Ponzi schemes in recent history – Bernie Madoff, Stanford Financial – used forgivable loans extensively before being revealed (Figure 2). These are periods with substantial uncertainty about the prospects of the firm. Workers may respond to uncertainty by leaving the firm, making the adverse outcome a self-fulfilling prophecy (a worker run in the sense of Hoffmann and Vladimirov 2025). This is consistent with firms using forgivable loans as retention devices.

C. Loan Utilization

In a forgivable loan, brokers get an advance payment, they earn it as they meet their performance targets, or repay it if they do not. If brokers would just park the money somewhere liquid and safe and consume it as they earn, then a forgivable loan would be no different than a regular state-contingent bonus. Instead, brokers often treat the loan as income or spend discretionarily the loan proceeds, increasing personal leverage, or use it to replace existing debt whose repayment schedule was not as onerous, changing the nature of personal leverage, both generating additional default risk.

Evidence from Surveys

Specifically, we partner with Keep Financial, a startup that helps employers structure retention bonuses as forgivable loans. Between December 2022 and March 2023, Keep conducted two surveys on a total of 3,083 full-time employees across different positions in several industries (finance, healthcare, technology, education, manufacturing, including the financial advisory industry) over the potential utilization of forgivable loan proceeds (data on actual loan utilization from brokers property and lien records below). The respondents were selected by age, race, sex, education and geography to be representative of their respective industries

in the U.S labor force. The results were similar across surveys and across respondents in different industries. When asked how they would use the loan proceeds, respondents listed placing the money in illiquid retirement accounts (40%), pledging it as down payment on a mortgage (so leverage on leverage, 21%), or spending it on a car purchase (14%). Around half of respondents report using the money to pay off student loans (12%) or other debt (44%). While this does not increase overall leverage, it changes its effective duration and adds nontrivial rollover risks. While most debt accelerates upon inability to pay installments, forgivable loans accelerate upon inability to continuously increase production, which is a far more onerous threshold, increasing default risk. All in all, only 28% of respondents report using part of the funds towards a liquid emergency fund. This suggests there is a substantial share of employees facing forgivable loans that may be unprepared to face the consequences of non-forgiveness.

Evidence from Property Records

We complement this with evidence of actual loan use from financial advisers property records. Specifically, for a large subset of financial advisers, we observe their residential addresses in 2023. We use a combination of property records data and mortgage servicing data from CoreLogic to figure out when did they purchase their properties and how did they finance the transactions. We restrict to brokers who were already active in the securities industry by 2007. We then split the sample into brokers employed at firms extending forgivable loan retention offers around the financial crisis and brokers who did not. Most of these loans were announced as a response to corporate mergers and extended to a large share of existing employment. We restrict to retention loans as brokers getting recruiting loans are also more likely to change location and hence mechanically more likely to buy property. We then plot the timing of housing purchases (the year when they bought their current residence) separately for brokers who (likely) got forgivable loans and who did not. Brokers who got loans during the financial crisis are also more likely to have bought their current residence around the financial crisis relative to brokers who did not (Figure 3).

We repeat the analysis in Table II. For every financial advisor for whom we have a residential address in 2023, we record whether it was eligible for retention loans during the financial crisis and whether it bought its house during the financial crisis, as well the characteristics of that property including the financing. We regress buying a house during the financial crisis on getting a forgivable loan during the financial crisis, but now controlling for the year it entered the securities industry (older more experienced advisors might have

already secured a satisfactory residence by the time they got the loan), as well as for the location of the house (to control for local housing and economic conditions) through fixed effects. The result stands. Taking two brokers entering the securities industry in the same year and buying their houses in the same state and the same county, the one who got an employer loan during the financial crisis is also more likely to buy its house in the financial crisis (column I).

Not only that. Brokers who got an employer loan are also more likely to take on a mortgage (column II). And conditional on getting a mortgage, taking two advisors entering the securities industry in the same year, buying a property in the same county (and now also in the same year, to control for price trends), the advisor who got a forgivable loan gets a bigger mortgage (column IV), and uses that bigger mortgage to fund a bigger house (column III). This suggests that employer loans do not just substitute for bank funding. Instead, advisors seem to use the employer loan as down payment to borrow more.

D. Selection Into Loans

We then ask who are the brokers who borrow from their employer firms to invest in illiquid assets and lever up when repayment obligations are so onerous. To answer this question, we repeat the analysis for subsets of advisers of different characteristics and see where the effect concentrates.

Taking two brokers with the same experience in the securities industry getting a mortgage to buy a property in the same year and the same county, the broker more likely to get an employer loan gets a bigger mortgage, and the effect concentrates among those brokers with low credit scores and in areas with low housing affordability (Table II bottom panel). This is consistent with brokers spending the loan proceeds to relax borrowing constraints.

IV. Financial Distress

A. Default Triggers

As a result, loan default is common. We first explain how brokers can default on employee forgivable loans. As long as the broker meets its performance and tenure requirements, loans are forgiven based on a preset forgiving schedule. Failure to meet a performance requirement results in repayment of the part of a loan that was supposed to be forgiven. Being late on the note for more than 30 days without restructuring is ground for termination for cause and acceleration of the loan. If the broker leaves or is fired before the entire amount is repaid,

the remaining outstanding principal and interest are accelerated and due immediately upon departure.

B. Dispute Resolution

The firm has two ways of enforcing unpaid forgivable loans once the broker has departed. It can seize the loan collateral through a restraint order filed in arbitration or in court. And it can launch a formal employment dispute seeking debt collection through mediation, arbitration or in court.

Collateral Repossession

As mentioned before, forgivable loans are collateralized by the brokers clients. When brokers sign a forgivable loan agreement, they also agree to a conditional non-solicitation agreement that effectively transfers the brokers clients to the firm in case of nonpayment. Specifically, it prevents the broker from contacting their clients and taking a firm's business to a competitor in case the broker leaves employment while the loan remains unpaid. Failure to repay a forgivable loan activates these non-solicitation agreements, which if violated could result in temporary restraining orders. Temporary restraining orders are the brokerage company's way of repossessing the loan collateral. Loan collection continues until full repayment lifts the temporary order. Historically, firms requested temporary restraining orders with the NASD. Since 2002, all restraining orders are set in court and then communicated to FINRA. As the name suggests, restraining orders are temporary (one year or until payment in full, whichever comes first). However, orphaned clients are quickly seized by the old employer's brokers, so by the time the broker can return to contacting its clients, they would have probably found a new advisor.

Debt Collection

A firm can seek debt collection in the following order. If the loan remains unpaid, the firm can request external mediation under FINRA, who then proceeds with mediator selection (see Egan, Matvos, and Seru 2025 for a background on the mediation process). A settlement occurs if the parties mutually resolve their dispute. Once parties sign a settlement agreement, the agreement is final and enforceable. However, there are times when the parties do not settle. In that case, claimants can file an arbitration claim. Since the 1987 US Supreme Court opinion on Shearson American Express Inc. v. McMahon, all unsettled employment

disputes in the securities industry, including disputes regarding unpaid forgivable loans, resolve through arbitration. Historically, FINRA (and predecessors NASD, CBOE, NYSE and AMEX) handled 99% of all securities industry-related arbitrations. Arbitrations involve formal hearings in front of an arbitrator panel and conclude with an arbitration award in favor of one of the parties. Arbitration awards are legally binding and final unless there is a court challenge. A party has 90 days to challenge the award in court by filing a motion to vacate, which is a request that the court set aside the award. Generally, these motions have limited grounds.

C. Loan Dispute Statistics

Over the past 34 years, we identify about 27,000 cases where securities firms have filed for external mediation, arbitration, or litigation to recover unpaid amounts on employee forgivable loans. Specifically, Figure 4 plots a time series of broker forgivable loan disputes, broken down by outcome, since FINRA and its predecessors started administering securities disputes in 1987. Out of these 26,913 cases, 8,511 conclude with a temporary restraining order, 10,452 proceed to mediation and are settled or (a small percentage) withdrawn in arbitration, and 7,949 result in an arbitration award, of which only 146 are challenged and proceed to court. Moreover, forgivable loan-related disputes are strongly countercyclical, falling in good times and rising in bad times. As a case in point, between 2008 and 2010, the number of loan disputes almost doubled from 885 to 1692 cases.

D. Loan Disputes in Perspective

We put these numbers into perspective in two ways. First, we compare the incidence of forgivable loan-related employment disputes in all employment disputes between brokers and their employer firms (Table III). According to FINRA Dispute Resolution Statistics, prior to 2017, delinquencies on broker forgivable loans were the primary source of intra-industry arbitration, more common than breach of contract, libel, compensation, discrimination, fraud or wrongful termination related disputes, and more common than raiding disputes across firms. Since 2017, employment loans are second after breach of contract, which however is a more generic category.

Second, we compare the number and amounts involved in employee forgivable loan related disputes with the number and amounts involved in all other financial compromises that brokers have struck with their non-employer creditors since the financial crisis. We

categorize brokers compromises with creditors into 8 different categories, including mortgage debt, personal and business loans, credit card debt, lines of credit, student loans, auto loans, medical debt, unpaid taxes and financial compromises stemming from divorce and inheritance. We restrict the data to compromises with amounts owed exceeding $10,000, to make it comparable to amounts disputed in forgivable loans. Forgivable loans are the second largest source of brokers financial compromises, with similar amounts and incidence as mortgages.

E. Delinquent Loan Characteristics

We then turn to the characteristics of the loans going into delinquency. These characteristics may be indicative of trends in the overall pool of outstanding loans. The top panel of Figure 5 plots the median forgivable loan-related arbitration award in FINRA Arbitration Awards Database, broken down by year of award. In virtually all cases, this represents the balance outstanding on the forgivable loan at the time of arbitration filing, which is our definition of loan delinquency. Loans are large and are getting larger. If up to around 2003, the median loan balance going into delinquency was around 20,000 – 30,000, by 2023, it has grown to 250,000. As these are loan balances at the time of delinquency, the original loan balance at the time of issuance must have been much higher. The bottom panel of Figure 5 plots the distribution of forgivable loan ages (time since signing) at the time of delinquency over time. Loan term has increased over time as well. If historically we were seeing loans aged 2-5Yrs going into delinquency, now we see loans outstanding that are 10-14Yrs old. We argue these trends are connected. Loans have gotten 10 $\times$ bigger. Since (as we discuss later on), neither broker productivity nor the share of that productivity that accrues to the employer has grown as much, to breakeven, employers needed to make the loans longer.

F. Delinquent Broker Characteristics

We next examine the characteristics of the brokers involved in forgivable loan disputes. We consider personal characteristics such as gender and race, the nature of their last employment role, such as whether they operate as employees or independent contractors (which is indicative of background risk), whether they are directly involved in selling (producer) as opposed to administrative or support (non-producer), their registrations (which are indicative of the type and breadth of activities the representative is involved in) and professional credentials (CFA charterholder), experience (number of years in the securities industry), their inclusion in WSJ's Barron Top Broker list (as a measure of broker quality) or political orientation, as

well as the characteristics of the customers they likely sell too, including age, race, origin, education and income, homeownership.

Table VI reports demographic characteristics of brokers and their customers, separately for brokers who have been involved in forgivable loan disputes and those who have not. As we do not observe whether a broker received a forgivable loan unless they became delinquent (with some exceptions described below), we construct a synthetic control group to match brokers with loan delinquencies. For every broker in delinquency, we focus on the time of first loan delinquency (some brokers become delinquent multiple times) and consider brokers employed at the same firm and in the same year with similar industry experience (± 1 year) as the delinquent broker.

Within brokers with a similar chance of receiving a loan, brokers involved in loan delinquencies are more likely to be male, vote republican, serve customers from underprivileged backgrounds (lower income, lower education, immigrants), operate as independent contractors, and be directly involved in sales.

G. Beyond Formal Disputes

As mentioned earlier, we only capture those loan delinquencies that result in a binding externally mediated settlement, arbitration, or court decision. The (potentially larger) number of loan delinquencies that resolve without the involvement of a court or arbitrator, or delinquencies which go through external mediation but not result in a legally binding settlement, is unknown. To get a more complete picture of forgivable loan-related delinquencies, we rely on brokerage firms' own estimates of employee forgivable loan default.

For every forgivable loan balance, securities firms often report an allowance for credit losses or loan loss reserve. The allowance for credit losses is an estimate of the expected amount of debt that a company is unlikely to recover due to default. Since 2020, most banks (and brokerage houses) use the current expected credit loss model, a forward looking estimate of the expected loss over the remaining life of outstanding loans by taking into account, for each future cashflow, the probability of default, the loss given default, and then discount these expected losses back to present. Since loss given default is partial, the allowance for credit losses is strict lower bound on the share of brokers defaulting on forgivable loans.

We collect information on employee forgivable loan loss reserves from securities firms' annual statements with the SEC. What we find is that at the end of 2021, 3.76% of all forgivable loan balances outstanding (or \$0.5bn in aggregate) were deemed to be uncollectable in expected present value terms. To put these numbers into perspective, we compare it with

loan loss reserves on other mainstream credit products. In 2021, expected losses on broker forgivable loans were still 2.4× higher than the comparable allowance for loan and lease losses as a percentage of total loans and leases at U.S. FDIC insured institutions (1.58%).

Yet maybe the gap in loan loss reserves is due to extraordinary government liquidity support lowering banks loan loss reserves during the global pandemic. We test and find similar results outside the pandemic. At the end of 2023, loan loss allowance for broker forgivable loans was still twice as large (3.50% for broker loans compared to 1.75% for loans and leases at FDIC insured financial institutions).

Second, there is a large variation in loan loss reserves across firms. This is substantially higher for wirehouses and regional firms (4% and up to 7% for Wells Fargo and 15-16% for Oppenheimer) than independent broker dealers (1.8%). This primarily reflects differences in their operations. Brokers at independent broker dealers are most often independent contractors who are evaluated primarily on the number of client accounts, recurring income such as fees on assets under management or well-diversified commission income. In contrast, brokers at wirehouses are most often employees who sell and are evaluated on more volatile (and often proprietary) commission income.

Finally, we exploit firms estimates of loan loss reserves to back out an estimate of the delinquency rate on employee forgivable loans. Every year, out of forgivable loan disputes that end up in external mediation, arbitration and litigation, 57% end up in settlement, 27% end up in a satisfied award, 7% end up in bankruptcy court related reorganization, and only 9% end straight up in default as brokers leave the securities industry where there is limited recourse. Which means that even if we assume firms recover nothing out of default, bankruptcy or reorganization, then firms should still recover some 84% of delinquent balances. This implies that up to 23% (3.76%/(1–84%)) of forgivable loans outstanding may become delinquent at some point in their life.

H. Distress Spillovers

Forgivable loans seem to be a key source of brokers' financial and liquidity constraints. Yet the resulting financial distress is not limited to forgivable loans. It spills over to other creditors through bankruptcy, as delinquent brokers are more likely to file for creditor protection, and outside bankruptcy, as delinquent brokers are more likely to strike out of bankruptcy compromises as well. In fact, employer debt seems to endogenously displace other debt in the pecking order of repayment outside bankruptcy. These spillovers are unlikely to be priced ex-ante, as most employer debt is not reported to credit bureaus.

I. Bankruptcy Protection

Following loan delinquency, brokers are substantially more likely to seek compromises with other creditors, file for bankruptcy protection or leave the securities industry altogether. Figure 6 compares the rate of financial disclosures (personal bankruptcies and compromises with creditors) between brokers in firms involved in forgivable loan-related disputes (hence offering forgivable loans) and firms that do not, over time. We find that brokers are up to 2.5× more likely to seek bankruptcy protection or strike compromises with creditors when exposed to forgivable loans.

We then turn to the timing of personal bankruptcies. Table V reports the percentage share of brokers reporting financial disclosures (bankruptcies and compromises) before and after their first forgivable loan delinquency, but now for the subset of brokers with at least one forgivable loan arbitration award. Conditional on being involved in a forgivable loan-related delinquency, brokers are 4× more likely to seek bankruptcy protection or strike compromises with creditors after the delinquency than before the delinquency (11.36% vs 2.35%). Importantly, compromises with creditors exclude current and past employers and hence exclude employee loans. We next decompose financial disclosures into bankruptcies and agreements between a broker and an outside creditor to settle a debt for less than the full balance due outside bankruptcy. The effect is driven by bankruptcies (16.4 × higher) rather than compromises outside bankruptcy (+34% higher). Finally, we zoom in on the 3 years around the loan delinquency date (Figure 7). We find that bankruptcy filings rise sharply around 3-6 quarters after employers initial file for arbitration for unpaid balances on forgivable loans, and remain at elevated levels for up to 12 quarters ex-post.[1]

J. Omitted Variables Driving Bankruptcy

Loan delinquencies do not happen in a vacuum. They follow histories of bad performance and usually coincide with loss of employment. This raises the possibility that the bad performance and subsequent loss of employment drive the spike in bankruptcies and not the forgivable loan per se.

One way to deal with this omitted variable concern is to run a placebo test. Find a setting where the omitted variable (bad performance and loss of employment) is present but

[1]Note that the number of broker bankruptcies is likely underreported due to of survivorship bias. There is no obligation that brokers continue to disclose bankruptcies once they have exited the industry. This is relevant both when comparing bankruptcy rate in the average population with that of delinquent brokers and when computing the recovery on forgivable loans.

our variable of interest (forgivable loan delinquency) is absent, and show no effect.

We construct such a placebo by looking at brokers who got terminated for misconduct allegations but did not become delinquent on forgivable loans. As their delinquent counterparts, brokers terminated for misconduct allegations lose their employment. As their delinquent counterparts, they likely experience a negative productivity shock. This is because once the brokers get terminated, misconduct as a reason for termination (which can and often arises out of firms own internal determination) also becomes public information, lowering clients and employers willingness to contract with them. And finally, as their delinquent counterparts, they also experience an (expected) liquidity shock because they have to pay customer damages to keep their license.

Specifically, we compute the share of financial advisors reporting financial disclosures before and after their first employment separation following misconduct allegations. We measure financial disclosures over a broker's full career in the securities industry, as well as within symmetric one and three year windows around the employment separation event, and we consider both cases where the broker has been allowed to resign as well as firing effective immediately. We find no increase in financial disclosures after employment separation following misconduct allegations (Table VII). This suggests that financial disclosures may emerge only when there is repayment of a forgivable loan involved.

Another solution to the omitted variable problem is to exploit plausibly exogenous variation in loan enforcement as an instrument shifting loan-related financial constraints, while holding other parts of a broker's balance sheet – or, in other words, other factors affecting its claim paying ability – constant. We provide one such instrument below.

Historically, when a broker defaulted on a forgivable loan, employers would seek debt collection by entering external mediation and arbitration with a securities industry arbitration forum and confirming that arbitration, if challenged, in court. This was a lengthy process often taking months, if not years. By 2009, some brokerage firms figured out they could materially streamline the enforcement process by exploiting New York Civil Practice Law Rule (CPLR) 3213 – motion for summary judgment in lieu of complaint – which says that, as long as the dispute only involves payment of moneys owed, a court can award a judgment in a matter of days. As a result, they set up non-FINRA regulated subsidiaries to bypass arbitration and registered them in NY state to litigate loan delinquencies in their stead.

We collected all CPLR 3213 court cases that one prominent brokerage, Merrill Lynch, filed through its specially designated subsidiary, Merrill Lynch International Finance, with the New York Supreme Court. For each case, we observe the plaintiff (Merrill Lynch In-

ternational Finance or equivalents), the defendant (a current or formerly employed Merrill Lynch FINRA-registered broker), the date, the loan amount. We use the defendant name to extract their future financial disclosures from BrokerCheck.

Our hypothesis is brokers delinquent on these loans face much shorter demands for payment so presumably experience much tighter liquidity constraints. One concern could be that firms, and therefore advisors, may select into different enforcement venues, making advisors litigating under NY CPLR 3213 different from those arbitrating under FINRA. There was, to our knowledge, no precedent of a brokerage house using NY CPLR 3213 to bypass and speed up forgivable loan arbitration. It also proved to be illegal. By January 2010, Merrill Lynch stopped using the scheme, only to be fined two years later $1m by FINRA for circumventing mandatory arbitration rules.

Focusing on loans that are at least 150 days old (so advisors had the time to reinvest the loan proceeds — this is how long it takes, for instance, for a typical person to find a house and close a mortgage), we find that the spike in financial disclosures around loan delinquencies is 3× higher for brokers litigated under the streamlined CPLR 3213, compared to brokers arbitrated under FINRA for similar loans around the same time. Unconditionally, the share brokers ending up in bankruptcy or compromises following CPLR 3213 debt collection is 30%.

K. Compromises with Other Creditors

As mentioned before, even when they don't end up in bankruptcies, brokers try to strike compromises with other creditors at 34% higher rates. What we do next is take all brokers with forgivable loan-related arbitration awards, and count the number of compromises with third party creditors that occurred after the start of the loan delinquency leading to the arbitration award, but now separately by whether the broker has eventually paid the employer loan in full or not.

Interestingly, 90-95% of these compromises come from cases where we know brokers fully repaid their forgivable loans (Table VIII). Which means that by revealed preference, these brokers must have preferred paying down their employer loans to paying down other debt. In other words, brokers default on their credit cards, bank loans and mortgages to keep their clients and their securities license intact.

This points to a more general principle. Employee forgivable loans are instances where workers can borrow by credibly pledging their human capital. Human capital is alienable in the sense of Hart and Moore 1994. What we show is that when a creditor has claim on a

borrower's human capital (as the employer has here), it endogenously becomes senior to all other creditors whose repayment relies on that human capital.

L. Incremental Constraints

The fact that loans generate financial distress upon delinquency ex-post does not mean loans make brokers more constrained overall. After all, by borrowing against their human capital, brokers expand borrowing capacity to potentially relax pre-existing borrowing constraints. Moreover, brokers use employer loans to repay other debt. It is therefore possible that the distress arising from loan delinquencies may have originated anyways, only that earlier or perhaps from other debts. Instead, we argue that loan-related liquidity constraints are incremental: they do not just substitute for constraints originating elsewhere on brokers balance sheets, but rather come on top of what would arise absent forgivable loans. The problem is what would have happened absent the loans is not observable. Instead, we construct the counterfactual of no forgivable loans using a regression discontinuity design.

M. A Regression Discontinuity Design

In 2009, Morgan Stanley and Smith Barney merged their brokerage operations. As a result of the merger, all brokers producing more than $500k in 2008 were eligible for a 9 years forgivable loan. Brokers producing less than $500k (the majority of them) were also eligible, but only if they had less than 7 years with the firm. This feature of the loan program introduces a sharp discontinuity in loan supply depending on tenure, a characteristic that was pre-determined at the time of the announcement, and motivates the regression discontinuity design.

Specifically, we identify all brokers employed at Morgan Stanley Smith Barney at the time of the merger. For each broker, we compute tenure by extracting their employment histories with Morgan Stanley or Smith Barney and keeping the longest contiguous qualifying spell. We divide brokers into eligible (treated) or ineligible (control) depending on whether they had less than 7 years of continued employment with either Morgan Stanley or Smith Barney. For every broker, we collect the number and timing of financial disclosures as reported at various stages over the life of the loan contract, and record their type (bankruptcies vs out of bankruptcy compromises) as well as the product involved (credit cards, mortgages, business loans).

N. Validating the RDD

We validate our RDD in two ways. First, if our treatment truly captures variation in loan supply, then we should see treated brokers become delinquent at higher rates. Table X plots the probability of reporting loan delinquencies for treated and untreated brokers over the length of the loan and 3 years afterwards. Indeed, brokers are twice as likely to become delinquent if treated, but only for the first years of the loan contract, and decreasingly so. Once the loan approaches maturity or has already matured, there are no more differences in delinquency rates.

Second, for treatment assignment to be as good as random, all other confounding characteristics should have the same distribution on either side of the cutoff. We consider potential determinants of future conduct and financial distress, such as an advisor's gender, experience in the securities industry, job role and registrations, as well as past conduct and past incidence of financial distress. We then turn to the demographics of the local adult population that these advisors would likely serve. We consider their median age, their racial composition, their immigration background, their educational attainment, as well as their median household income, homeownership rate and median house values at the time the merger. We find no discontinuities in any of these characteristics around the loan eligibility cutoff (Table IX).

O. RDD Results

The top panel of Figure 8 plots the probability that a broker will have at least one financial disclosure over the length of the loan contract against her tenure at the time of the merger, to find that financial disclosures indeed seem to rise discontinuously around the loan eligibility cutoff. We then estimate the causal effect of loan availability on future financial disclosures by fitting local linear regressions on either side of the cutoff. Specifically, we regress subsequent financial disclosures (our proxy for financial distress Y) on tenure at the time of the merger (the running variable T) and a dummy D set to 1 whenever the broker had less than 7 years (the shifter):

$$Y_i = \alpha + \beta T_i + \delta D_i + \gamma Z_i + \varepsilon_i \quad \forall \quad |T_i - 7| \leq h$$

where Z_i denotes other predetermined broker characteristics, and the condition at the end says tenure is measured over a bandwidth h around the cutoff and not over its full domain. The specification above suggests a single linear fit on either side of the cutoff, but we also allow the slope to vary on either side of the cutoff and select the optimal bandwidth in a

bias-variance sense. δ is the coefficient of interest. It captures any local discontinuous shift in financial disclosures around the loan eligibility cutoff.

Taking two brokers with similar experience in the securities industry, joining Morgan Stanley and Smith Barney in a tight window around the same cutoff date, the broker more likely to be eligible for a loan (joining slightly later) experiences a 3.92pp higher likelihood of subsequently reporting a financial disclosure over the life of the loan. The shift in financial disclosures is driven by compromises with other creditors out of bankruptcy rather than within bankruptcy, and in particular by compromises involving bank loans (and likely personal business loans), is strongest in the first 4 years of the contract (when the residual loan balance is largest) and disappears as and after the loans mature (bottom panel of Figure 8).

P. License Suspensions

Brokers who are delinquent on employee forgivable loans and fail to pay risk suspension from the securities industry. In this sense, by taking up a forgivable loan, brokers do not only sign a conditional non-solicitation agreement (preventing them from contacting their clients in the event of non-payment), but also a conditional (and in fact indefinite in both duration and scope) non-compete agreement (preventing them for working again in the industry if they run away with the money).

To understand the extent to which license suspension is enforced, we collect the list of all brokers who failed to pay (forgivable loan-related) arbitration awards, then failed to prove their inability to pay to the arbitration panel or failed to stay the debt collection in a bankruptcy court, and as a result were suspended (indefinitely or until the award was complied with) from the securities industry. We find that 21.18% of these brokers were suspended at least once for unpaid awards.

We then examine the timing of license suspensions. According to FINRA Rule 9554, arbitration awards must be paid within 30 days of the date the award was granted, unless the respondent has a defense to nonpayment or a court decision staying collection of debts. Indeed, we find that virtually all these suspension decisions follow in the few months after the loan award (brokers often ask for hearing and claim non-payment defenses before they are suspended), but never before 30 days.

V. Service Quality

Distress from employee forgivable loans spills over to service quality. Our main proposed mechanism, which we test below, is that as loans accelerate and demand liquidity, advisors commit misconduct to generate that liquidity. Misconduct acts as a liquidity of last resort that experts can use to relax their borrowing constraints.

Crucially, misconduct as a liquidity facility relies on its dynamic nature. Misconduct (excessive trading, steering) is a technology that generates positive cashflows today at the expense of some negative cashflows down the road with some detection probability. As a result, misconduct can function as a form of risky borrowing (Andreoni 1992), temporarily diverting funds away from unsuspecting consumers and into the pockets of employer-creditors, funding forgivable loan-related constraints. This differentiates our mechanism from most of the existing literature (with a few exceptions noted earlier) which thinks about misconduct in a static cost benefit way (Becker 1968).

A. Evidence on Misconduct

Unconditionally, brokers involved in forgivable loan-related disputes are 5× as likely to have misconduct allegations (consumer complaints, other civil or criminal investigations, regulatory actions) than the average broker (72.33% vs 16.23%).

We next turn to the timing of misconduct. Conditional on loan delinquency, misconduct tends to concentrate after (or during) loan delinquency, and not before. Specifically, we restrict to the sample of brokers with at least one forgivable loan arbitration award and compare the percentage of brokers with at least one regulatory action before and after their first forgivable loan delinquency. This analysis captures changes along the extensive margin of each category of misconduct. We show the results in Table XI. Conditional on being involved in a forgivable loan-related award, brokers are more than 4× more likely to have regulatory actions after the delinquency than before the delinquency (31.17% vs 7.6%). The result persists regardless of whether the action is initiated by federal or state regulator, whether it comes from a government or industry self-regulatory organization (e.g. FINRA).

Next, we zoom into the timing of regulatory actions in the three years surrounding the first loan delinquency date in Panel B of Figure 11. We find that regulatory actions start to rise shortly after the delinquency event and increase sharply within the following two to three quarters, peaking around quarter +3 at approximately 5 actions per 100 brokers. The rate of regulatory actions remains elevated for up to 12 quarters following delinquency.

We repeat the analysis for consumer-initiated complaints. Panel A of Figure 11 shows the timing of consumer complaints in the three years before and after the first loan delinquency date. The number of complaints rises steadily in the quarters leading up to the delinquency, peaking sharply at the delinquency quarter at nearly 5 complaints per 100 brokers. Following delinquency, the complaint rate declines but remains above pre-delinquency levels for approximately two quarters. The pattern is not driven by spurious complaints that are subsequently denied, and is present for both arbitrations that end up in settlements or awards against the broker (Figure 10).

The fact that complaints start rising slightly before the loan is declared delinquent may point to a second role of misconduct that we do not exploit here yet, which is risk shifting (Jensen and Meckling 1976). The broker may privately know he will be terminated for missing a performance benchmark before the firm realizes it. Do nothing, and loan would accelerate with high probability and the broker loses everything. Take a risky action, and get a chance at ressurection. Misconduct may act as such a risky action. With some probability, misconduct succeeds and increases performance. With some probability, it gets detected, triggering acceleration. Misconduct therefore acts as a risky form of effort that increases the probability the broker meets its production benchmark ex-ante and avoids acceleration. (Most of our causal evidence below will, however, be ex-post, after acceleration, supporting the liquidity mechanism).

B. Misconduct Timing

The timing of regulatory actions and consumer-initiated complaints seems to align closely with the timing of forgivable loan enforcement. This is true both on the extensive margin – loan delinquency is associated with a spike in the incidence of misconduct – and the intensive margin – a larger loan balance is associated with a proportionally larger spike in damages. The spike is stronger in periods when credit availability is scarce and for brokers whose borrowing capacity is reduced, probably as brokers substitute credit access with misconduct as a source of borrowing to relax liquidity constraints, and is absent for brokers vacating their repayment obligations in arbitration or in court, again consistent with forgivable loan enforcement as a source of misconduct (Table XII).

C. Nature of Allegations

We then extract the nature of the allegations that consumers and regulators make against brokers from the textual description of the consumer complaints and regulatory actions re-

ported for each broker in BrokerCheck. Using natural language processing, we split these allegations into broad categories, flag allegations that are stale, involve events happening way before the start of the loan delinquency process or pointing to sustained behavior over some longer period of time, separate them into acts of omission (inattention, carelessness, negligence) and acts of commission (misrepresentations and other deliberate actions to exploit), and rank the extent to which these allegations are capable of generating an immediate economic benefit for the broker.

The top panel of Table XIII revisits, for all brokers involved in forgivable loan–related arbitration awards, the quarterly incidence of misconduct allegations over the three years surrounding the loan arbitration filing date. It is primarily non-stale complaints (so misconduct allegations arising from recent events), complaints arising from deliberate actions where brokers are more likely to derive an immediate financial benefit, that spike around loan delinquency dates. We then examine the content of these complaints and the amounts involved. We find evidence of frequent omissions and misrepresentations that brokers make in the process of selling, excessive trading, unauthorized activity and discretion, or outright fraud, conversion and theft of funds (bottom panel of Table XIII).

Finally, damages are large ($247,000 per complaint), and there is a strong correlation between the amount that needs to be refunded and the incidence and severity of misconduct. If loan delinquencies in general are associated with a spike in complaints and those complaints tend to be particularly severe, larger delinquencies are associated with an even larger spike in the incidence of complaints, and conditional on receiving a complaint, with even larger amounts of damages per complaint. The nature and magnitude of these allegations are consistent with misconduct acting as a liquidity of last resort: as loans accelerate and demand liquidity, the expert commits misconduct to generate that liquidity.

D. Selection into Misconduct

We next zoom in on the subset of delinquent brokers and compare the characteristics of brokers who end up committing misconduct with those who do not. Conditional on loan delinquency, brokers involved in misconduct are more likely to be male, vote republican, be directly involved in sales and have more experience in the securities industry. They are weakly more likely to work as independent contractors, less likely to hold a CFA charter, more likely to be also registered as investment advisors, and less likely to have made the Barron's list, though the latter are not statistically significant. Moreover, misconduct concentrates where the costs to misconduct seem lowest (Becker 1968). Brokers involved in misconduct

are more likely to target customers who are less educated, have lower household income, lower homeownership, and are more likely to be immigrants (Table X).

E. Causal Evidence

We now examine the effect of forgivable loan delinquency on broker misconduct in a causal sense. The main identification challenge is that unobserved individual characteristics could drive both loan delinquency and misconduct. To overcome this, we exploit plausibly exogenous variation in the forgivable loan enforcement that is orthogonal to advisor characteristics. We use this shock in loan enforcement to instrument for variation in loan delinquency in a triple difference-in-differences setting.

F. Loan Enforcement Reform

Since 1987, all disputes in the securities industry, including those involving forgivable loans, resolve in an industry arbitration forum. Failure to comply with an arbitration award within 30 days resulted in an indefinite suspension from the securities industry. However, there was a loophole. An arbitration forum could only enforce an arbitration decision at some time T if the broker was a member of the securities industry at that time T. As a result, a broker could wait for an unfavorable arbitration award, and voluntarily deregister from the securities industry. The 30 days waiting period would pass, triggering enforcement, only for the arbitration forum to convene and realize it has no jurisdiction to enforce the arbitration award, as the broker is no longer a member of the securities industry. Nothing would stop the broker from reregistering with the securities industry afterwards, making award enforcement moot (the firm could still fight the reregistration, but it would need to launch a separate arbitration, which would take time and might require them to enter in conflict with the broker's new firm).

In May 2004, NASD addressed this loophole by proposing a rule change (see Release No. 34–49636, File No. SR–NASD–2003–69, published in the Federal Register on May 7, 2004). The rule extended NASD's jurisdiction for two years following an advisor's departure from the firm, specifically for the purpose of enforcing unpaid arbitration awards. Advisors could still theoretically avoid enforcement by moving to other markets (Honigsberg, Hu, and Jackson 2025), but this option would have been more costly – it would require obtaining different licenses and often acquiring a new client base. Importantly, this rule change only applied to NASD-registered advisors. Those registered with the New York Stock Exchange (NYSE)

were governed by separate arbitration enforcement rules which remained unchanged.[2]

We therefore exploit variation in forgivable loan enforcement before and after the 2004 regulation, in NASD and NYSE, as an instrument for loan-induced liquidity constraints, to tease out the causal effect of loan delinquency on misconduct.

G. Instrument Relevance

For the NASD Rule change to have bite (or equivalently for our instrument for loan-related constraints to be relevant), we require that the loophole identified by the regulation was indeed implementable, and that the regulation outlawing it was actually enforced. We provide evidence for both conditions below.

Figure 12 Panel A plots the share of delinquent brokers who have been found to temporary deregister from the securities industry for a period of maximum 60 days around a forgivable loan repayment enforcement date, absent a regulatory or employment action forcing them to do so, in the years before and after the regulatory change. Brokers indeed temporarily deregister around the loan repayment enforcement date, but only before and not after the regulatory shock.

Second, Figure 12 Panel B plots the percentage of brokers who have been suspended for non-payment of arbitration awards following forgivable loan delinquencies, in the 8 years before and after the implementation of the NASD Rule change. We document a sharp increase in suspensions following non-payment of arbitration awards following the implementation of the NASD regulation. This is entirely driven by loans arbitrated under NASD (suspensions following non-payment of NYSE awards are essentially absent both before and after the rule change), and is consistent with loan enforcement tightening for brokers arbitrated under NASD and not NYSE.

Aggregate trends in loan size (Figure 1), term (Figure 5), and delinquencies (Figure 4) are also broadly consistent with a tightening of forgivable loan enforcement around 2004. Loan size rises after 2004, presumably as firms, armed with better enforcement, may have been more willing to lend out larger amounts of money. Second, loan terms rise as well, suggesting it is unlikely that loan sizes rose because of higher productivity. Firms recover loan balances from the future productivity of their advisors. With productivities not rising as much, firms had to make those loans longer to break even. Finally, the incidence of loan delinquencies

[2]NYSE did converge to the NASD rules when NASD, NYSE, and CBOE merged to form FINRA. However, the 2007 merger involved multiple simultaneous regulatory changes that may have affected advisor behavior more broadly, making it an unsuitable candidate for identification.

is flat despite the rise in total and average loan balances, resulting in a drop in delinquency rates per dollar lent. The change in loan enforcement might provide an explanation. Brokers that would have opportunistically defaulted on forgivable loans pre-2004, knowing they could avoid the consequences anyways, may have reconsidered afterwards.

H. Motivating Evidence

We start with motivating evidence suggesting the tightening of loan enforcement was indeed associated with an increase in misconduct conditional on delinquency. The top panel of Figure 13 plots the quarterly incidence of misconduct in a six-year window around a broker's first forgivable loan delinquency date, separately for delinquencies occurring in the 3 years before and 3 years after the 2004 NASD forgivable loan enforcement change, to show that the incidence of misconduct increases after loan delinquency, but only after the regulatory change. The bottom panel of Figure 13 repeats the analysis, but now separately for delinquencies arbitrated under the NASD (treated group) and NYSE (control group). Misconduct spikes after a loan delinquency, but it does so more for delinquencies arbitrated under the NASD and only after the regulatory change, motivating a triple difference in differences design.

I. A Triple Difference in Differences Design

We restrict the sample to brokers whose first loan delinquency occurred at any point in the 3 years before and after the regulatory shift (2001-2006).[3] We end the sample pre-2007 as the NASD–NYSE merger in 2007 that created FINRA introduced multiple simultaneous regulatory changes that could confound the effect of loan enforcement on advisor behavior. Then for each broker, we compute the total number of regulatory disclosures in the three years before and after their first loan delinquency. Let $R_{it\Delta t}$ denote the number of regulatory actions for broker i delinquent at time t in a Δt window around loan delinquency, where Δt can either be 3 years before and 3 years after. For every broker i and delinquency time t, let $After_{\Delta t}$ be an indicator variable set to 1 if misconduct is after the loan delinquency and 0 otherwise. Let $Post_t$ be an indicator variable set to 1 if a broker i's delinquency at time t happens after the regulatory change, and let $Treat_i$ be an indicator variable set to 1 if broker i is arbitrated under NASD. Let α_i and α_t be broker and delinquency time fixed

[3]Strengthening loan enforcement may have also altered the prevalence and characteristics of new loans being issued in equilibrium as well as the characteristics of brokers selecting into these loans. By looking into a tight window around the loan enforcement change, we make sure we identify the effect of strengthening loan enforcement on a set of already existing loans, so holding loan and broker characteristics fixed.

effects. We propose the following triple difference in differences specification:

$$R_{it\Delta t} = \alpha_i + \alpha_t + \beta_1 \times After_{\Delta t} + \beta_2 \times Post_t + \beta_3 \times Treat_i + \beta_4 \times After_{\Delta t} \times Post_t + \beta_5 \times After_{\Delta t} \times Treat_i + \beta_6 \times Post_t \times Treat_i + \beta_7 \times After_{\Delta t} \times Post_t \times Treat_i \quad (1)$$

where a_i, a_t, $Post_t$, $Treat_i$ and interactions between those capture broker and delinquency time-invariant variation in misconduct, and β_7 is the triple interaction coefficient of interest. It captures how much more misconduct increased after delinquency (relative to before) for treated brokers after stronger enforcement, compared with untreated brokers, compared to pre-2004.

J. Identifying Assumptions

We validate our identification strategy in two ways. First, in Table XIV, we compare the treated and control group across a range of broker and customer characteristics in the pre-period. Our brokers are similar in terms of gender, their employment type (employee versus independent contractor – which is indicative of background risk), their role (management as opposed to involved in sales), their licenses (which are indicative of the type and breadth of activities the representative is involved in and implicitly their risk and productivity) and other professional credentials (CFA charter holder), their experience (number of years in the securities industry) or inclusion in the WSJ Barron Top Broker list (as a measure of broker quality). They have similar political preferences, and target a similar customer base, in terms of age, race, origin, education and income, homeownership and housing wealth.

Second, for the identification strategy to be valid, the conditional parallel trends assumption must hold. That is, conditional on covariates and in the absence of the loan enforcement change, the evolution of regulatory actions across treated and control groups should have been the same. We evaluate the parallel trends assumption in Figure 14.

Table XV reports the results. Brokers exposed to stricter loan enforcement experience 0.267 more regulatory actions in the three years after their first loan delinquency, relative to the three years before, compared to brokers not exposed to the rule change and compared to the pre-period.

K. Selection into Treatment

Our triple differences design looks at delinquencies from a set of pre-existing loan contracts and exploits variation in loan enforcement across delinquencies and over time. A natural

concern is selection into treatment. Learning about stricter enforcement, unconstrained brokers may select out of delinquency. As a result, those who proceed with delinquency even under stricter enforcement may be a selected set of more financially constrained brokers, for whom we might mechanically expect higher subsequent misconduct.

To address this concern, we exploit the fact that the 2004 NASD rule applied to both prospective as well as pre-existing delinquencies, as long as those delinquencies did not result in a binding arbitration decision (were still pending) by the announcement date. As a result, we restrict to the subset of brokers whose delinquencies had already started before the regulatory announcement (pre-existing delinquencies) and compare brokers whose delinquencies have ended before the regulatory announcement (pre) with brokers whose delinquencies have started before but ended after the regulatory announcement (post) in a triple difference-in-differences design. The top panel of Figure 15 illustrates our new shock timing, while the bottom panel reports the results. While brokers who were already close to an arbitration award at the time of the announcement had no time to respond to the enforcement change, the remaining ones do. Conditional on already being in delinquency, brokers subject to the enforcement change see more misconduct allegations than brokers who are not, relative to themselves prior to delinquency and relative to the pre-period.

L. Incremental Misconduct

The fact that brokers respond to loan delinquency ex-post by committing misconduct does not imply forgivable loans overall are bad for service quality. This is because forgivable loans also provide incentives ex-ante. In particular, forgivable loans make advisors' payoff function more concave. Suppose an advisor's compensation structure were linear in production (this tends to be a good approximation – most advisors earn a fixed percentage of their production as payout). And suppose there are three production states: forgiveness (good performance), repayment (bad performance), and acceleration (very bad or continued bad performance). In the forgiveness state, the loan gets forgiven so the payoff remains unchanged. In the repayment state, the loan gets repaid shifting the advisors payoff downward somewhat. In the acceleration state, the entire loan balance comes due immediately with interest. And to the extent to which debt acceleration is binding because one cannot costlessly rollover into other debt or liquidate unused assets, this results in a large reduction in the payout in the acceleration state ex-post, making the overall payoff function more concave.

Now, misconduct is nothing but a lottery over production. With some probability, it succeeds and increases production, while with some probability it gets detected, leading to

a consumer complaint, regulatory action, damages sought or even termination. Risk averse agents dislike lotteries. Make their payoffs more concave and they dislike lotteries even more. Hence, outside default, loans should disincentive misconduct. In default, loans appear to incentivize it. Which effect dominates is an empirical question.

To establish causality, we revisit our 2009 Morgan Stanley Smith Barney RDD setting, and exploit the fact that loan availability shifts discontinuously with tenure. Specifically, for every broker affiliated with Morgan Stanley or Smith Barney at the time of the merger, we track the incidence of misconduct allegations over the life of the loan contract (9 years) and up to 3 years afterwards (we consider formal consumer initiated complains, regulatory actions, as well as employer disciplinary actions following misconduct allegations. The latter can arise from firm internal determination even absent a formal complaint or regulatory action). We then regress misconduct (a dummy Y set to 1 if the broker has at least one misconduct allegation during the reporting period) on tenure at the time of the merger (the running variable T) and a dummy D set to 1 whenever the broker had less than 7 years (the shifter), in a regression discontinuity design:

$$Y_i = \alpha + \beta T_i + \delta D_i + \gamma Z_i + \varepsilon_i \quad \forall \quad |T_i - 7| \leq h$$

where Z_i denotes other predetermined broker characteristics, and the condition at the end says that tenure is measured over a bandwidth h around the cutoff and not over its full domain. δ is the coefficient of interest. It captures any local discontinuous shift in misconduct around the loan eligibility cutoff.

Taking two brokers in the same county with similar experience in the securities industry, joining Morgan Stanley and Smith Barney in a tight window around the same cutoff date, the broker more likely to be eligible for a loan experiences a 7.77pp higher probability of reporting at least one misconduct allegation over the duration of the loan contract (or equivalently a 9.87pp increase in total misconduct allegations) (Table XVI). The results are primarily driven by complaints, though regulatory and employer actions rise as well, and are robust to different estimation bandwidths (2-3Y), allowing the slope coefficient to vary on either side of the cutoff or assigning more weight to observations closer to the cutoff.

M. Interpreting the Causal Estimates

We put these causal estimates into perspective in two ways. First, we take our local average treatment effect (a 7.77pp increase in misconduct) and compare it with the incidence of misconduct among untreated brokers in the neighborhood of the cutoff (7.2% had at least one

miscoduct allegation over the same period). We conclude that the presence of forgivable loans is associated with a more than doubling of the incidence of misconduct over the subsequent term of the loan and up to 3 years afterwards, at least locally.

Second, we extrapolate the local average treatment effect (9,87pp more allegations) to all treated advisors, multiply it by the number of treated advisors (7,661) then divide it by the actual realized misconduct allegations over the same period for all Morgan Stanley Smith Barney advisors employed at the time of the merger (14,584 $\times$ 15.81%), to arrive at an estimate of the share of misconduct attributable to forgivable loans for the firm as a whole. According to this computation, 33% of all misconduct reported by Morgan Stanley Smith Barney advisors after the financial crisis can be attributed to employee forgivable loans.

N. Beyond Misconduct

We next look at how other aspects of service quality or quantity vary after the loan supply shock (Table XVII). We do not find that loans make advisors more productive overall (in terms of fees, commissions, or assets under management). We also do not find that advisors invest more in long term client relationships, adopt fee-based advising models or customer friendly licenses and professional designations, or at least not in a causal sense.

VI. Labor Mobility

Loans are anticompetitive. Brokers are unable to leave for a smaller company or open an independent practice unless they repay the balance on the loan. Having spent the money, the only option is to roll over the loan with another large company that has the capacity to fund the loan. Forgivable loans act as effective shadow non-competes taking talent away from small companies and locking it in larger companies. This is particularly valuable in industries where standard labor mobility restrictions are hard to enforce.

A. Broker Mobility

To examine the effect of forgivable loan availability on broker mobility, we collect data on brokers individual employment spells to store the following information at the firm $\times$ year level: the firm total employment size, the total amount of recruitment over the last 5 years, the total amount of poaching, defined as recruitment of representatives from other companies with at least 5Y of experience in the securities industry over the last 5Y, retention, defined as share of last period employment still in employment at the end of this year, departures,

defined as the share of current period employment that will depart the next period, which we then split into departures to companies with more than 1000 employees and departures to companies with fewer than 100 employees. We focus on the intensive margin (the extent to which firms extend forgivable loans as measured by the average loan balance per broker). Results on the extensive margin (whether the firm extends loans or not) coming out soon.

Figure 16 looks at the relationship between the extent to which a securities firm pays employee forgivable loans (measured as the average loan balance per broker) and its ability to retain its workforce in the cross section and over time. On average, higher employee loan balances are associated with higher current employee retention rates and predict lower future employee departure rates. Table XVIII repeats the analysis in the cross-section (with year fixed effects), to find that on average, a $100,000 increase in the average employee loan balance is associated with 2.1pp higher current employee retention rates and predict a 2.8pp lower employee departure rates over the next 12 months.

Yet brokers can depart because they have poor opportunities inside the firm or good opportunities outside the firm. To disentangle the two explanations, we split departures into departures to large firms or small firms holding incumbent firms fixed. We find that higher loan balances predict fewer departures to smaller firms and not bigger firms — so precisely those firms where is harder to refinance the loan.

However, there may be other factors differentially affecting the ability of advisors to access employment opportunities in small vs. large firms. For instance, not only are smaller companies less able to refinance an outstanding loan balance, but also disproportionately more likely to be outside of the Broker Protocol, meaning brokers looking to move to small firms face additional litigation risk. To isolate differences in litigation risk across firms, we next focus on employee transfers within firms that are members of the Broker Protocol. We find is that even for transfers within the protocol, where restrictions in soliciting clients are minimal and importantly are homogenous across firms, there is still a larger reduction in departures towards smaller companies.

B. Retention DID

We now examine the relationship between forgivable loan enforcement and employee retention causally. As before, we obtain exogenous variation by instrumenting loan enforcement with the regulatory change in 2004. Prior to the 2007 merger of NASD and NYSE into FINRA, most brokerage firms were dually registered and could choose the arbitration forum for resolving employment disputes. After the rule change, which strengthened enforcement

under NASD arbitration, many firms began shifting new (and sometimes existing) contracts to NASD. Indeed, we observe a sharp decline in newly filed NYSE loan arbitrations — 49 cases in 2002, 47 in 2003, and 58 in 2004—dropping to 21 in 2005, 14 in 2006, and just 12 in 2007. This shift plausibly increased perceptions of enforcement and strengthened the ex-ante retention effect of forgivable loans, as brokers were more likely to remain with the current firm to avoid triggering repayment.

The key empirical challenge here is constructing a control group of employees that were not subject to increased enforcement in the likelihood of loan delinquency even after 2004. We address this by focusing on brokers hired before 2004 at firms that continued to report NYSE arbitration cases after the rule change in 2004. The fact that some firms continued arbitrating under NYSE (despite weaker enforcement) plausibly reflects contract language that did not allow for forum choice. Our identification assumption is that conditional on the same firm, employees that did not end up in loan delinquency had similar forum choice constraints as those who did (for which we can directly observe forum choice).

C. Empirical Specification

We define the treatment group as firms that stopped reporting NYSE loan arbitrations after 2004, suggesting a shift to NASD arbitration and thus exposure to stricter enforcement. The control group consists of firms that continued to report, or predominantly reported, NYSE arbitrations after 2004, indicating that their contracts remained governed by NYSE rules and were not subject to the NASD rule change. We compute three-year retention rates for brokers hired between 1999 and 2004. Because the NASD rule change took effect in 2004, we expect the enforcement shock to affect only those brokers whose retention window overlaps with the post-rule period—that is, brokers hired in 2001 or later. We compare retention trends across treatment and control firms using a difference-in-differences framework, as specified below.

$$Retention3Y_{fct} = \alpha + \beta_1 Post_t \times Treat_f + \beta_2 \times Treat_f + \gamma X_{ft} + \alpha_t + \alpha_c + \epsilon_{fct}$$

The dependent variable, $Retention3Y_{fct}$, is defined at the three-year employee retention rate for firm f of owner c at time t. The treatment indicator, $Treat_f$, equals one for firms that shifted from NYSE to NASD arbitration after 2004, thus becoming subject to stricter enforcement of forgivable loan agreements. The control group comprises firms that continued to report, or predominantly reported, NYSE loan arbitrations after 2004 and are assumed to be unaffected by the enforcement change. The post-treatment indicator,

$Post_t$, equals one for years after the 2004 NASD rule change. The vector X_{ft} includes firm-level control variables including protocol membership status, firm size (measured as the log of total employment), and average broker experience. The specification includes year and common ownership fixed effects, with standard errors clustered at the common ownership level. Common ownership here is defined as any pair of firms sharing at least one direct or indirect controlling institutional shareholder, based on the FINRA 2021 Common Ownership Snapshot.

For the identification strategy to be valid, the parallel trends assumption must hold. That is, in the absence of the loan enforcement change, the three-year retention rate should have been the same for the treatment and control groups. We evaluate the parallel trends assumption in Figure 17.

Table XIX reports the coefficients for the specification adding year fixed effects, firm controls and common ownership fixed effects, respectively. Across all specifications, three-year retention rates increase significantly (between 5.99 and 9.30 pp) for cohorts bound by the regulation, compared to cohorts not bound by the regulation, compared to the pre-period.

A potential limitation of our strategy is that by comparing firms arbitrating in different forums, we may inadvertently capture differences in underlying firm characteristics or operations. To address this limitation, we turn to the sample of firms that engaged in both NASD and NYSE arbitrations in the pre-period, and exploit variation in the extent to which they continue to arbitrate in NYSE or switch to NASD after the regulation. As before, we interpret their inability to switch to NASD despite stronger enforcement as capturing constraints in forum choice set in employment contracts ex-ante. As shown in Figure 18, all our difference-in-differences estimates remain statistically significant, with the increase in retention observed only among treated firms ex-post.

VII. External Validity

Forgivable loans are prevalent in high-skilled, client-facing professions. Although our analysis focuses on the financial advisory industry due to data availability, the underlying mechanisms and implications are likely to extend more broadly. To illustrate the potential external validity of our findings, we present supporting evidence from executives, healthcare professionals, and commercial real estate agents.

A. Executives

Executive forgivable loans gained prominence in the 1990s and early 2000s as a tool for recruitment, retention, and incentive alignment. However, unlike other types of incentive pay such as stock option grants that required lengthy disclosures, forgivable loans offered comparable incentives absent the same transparency or accountability, facilitating managerial rent extraction.[4] Executive forgivable loans were eventually banned under the 2002 Sarbanes-Oxley Act in response to high-profile corporate scandals involving fraud and abuse at firms like Enron and Tyco. Since then, forgivable loans have reemerged in the form of retention tools for non-executives.

To document the scale and structure of these loans, we analyze data from the ExecuComp database. The data comes from SEC Form DEF 14A definitive proxy statements filed by public companies in preparation of shareholder votes, and includes company and executive identifiers, allowing us to track individuals across firms and time. Loan forgiveness details appear in the "other compensation" notes of annual compensation tables. We define a forgivable loan as any compensation entry involving terms such as "loan," "debt," "promissory note," or "advance". By definition, loans are not treated as compensation as they need to be repaid. Hence, any occurrence of the word loan or equivalent as compensation implies some sort of debt forgiveness. Many public companies fail to disclose executive loans even when they have to, and private firms are exempt. However, we identify at least 120 firms that reported executive loans between 1992 and 2006. These firms collectively managed approximately $609 billion in assets in 2000. The average annual forgiveness amount was $945,971, with some as high as $15 million. The aggregate loan amount forgiven across all years exceeded $200 Million. In relative terms, the median loan forgiveness amount was comparable to amounts paid as base salary and made up 17% of overall executive compensation. For the subset of executives reporting debt forgiveness in the ExecuComp dataset, we examine the underlying SEC Form DEF14A definitive proxy statements to extract details on loan contract terms. These loans typically span three to five years, with balances forgiven annually—often in pro-rata installments. In most cases, forgiveness is contingent on continued tenure at the firm.

[4]Large upfront payments were not immediately disclosed in compensation tables; instead, the income was reported only upon forgiveness. These amounts were often classified as "other annual compensation" rather than "salary," further obscuring their nature.

B. Healthcare Professionals

Forgivable loans are also widely used in healthcare industry. In the nursing profession, they often take the form of Training Repayment Agreement Provisions (TRAPs), which require nurses to repay their employer for on-the-job training if they leave before a specified period. Unlike traditional forgivable loans in finance, where the employee repays money received, TRAPs obligate repayment for non-fungible goods or services. Since there are not direct monetary transfers upfront, a new employer cannot easily reimburse the former employer. A 2022 survey by National Nurses United revealed that 51.1% of 1,698 respondents had participated in training, residency, or apprenticeship programs tied to employment, and among those, only half were aware they were incurring debt. These obligations disproportionately affect early-career nurses: 74.5% of those with less than five years of experience reported being in such programs, compared to just 19.8% of nurses with over 20 years in the field. While broker forgivable loans may create incentives for misconduct tied to commission-based sales, nursing TRAPs raise distinct consumer protection concerns. Nurses reported being compelled to work under unsafe staffing ratios, take undesirable shifts, and tolerate mistreatment due to the financial penalties associated with early departure. Many expressed feeling trapped in unsafe conditions, unable to advocate for themselves or patients for fear of triggering loan repayment obligations (CFPB, 2022). Similarly, forgivable loans are commonly used in physician recruitment, particularly in rural or underserved areas. Hospitals often rely on patient referrals from local medical practices. To increase referrals, hospitals can extend loans to physicians recruited at local practices, and often guarantee their salaries for the first few years of employment. These loans cover student loans or moving expenses and are forgivable based on continued tenure and local service. Although regulations like the Anti-Kickback Statute and the Stark Law prohibit tying forgiveness directly to referrals, these arrangements may still create implicit incentives for overutilization. This may happen as practices often let go underperforming physicians when the hospital income guarantee stops or when physicians encounter unexpected tax burdens upon loan forgiveness.

C. Commercial Real Estate Professionals

Forgivable loans also proliferate in the commercial real estate sector as a tool for recruitment and retention, particularly among top companies. As of early 2024, several large commercial real estate companies disclosed substantial balances associated with such arrangements: Newmark reported $787.9 million in "Loans, Forgivable Loans and Other Receivables from

Employees," Cushman & Wakefield disclosed $413.6 million in "Receivables from Brokers and Other Employees," and Marcus & Millichap reported $179 million in "Net Advances and Loans." While many other companies (such as Jones Lang LaSalle) do not disclose loan balances, court filings reveal active efforts to recover unpaid loan amounts, indicating similar practices. These loans are typically structured as advances that are forgiven over time, conditional on continued employment.

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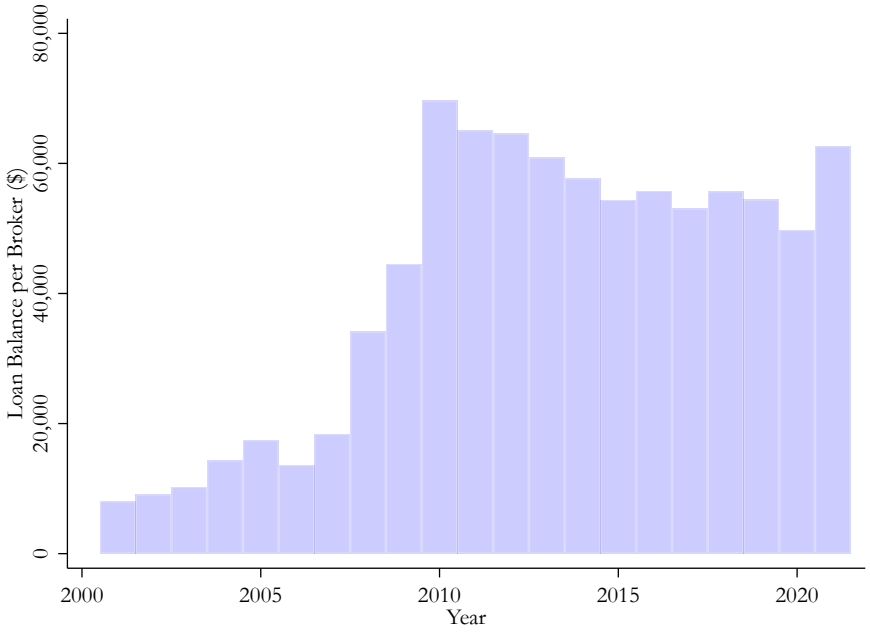
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Charts and Tables

Figure 1: **Forgivable Loan Balances Across Firms and Time**

A. This chart plots the average forgivable loan balance outstanding per broker across the subset of US securities firms disclosing forgivable loan balances in their Focus Report annual statements with the SEC since electronic reporting started in 2001. Balances computed as firm level balances divided by firm employment, weighted by each firms weight in overall reporting firms employment. Not all firm employees get forgivable loans. As a result, the average loan balance among receiving employees is strictly greater.



B. This table reports the 10 largest aggregate loan balances across securities firms by the end of our sample in 2022. Data from securities firms annual X-17A-5 financial statements with the SEC, cross-checked with parent companies 10-Ks for publicly listed parents. Figures in USD Billions.

Securities Firm	Loan Balance
Morgan Stanley Smith Barney	4.12
UBS	2.25
Wells Fargo	2.20
RBC Capital Markets	1.19
LPL Financial	1.07
Ameriprise Financial	1.01
Raymond James	0.94
Stifel Nicolaus	0.65
Janney Montgomery Scott	0.31
Merrill Lynch, Pierce, Fenner & Smith Inc	0.27

Table I: **The Supply of Forgivable Loans**

This table shows variation in the extent to which firms report loan balances (the extensive margin) and the average balance per broker conditional on reporting (the intensive margin) by firm characteristics. We consider firm size and affiliation with a financial intermediary (larger firms, firms affiliated with large financial intermediaries have the funding capacity the finance the loans), the extent to which firms enforce client non-solicitation clauses in employment contracts (firms in the Broker Protocol have committed to waive non-solicitation and may use loans as an alternative labor restriction device), the firm clientele (retail clients tend to follow the broker, institutional clients tend to follow the firm), the firm business model and in particular, the extent to which the firm can seize client accounts (traditional firms control the client account information, independent broker dealers often do not) and the extent to which the firm may worry the client would follow the broker (banks and insurers have sticky client relationships and large switching costs, discounters (Robinhood) leave little role for the brokers as clients interact directly with the platform). Loan balances employment weighted. Data on firm loan balances from securities firms SEC annual statements over the period 2001-2021. Firm characteristics and employment from FINRA. Firm membership in the Broker Protocol from the Protocol custodian firm.

	Intensive Margin		Extensive Margin	
	Loan Balance (USD)		Report Loan	
	Mean	SE	Mean	SE
Firm Employment				
Large	72,300	5,294	0.19	0.01
Medium	13,242	747	0.29	0.03
Small	9,196	852	0.40	0.03
Intermediary Affiliation				
Affiliated	56,263	1,755	0.25	0.02
Standalone	7.532	462	0.27	0.05
Protocol Membership				
Member	69,942	2,215	0.61	0.03
Non-member	28,263	1,408	0.13	0.01
Clientele				
Retail	55,736	1,718	0.40	0.03
Institutional	37,009	6,739	0.08	0.02
Retail Business Model				
Traditional	91,895	3,362	0.46	0.06
Independent	11,739	637	0.50	0.04
Bank	10,938	1,382	0.28	0.07
Insurer	7,574	533	0.19	0.07
Discounter	0	-	0	-

Figure 2: **Loan Timing: Balances and the Revelation of Fraud**

On February 17, 2009, the U.S. Securities and Exchange Commission charged Stanford Financial and its associates with orchestrating a $7Bn Ponzi scheme. According to the SEC, Stanford Financial used foreign subsidiaries to sell certificates of deposits promising unusually high yields (10-12%). Instead of being invested, client funds were used to fund withdrawals, support the company operations and pay its associates. This chart plots employee forgivable loan balances in the five years prior to the scheme's revelation. The grey area marks the period after the SEC began its formal investigation into the scheme in late 2005. Data on Stanford Financial loan balances from the company's annual Focus Reports. Data on Stanford Financial employment aggregated from financial advisors employment spells in BrokerCheck.

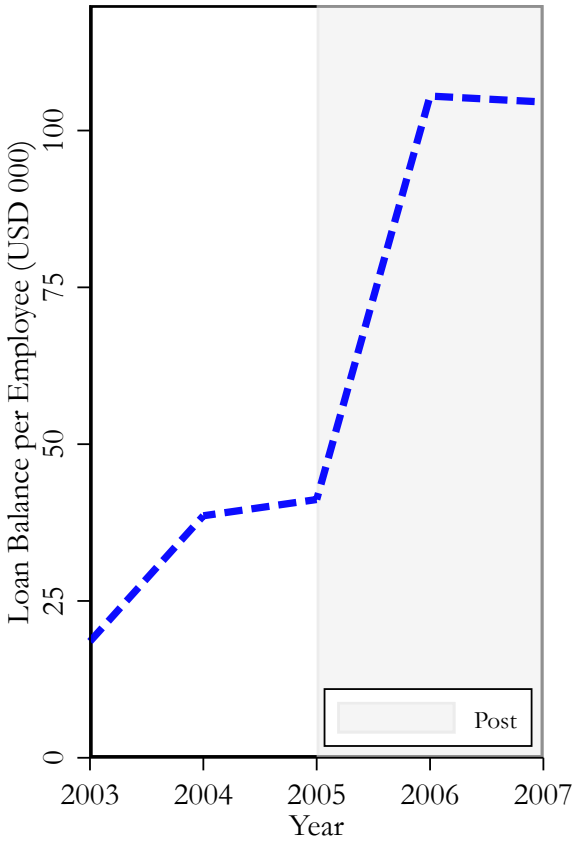


Figure 3: **Loan Use: Evidence from Property Records**

For a subset of financial advisers, we observe their residential addresses in 2023. We use a combination of property records data and mortgage servicing data from CoreLogic to figure out when did they purchase their properties and how did they finance the transactions. We restrict to brokers who were already active in the securities industry by 2007. We then split the sample into brokers employed at firms extending forgivable loan retention offers around the financial crisis and brokers who did not. Most of these loans were announced as a response to corporate mergers and extended to a large share of existing employment. We restrict to retention loans as brokers getting recruiting loans are also more likely to change location and hence mechanically more likely to buy property. We then plot the timing of housing purchases (the year when they bought their current residence) separately for brokers who (likely) got forgivable loans and who did not. Brokers who got loans during the financial crisis are also more likely to have bought their current residence around the financial crisis relative to brokers who did not.

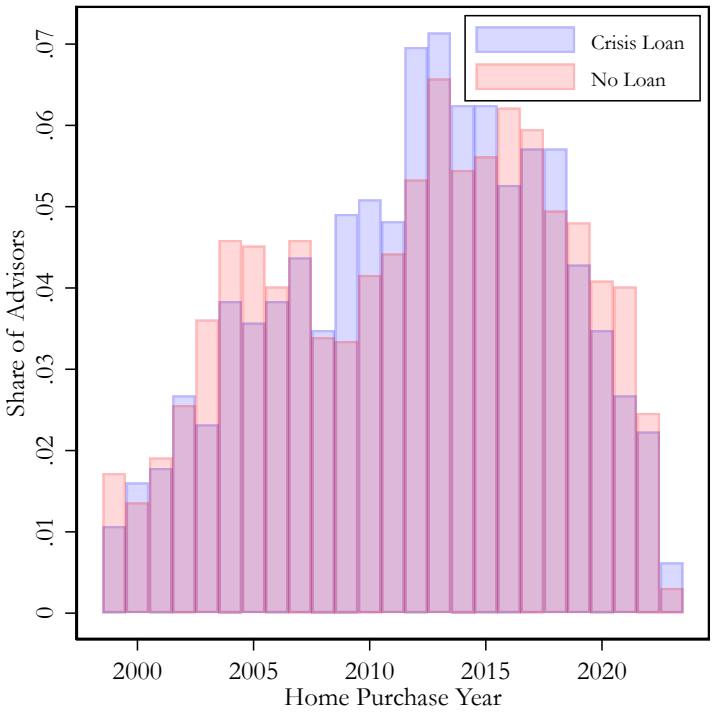


Table II: **Loan Use: Evidence from Property Records**

For every financial advisor for whom we have residential address in 2023, we record whether or not it was eligible for retention loans during the financial crisis and whether it bought its house during the financial crisis, as well the characteristics of that property including the financing. We regress buying a house (or getting a mortgage to buy a house) during the financial crisis on getting a forgivable loan during the financial crisis, controlling for the year it entered the securities industry (older more experienced advisors might have already secured a satisfactory residence by the time they got the loan), as well as for the location of the house (to control for local housing and economic conditions) through fixed effects. Data on financial advisers residential addresses from Form U-4 registrations collected by Discovery Data. Data on house and mortgage transactions from CoreLogic.

			conditional on getting a mortgage	
	Got Home	Got Mortgage	Home Value	Mortgage Amt
Got Loan	0.023***	0.020***	25,334***	13,321**
	[0.004]	[0.003]	[9136]	[5767]
FE:				
Entry Year	Yes	Yes	Yes	Yes
County	Yes	Yes	Yes	Yes
State	Yes	Yes	Yes	Yes
Purchase Year	No	No	Yes	Yes
No	82,042	82,042	16,399	16,399
R2	0.025	0.029	0.381	0.350

Selection into Loan Use

We then restrict the sample to brokers who got a mortgage to buy their primary residence around the financial crisis (2007-2012), and split it into brokers with above or below median FICO scores (high or low FICO), purchasing in the bottom 90% or top 10% US counties by house price to income ratio (high vs low affordability). Got loan is a dummy set to 1 if the broker was employed at a firm extending retention loans around the financial crisis. Huber-White standard errors in parentheses.

Mortgage Amount	High FICO	Low FICO	High Afford	Low Afford
Got Loan	7,296	41,369*	10,196**	58,688*
	[16,350]	[23,575]	[4,709]	[30,265]
FE:				
Entry Year	Yes	Yes	Yes	Yes
County	Yes	Yes	Yes	Yes
State	Yes	Yes	Yes	Yes
Purchase Year	Yes	Yes	Yes	Yes
No	2,708	2,054	13,975	1,189
R2	0.398	0.358	0.305	0.194

Figure 4: **Forgivable Loan Related Disputes by Outcome**

When a broker defaults on an employee forgivable loan, its employer can seize collateral by filing a temporary restraining order in court to prevent the broker from contacting their clients and taking a firm's business to a competitor, start external arbitration under a securities industry arbitration forum, which can resolve in an externally-mediated settlement, an arbitration award against the broker or proceed to be litigated in court. This chart plots a time series of broker forgivable loan disputes, broken down by outcome, since FINRA (and its predecessors NASD, NYSE, CBOE and AMEX) started administering securities disputes in 1987. Statistics on forgivable loan related settlements, arbitration awards and litigations from FINRA Dispute Resolution Statistics and Arbitration Awards Online. Statistics on forgivable loan related temporary restraining orders from NASD and later FINRA's Office of Dispute Resolution.

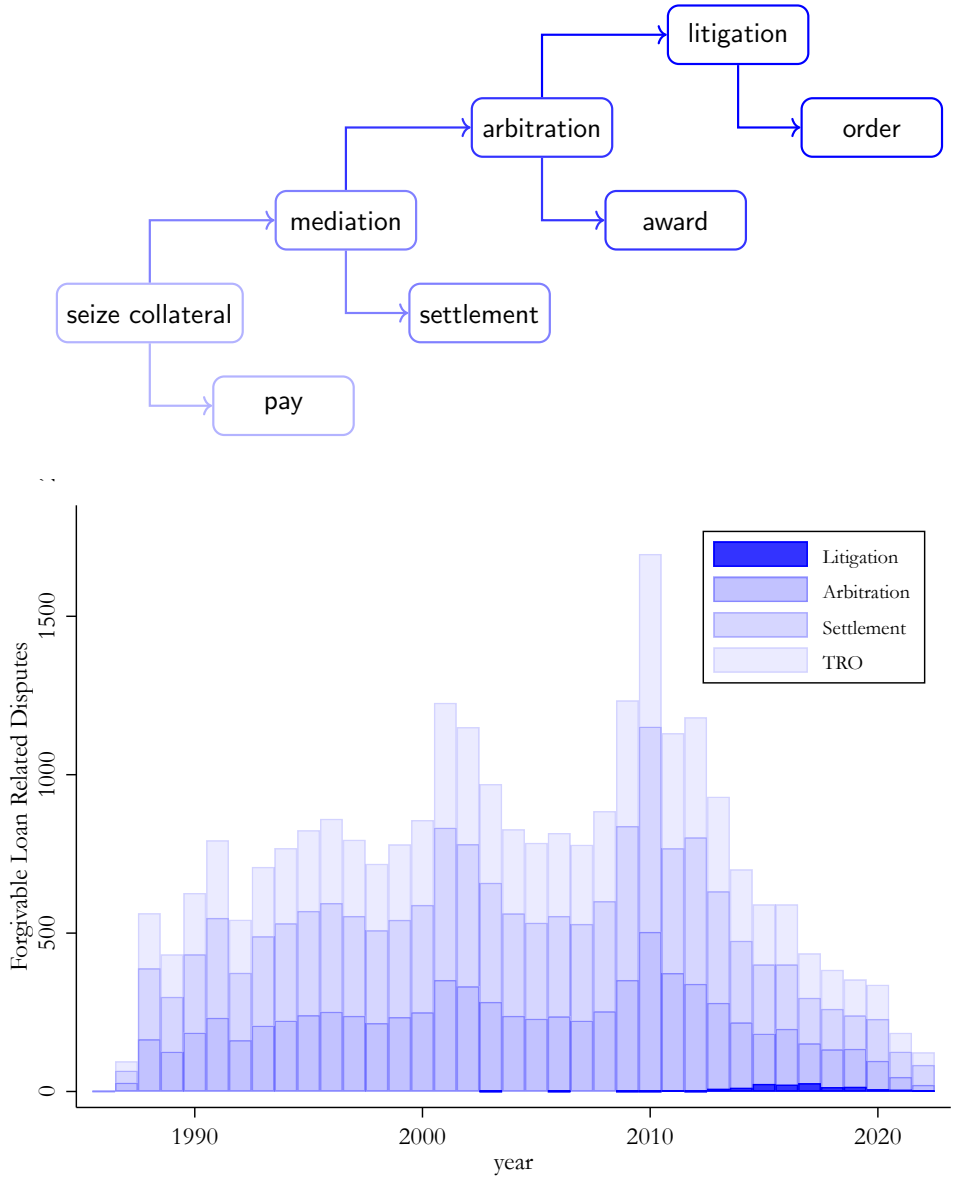


Table III: **Loan Disputes in Perspective: Employment Disputes**

This table compares the incidence of forgivable loan related disputes against all other main categories of employment disputes since FINRA started reporting statistics on intra-industry arbitrations in 2011. A single arbitration case may include multiple controversies. In all years prior to 2017, forgivable loans have been the primary source of intra-industry arbitrations. Since then, forgivable loan related arbitrations stand second after breach of contract, which is however a broader category. Data from FINRA's Dispute Resolution Statistics.

Category	Arbitrations
Breach of Contract	5134
Forgivable Loans	**4870**
Compensation	1994
Wrongful Termination	1306
Libel	1480
Discrimination	529
Raiding	397
Negligence	265

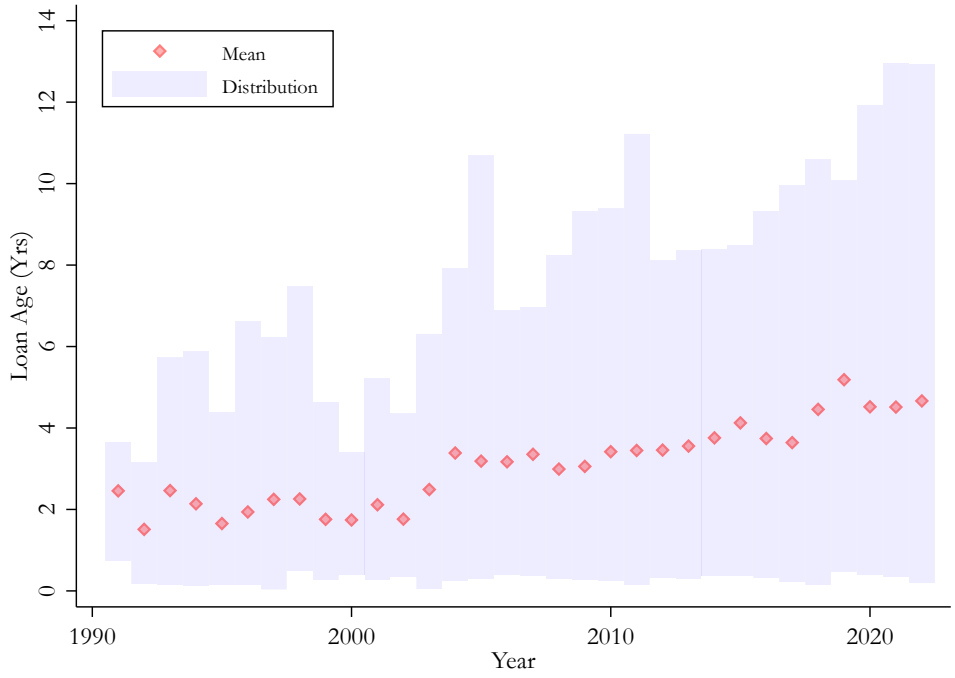
Table IV: **Loan Disputes in Perspective: Financial Compromises**

This table compares the incidence and size distribution of employee forgivable loan compromises with those of other major creditor categories over the decade following the financial crisis. Forgivable loan counts are based on loan disputes resolved through settlement, arbitration, or litigation. Forgivable loan size is estimated based on the subset of loan disputes which resulted in FINRA arbitration awards. Compromise restricted to amounts exceeding $10,000.

Category	Compromises	10th Pct	25th Pct	Median	75th Pct	90th Pct
Mortgage Debt	4,966	44,156	101,449	200,000	351,630	570,166
Forgivable Loans	**4,632**	**19,876**	**50,000**	**135,116**	**300,012**	**603,354**
Credit Card	4,439	10,710	12,275	15,865	21,900	33,900
Bank Loan	2,188	28,177	38,666	89,778	233,043	468,750
Tax	509	13,369	21,328	50,325	150,000	339,426
Student Loan	207	12,000	14,810	21,789	37,554	70,000
Divorce & Inheritance	35	17,250	26,675	188,000	460,266	830,145
Medical Debt	20	12,279	13,431	22,459	48,074	212,840

Figure 5: **Loan Characteristics in Dispute**

This figure plots key loan characteristics as coming out of forgivable loan related arbitration awards in FINRA Arbitration Awards Database, broken down by year of award. The top chart plots the average and associated distribution of forgivable loan ages at the time of filing the arbitration leading to the award. Age defined as the award filing date minus loan signing date. The bottom chart plots the median forgivable loan related arbitration award over time. In virtually all forgivable loan cases, the award represents the balance outstanding on the forgivable loan at the time of filing the arbitration leading to the award. Penalizing interest excluded unless quoted together with the balance as a single award amount. As both loan ages and balances quoted as of the time of delinquency, they represent a lower bound on what the original loan balance and repayment term must have been at issuance.



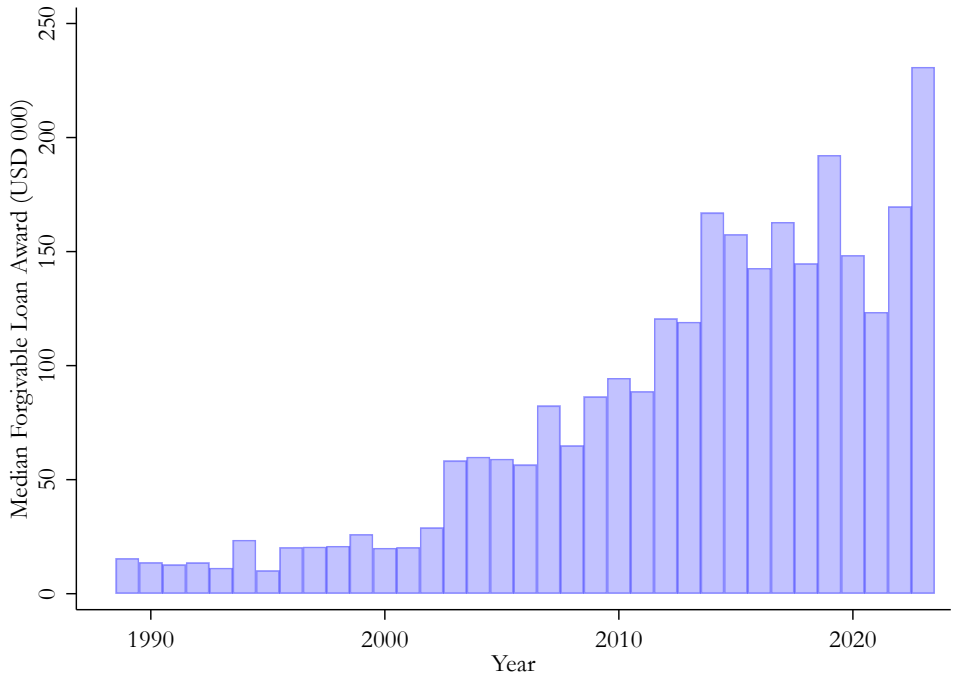


Figure 6: **Broker Financial Disclosures by Loan Exposure**

This figure plots the incidence of brokers financial disclosures broken down by brokers exposure to employee forgivable loans. Incidence of financial disclosures measured as the number of bankruptcies and compromises with creditors in any given year. A broker is exposed to forgivable loan if its employer firm has been involved in forgivable loan-related arbitration awards at least once during the sample period. Data on brokers employment and financial disclosures from FINRA BrokerCheck. Data on forgivable loan related arbitrations from FINRA Arbitration Awards Online. Sample period is 2007-2020.

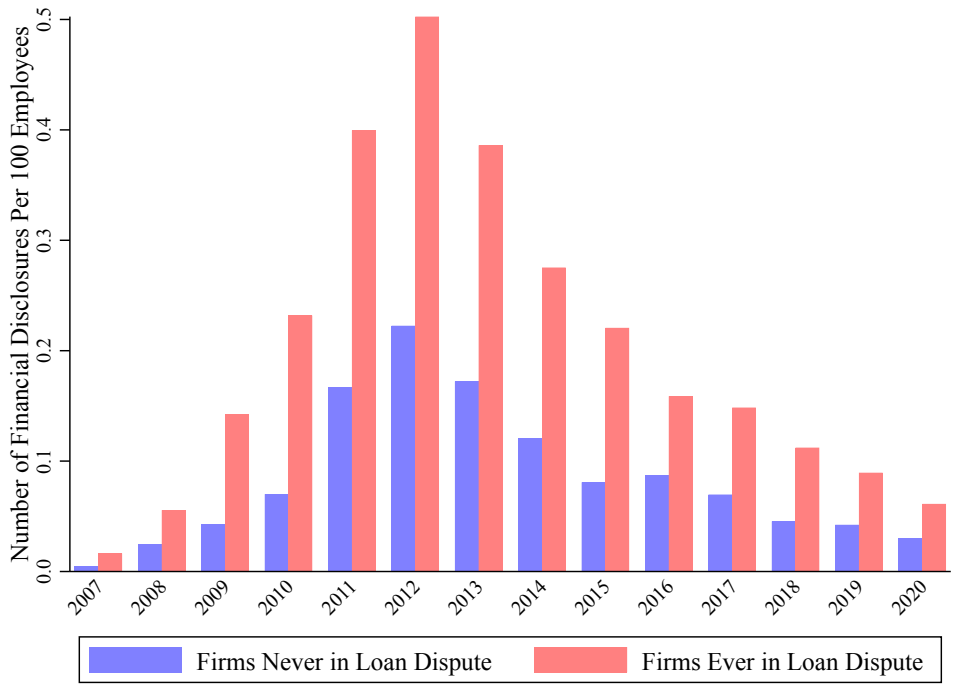


Table V: **Financial Disclosures Around Loan Delinquency**

This table reports the percentage share of brokers reporting financial disclosures before and after their first forgivable loan delinquency, for the subset of brokers with at least one forgivable loan arbitration award. Bankruptcy set to 1 if the broker has filed a bankruptcy petition or been the subject of an involuntary bankruptcy petition seeking creditor protection under federal bankruptcy law. Compromise with creditors set to 1 if the broker has been involved in any agreement between a broker and an outside creditor to settle a debt for less than the full balance due. Creditors exclude current and past employers (and hence exclude employee loans). The third column reports the T-stat from a test of differences between the two means. Standard errors reported in parentheses.

Financial Disclosures	Pre (%)	Post (%)	|T-stat|
All	2.35	11.36	15.15
	[0.26]	[0.54]	
Bankruptcies	0.55	9.04	16.84
	[0.12]	[0.49]	
Compromises	1.81	2.44	1.85
	[0.23]	[0.26]	

Figure 7: **Bankruptcies Around Loan Delinquency**

This figure plots the incidence of personal bankruptcy filings in the three years before and after a broker's first forgivable loan delinquency, for the subset of brokers with at least one forgivable loan arbitration award. Delinquency date defined as forgivable loan arbitration filing date with FINRA. Bankruptcy rates calculated as the total number of bankruptcies per quarter, normalized by the number of brokers in that quarter and scaled by 100.



Table VI: **Broker Characteristics by Loan Delinquency Status**

This table reports demographic characteristics of brokers and their customers, separately for brokers who have been involved in forgivable loan disputes and those who have not. Since we do not observe whether a broker received a forgivable loan unless they became delinquent, we construct a control group to match brokers with loan delinquencies. Control brokers are matched based on employment at the same firm and in the same year as the delinquent broker's first loan delinquency, with similar industry experience (± 1 year). For broker characteristics, we report key individual attributes, including gender, producer status (i.e., directly involved in sales), employment type (employee versus independent contractor), professional credentials (e.g., CFA designation), dual registration status, inclusion on the Barron's Top Broker list (2009–2023), and political orientation, measured as the percentage vote for the Democratic candidate in the 2020 U.S. Presidential Election in the same tract as the brokers home address location. We extract customer characteristics from the county of the broker's office location. We report the median household income, homeownership rate, median house value, average age, racial composition, educational attainment, and the share of residents who are U.S.-born. The same broker in the control group can be a control to more than a treated broker. Last two columns report differences net of for employer $\times$ industry experience $\times$ delinquency year fixed effects.

					Fixed Effect	
Loan Delinquency	Yes	No	Diff	|T - stat|	Diff	|T - stat|
Broker Characteristics						
Male (%)	92.76	70.54	22.22	22.69	17.91	18.10
Producer (%)	86.22	71.23	14.99	14.16	17.97	17.73
Independent Contractor (%)	33.10	13.06	20.04	25.87	16.28	27.74
CFA (%)	1.52	2.00	-0.48	-1.61	-0.34	-1.10
Dually Registered (%)	75.67	80.79	-5.13	-6.06	3.45	4.27
Barrons List (%)	0.83	1.40	-0.56	-3.36	-0.31	-1.83
Democrate Lead (%)	7.79	11.67	-3.88	-4.52	-5.10	-5.84
Customer Characteristics						
Median Household Income ($)	67,226	69,962	-2,736	-12.77	-1,826	-8.92
Home Ownership (%)	54.67	55.09	-0.42	-1.98	0.88	4.68
House Value ($)	441,754	459,675	-17,921	-4.32	-32,270	-8.65
Median Age (Yrs)	37.39	37.43	-0.04	-0.85	0.01	0.22
Race (White %)	64.83	64.65	0.17	1.00	0.14	0.82
Education (BA or Higher %)	40.27	41.31	-1.05	-7.07	-1.51	-10.82
US Born (%)	77.06	78.55	-1.49	-10.24	-0.95	-6.87

Table VII: **Financial Disclosures after Employment Separation**

This table reports the share of financial advisors reporting financial disclosures before and after their first employment separation following misconduct allegations. We consider the full period over which the broker is active in the securities industry, as well as 3Y and 1Y periods around the employment separation event. There is no increase in financial disclosures after employment separation. We find the same results when looking at brokers that are explicitly and immediately discharged (fired) by the firm (last panel). The third column reports the T-stat from a test of differences between the two means. Standard errors reported in parentheses. Financial disclosures do not seem to rise after employment separation, even when those separations follow negative events such as misconduct.

	Pre (%)	Post (%)	
At any time	5.67	1.61	18.9
	[0.19]	[0.10]	
3Yr Window around Separation	2.64	1.38	8.4
	[0.12]	[0.09]	
1Yr Window around Separation	0.89	0.71	1.8
	[0.07]	[0.07]	
1Yr Window around Discharge	0.97	0.71	2.3
	[0.09]	[0.07]	

Table VIII: **Repayment Priority Outside Bankruptcy Employers vs Other Creditors**

This table reports, for the subset of brokers with forgivable loan-related arbitration awards, the number of compromises with other third party creditors that occurred in the 3 years after or at any time after the start of the loan delinquency leading to the arbitration award: but now broken down by loan delinquency outcome: whether the broker has eventually paid the employer loan in full or whether delinquency has resulted in full or partial loan default. Compromises with other creditors defined as an agreement between the broker and one or more non-employer creditors under which the creditor agrees to accept less than the full amount owed in full satisfaction of a debt, and come from brokers Form U-4 annual registration filings Question 14K as reported on FINRA BrokerCheck. As data on compromises with other creditors starts in 2011, we restrict to forgivable loan delinquencies initiated on or after 2011. Most compromises with other creditors occur despite the broker repaying its employer loan in full.

Employer Loan Status	Paid Employer in Full	Full or Partial Default
Compromises: Anytime Post Delinquency		
All Other Creditors	151	9
Credit Cards	96	4
Mortgages	13	0
Others	42	5
Compromises: 3Y Post Delinquency		
All Other Creditors	59	5
Credit Cards	37	1
Mortgages	4	0
Others	18	4

Table IX: **RDD Covariate Balancing Table**

This table reports pre-existing differences in broker characteristics in the treatment and control groups, defined by whether tenure at the time of the merger is below or above seven years. Columns (1)–(6) report the broker's gender (1 is male), experience in the securities industry, whether the broker is dually registered, whether the broker has held a leadership role, whether the broker has had any prior misconduct allegations, and whether the broker has reported any bankruptcies or compromises with creditors over the previous 10 years. The top row plots the coefficient from the same regression discontinuity specification as the one in the main regression. All characteristics observed at the time of Morgan Stanley–Smith Barney merger.

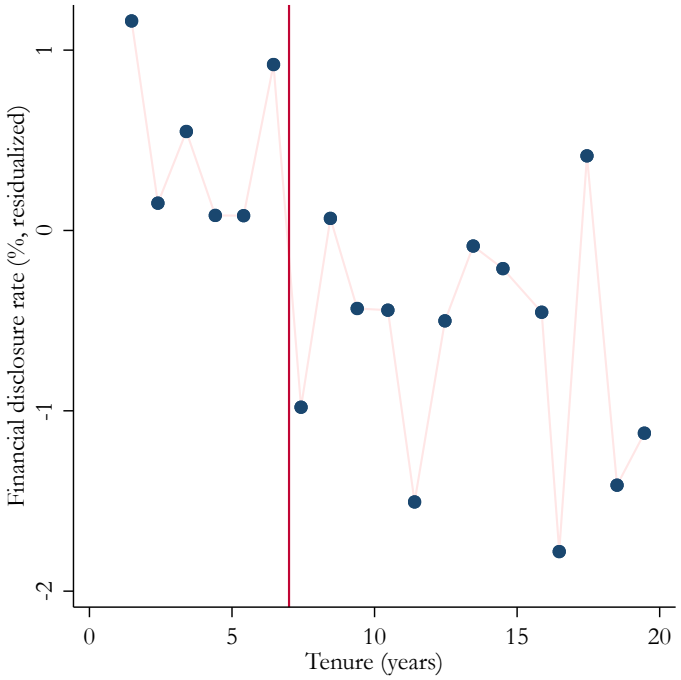
	(1) *Gender*	(2) *Experience*	(3) *Registration*	(4) *Lead Role*	(5) *Misconduct*	(6) *Distress*
RD	4.533	-1.850	-2.404	1.772	-1.790	-0.029
	(6.940)	(1.216)	(6.164)	(2.144)	(3.942)	(0.138)
N	13,813	14,584	14,584	14,584	14,584	14,584

This table reports pre-existing differences in broker client characteristics in the treatment and control groups, defined by whether tenure at the time of the merger is below or above seven years. Columns (1)–(7) report the median age in years, the percentage of Black residents, the percentage of residents with at least a bachelor's degree, the percentage of US-born residents, the mean household income in thousands of dollars, the median house value in thousands of dollars, the homeownership rate in percent for adults in the same county as the broker's office location. The top row plots the coefficient from the same regression discontinuity specification as the one in the main regression. All client characteristics observed at the time of Morgan Stanley–Smith Barney merger.

	(1) *Age*	(2) *Race*	(3) *College*	(4) *US Born*	(5) *Income*	(6) *House Val*	(7) *HomeOwner*
RD	0.286	-0.411	-0.252	2.786	1.971	8.439	-0.613
	(0.380)	(2.282)	(1.168)	(1.884)	(3.082)	(29.446)	(1.354)
N	14,528	14,528	14,528	14,528	14,528	14,528	14,528

Figure 8: **Incremental Financial Constraints RDD**

In 2009, Morgan Stanley and Smith Barney merge their brokerage operations. All brokers producing more than $500k in 2008 are eligible for a 9 year forgivable loan. Brokers producing less than $500k (the great majority) are eligible, but only if they have less than 7 years with the firm, generating a discontinuity in loan availability with past tenure. For every broker employed with Morgan Stanley and Smith Barney at the time merger, we track financial disclosures (bankruptcies and compromises with creditors) over the life of the loan as well as the subsequent 3 years. This chart plots the probability a broker has a least one subsequent financial disclosure against tenure at the time of the merger. The likelihood of financial disclosures shifts discontinuously around the loan eligibility cutoff, motivating a regression discontinuity design. The financial disclosure probability residualized with respect to broker experience in the securities industry and county fixed effects.



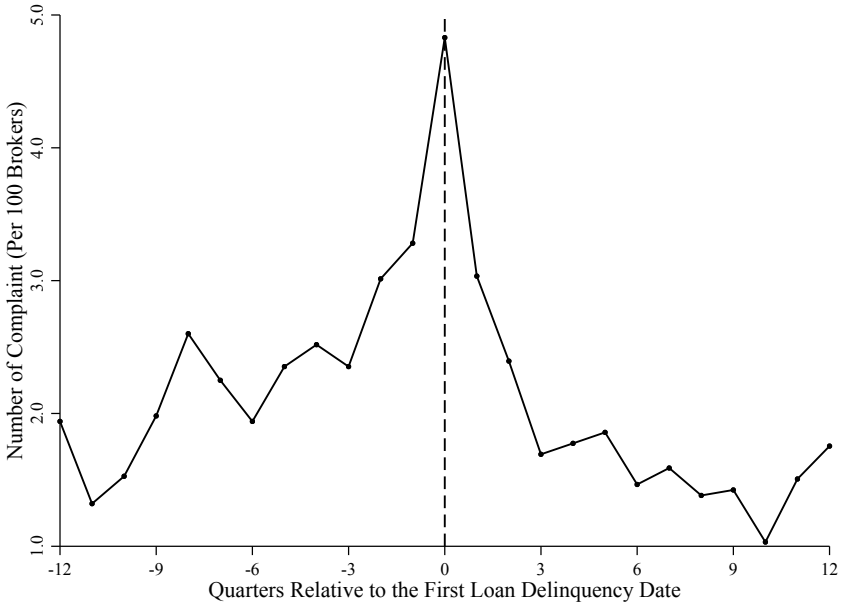
This table reports estimates from the resulting regression discontinuity design. Specifically, we regress subsequent financial disclosures (the outcome variable) on tenure at the time of the merger (the running variable) and a dummy set to 1 whenever the broker had less than 7 years (the shifter), for the sample of brokers employed with Morgan Stanley and Smith Barney at the time merger. Columns (1)–(3) show the share of brokers with at least one (i) financial disclosure, (ii) compromise with other creditors, and (iii) compromise on a personal business loan over the life of the loan, respectively. Columns (4)–(6) show the share of brokers with at least one financial disclosure broken down by disclosure timing: years 1–4 of the loan, years 5–8 of the loan, and after loan maturity, respectively. All specifications control for the broker experience in the securities industry. Estimates use local linear fits on each side of the cutoff and optimal bandwidths in a bias-variance sense. Robust standard errors are reported in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
RDD Estimate	3.922**	2.543*	2.525	3.580**	1.309	0.005
	(1.938)	(1.489)	(1.544)	(1.773)	(0.945)	(0.205)
N	12,898	12,898	12,898	12,898	12,898	12,898

Figure 9: **Misconduct Around Loan Delinquency Date**

This figure plots time-series trends in the average number of reported consumer complaints and regulatory actions per 100 brokers per quarter, based on FINRA broker records. The sample includes events reported within a three-year window before and after each broker's first loan dispute date. Reporting rates are calculated as the total number of events in each category per quarter, normalized by the number of brokers and scaled by 100. Panel A presents consumer complaints; Panel B presents regulatory actions. Patterns of regulatory actions are consistent across arbitration forums.

A: Consumer Complaints



B: Regulatory Actions

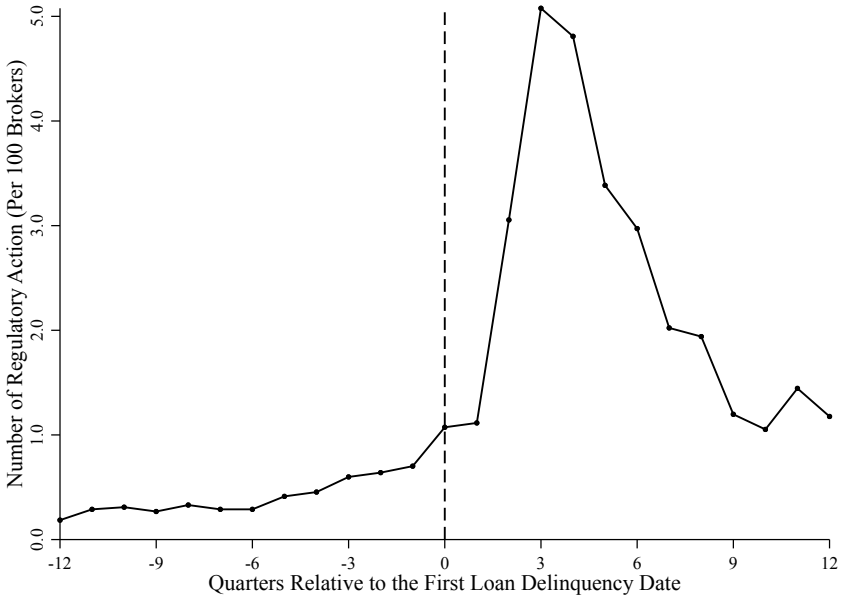


Table X: **Delinquent Broker Characteristics by Misconduct Status**

This table reports demographic characteristics of brokers and their customers, separately for brokers with and without misconduct disclosures. The sample is restricted to brokers who have been involved in at least one loan dispute. For broker characteristics, we report key individual attributes, including gender, producer status (i.e., directly involved in sales), employment type (employee versus independent contractor), professional credentials (e.g., CFA designation), dual registration status, experience (number of years in the securities industry), inclusion on the Barron's Top Broker list (2009–2023), and political orientation, measured as the percentage vote for the Democratic candidate in the 2020 U.S. Presidential Election in the same tract as the brokers home address location. We extract customer characteristics from the county of the broker's office location. We report the median household income, homeownership rate, median house value, average age, racial composition, educational attainment, and the share of residents who are U.S.-born. Last two columns report results controlling for employer FE, defined as the firm counterparty in loan delinquency. Data on broker forgivable loan delinquencies from FINRA Arbitration Awards Online. Data on broker home and office locations and misconduct records from brokers regulatory filings with FINRA. Demographics from the American Community Survey. Voting outcomes from the MIT Election Lab.

					Employer FE	
Misconduct	Yes	No	Diff	|T - stat|	Diff	|T - stat|
Broker Characteristics						
Male (%)	93.78	91.75	2.04	1.84	1.13	0.82
Producer (%)	89.76	78.16	11.60	7.01	7.50	4.45
Independent Contractor (%)	38.72	26.09	12.63	5.88	10.04	4.28
CFA (%)	1.09	2.28	-1.27	-2.39	-0.35	-0.63
Dually Registered (%)	75.00	74.84	0.16	0.09	1.54	0.89
Barrons List (%)	0.84	1.14	-0.29	-0.98	1.14	1.53
Experience (Yrs)	16.25	14.67	1.58	5.47	2.84	6.39
Democrate Lead (%)	6.57	9.05	-2.49	-1.55	-1.97	-1.15
Customer Characteristics						
Median Household Income ($)	66,612	69,224	-2,612	-6.47	-2,814	-6.79
Home Ownership (%)	54.20	54.91	-0.67	-1.61	-1.36	-3.41
House Value ($)	445,952	447,558	-1,606	-0.22	-1,471	-0.20
Median Age (Yrs)	37.44	37.27	0.16	1.89	0.02	0.22
Race (White %)	64.71	64.25	0.45	1.59	-0.14	-0.43
Education (BA or Higher %)	40.34	40.99	-0.65	-2.29	-0.42	-1.50
US Born (%)	76.47	78.14	-1.67	-5.81	-1.73	-5.98

Table XI: **Regulatory Actions Around Loan Delinquency by Regulatory Body**

This table reports the percentage share of brokers reporting regulatory actions before and after their first forgivable loan delinquency, overall and broken down by jurisdiction of the regulatory body enforcing the action. We distinguish between actions enforced by federal regulatory agencies (SEC) or nationwide self-regulatory agencies under federal oversight (FINRA, CBOE, NYSE, NASD) (collectively federal) and state-wide regulatory bodies (state securities commissions, insurance commissioners) (collectively state). As FINRA regulatory actions represent the lionshare of FINRA-registered brokers regulatory actions, we report is separately under federal. The third column reports the T-stat from a test of differences between the two means. Standard errors are reported in parentheses.

Regulatory Actions	Pre (%)	Post (%)	|T-stat|
All	7.60	31.17	32.68
	[0.38]	[0.67]	
Federal	7.41	30.34	31.91
	[0.38]	[0.66]	
FINRA	4.66	28.48	34.58
	[0.30]	[0.65]	
State	0.35	2.08	7.85
	[0.09]	[0.21]	

Figure 10: **Consumer Complaints around Loan Delinquency By Status**

This figure plots time-series trends in the average number of reported consumer complaints by status per 100 brokers per quarter, based on FINRA broker records. The sample includes events reported within a three-year window before and after each broker's first loan dispute date. Reporting rates are calculated as the total number of events in each category per quarter, normalized by the number of brokers and scaled by 100. Panel A plots all consumer complaint reported. Panel B plots consumer complaints net of those that were ultimately denied. Panel C plots complaints that resulted in a settlement. Panel D plots complaints that resulted in an award.

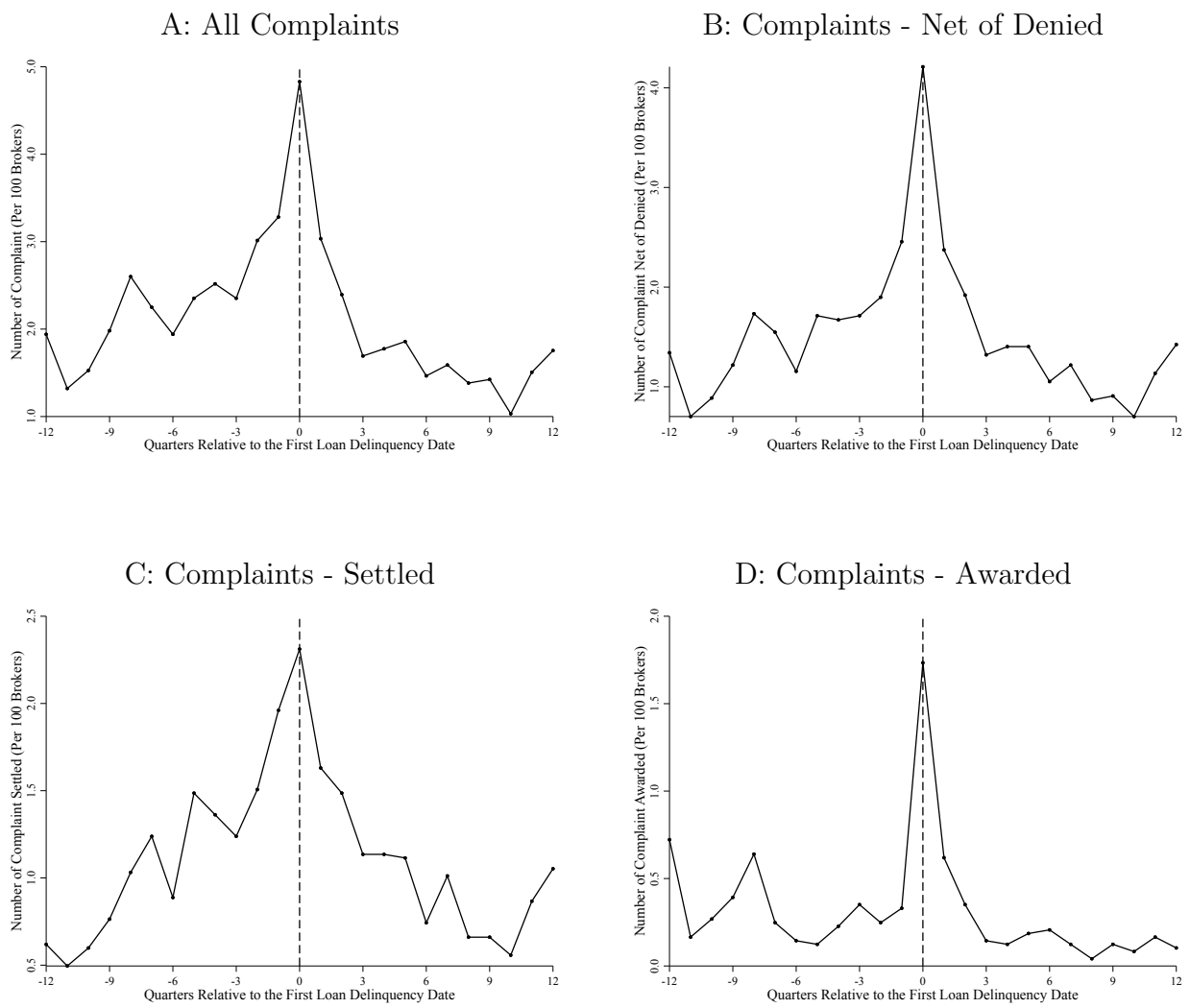


Table XII: **Complaints Around Loan Delinquency by Loan Characteristics**

This table summarizes, for the sample of brokers involved in forgivable-loan–related arbitration awards, the quarterly incidence of misconduct allegations over the three years surrounding the loan arbitration filing date. We compare the frequency of allegations filed within and outside a three-quarter window centered on the filing date. Loan delinquencies broken down by size (above or below median loan balance), state of the economy (delinquencies arising during vs the two years before and after the Great Financial Crisis), claim process (whether the broker challenges the repayment claim with a counterclaim, whether the dispute proceeds to court), and case outcome (whether the case is vacated or not in arbitration or in court). The third and fourth columns report T-tests of the differences in the means. Standard errors reported in parentheses.

Sample	Within 3Q	Outside 3Q	Diff.	T-Stat
All Loans	2.93	1.79	1.14	6.92
	[0.18]	[0.13]	[0.16]	
Loan Size				
Large Loans	3.34	1.86	1.48	6.36
	[0.28]	[0.14]	[0.23]	
Small Loans	1.97	1.42	0.55	2.24
	[0.16]	[0.20]	[0.24]	
Delinquency Timing				
Crisis	3.61	1.27	2.33	4.65
	[0.62]	[0.24]	[0.50]	
No Crisis	1.97	1.68	0.29	0.71
	[0.26]	[0.34]	[0.41]	
Claim Process				
Counterclaim	3.01	1.73	1.28	1.88
	[0.71]	[0.29]	[0.68]	
No Counterclaim	2.63	1.63	1.00	5.69
	[0.16]	[0.13]	[0.18]	
Proceed to Court				
Yes	7.83	5.51	2.31	1.96
	[2.10]	[1.17]	[1.18]	
No	2.76	1.64	1.12	5.42
	[0.20]	[0.15]	[0.21]	
Arbitration Outcome				
Pay	2.65	1.63	1.02	5.95
	[0.16]	[0.13]	[0.17]	
No Pay	0.38	1.75	-1.38	-1.89
	[0.38]	[0.60]	[0.73]	
Court Outcome				
Confirmed	8.24	5.73	2.52	1.88
	[2.41]	[1.32]	[1.34]	
Vacated	5.04	4.08	0.96	0.59
	[1.33]	[1.47]	[1.62]	

Table XIII: **Complaints Around Loan Delinquency by Nature of Allegations**

The top panel summarizes, for the population of brokers involved in forgivable-loan–related arbitration awards, the quarterly incidence of misconduct allegations over the three years surrounding the loan arbitration filing date. We compare the frequency of allegations filed within and outside a three-quarter window centered on the filing date. Allegations are further classified by type. Current allegations are defined as those arising from conduct occurring within one year prior to filing, as opposed to stale allegations that are from older events. Benefit allegations are defined as those involving conduct that, if true, could generate an immediate financial gain for the broker, as opposed to no-benefit allegations that do not entail direct financial advantage. Acts of omission include inattention, carelessness, negligence, whereas acts of commission refer to misrepresentations and other deliberate actions to exploit one's clients for financial gain. The third and fourth columns report the difference in means and the corresponding T-statistics. Standard errors are reported in brackets.

Sample	Within 3Q	Outside 3Q	Diff.	T-Stat
All Allegations	2.93	1.79	1.14	6.92
	[0.18]	[0.13]	[0.17]	
Current	1.82	1.09	0.73	5.34
	[0.12]	[0.10]	[0.14]	
Stale	1.11	0.70	0.41	5.10
	[0.11]	[0.06]	[0.08]	
Benefit	2.42	1.39	1.04	7.46
	[0.17]	[0.10]	[0.14]	
No Benefit	0.51	0.41	0.10	1.68
	[0.05]	[0.04]	[0.06]	
Commission	2.54	1.42	1.12	7.83
	[0.17]	[0.10]	[0.14]	
Omission	0.92	0.55	0.37	3.66
	[0.07]	[0.08]	[0.10]	

This lower panel reports the breakdown of allegation types for customer complaints filed within the 3.5-quarter window before and after advisors' forgivable loan delinquency arbitration dates. The sample includes 1,027 brokers with at least one complaint during this period.

Nature of Allegations	Count(#)	Share (%)
Omissions and Misrepresentations	443	43
Suitability and Excessive Trading	231	22
Unauthorized Activity and Discretion	155	15
Fraud, Conversion, and Theft of Funds	50	5
Others (Licensing, Supervision, etc.)	148	15
Total	1,027	100

Figure 11: **Complaints around Loan Delinquency: Reverse Causality**

While termination which can lead to loan acceleration which can incentivize misconduct, it is also possible that misconduct happens first which leads to termination which triggers loan acceleration, leading to reverse causality problem. This is particularly relevant for consumer-initiated complaints whose rise predates loan delinquency. To rule out this possibility, we exploit the fact that employers must report the reason for terminating an employee in Form U5: Uniform Termination Notice for Securities Industry Registration, and take out cases where brokers are terminated following misconduct allegations. These include allegations arising from formal consumer complaints and regulatory actions, as well as coming out of the firm's internal determination of a broker's conduct. This chart compares the quarterly incidence of consumer-initiated complaints for all delinquent brokers vs the subset of delinquent brokers that never got terminated as a result of misconduct allegations (where reverse causality concerns are minimal) to show our results go through.

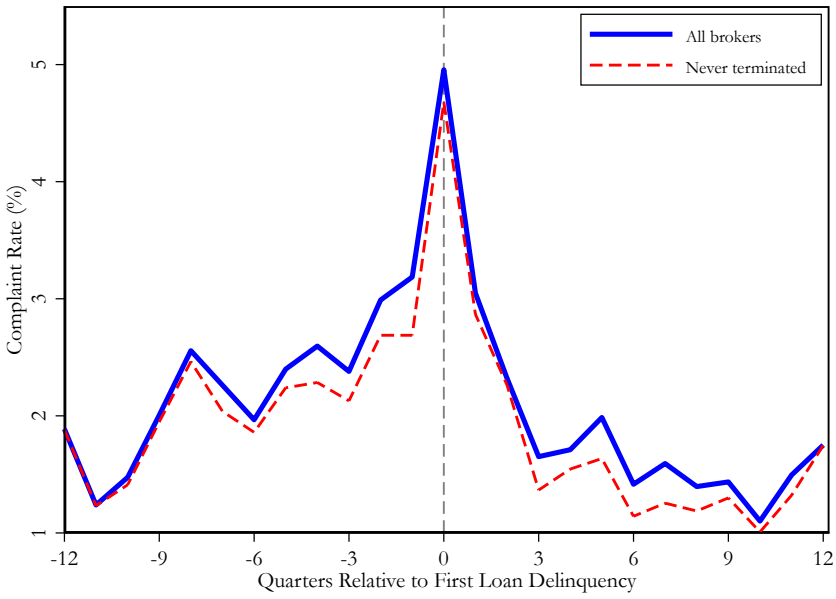
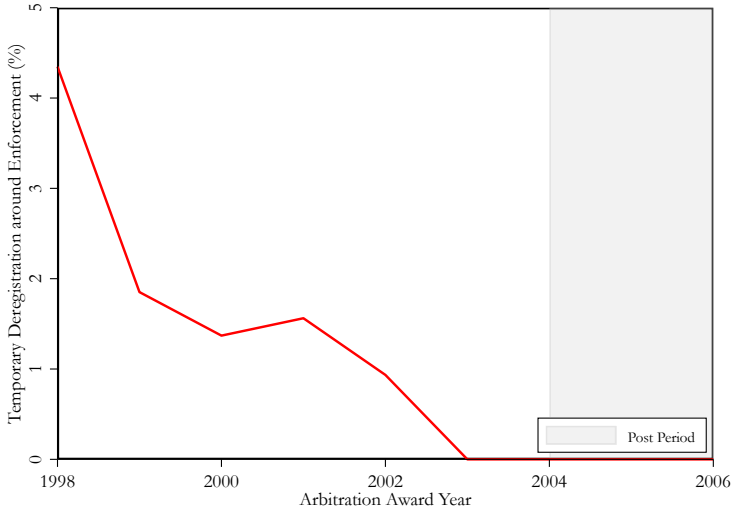


Figure 12: **Relevance of the 2004 NASD Enforcement Shock**

This figure documents changes in broker behavior and enforcement outcomes around the NASD 2004 regulatory shock. A broker is classified as affected by the shock when its arbitration award date falls on or after 2004Q3. Panel A plots the annual share of delinquent brokers who temporarily deregister, for a duration of at most 60 days, within a ±60-day window around the loan-enforcement date. As our goal is to capture voluntary deregistrations, we exclude deregistrations involving formal sanctions for non-payment of arbitration awards or deregistrations stemming from employer separations following misconduct allegations. Brokers temporarily deregister around the loan repayment enforcement date before, but not after, the regulatory shock. Panel B plots the annual share of delinquent brokers suspended for non-payment of arbitration awards in the eight years before and after the regulation to show that enforcement increases after the NASD regulation. This is entirely driven by loans arbitrated under NASD. Suspensions following non-payment of NYSE awards are essentially non-existent both before and after the regulation, consistent with loan enforcement tightening for brokers arbitrated under NASD and not NYSE.

A: Temporary Deregistrations



B: License Suspensions

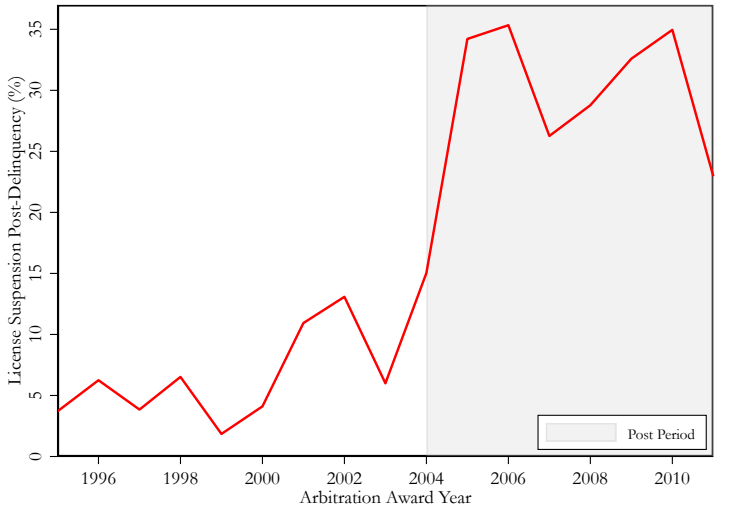


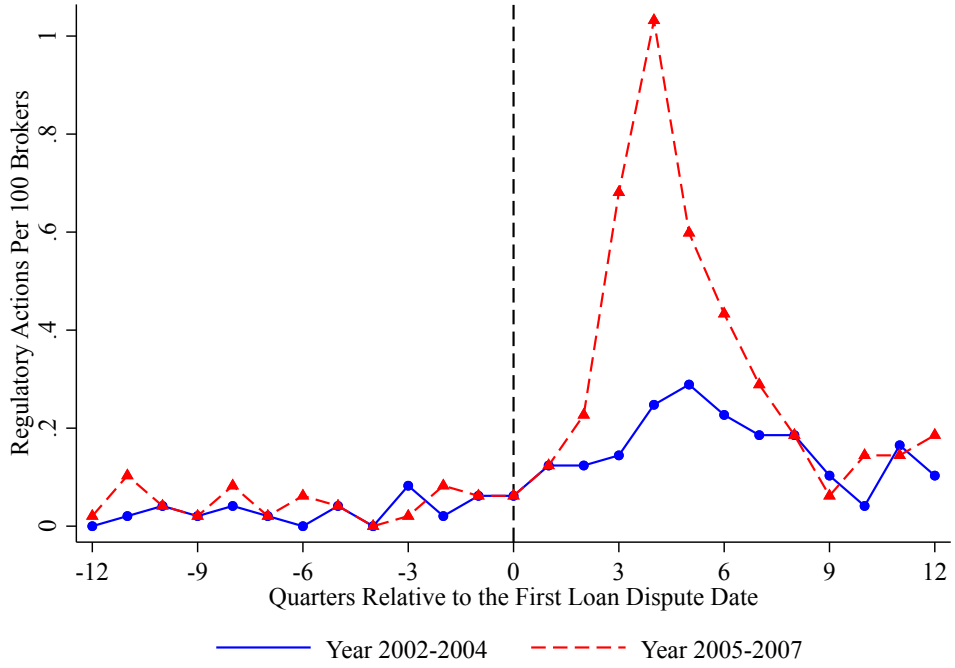
Table XIV: **Consumer Protection DDD: Balancing Table**

This table reports demographic characteristics of brokers and their customers, separately for the treatment and control groups used in our misconduct difference-in-differences analysis. The treatment group consists of brokers arbitrated under NASD, while the control group consists of brokers arbitrated under NYSE. For broker characteristics, we report key individual attributes, including gender, producer status (i.e., directly involved in sales), employment type (employee versus independent contractor), professional credentials (e.g., CFA designation), dual registration status, experience (number of years in the securities industry), future inclusion on the Barron's Top Broker list, and political orientation, measured as the percentage vote for the Democratic candidate in the previous U.S. Presidential Election in the same tract as the brokers home address location. We extract customer characteristics from the county of the broker's office location. We report the median household income, homeownership rate, median house value, average age, racial composition, educational attainment, and the share of residents who are U.S.-born. Data on broker forgivable loan delinquencies from FINRA Arbitration Awards Online. Data on broker home and office locations and misconduct records from brokers regulatory filings with FINRA. Demographics from the American Community Survey. Voting outcomes from the MIT Election Lab.

					Observations	
	Treated	Control	Diff	|T-stat|	Treated	Control
Broker Characteristics						
Male (%)	91.86	90.20	1.66	0.38	221	51
Producer (%)	79.57	82.50	-2.93	-0.42	186	40
Independent Contractor (%)	37.82	36.36	1.46	0.18	193	44
CFA (%)	0.45	1.96	-1.5	-1.14	221	51
Dually Registered (%)	66.52	68.63	-2.11	-0.29	221	51
Barrons List (%)	0.32	1.03	-0.71	1.02	628	97
Experience (Yrs)	12.16	13.19	-1.03	-1.24	628	97
Democratic Lead (%)	4.39	6.77	-2.38	-0.41	162	36
Customer Characteristics						
Median Household Income ($)	66,276	65,518	758.41	0.637	628	97
Home Ownership (%)	50.60	54.14	-3.53	-2.30	628	97
House Value ($)	491,366	442,392	48,974	1.96	628	97
Median Age (Yrs)	37.27	37.71	-0.44	-1.75	628	97
Race (White %)	63.99	65.08	-1.10	-1.11	628	97
Education (BA or Higher %)	42.38	40.83	1.54	1.70	628	97
US Born (%)	75.35	76.27	-0.92	-1.04	628	97

Figure 13: **Regulatory Actions Around Loan Delinquency Before and After the Loan Enforcement Change**

This figure plots the quarterly incidence of misconduct (regulatory actions) in a six-year window around a broker's first forgivable loan delinquency date, separately for delinquencies occurring in the 3 years before (blue) and 3 years after (red) the 2004 NASD forgivable loan enforcement change. Incidence defined as the number of regulatory actions per 100 brokers in each respective quarter.



This table reports the likelihood of misconduct (regulatory actions) occurring in the three years before and after a broker's first forgivable loan delinquency date, for delinquencies occurring in the 3 years before and after the 2004 forgivable loan enforcement change (2002–2004 – pre-enforcement) (2005–2007 – post-enforcement), but now separately for delinquencies arbitrated under the NASD (treated group) and NYSE (control group). The likelihood defined as the percentage of delinquent brokers with at least one regulatory action relative to the total number of delinquent brokers in each subsample. Standard errors reported in parentheses. Misconduct spikes after a loan delinquency, but it does so more for delinquencies arbitrated under the NASD and only after the regulatory change, motivating a triple difference in differences design.

	NASD (Treated)		**NYSE (Control)**	
Misconduct Timing	2002–2004	2005–2007	2002–2004	2005–2007
Misconduct 3Y Pre (%)	11.73	8.95	6.15	15.91
	[1.11]	[2.08]	[3.00]	[5.58]
Misconduct 3Y Post (%)	35.31	50.53	26.15	27.27
	[1.65]	[3.64]	[5.49]	[6.79]

Table XV: **Loan Enforcement and Misconduct DDD**

This table reports estimates from triple–difference-in-differences specifications evaluating the effect of forgivable-loan enforcement on regulatory actions. The outcome variable is the broker-level count of regulatory actions measured in a symmetric window around the first loan delinquency, either the three years before or the three years after. *After* equals 1 for observations in the post-delinquency window. The treatment group consists of brokers arbitrated under NASD, while the control group consists of brokers arbitrated under NYSE. The post-enforcement period is defined as any quarter beginning in 2004Q3 or later. Column 1 reports estimates for all brokers with delinquent forgivable loans across all years. Column 2 restricts the sample to delinquencies occurring during 2001–2007. Column 3 retains only brokers whose delinquency predates the 2004Q3 regulatory change; in this column the post period is defined by arbitration awards issued after the change. All specifications include broker fixed effects and delinquency time fixed effects. All standard errors are clustered at the employer level.

Number of Regulatory Actions	(1)	(2)	(3)
Treat × Post × After	0.260**	0.267***	0.105
	(0.124)	(0.101)	(0.122)
Treat × After	0.077	0.135**	0.052
	(0.062)	(0.068)	(0.085)
Post × After	-0.012	-0.050	-0.066
	(0.111)	(0.097)	(0.117)
After	0.080	0.050	0.095
	(0.059)	(0.062)	(0.083)
Broker FE	Yes	Yes	Yes
Delinquency Time FE	Yes	Yes	Yes
Observations	2,494	1,410	1,960
R-squared	0.575	0.598	0.539

Figure 14: **Loan Enforcement and Misconduct: Parallel Trends**

This figure plots a dynamic version of the Column (2) estimates from Table XV, which restricts the sample to delinquencies occurring during 2001–2007. The outcome variable is the broker-level count of regulatory actions measured in a symmetric window around the first loan delinquency, either the three years before or the three years after. The treatment group consists of brokers arbitrated under NASD, while the control group consists of brokers arbitrated under NYSE. The post-enforcement period is defined as any quarter beginning in 2004Q3 or later. Each point estimate captures, in the post regulation period, the increase in regulatory actions after versus before the loan delinquency date for treated relative to control brokers. All specifications include broker fixed effects and delinquency time fixed effects. All standard errors are clustered at the employer level. Light gray bars denote 95% confidence intervals.

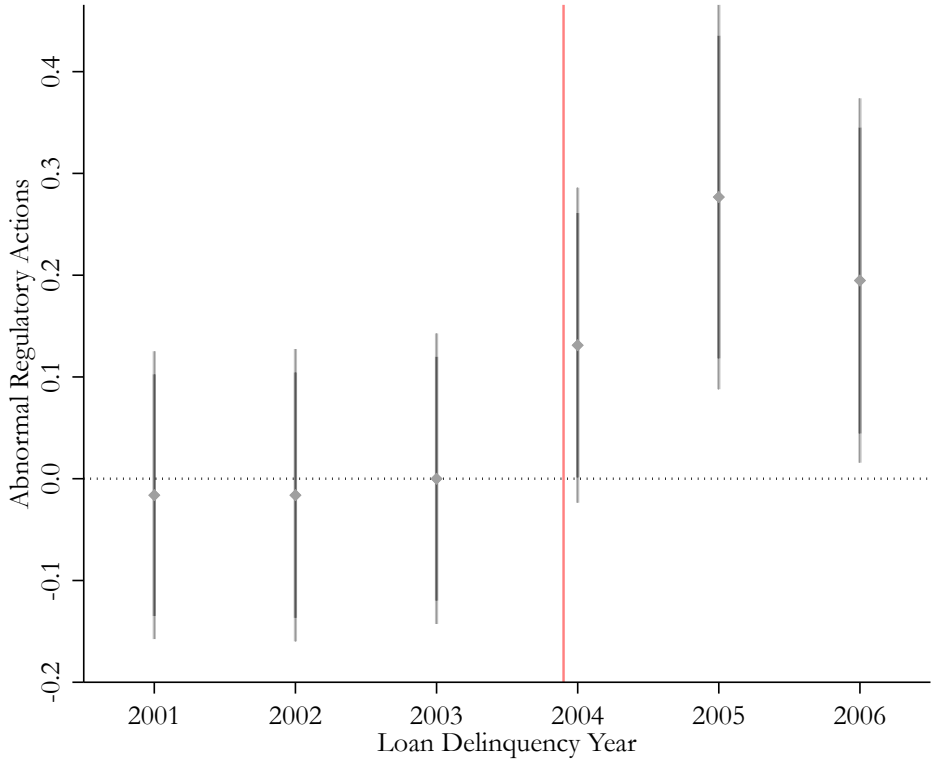
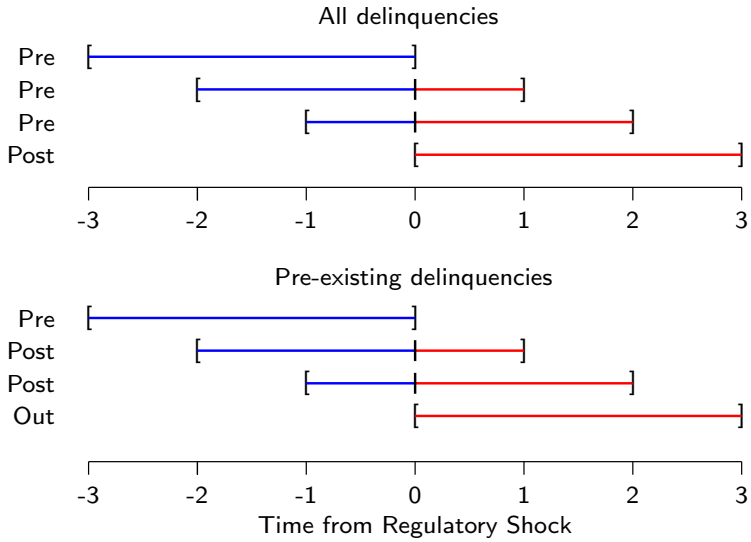


Figure 15: **Selection into Delinquency DDD**

Let each bar denote the interval between when loan arbitration and when an award is granted. Let the vertical bar denote the 2004 regulatory change. Under the current specification, brokers whose delinquencies have started before the regulatory announcement fall into the pre-period, brokers whose delinquencies have started after the regulatory announcement fall into the post period. There is a concern of selection into treatment. Learning about stricter enforcement, unconstrained brokers select out of delinquency, leaving only most constrained brokers in the treated group. Instead, we restrict to the subset of brokers whose delinquencies have started before the regulatory announcement and compare brokers whose delinquencies have started and ended before the regulatory announcement (pre) with brokers whose delinquencies have started before the regulatory announcement but ended after the regulatory announcement(post).



This chart plots coefficient estimates from the same triple difference in differences design in Figure 14, but now estimated for the subset of pre-existing delinquencies. Each point estimate captures extra misconduct allegations in the 3 years after loan delinquency, compared to the 3 years before loan delinquency, compared to delinquencies not subject to the rule change, compared to pre-period. 95% confidence intervals shown.

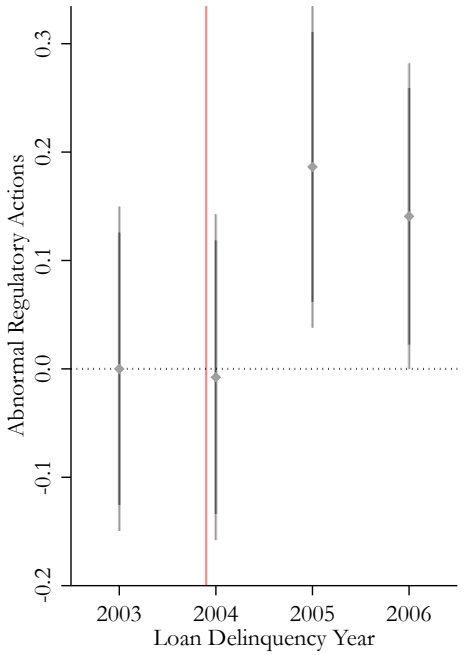


Table XVI: **Incremental Misconduct RDD**

In 2009, Morgan Stanley and Smith Barney merge their brokerage operations. All brokers producing more than $500k in 2008 are eligible for a 9 year forgivable loan. Brokers producing less than $500k (the great majority) are eligible, but only if they have less than 7 years with the firm, generating a discontinuity in loan availability with past tenure and motivating a regression discontinuity design. For every broker employed with Morgan Stanley and Smith Barney at the time merger, we track misconduct allegations (consumer initiated complaints and regulatory actions) over the life of the loan and 3 years beyond it. We then regress subsequent misconduct (the outcome variable) on tenure at the time of the merger (the running variable) and a dummy set to 1 whenever the broker had less than 7 years (the shifter), for the sample of brokers employed with Morgan Stanley and Smith Barney at the time merger. Columns (1)–(3) show the share of brokers with at least one (i) misconduct allegation of any kind, (ii) consumer complaint, and (iii) regulatory action, measured over the life of the loan and within three years after maturity. Estimates use local linear fits around the cutoff with a fixed bandwidth of 2.5 years. Columns (4)–(5) vary the estimation bandwidth holding the outcome in Column (1) fixed. Column (4) uses a 2-year bandwidth; Column (5) uses a 3-year bandwidth. Robust standard errors are reported in parentheses.

	Conduct	Complaint	Regulatory	Narrow	Wide
	(1)	(2)	(3)	(4)	(5)
Cutoff	5.813**	5.116*	1.177	4.558	4.841*
	(2.872)	(2.790)	(0.871)	(3.284)	(2.572)
Tenure	4.305**	3.379*	1.612**	3.467	2.981**
	(1.977)	(1.877)	(0.806)	(2.732)	(1.445)
Experience	0.094	0.140*	-0.034	0.028	0.184**
	(0.080)	(0.079)	(0.022)	(0.077)	(0.082)
Constant	3.830**	2.723	0.917*	4.513**	3.125*
	(1.946)	(1.905)	(0.555)	(2.075)	(1.821)
Observations	1,463	1,463	1,463	1,123	1,766
R-squared	0.004	0.004	0.006	0.002	0.005

Table XVII: **Beyond Misconduct**

We repeat the regression discontinuity design in Table XVI, but now looking at other aspects of service quality or quantity. We consider production (generated fees and commissions), assets under management, the extent to which advisors switch to a fee based model (become a registered investment advisor or RIA) or acquire customer friendly professional designations raising them to a higher standard of care such as a certified financial planner (Got CFP). The sample is brokers employed with Morgan Stanley and Smith Barney at the time merger. The outcome variable is measured ex-post, as of the end of the loan term in 2018. Data on professional designations, production and assets under management is not available for all advisors. Data on registrations from FINRA BrokerCheck. Data on professional designations, production and assets under management from Discovery Data (formerly Meridian IQ).

	Become RIA	Got CFP	AUM	Production
Cutoff	0.74	1.52	-0.02	0.11
	[2.15]	[6.16]	[0.34]	[0.55]
Const	6.05***	20.94***	17.39***	13.50***
	[1.51]	[3.09]	[0.23]	[0.55]
N	1463	1037	704	101
R2	0.261	0.221	0.269	0.429

Figure 16: **Loan Balances and Employee Retention**

This chart looks at the relationship between the extent to which a securities firm pays employee forgivable loans (measured as the average loan balance per broker) and its ability to retain its workforce (defined as the workforce retention rate over the previous 12 months). On average, higher employee loan balances are associated with higher current employee retention rates and predict lower future employee departure rates. Data on firm employee forgivable loan balances from securities firms annual SEC X-17A-5 Focus reports annual statements. Data on firm employment and turnover from broker individual employment records in BrokerCheck. The period is 2001 to 2021.

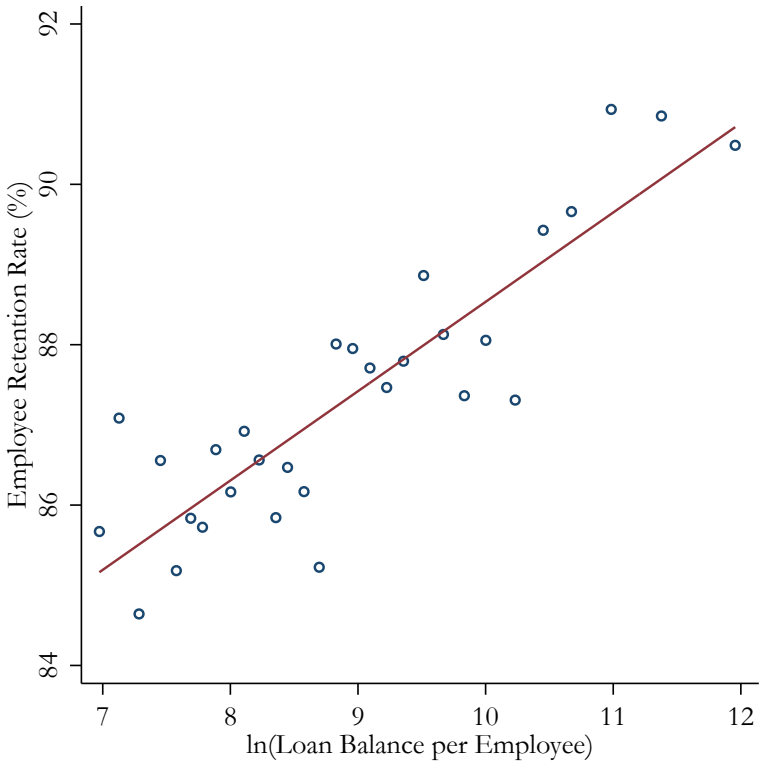


Table XVIII: **Loan Balances and Employee Retention**

This table looks at the relationship between the extent to which a securities firm pays employee forgivable loans (measured as the average loan balance per broker) and its ability to retain its workforce, measured as current year employee retention rate (column 1), as well as next year departure rate, both overall (column 2), and broken down by the experience of the brokers departing the firm (columns 3-4), the size of the destination firms (columns 5-6) and the size of the destination firms for transfers within the Broker Protocol (columns 7-8), where firm size is defined as the number of FINRA-registered representatives employed at the firm. We control for aggregate variation in employment opportunities via time fixed effects, and cluster standard errors at the firm level. ***,**, and * indicate statistical significance at the 1%, 5% and, 10% level, respectively.

	Retention	Departures						
	Overall	Overall	By Experience		By Destination		Within Protocol	
			>5Yrs	<5Yrs	Small Firm	Large Firm	Small Firm	Large Firm
Loan Balance	2.171***	-2.806***	-1.715***	-1.091***	-1.738***	-1.068**	-0.156**	-0.091
	(0.752)	(0.842)	(0.653)	(0.299)	(0.605)	(0.467)	(0.080)	(0.212)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2472	2372	2372	2372	2372	2372	950	950
R2	0.052	0.051	0.049	0.036	0.053	0.065	0.051	0.013

Table XIX: **Loan Enforcement and Employee Retention DID**

This table reports coefficient estimates from a difference-in-differences regression examining the effect of forgivable loan enforcement on 3Yr employee retention rates. The sample includes firms with NASD- or NYSE-related loan arbitrations between 2002 and 2006. The control group consists of firms whose brokers were unaffected by the enforcement change—specifically, firms that continued to report, or predominantly reported, loan arbitrations through NYSE after 2004. The treatment group consists of firms whose brokers were affected by the enforcement change—specifically, firms that shifted to reporting loan arbitrations through NASD after 2004, thereby becoming subject to stricter enforcement. The dependent variable is the three-year employee retention rate for all hires. The first cohort affected by the enforcement change consists of brokers hired in 2001, whose retention is measured through 2004. Column (1) includes year fixed effects. Column (2) adds controls for firm size, measured as the logarithm of total employment, protocol membership status, and average broker experience. Column (3) further includes common ownership fixed effects. Standard errors are reported in parentheses. All standard errors are clustered at the common ownership level. Common ownership is defined following the FINRA 2021 Common Ownership Snapshot as any pair of firms that share at least one direct or indirect controlling institutional shareholder.

3Y Retention Rate	(1)	(2)	(3)
Treat × Post	8.393**	9.298***	5.989*
	(3.577)	(3.271)	(3.348)
Treat	-22.37***	-12.02**	-10.11**
	(3.514)	(4.810)	(4.027)
Firm Size		4.716***	1.830
		(0.891)	(1.641)
Protocol Status		14.15*	13.74***
		(7.226)	(4.297)
Broker Experience		0.462	-0.778
		(0.708)	(0.859)
Year FE	Yes	Yes	Yes
Common Ownership FE	No	No	Yes
Observations	637	635	631
R-squared	0.045	0.152	0.582

Figure 17: **Loan Enforcement and Employee Retention: Parallel Trends**

This figure plots a dynamic version of the coefficient estimates from Table XIX. The dependent variable is the three-year employee retention rate for all hires. The omitted category in the regression corresponds to the year of the enforcement change. The first cohort affected is brokers hired in 2001, whose retention is measured through 2004. The regression controls for firm size, measured as the logarithm of total employment, protocol membership status, and average broker experience. Year and common ownership fixed effects are included, with standard errors clustered at the common ownership level. Common ownership is defined following the FINRA 2021 Common Ownership Snapshot as any pair of firms that share at least one direct or indirect controlling institutional shareholder. Light gray bars denote 95% confidence intervals.

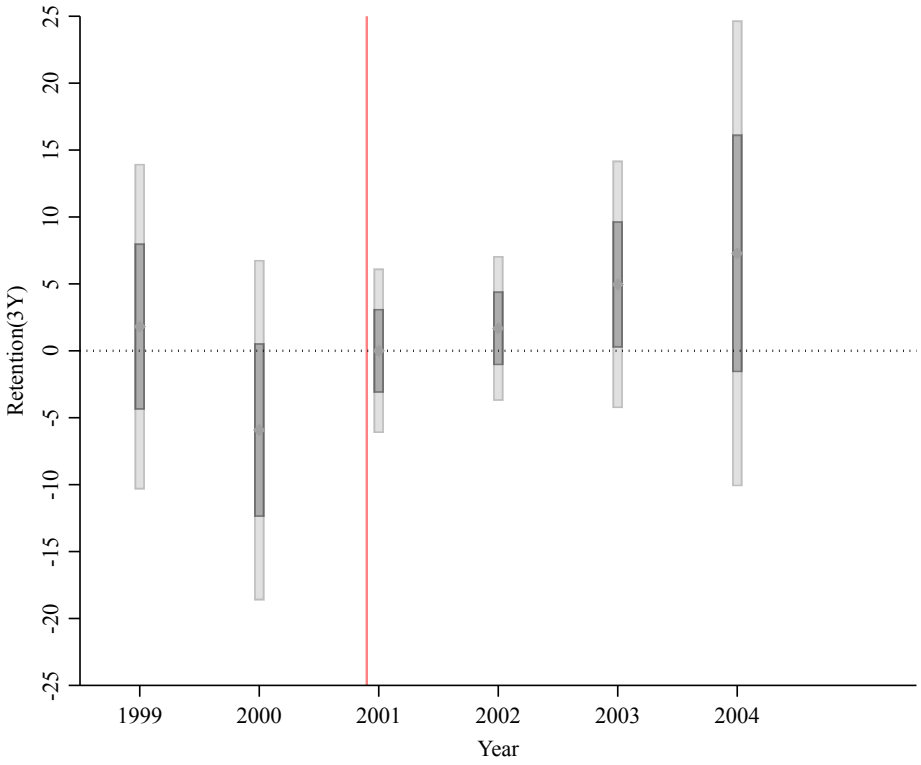


Figure 18: **Loan Enforcement and Employee Retention: Robustness**

This figure plots the difference in three-year employee retention rates attributable to forgivable loan enforcement. The sample includes firms with both NASD- and NYSE-related loan arbitrations in the pre-period. The control group consists of firms whose brokers were unaffected by the enforcement change—specifically, firms that continued to report, or predominantly reported, loan arbitrations through NYSE after 2004. The treatment group consists of firms whose brokers were affected by the enforcement change—specifically, firms that shifted to enforcing loan arbitrations through NASD after 2004, thereby becoming subject to stricter enforcement. The dependent variable is the difference in three-year employee retention rate between treatment and control group. The omitted category in the regression corresponds to the year of the enforcement change. The first cohort affected by the enforcement change consists of brokers hired in 2001, whose retention is measured through end-2004. The gray bars represent 95% confidence intervals. Standard errors are calculated separately for each year using broker-level data within the treatment and control groups.

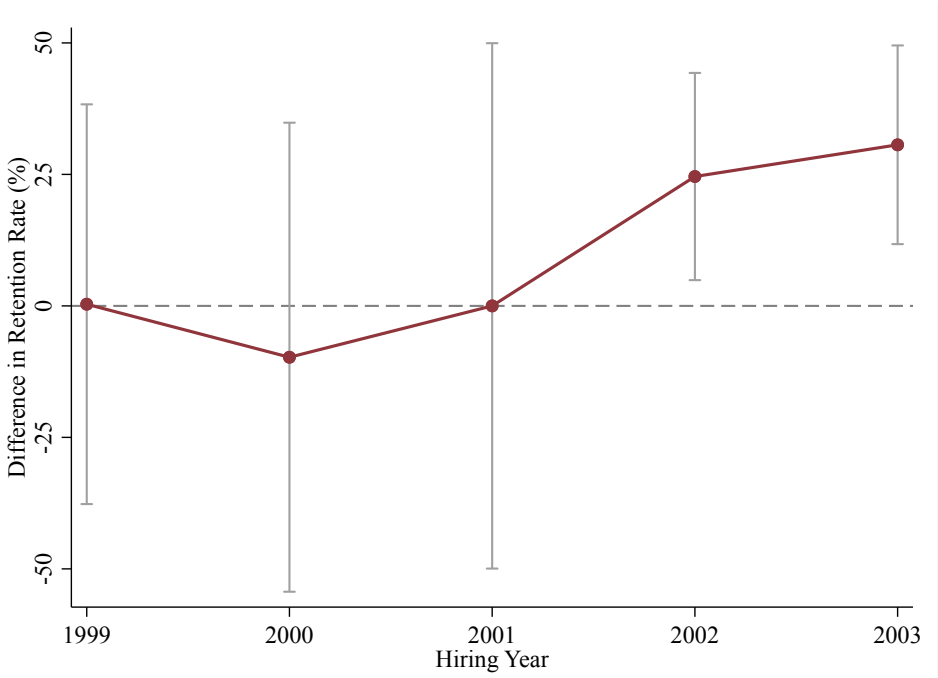


Figure 19: **Employee Promissory Note Agreement**

Employee forgivable loans are often structured as the a promissory note (an advance payment with an obligation to repay) plus a bonus agreement (a stream of bonuses, where each bonus is designed to exactly offset scheduled loan repayments over time). This chart provides one representative example of the promissory note part of the contract. It specifies the amount being advanced (the principal), the repayment schedule, the interest rate, the ability of the employer to garnish worker compensation in case of non-payment, and the fact that the loan balance accelerates upon separation.

PROMISSORY NOTE #R00007313N

$497,350.00 November 4, 2014

FOR VALUE RECEIVED, WILLIAM JOHN PAYNTER, (the "Employee") promises to pay, as herein provided, UBS Credit Corp., a Delaware corporation and its successors and/or assigns, including all affiliates and related entities ("UBS"), in lawful money of the United States of America, at 1000 Harbor Boulevard, Weehawken, NJ 07086, or at such other place as UBS may direct, the principal sum of $497,350.00 (the "Principal Amount"), together with interest thereon from the date of this Note at a per annum interest rate of 2.2000%

The Principal Amount, together with all accrued but unpaid interest thereon and any and all other fees or other charges payable in connection with this Promissory Note, including but not limited to any penalty incurred for late payment as described herein (collectively the "Obligations"), shall be due and payable in the amounts and on the dates set forth immediately below:

$45,213.64, plus accrued interest, on Oct 17, 2015
$45,213.64, plus accrued interest, on Oct 17, 2016
$45,213.64, plus accrued interest, on Oct 17, 2017
$45,213.64, plus accrued interest, on Oct 17, 2018
$45,213.64, plus accrued interest, on Oct 17, 2019
$45,213.64, plus accrued interest, on Oct 17, 2020
$45,213.64, plus accrued interest, on Oct 17, 2021
$45,213.64, plus accrued interest, on Oct 17, 2022
$45,213.64, plus accrued interest, on Oct 17, 2023
$45,213.64, plus accrued interest, on Oct 17, 2024
$45,213.60, plus accrued interest, on Oct 17, 2025

Employee understands and agrees that, in the event that a payment due under this Note is not received by UBS within 10 days of the date set forth herein, he/she shall pay an additional late fee in the amount of 2% of the outstanding payment. In no event will this late fee exceed the maximum amount permitted by applicable law.

To the fullest extent permitted by law, Employee authorizes UBS to offset the above payments at the time they are due from any salary, commission, bonus, award, or other compensation payable to the Employee by UBS and all related entities and/or any funds held by Employee

This Note shall immediately become due and payable without presentment, demand, protest, notice of default or other notice of any kind, which the Employee hereby expressly waives, in the event that the Employee's employment with UBS or any related entity is terminated, either voluntarily or involuntarily by the Employee or UBS, including any related entity, for any reason whatsoever.

Figure 20: **Performance Bonus Agreement**

Employee forgivable loans are often structured as the a promissory note (an advance payment with an obligation to repay) plus a bonus agreement (a stream of bonuses, where each bonus is designed to exactly offset scheduled loan repayments over time). This chart provides one representative example of the bonus part of the contract. It shows how bonuses are set to exactly offset the loan repayment, how they are contingent on production, how they are suspended upon separation, and how the broker agrees not to solicit its clients in case of non-payment.

TRANSITION PAYMENT AWARD AGREEMENT

This Transition Payment Award Agreement ("Agreement") is entered into this 17th day of October, 2014, between UBS Financial Services Inc., a Delaware corporation, and its successors and/or assigns, including all affiliates and related entities ("UBSFS") and WILLIAM JOHN PAYNTER ("Employee").

1. Transition Payments: Subject to the terms and conditions set forth in this Agreement, on the dates set forth below, UBSFS agrees to pay Employee transition payments in the amounts set forth immediately below less applicable withholdings for federal, state and local taxes and any offset for defaults, arrearages or past due amounts owed to UBSFS, and all related entities as of the date of such payment(s) and any/all penalties related thereto:

$56,155.34, on or before the last day of Nov, 2015
$55,160.64, on or before the last day of Nov, 2016
$54,165.94, on or before the last day of Nov, 2017
$53,171.24, on or before the last day of Nov, 2018
$52,176.54, on or before the last day of Nov, 2019
$51,181.84, on or before the last day of Nov, 2020
$50,187.14, on or before the last day of Nov, 2021
$49,192.44, on or before the last day of Nov, 2022
$48,197.74, on or before the last day of Nov, 2023
$47,203.04, on or before the last day of Nov, 2024
$46,208.30, on or before the last day of Nov, 2025

2. Conditions For Payments: UBSFS shall have no obligation to make any transition payment hereunder in the event that Employee's employment with UBSFS is terminated, either voluntarily or involuntarily, by Employee or UBSFS for any reason whatsoever. Further, UBSFS shall not be obligated to make any transition payment hereunder unless Employee: (a) has, at all times since the date of this Agreement, remained in the full-time, active employment of UBSFS; (b) has obtained and maintained in full force and effect all licenses and registrations from the Financial Industry Regulatory Authority ("FINRA"), securities exchanges, state securities commissions and other regulatory bodies as UBSFS shall determine is necessary or appropriate in order for Employee to conduct securities or commodities transactions or otherwise perform the functions for which he/she is employed; (c) has generated Trailing 12 months gross production of at least 130% of the dollar amount of the Trailing 12 months gross production identified in Employee's Letter of Understanding as "LOU Trailing 12" as of the last day of the month prior to each month set forth in Paragraph 1 (except that this requirement shall not apply to the first transition payment scheduled to be made pursuant to this Agreement);

a. Binding Mutual Arbitration. Employee and UBS agree that any Covered Claims (defined below) will be resolved by final and binding arbitration

4. Non-Solicitation Of Clients: Subject to applicable law and Paragraph 6 of this Agreement, in the event Employee's employment with UBSFS is terminated for any reason whatsoever, whether voluntarily or involuntarily, Employee agrees, for a period of one year from the date of termination or until such time that all amounts owed by the Employee to UBSFS and all related entities have been fully repaid, whichever is earlier, to not solicit, directly or indirectly, any of the clients who maintain accounts at UBSFS ("Clients of UBSFS") whom Employee serviced during his/her employment at UBSFS or other Clients of UBSFS whose names became known to Employee while in the employ of UBSFS.

EMPLOYEE FURTHER EXPRESSLY CONSENTS TO THE ISSUANCE OF A TEMPORARY RESTRAINING ORDER OR A PRELIMINARY INJUNCTION BY ANY COURT OR ARBITRATION PANEL WITH JURISDICTION OVER EMPLOYEE TO PROHIBIT THE BREACH OF ANY PROVISION OF THIS AGREEMENT, OR TO MAINTAIN THE STATUS QUO PENDING THE

10. Not An Employment Contract: Employee expressly acknowledges that his/her employment with UBSFS is "at will" and that this Agreement is not an employment contract or agreement to employ Employee for a specified period of time or a promise of continued employment with UBSFS for any period whatsoever. Accordingly, Employee acknowledges that his/her employment may be terminated with or without cause and with or without notice at any time at his/her option or that

IN WITNESS WHEREOF, Employee has executed this Agreement as of the date set forth above

EMPLOYEE:
William John Paynter

Figure 21: **Request for Payment**

RubinFortunato
Employment Law That Works

JASON K. ROBERTS
DIRECT DIAL: (610) 408-2056
DIRECT FAX: (610) 854-0392
EMAIL: jroberts@rubinfortunato.com

August 17, 2009

Via UPS Overnight Mail

Robert Krieger
2104 Big Sky Dr.
Rocklin, CA 95765

Re: Advisor Transition Program Promissory Note Obligation Owed by Robert Krieger

Dear Mr. Krieger:

This firm represents Merrill Lynch, the company servicing your Promissory Note executed pursuant to the Advisor Transition Program Agreement.

Your Promissory Note dated January 7, 2009 provides that in return for the loan from MLIFI in the amount of $122,789, you would repay, on a monthly basis, the sum of $1,622, representing a repayment of principal plus interest at a rate of 3.0% per year, from January 2009 through December 2015, until the loan was repaid in full. (A copy of the Promissory Note is enclosed.)

Since your employment with Merrill Lynch ended before the loan was fully repaid, MLIFI hereby demands payment of the outstanding balance of $113,511.41. Payment of this outstanding balance, in the form of a check made payable to "Merrill Lynch," must be received by this office immediately.

Failure to make immediate repayment of the balance due will result in the initiation of litigation against you to recover the balance, plus interest and attorney's fees.

Very truly yours,

RUBIN, FORTUNATO & HARBISON P.C.

Jason K. Roberts

Enclosure

Figure 22: **Mandatory Arbitration Clause in Employment Contracts**

All employment contracts in the securities industry contain a mandatory arbitration clause which requiring that any employment disputes between the broker and the securities firm gets resolved in an industry arbitration forum. This clauses are standardized across firms and forums. This chart provides a copy of such an arbitration clause.

FORM U-4

UNIFORM APPLICATION FOR SECURITIES INDUSTRY REGISTRATION OR TRANSFER

If there is an amendment to this page, complete only Items 1, 2, 3, 4 and Items being amended.

(1) LAST NAME	JR./SR. etc.	FIRST NAME	MIDDLE NAME (SPECIFY IF NONE)	(2) APPLICANT'S CRD #
				SOC. SEC. #
(3) FIRM CRD # / FIRM NFA #	(4) FIRM NAME (Do not include this employment under item 19, page 2)			APPLICANT'S NFA # / (5) EMPLOYMENT DATE
(6) FIRM MAIN ADDRESS	STREET	CITY	STATE	ZIP
(7) BRANCH I.D. #	OFFICE OF EMPLOYMENT ADDRESS STREET	CITY	STATE	ZIP

(8) Will applicant maintain registration with another Broker-Dealer not under common ownership or control with the firm named in Item 4 above? ☐ Yes ☐ No
(If "Yes", list in item 19)
If "Yes", has/have the firm(s) been contacted? ☐ Yes ☐ No

(9) Will applicant maintain multiple registrations with Broker-Dealers under common ownership or control with the firm named in Item 4 above? ☐ Yes ☐ No
If "Yes", fill in information below:
Firm CRD # _____ Name of Firm _____
Firm CRD # _____ Name of Firm _____
Firm CRD # _____ Name of Firm _____

(10) TO BE REGISTERED WITH THE FOLLOWING:

SRO ☐ ASE ☐ BSE ☐ CBOE ☐ CSE ☐ MSE ☐ NASD ☐ NFA ☐ NYSE ☐ PHLX ☐ PSE ☐ OTHER (Specify) _____

THE APPLICANT MUST READ THE FOLLOWING VERY CAREFULLY

1. I swear or affirm that I have read and understand the items and instructions on this form and that my answers (including attachments) are true and complete to the best of my knowledge. I understand that I am subject to administrative, civil or criminal penalties if I give false or misleading answers.

5. I agree to arbitrate any dispute, claim or controversy that may arise between me and my firm, or a customer, or any other person, that is required to be arbitrated under the rules, constitutions, or by-laws of the organizations indicated in Item 10 as may be amended from time to time and that any arbitration award rendered against me may be entered as a judgement in any court of competent jurisdiction.

_____ Month Day Year

_____ SIGNATURE OF APPLICANT

_____ TYPE OR PRINT NAME OF APPLICANT