Deleting misconduct: The expungement of BrokerCheck records☆

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ABSTRACT

We examine a controversial process, known as expungement, which allows brokers to remove evidence of financial misconduct from public records. From 2007 to 2016, we identify 6660 expungement requests, suggesting that brokers attempt to expunge 12% of the allegations of misconduct reported by customers and firms. When these requests are adjudicated on the merits, arbitrators approve expungement 84% of the time. We show that expungements significantly predict future misconduct; brokers with prior expungements are 3.3 times as likely to engage in new misconduct as the average broker. Further, using an instrumental variable based on the random assignment of arbitrators, we present evidence that brokers who receive expungement are more likely to reoffend than brokers who are denied expungement. We also show that successful expungements improve long-term career prospects.

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1. Introduction

BrokerCheck, a public-facing website maintained by financial regulators, provides employment and disciplinary history for all US-registered securities brokers in an easy-to-search format. There are many indications that the website is well utilized and provides important information. For example, as of September 1, 2018, Amazon's Alexa estimated there were 263,478 unique visitors to BrokerCheck over the past 30 days and that these visitors were older, more educated, and wealthier than the internet average—characteristics of consumers we might expect to research

a broker prior to hiring him or her.[1] In addition, brokerage firms are well known to use the information in hiring decisions. Regulators, too, use the information; they rely on the disciplinary history in BrokerCheck when deciding which brokerage firms to inspect, as not all brokerage firms are inspected annually.[2] Academics have also recently begun to explore the data. For example, Egan et al. (2019a) find that prior offenders are more than five times as likely to engage in new misconduct as the average broker, and Qureshi and Sokobin (2015) find that the 20% of brokers with the highest ex-ante predicted harm probability are associated with more than 55% of total harm cases.

Given the relevance of this database to a variety of users, it is important to understand not only what is presented in the database but also what information has been removed. Information is removed through a controversial practice, known as "expungement," which allows brokers to remove select allegations of misconduct through an arbitration process. The expungement process has been the subject of significant policy debate (Lipner, 2013; Edwards, 2017a; 2017b). State regulators and investor advocates have argued that expungement removes legitimate allegations of misconduct, therefore harming the ability for state regulators to monitor brokers effectively and for investors to protect themselves (Lipner, 2013). In response, broker advocates have pointed out that the allegations of misconduct in BrokerCheck are frequently unverified and have praised the expungement process as an avenue for brokers to remove meritless allegations.[3]

Journalists and the Public Investors Arbitration Bar Association (PIABA) have previously collected subsets of the BrokerCheck expungement awards.[4] These prior studies often demonstrate success rates of over 90%, leading to vigorous policy debate and congressional action proposing reform.[5] To our knowledge, however, none of the prior work has attempted to collect the full set of expungements, nor has it examined the effect of BrokerCheck expungement on future misconduct or career outcomes. We provide this analysis.

Our study begins by scraping data on arbitration awards from FINRA's Arbitration Awards database, allowing us to identify 6660 broker requests for expungement filed from 2007 to 2016. For comparison, there were just over 53,000 new allegations of misconduct made by firms or customers over the same period (brokers cannot expunge civil, criminal, or regulatory disclosures through this process, so we limit the comparison to allegations made by firms or customers). This suggests that brokers request to expunge 12% of the allegations of misconduct made by customers and firms.[6] Of the expungement requests that are adjudicated on the merits, over 80% are successful.

On the one hand, if the process functions as intended—meaning that the expunged information is inaccurate or otherwise does not reflect the broker's conduct—removing the information has many benefits. Doing so should (1) improve the accuracy of the BrokerCheck database, (2) incentivize brokers to maintain a clean record by sharpening the signal between "clean" and "misconduct" brokers (Mungan, 2017; Png, 1986; Polinsky and Shavell, 1989), and (3) allow regulators, firms, and consumers to perform more effective monitoring, as they can better predict the brokers likely to commit misconduct.

On the other hand, if brokers are abusing the expungement process, as some have alleged, removing misconduct from BrokerCheck will reduce the utility of BrokerCheck and monitoring based on this information and will hamper the effectiveness of FINRA's disciplinary regime, which imposes increasingly severe sanctions on repeat offenders.[7] Moreover, if the expungement process is abused, behavioral literature suggests that it could lead to an increase in socially undesirable behavior, as studies have found that a higher incidence of unethical behavior is likely to occur if prior unethical decision making is rewarded (Hegarty and Sims, 1978). Further, success can breed overconfidence and, in the investment context, excessive risk-taking (e.g., Laming, 1968; Rabbitt and Phillips, 1967; Rabbitt and Rodgers, 1977; Mizruchi, 1991; Odean, 1998; Camerer and Lovallo, 1999).

Therefore, a key issue in understanding the impact of expungement is the relation between expungement and broker recidivism. At a descriptive level, successful expungements predict future misconduct; brokers with prior expungements are 3.3 times as likely to engage

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[1] Please see Exhibit 1 in the Online Appendix for information provided by Amazon's Alexa.

[2] Financial Industry Regulatory Authority (FINRA), 2017. Regulatory and examination priorities letter. Available at https://www.finra.org/sites/default/files/2017-regulatory-and-examination-priorities-letter.pdf (last accessed on January 17, 2020). Although FINRA and other regulators rely on Central Registration Depository (CRD) (the database underlying BrokerCheck), expungements remove the information from CRD as well.

[3] Kennedy, D., 2016. How frivolous customer disputes can be erased from FINRA BrokerCheck. InvestmentNews.com (August 23, 2016).

[4] PIABA, 2013. Stockbroker arbitration slates wiped clean 9 out of 10 times when "expungement" sought in settled cases (October 16, 2013). PIABA, 2015. Update to the 2013 expungement study of the public investors arbitration bar association (October 20, 2015). Weinberg, N., 2018. What happens when banks smear their exiting brokers. Bloomberg News (October 23, 2018). PIABA has performed the most systematic study of the awards, but their collection process is limited to expungement cases involving stipulated awards or settled customer claims rather than the full set of expungement awards. Further, their coding reflects whether any expungement request in the award was successful, not whether each request was successful (there are frequently multiple requests in the same award, and outcomes may differ for each request). This choice leads to a mechanically higher success rate.

[5] Grassley, C., Reed, J., 2013. Grassley, Reed seeks answers on expungement of investor complaints. United States Senate (Dec. 16, 2013). Warren, E., 2019. Warren calls for transparency as FINRA updates broker expungement rules. United States Senate (March 22, 2019).

[6] Under the conservative assumption that all expunged misconduct was incurred during our sample period and should be included in the denominator, we have 6,660 expungement attempts relative to 58,100 new allegations of misconduct by customers and firms (53,525 allegations remaining in BrokerCheck and 4,575 successfully expunged allegations). Of course, this estimate is imperfect, as there is a time lag between when the infraction occurs and when it is expunged, meaning that expungements in the beginning of our sample likely relate to misconduct that occurred prior to 2007 and misconduct in recent years would not show up in our expungement sample. For this reason, our inclusion of all successfully expunged allegations in the denominator is over inclusive, as some of these infractions occurred prior to 2007, but we take this approach to be conservative.

[7] FINRA, 2019. Sanction guidelines. Available at https://www.finra.org/sites/default/files/Sanctions_Guidelines.pdf (last accessed on December 11, 2019).

in new misconduct as the average broker, suggesting that expungements may provide value to BrokerCheck users insofar as these awards contain some predictive information. However, this simple ordinary least squares (OLS) regression does not address whether expungement affects recidivism, as many of the characteristics associated with expungements are also likely to be associated with recidivism.

To answer the causal question of whether expungement affects recidivism, we use an instrumental variable (IV) analysis where our instrument is based on the randomized list of arbitrators assigned to the case. The arbitrators on this list are chosen by an algorithm, and FINRA states explicitly—and has undergone an audit to confirm—that the algorithm selects the initial list of arbitrators randomly (subject only to geographic limitations).[8] The arbitrators on this list are not publicly available, but FINRA provided us with this information for the purposes of this study. Conceptually, our instrument is the relative leniency of this randomly generated list. Empirically, we define two instruments: the relative leniency of the (1) mean and (2) median arbitrator on FINRA's randomly generated list of potential arbitrators, where "relative" is determined in comparison with other arbitrators in the same year and region. To determine each arbitrator's leniency, we compute the number of expungements awarded relative to the total number of expungements over which the arbitrator has presided (excluding the current case).

Although the parties can endogenously select their arbitrators from this randomly generated list, we do not expect this potential endogenous selection to affect the validity of our IV, as we rely solely on the randomly generated list. Moreover, our tests confirm that the leniency of the arbitrators on the randomly generated list is significantly correlated with expungement success (i.e., the first-stage results are highly significant). However, we do not expect FINRA's random draw of arbitrators to affect recidivism except through its effect on the expungement process (i.e., we theorize that the exclusion restriction holds).

Our analysis provides evidence that successful expungements increase recidivism. The two-stage least squares (2SLS) results, which exploit plausibly exogenous variation in expungement from the random assignment of FINRA's arbitrator list, show that expunged brokers are more likely to reoffend. With full controls, the 2SLS result using the median arbitrator on the randomly generated list of potential arbitrators shows that the marginal expunged broker has 0.31 more years with allegations of misconduct (or expunged misconduct) than brokers who are denied expungement. Notably, this result appears to be driven by repeat expungements—in other words, successful expungements cause an increase in future expungements. With full controls, the 2SLS results show that the marginal expunged broker has 0.16–0.20 more years with successful expungements than brokers who are denied expungement. Additional robustness tests provide evidence that the increase in successful expungements is jointly driven by an

increase in expungement requests and a greater likelihood of success.

There are several explanations for why successful expungements would increase recidivism. First, as noted previously, predictions based on behavioral literature are consistent with this finding. Relative to a broker denied expungement, a broker granted expungement might increase recidivism and expungement requests due to increased risk-taking with client assets, overconfidence that he can obtain another expungement, and/or more frequent incidences of unethical behavior, as the broker has received external signals that his initial behavior was appropriate. Second, the findings are consistent with the incentives created by FINRA's accelerating sanctions regime. The brokers denied expungement face increasing costs of misconduct for each additional infraction, but the brokers granted expungement are reset to a lower baseline, as expunged misconduct will not be considered when penalizing additional misconduct. Thus, a marginal broker granted expungement is presumably more likely to engage in future misconduct because the cost of such misconduct is likely to be lower than for a marginal broker denied expungement.

Finally, it is possible that expungement increases recidivism because it improves career outcomes, allowing expunged brokers to remain in the industry for longer periods and thus have more opportunity to commit misconduct. Prior literature on financial advisors supports this possibility, as brokers are more likely to depart the firm after misconduct and are less likely to be rehired going forward (Egan et al., 2019a). Although we are not aware of any prior work that has examined the effect of removing evidence of misconduct on brokers' career prospects, there are intuitive explanations for why it would provide similar career benefits. For example, even if an employer knows of an expunged infraction, firms may be more comfortable with a broker who has "private" allegations of misconduct rather than a broker with "public" allegations of misconduct.

Therefore, we examine the career consequences of expungement. Our descriptive analysis suggests that brokers who receive a successful expungement are more likely to remain with their firm and, conditional on leaving the firm, to be rehired by another brokerage firm. Similarly, the results from our IV analysis using the leniency of the mean arbitrator show that, relative to those denied expungement, marginal expunged brokers are 21 percentage points less likely to separate from their firm (with full controls). Marginal expunged brokers also remain in the BrokerCheck database for a greater number of years (meaning they remain employed as registered brokers). Therefore, there is evidence that expungement improves career outcomes, plausibly providing expunged brokers with greater opportunity to commit misconduct and driving our results on recidivism. Although additional robustness tests suggest that the beneficial career consequences of expungement are unlikely to be the primary mechanism driving our results showing that expungement increases recidivism, they are likely a contributing factor.

Our paper contributes to several areas of literature. First, we contribute to prior work on personal brands as a regulatory tool. Personal brands are a crucial component

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[8] FINRA, 2016. Arbitrator selection. Available at https://www.finra.org/arbitration-mediation/arbitrator-selection (last accessed January 16, 2020).

of the regulatory regime for different financial professionals, including registered representatives of broker-dealers, investment advisers, and National Futures Association members. Regulators require these individuals to disclose substantial personal information to the regulator, much of which is then made available online in accordance with a market-based theory of deterrence: public disclosure will allow markets to weed out the "bad actors." Regulators frequently post allegations with relatively limited verification, such as customer complaints, because these allegations have predictive power (e.g., Dimmock and Gerken, 2012; Egan et al., 2019a; Qureshi and Sokobin, 2015; McCann et al., 2017). But, although these allegations have predictive power, on average, there are false positives as well. Thus, one tension with this approach is the degree to which regulators should verify disciplinary information ex ante versus allowing individuals to remove information ex post through expungement. Our study suggests that, at least at present, regulators should rely more heavily on ex-ante verification rather than ex-post expungement.

Second, our paper contributes more generally to literature on reputation. Prior work has shown that firms punish bad actors, but it is unclear whether firms penalize bad actors because they care about misconduct or because they do not want to be publicly associated with bad actors. A simple example illustrates the difference. Human Resources at the Wynn Las Vegas had received allegations that Steve Wynn sexually assaulted female employees for over a decade, but it was only when the allegations became public that Steve Wynn was forced to step down from his position as CEO and chairman of Wynn Resorts.[9] Similarly, there may be a difference in how brokerage firms view public and private misconduct, and our setting allows us to better understand this distinction. If these firms care equally about public and private misconduct, we might expect expungement to have little impact on career outcomes. However, we find that expungement significantly improves career prospects and many firms' applications do not ask about expunged misconduct, implying that firms care more about public misconduct.

Third, we contribute to work on the removal of information from consumer databases. Prior work examines the career consequences of publicly known misconduct, but we are unaware of any prior empirical work that examines the effect of removing that misconduct. The closest area of literature examines the removal of adverse credit market indicators such as bankruptcy flags (e.g., Dobbie et al., 2017; Dobbie et al., 2020). However, our setting differs from these papers in crucial ways. First, the parties in our setting remove allegations of misconduct rather than financial mishaps. Second, the parties here apply for expungement, whereas credit flags disappear after a certain number of years.

Finally, we contribute to the ongoing policy debate over expungement. FINRA has recently proposed updated rules to govern the process and is awaiting approval from

the Securities and Exchange Commission. Our analysis suggests several avenues for reform.

2. Institutional background

In the United States, many investor allegations involving financial advisor misconduct–anywhere from 3,000 to 9,000 complaints each year–are adjudicated through FINRA's arbitration process.[10] Arbitrations are conducted either by a single factfinder or a panel composed of three adjudicators. In each case, the arbitrators are drawn from a group of more than 7800 arbitrators maintained by FINRA nationwide.

FINRA identifies a potential set of arbitrators using the Neutral List Selection System (NLSS), a computer algorithm that ensures conditional random selection (subject only to minimization of arbitrator travel). According to FINRA, "[t]he randomized process [used in the NLSS] has been verified by an Ernst & Young audit in a report that confirmed that a 'random pool management algorithm [is] used to ensure that each arbitrator in the pool has the same opportunity to appear on a list as all other arbitrators in that pool.'"[11] After the list is determined, each party to an arbitration is allocated a certain number of strikes to eliminate undesirable candidates. Theoretically, if both parties select the arbitrator with equal diligence, they will end up with the average arbitrator on the initial list of randomly assigned arbitrators.[12] In investor cases with claims of up to $100,000, the general rule is that a single arbitrator will adjudicate the claim. The parties receive one list of ten qualified public arbitrators, and each party has the right to strike up to four arbitrators from the list and rank the remaining six. Investor cases involving claims of more than $100,000 are typically adjudicated by a panel of three arbitrators. In these cases, the parties receive three lists of potential arbitrators and again strike the least desirable options from each list and rank those remaining.

After a customer complaint is settled or adjudicated, the firm or broker that was the subject of the complaint has an obligation to report that outcome to FINRA's CRD, typically no more than 30 days after learning that a filing is required. Firms or individuals who fail to file required updates are subject to regulatory action by FINRA. FINRA then releases some, but not all, of the information in each firm and broker's CRD file to the public on FINRA's BrokerCheck website (Qureshi and Sokobin, 2015).

BrokerCheck displays information on all brokers and firms registered with FINRA. Subject to limited exceptions, financial professionals who buy or sell securities on behalf of their customers or their own account are required to register with FINRA. As such, the scope of BrokerCheck extends beyond traditional retail-facing brokers to include sell-side advisors such as investment bankers. BrokerCheck is meant to provide individuals with a free and easy way to research an investment professional, and the database includes information about licenses, employment history, and disciplinary history. The disciplinary history—in FINRA parlance, "dispute information"—includes written complaints, criminal conduct, arbitrations in which the broker is named as a party, litigation in which the broker is named as a party, arbitration awards, and civil judgments. An example of a BrokerCheck webpage is provided in Exhibit 2 of the Online Appendix. In this instance, the broker appeared to have a disclosure-free record until December 2012. However, this particular individual had expunged an infraction in 2011. After the expungement, he received three more disclosures and was later barred from the industry due to misconduct.

One concern with the disciplinary history provided on BrokerCheck is that much of it has not been independently verified. Although some complaints are confirmed, such as criminal or regulatory actions against the broker, the allegations made by private parties such as customers or employers are frequently unverified. For example, a written customer complaint against a broker can show up in BrokerCheck without third-party verification. The process leads to concerns that a completely erroneous allegation—such as a dispute against the wrong broker—may be recorded in BrokerCheck.

For this reason, there are concerns that the disciplinary information in BrokerCheck is over-inclusive and may penalize brokers unfairly. To address these concerns, FINRA allows brokers to expunge their records. The rules governing expungement have been the subject of a great deal of controversy and have changed extensively over time (Lipner, 2013). Since April 2004, however, expungement of customer-related information has been governed by Rule 2080 (former NASD Rule 2130). This rule provides arbitrators with guidance on addressing expungement requests and specifies that expungement may only be awarded in cases where the initial case either (1) involved a claim that was "factually impossible or clearly erroneous," (2) involved a complaint where the registered person was not involved in the alleged conduct, or (3) the information in the claim is "false." To our knowledge, there is no FINRA rule governing expungement of noncustomer related disputes that may arise, such as disputes between a broker and her firm.

An important question in this debate is why all brokers do not attempt to expunge their records. To answer this question, we cold-called 554 brokers in our sample. Of these, 100 had successfully expunged an infraction and the remainder had not. Of these 554 brokers, only 19 agreed to speak with us—the remainder immediately hung up, did not return our calls, or hung up after comments such as "I don't know what an expungement is." However, these 19 provided consistent explanations for why brokers do not expunge. First, many brokers stated they were unaware of the process or even that allegations of misconduct could be viewed publicly. Several were very surprised to receive our call, responding with comments such as "your call is the first time I've ever heard this" (referring to the expungement process). Second, of the brokers familiar with the process, many thought it was too costly. The cost mentioned ranged from $12,500 to $300,000, with most putting the cost around $25,000–$50,000 before settlement payments.[13] Finally, many of the brokers estimated their likelihood of success to be low, noting that FINRA considers expungement an exceptional remedy.

3. Methodology and descriptive statistics

Our analysis uses two data sets: (1) the BrokerCheck data and (2) the expungement data. The BrokerCheck data include an unbalanced panel of 1.23 million brokers available in FINRA's BrokerCheck database from 2007 to 2017. The expungement data include 4817 cases initiated from 2007 to 2016 requesting expungement for 6660 offenses (some cases request expungement for multiple brokers or multiple offenses). After eliminating requests for which we could not locate the broker's CRD number, and those related to brokers no longer remaining in BrokerCheck, we have a total of 6433 requests. Of these requests, 5282 were resolved on the merits (in the remaining actions, the underlying claim was typically withdrawn or dismissed prior to when the arbitrator would have ruled on expungement, making the request for expungement moot).

When creating the expungement data, we focused on requests filed from 2007 to 2016 for three reasons. First, FINRA was created through regulatory consolidation in July 2007, so recordkeeping becomes more consistent at this point. Second, many expungement cases brought after 2016 were still ongoing when we collected data in 2018 were. Third, BrokerCheck is meant to display records for a period of ten years, meaning that data over a decade old become subject to an increasingly severe selection bias. We provide detailed information on these two data sets below.

3.1. BrokerCheck data

We scraped BrokerCheck in May 2018, so our BrokerCheck data contain information on all brokers and firms with records available on BrokerCheck in May 2018. This yields an unbalanced panel of 1.23 million brokers

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[13] At the extreme, one broker estimated the cost to be $700,000 for an expungement. However, this same broker mentioned that he had prior difficulty over a "traffic stop" that we later determined to be assault on a police officer, so we question his credibility.

spanning the period between 2007 and 2017 (the data only include brokers in the year(s) they are actively registered broker-dealers). In total, there are roughly 7.7 million broker-year observations. If a broker switched firms midway through the year, he was assigned to the firm that he spent the most time at in any given year. If a broker was registered at two firms for an entire year, we randomly selected one firm for the year.

For each broker identified in BrokerCheck, we pulled the individual-level variables shown in Panel A of Table 1. The table presents characteristics of brokers who have applied for expungement, brokers who have not applied for expungement, and *t*-statistics comparing the two populations. There are clear differences between the populations. Brokers who apply for expungement have more years of experience, far more disciplinary history, and are more likely to be retail brokers (following Qureshi and Sokobin, 2015, we define retail brokers as those who hold more than three state registrations). These brokers have also passed more exams, likely because they are retail brokers and must pass the exams required for the state(s) in which they operate. Notably, 85% of the brokers who have applied for expungement are dually registered as broker-dealers and investment advisers—significantly higher than the general population in BrokerCheck. Generally speaking, investment advisers make investment decisions on behalf of their clients, whereas brokers execute trades they are told to execute. Therefore, investment advisers typically have greater opportunity to harm their clients.

Following Egan et al. (2018, 2019a), we consider 6 of the 23 disclosure categories on BrokerCheck to be "misconduct." These six categories are as follows: customer dispute-settled, regulatory-final, employment separation after allegations, customer dispute-award/judgment, criminal-final disposition, and civil-final. The number of allegations in each of the disclosure categories, including those categories we do not consider misconduct, is presented in Exhibit 3 of the Online Appendix. Many of the other disclosure categories do not necessarily relate to misconduct but may reflect personal history such as liens or bankruptcies. Further, by limiting to these six categories, we have greater confidence in the accuracy of the underlying complaint. For example, for an oral complaint to be included in the customer dispute-settled category, the settlement must have exceeded $15,000.[14]

After completing the scrape of brokers, we generated a unique list of employers and scraped BrokerCheck for information on these firms. As shown in Panel B of Table 1, we identified 7,481 unique firms (roughly one-third were available in all years). The majority of firms in BrokerCheck do not employ expunged brokers, but those that do tend to be larger, more established, and more retail facing. This seems intuitive, as larger firms with more brokers—especially retail brokers—and longer lifespans have more opportunity for the brokers they employ to commit misconduct and expunge that misconduct.

3.2. Expungement data

Our expungement data contain, as best possible, the complete set of all requests to expunge broker CRD information initiated from 2007 through 2016. We identified the expungement cases using FINRA's Arbitration Awards online database. First, we conducted a search of the Arbitration Awards online database using the following keywords: "expungement," "2080," or "2130" (as discussed previously, Rules 2080 and 2130 govern FINRA's expungement procedures for customer-initiated disputes). This search yielded over 10,000 arbitration awards, each uniquely indexed by a FINRA Award ID. We scraped this list of FINRA Award IDs and the links to the relevant arbitration award PDFs. Second, using this list of Award ID numbers and PDF links, we downloaded the PDFs. As a first cut, we identified the 3,500 cases that contained "2080" or "2130" in the award section of the PDF. For the remaining PDFs, we identified those containing "expungement" in the text of the award and hand-coded these PDFs to confirm they were actually related to expungement proceedings. After removing duplicates, we had 6,100 expungement arbitration awards in total.

To gain confidence in our sample and identify further expungements, we reached out to PIABA, an international bar association whose members represent investors in disputes with the securities industry. PIABA tracks expungements and shared with us data from 2007 to 2014 for the purposes of this study. Our initial data included 92% of the cases in the PIABA data, and we added the missing 227 observations.[15]

After restricting attention to cases initiated from 2007 through 2016, our search parameters yielded 4,817 arbitration awards corresponding to 6,660 unique (broker-offense) expungement requests. For each arbitration award, we identified the following variables: date of award, date of claim, all brokers who applied for expungement, the justification for the expungement under Rule 2080 (false, erroneous, or not involved), whether the case was heard by a panel or sole arbitrator, whether the expungement was successful, whether the case was settled, the hearing site of the case, whether the expungement was unopposed, settlement amounts (when disclosed), who initiated the case (broker, firm, or customer), and the date and type of the underlying infraction. (Detailed descriptions of these variables are provided in Exhibit 4 of the Online Appendix.) We scraped the variables initially but hand-checked the coding. To categorize the underlying infraction, we used the categories provided in Table 3(a) of Egan et al. (2019a) for customer-initiated cases and created similar categories for cases initiated by firms or brokers. The number of expungement requests by category is provided in Exhibit 5 of the Online Appendix. Particularly for the customer-initiated infractions, most instances of misconduct are those typically associated with

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[14] Amendments in 2009 increased the reporting threshold to $15,000 from $10,000. However, this threshold only applies to oral complaints. Written complaints are included if the claim amount (not settlement amount) exceeds $5,000.

[15] Our sample included an additional 1,233 cases that were not included in the PIABA data. This discrepancy is largely because PIABA restricts attention to expungement cases involving stipulated awards or settled customer claims.

Table 1

Summary statistics.

This table provides summary statistics on FINRA's BrokerCheck database from 2007 to 2017. Panel A provides summary statistics on the 1.23 million brokers available in the data, and Panel B provides summary statistics on the firms. In Panel A, observations are broker by year, and brokers are divided into two groups: nonexpungement brokers and expungement brokers. Expungement brokers are those who filed a request for expungement at least once from 2007 to 2016. Nonexpungement brokers are analogously defined. In Panel B, observations are firm by year, and firms are divided into two groups according to whether any FINRA-registered brokers employed by the firm filed a request for expungement from 2007 to 2016. Firms dually registered as investment advisers were matched to Form ADV data spanning from 2007 to 2015. All firm and broker characteristics are defined in the appendix. The final column corresponds to a t-test for equality of means between the two groups. Statistical significance of 10%, 5%, and 1% is represented by *, **, and ***, respectively.

Panel A

	Non-Expungement brokers						Expungement brokers						t-test
	Obs.	Mean	Std. dev.	Median	25th pctl.	75th pctl.	Obs.	Mean	Std. dev.	Median	25th pctl.	75th pctl.	t
Broker characteristics													
Experience (years)	7,736,093	15.16	10.13	14.00	7.00	21.00	42,873	23.68	9.25	23.00	17.00	30.00	−190.12***
Retail broker	7,736,093	0.36	0.48	0.00	0.00	1.00	42,873	0.72	0.45	1.00	0.00	1.00	−161.23***
Non-White	7,736,093	0.10	0.30	0.00	0.00	0.00	42,873	0.07	0.25	0.00	0.00	0.00	31.40***
Registration													
Investment adviser	7,736,093	0.48	0.50	0.00	0.00	1.00	42,873	0.85	0.36	1.00	1.00	1.00	−215.81***
Barred	7,736,093	0.00	0.05	0.00	0.00	0.00	42,873	0.01	0.10	0.00	0.00	0.00	−15.99***
Disclosures													
Disclosure (flow in one year)	7,736,093	0.02	0.13	0.00	0.00	0.00	42,873	0.09	0.28	0.00	0.00	0.00	−51.42***
Misconduct (flow in one year)	7,736,093	0.01	0.08	0.00	0.00	0.00	42,873	0.05	0.23	0.00	0.00	0.00	−43.76***
Expungement (flow in one year)	7,736,093	0.00	0.00	0.00	0.00	0.00	42,873	0.10	0.30	0.00	0.00	0.00	−67.98***
Disclosure (stock)	7,736,093	0.12	0.32	0.00	0.00	0.00	42,873	0.48	0.50	0.00	0.00	1.00	−151.22***
Misconduct (stock)	7,736,093	0.05	0.21	0.00	0.00	0.00	42,873	0.35	0.48	0.00	0.00	1.00	−132.11***
Expungements between 2007–2017	7,736,093	0.00	0.00	0.00	0.00	0.00	42,873	1.00	0.04	1.00	1.00	1.00	−5674.83***
Disclosure (stock - including pre-2007)	7,736,093	0.17	0.38	0.00	0.00	0.00	42,873	0.59	0.49	1.00	0.00	1.00	−177.75***
Misconduct (stock - including pre-2007)	7,736,093	0.09	0.29	0.00	0.00	0.00	42,873	0.45	0.50	0.00	0.00	1.00	−148.38***
Exams and qualifications													
Num. qualifications	7,736,093	2.95	1.38	3.00	2.00	4.00	42,873	4.01	1.55	4.00	3.00	5.00	−141.10***
Uniform sec. agent st. law (63)	7,736,093	0.76	0.43	1.00	1.00	1.00	42,873	0.86	0.35	1.00	1.00	1.00	−55.32***
General sec. rep. (7)	7,736,093	0.69	0.46	1.00	0.00	1.00	42,873	0.93	0.25	1.00	1.00	1.00	−195.39***
Inv. co. products rep. (6)	7,736,093	0.39	0.49	0.00	0.00	1.00	42,873	0.16	0.36	0.00	0.00	0.00	132.96***
Uniform combined st. law (66)	7,736,093	0.24	0.43	0.00	0.00	0.00	42,873	0.28	0.45	0.00	0.00	1.00	−19.70***
Uniform inv. adviser law (65)	7,736,093	0.21	0.41	0.00	0.00	0.00	42,873	0.50	0.50	0.00	0.00	1.00	−119.37***
General sec. principal (24)	7,736,093	0.16	0.37	0.00	0.00	0.00	42,873	0.25	0.43	0.00	0.00	1.00	−43.53***
Observations	7,736,093						42,873						7,778,966

Table 1
(*continued*)

Panel B

| | Obs. | Firms without expungement attempts | | | | Obs. | Firms with expungement attempts | | | | t-test |
		Num. firms	Mean	Std. dev.	Median		Num. firms	Mean	Std. dev.	Median	t
BrokerCheck data											
Investment adviser	52,134	7,122	0.20	0.40	0.00	679	359	0.64	0.48	1.00	−24.15***
Affiliated w/ fin. inst.	52,134	7,122	0.39	0.49	0.00	679	359	0.68	0.47	1.00	−16.33***
Firm age	52,092	7,105	21.33	12.89	18.00	679	359	29.80	20.08	25.00	−10.96***
Num. business lines	52,130	7,120	3.85	4.53	2.00	679	359	11.28	7.88	13.00	−24.51***
Num. brokers	52,134	7,122	101.68	698.81	9.00	679	359	3649.15	7113.28	543.00	−12.99***
Firm employee misconduct (flow in one year)	52,134	7,122	0.01	0.05	0.00	679	359	0.04	0.08	0.01	−9.93***
Firm employee misconduct (stock - including pre-2007)	52,134	7,122	0.13	0.20	0.04	679	359	0.23	0.16	0.17	−15.15***
Active	52,134	7,122	0.67	0.47	1.00	679	359	0.75	0.43	1.00	−4.94***
Num. states	52,130	7,120	15.76	20.34	3.00	679	359	37.48	23.05	52.00	−24.43***
Expelled firm	52,134	7,122	0.02	0.15	0.00	679	359	0.07	0.26	0.00	−4.79***
Form ADV data											
Services retail investors	3,894	727	0.83	0.37	1.00	342	149	0.97	0.17	1.00	−12.54***
Number of accounts	3,660	686	5687.23	32331.93	603.00	329	142	173014.98	352116.59	15309.00	−8.62***
Assets under management ($ millions)	3,660	686	2678.11	11319.26	258.08	329	142	42217.62	89555.25	4092.58	−8.00***
Compensation/ fee structure											
Hourly	3,894	727	0.45	0.50	0.00	342	149	0.61	0.49	1.00	−5.73***
Fixed fee	3,894	727	0.58	0.49	1.00	342	149	0.84	0.37	1.00	−12.20***
Commission	3,894	727	0.43	0.50	0.00	342	149	0.64	0.48	1.00	−7.45***
Performance	3,894	727	0.11	0.31	0.00	342	149	0.12	0.32	0.00	−0.52
Observations	52,134					679					52,813

an investment adviser rather than a broker-dealer (e.g., breach of fiduciary duty).

We identified additional detail about the broker using his or her name. First, as in Egan et al. (2018), we matched the broker's name with the GenderChecker.com database to identify the broker's gender. If the broker's first name was not in the database or was unisex, we matched the middle name (or any other name excluding the broker's last name). Second, we ran the broker's name through NamePrism, an ethnicity classification tool (Junting et al., 2017). The tool classifies brokers into six categories: White, Black, API (Asian and Pacific Islander), AIAN (American Indian and Alaska Native), multiple race (more than two races), and Hispanic.

3.2.1. Summary information on expunged brokers

Descriptive statistics for the expungement data are presented in Tables 2 and 3, which contain additional information from the BrokerCheck data. To merge these data sets, we use the broker's CRD and the year that the arbitration award was adjudicated. Roughly 12% of the brokers who sought expungement were not employed at a FINRA-registered firm when the arbitration is decided, and we omit these brokers from our merged data set. This reduces the sample to 5578 expungement requests made by actively registered brokers. Of these, 4011 were successful, 621 were unsuccessful, and the remainder were not decided on the merits (i.e., moot).

Panel A of Table 2 includes only brokers with expungeable misconduct and examines which brokers file for expungement. The first set of columns reflects all brokers with expungeable misconduct,[16] and the next set of columns compares the brokers by whether they filed for expungement. Some trends are evident. Retail-facing brokers and those with a prior successful expungement are more likely to file for expungement. Brokers from firms with more expungements are also more likely to apply, as are brokers from disciplined/taping firms. Disciplined firms are those that have been expelled from FINRA membership or have had their broker-dealer licenses revoked. Taping firms are those that, roughly stated, are required to tape conversations with customers because they have a significant association with a disciplined firm.

Panel B of Table 2 examines the brokers who succeeded on expungement requests. As in Panel A, we show the mean, median, and standard deviation for each relevant variable and present these statistics conditional on whether the expungement was successful. Certain characteristics are associated with success. Brokers are more likely to succeed if the case is not opposed, the broker has settled with the aggrieved party, and the broker has a prior successful expungement. Brokers from larger firms–and firms without disciplinary history–are

also more likely to succeed. In sum, Table 2 shows there are significant selection issues with regard to brokers who request and receive expungement that need to be addressed to estimate the causal effect of expungement.

Table 3 presents information on the brokerage houses with the most expunged brokers (only firms with 100 or more brokers are included, but over 98% of brokers who file for expungement are from firms with 100 or more brokers). Column (1) presents the firms with the greatest absolute number of expungements. Column (2) presents the firms with the greatest number of expungements relative to total misconducts. Column (3) presents the firms with the highest percentage of expungements relative to total brokers. Column (4) presents the firms with the highest percentage of expungements relative to retail brokers (as discussed previously, retail brokers are more likely to have misconduct on their records).

The most notable finding is that 12 of the 36 unique firms in Table 3 are no longer operating. Four firms, Blackbook Capital LLC, NSM Securities, RW Towt, and iTRADEdirect.com, have been expelled from FINRA membership. And FINRA has terminated the registrations for another two of these firms, Lighthouse Capital Corporation and Rockwell Global Capital LLC. Finally, another six are no longer registered (Accelerated Capital Group, Calvert Investment Distributors Inc., Jefferies Bache Securities LLC, Newbury Street Capital, RP Capital LLC, and The Delta Company). One explanation is that firms facing severe disciplinary action or a lapse in registration encourage their brokers to expunge their records to present a better image. Another possibility is that brokers at these firms want to clean their records because they expect to soon look for other employment.

3.2.2. Summary information on the expungement process

Further descriptive statistics are presented in Fig. 1 through 3. Fig. 1 presents the number of moot, successful, and unsuccessful expungement awards by year and shows that over 80% of expungements decided on the merits are successful in each year from 2007 to 2016 (including the moot requests as part of the denominator, roughly 70% of requests are successful). Fig. 2 presents the number of brokers who sought multiple expungements during our sample period and shows that roughly 6% of brokers (among those who requested expungement at least once in our sample) sought two expungements, and 4% sought three or more expungements (at the extreme, one broker requested expungement 39 times during our sample period). Further restricting to the set of brokers whose first expungement attempt is successful, we find that 10% request expungement again. Finally, Fig. 3 shows the mean and median net settlement for all nonzero, customer-related arbitrations requesting an expungement by year (the net settlement value reflects the difference between what the customer was due to receive minus what she was required to pay, in the few rare instances where the customer was required to compensate the broker for infractions committed by the customer). Although the figure should be interpreted cautiously, as we were only able to identify the settlement amount in roughly one-quarter of cases, the settlement values are notable. In all years, the

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[16] Of the six categories of "misconduct," three can be expunged: customer dispute-settled, employment separation after allegations, and customer dispute-award/judgment. See frequently asked questions about FINRA Rule 2080 (expungement), available at https://www.finra.org/registration-exams-ce/classic-crd/faq/finra-rule-2080-frequently-asked-questions (last accessed on January 17, 2020).

Table 2

Summary statistics.

This table provides summary statistics on the brokers who apply for expungement. Panel A uses the full set of brokers with expungement-eligible misconduct. Observations are broker by year, and brokers are divided into two groups: (1) those who requested expungement at least once and (2) those who never requested expungement. Panel B includes only brokers who applied for expungement. Observations are broker by request, and the final columns divide these requests by whether they are successful or unsuccessful (i.e., the expungement is approved or denied). The final column corresponds to a *t*-test for equality of means between the two groups. The number of successful and unsuccessful expungements does not sum to the number of total expungements because there are 946 moot expungement requests (i.e., expungement requests that were not resolved on the merits). All broker characteristics are defined in the appendix. Statistical significance of 10%, 5%, and 1% is represented by *, **, and ***, respectively.

Panel A

	Brokers with expungement-eligible misconducts				Attempted expungement				Did not attempt expungement				t-test
	Obs.	Mean	Std. dev.	Median	Obs.	Mean	Std. dev.	Median	Obs.	Mean	Std. dev.	Median	t
Broker characteristics													
Experience (years)	334,398	20.612	10.49	20.000	42,851	23.683	9.25	23.000	291,547	20.160	10.59	19.000	65.30***
Retail brokers	334,398	0.523	0.50	1.000	42,851	0.717	0.45	1.000	291,547	0.494	0.50	0.000	86.95***
Investment adviser	334,398	0.763	0.43	1.000	42,851	0.851	0.36	1.000	291,547	0.750	0.43	1.000	46.10***
Barred	334,398	0.045	0.21	0.000	42,851	0.011	0.10	0.000	291,547	0.050	0.22	0.000	−36.99***
Prior successful expungement	334,398	0.038	0.19	0.000	42,851	0.298	0.46	0.000	291,547	0.000	0.01	0.000	351.27***
Female	321,779	0.137	0.34	0.000	41,656	0.129	0.34	0.000	280,123	0.139	0.35	0.000	−5.31***
Ethnicity													
White	334,398	0.907	0.29	1.000	42,851	0.935	0.25	1.000	291,547	0.903	0.30	1.000	21.21***
Black	334,398	0.003	0.05	0.000	42,851	0.002	0.04	0.000	291,547	0.003	0.06	0.000	−3.79***
Asian Pacific Islander	334,398	0.038	0.19	0.000	42,851	0.020	0.14	0.000	291,547	0.040	0.20	0.000	−20.94***
Hispanic	334,398	0.050	0.22	0.000	42,851	0.044	0.20	0.000	291,547	0.051	0.22	0.000	−6.60***
Firm characteristics													
Num. brokers	334,398	10678.773	11119.57	5967.000	42,851	12354.543	11906.24	9062.000	291,547	10432.472	10977.68	5815.000	33.47***
Num. retail brokers	334,398	5575.346	6838.23	1995.000	42,851	7250.230	7538.22	3488.000	291,547	5329.175	6694.00	1876.000	54.54***
Taping and/or disciplined firm	334,398	0.004	0.06	0.000	42,851	0.007	0.08	0.000	291,547	0.004	0.06	0.000	8.29***
Investment adviser	334,398	0.806	0.40	1.000	42,851	0.809	0.39	1.000	291,547	0.806	0.40	1.000	1.28
Total expungements per year (at this firm)	334,398	117.688	171.43	15.000	42,851	167.204	189.27	58.000	291,547	110.411	167.42	14.000	64.43***
Total misconducts per year (at this firm)	334,398	114.471	149.46	44.000	42,851	132.146	158.41	64.000	291,547	111.873	147.92	42.000	26.24***
Observations	334,398				42,851				291,547				334,398

Table 2
(*continued*)

Panel B

	All expungements				Successful				Unsuccessful				t-test
	Obs.	Mean	Std. dev.	Median	Obs.	Mean	Std. dev.	Median	Obs.	Mean	Std. dev.	Median	t
Broker characteristics													
Barred	5,578	0.013	0.11	0.000	4,011	0.006	0.08	0.000	621	0.052	0.22	0.000	−8.90***
Prior successful expungement	5,578	0.073	0.26	0.000	4,011	0.077	0.27	0.000	621	0.076	0.26	0.000	−0.31
Female	5,440	0.125	0.33	0.000	3,904	0.129	0.34	0.000	608	0.107	0.31	0.000	1.40
Ethnicity													
White	5,578	0.933	0.25	1.000	4,011	0.936	0.24	1.000	621	0.928	0.26	1.000	0.63
Black	5,578	0.002	0.04	0.000	4,011	0.002	0.04	0.000	621	0.002	0.04	0.000	0.22
Asian Pacific Islander	5,578	0.018	0.13	0.000	4,011	0.014	0.12	0.000	621	0.034	0.18	0.000	−3.17**
Hispanic	5,578	0.047	0.21	0.000	4,011	0.048	0.21	0.000	621	0.037	0.19	0.000	1.20
Arbitration characteristics													
Num. brokers per case	5,578	1.905	2.14	1.000	4,011	1.895	2.32	1.000	621	1.705	1.35	1.000	2.48*
Panel of arbitrators	5,576	0.770	0.42	1.000	4,011	0.772	0.42	1.000	621	0.773	0.42	1.000	−0.21
Opposed	5,578	0.429	0.50	0.000	4,011	0.277	0.45	0.000	621	0.749	0.43	1.000	−17.53***
Duration from infraction to claim (years)	335	5.779	4.38	5.000	304	5.822	4.45	5.000	9	5.222	2.68	4.000	0.39
Duration from claim to award (years)	5,555	1.389	0.81	1.000	3,988	1.383	0.79	1.000	621	1.435	0.89	1.000	−1.49
Justification for expungement													
False	5,578	0.390	0.49	0.000	4,011	0.542	0.50	1.000	621	0.000	0.00	0.000	22.03***
Involved	5,578	0.287	0.45	0.000	4,011	0.399	0.49	0.000	621	0.000	0.00	0.000	17.19***
Erroneous	5,578	0.301	0.46	0.000	4,011	0.418	0.49	0.000	621	0.000	0.00	0.000	17.82***
Truly erroneous	5,578	0.052	0.22	0.000	4,011	0.071	0.26	0.000	621	0.003	0.06	0.000	5.81***
Settlement characteristics													
Broker contributes to settlement	5,578	0.032	0.17	0.000	4,011	0.016	0.12	0.000	621	0.145	0.35	0.000	−17.61***
Firm contributes	5,578	0.151	0.36	0.000	4,011	0.155	0.36	0.000	621	0.048	0.21	0.000	7.65***
Both contribute	5,578	0.063	0.24	0.000	4,011	0.025	0.16	0.000	621	0.341	0.47	0.000	−33.32***
Settlement	5,573	0.683	0.47	1.000	4,006	0.778	0.42	1.000	621	0.538	0.50	1.000	8.32***
Settlement amount	2,444	264647.242	2343418.55	0.000	1,381	83106.513	408436.77	0.000	373	606721.984	2713015.16	60000.000	−3.07**
Firm characteristics													
Num. brokers	5,578	11752.977	12119.90	6039.000	4,011	12745.540	12212.48	10342.000	621	8810.644	11507.56	1682.000	6.44***
Num. retail brokers	5,578	7223.038	7906.72	2749.000	4,011	7879.272	8030.50	4005.000	621	5342.813	7356.43	757.000	6.31***
Taping and/or disciplined firm	5,578	0.006	0.08	0.000	4,011	0.002	0.05	0.000	621	0.026	0.16	0.000	−6.71***
Total expungements per year (at this firm)	5,578	171.288	192.27	60.000	4,011	185.713	193.53	80.000	621	130.691	184.25	15.000	5.60***
Total misconducts per year (at this firm)	5,578	116.973	136.47	50.000	4,011	123.666	135.67	61.000	621	95.137	135.90	20.000	4.24***
Complaint characteristics: initiated by													
Customer initiated	5,578	0.766	0.42	1.000	4,011	0.738	0.44	1.000	621	0.757	0.43	1.000	0.57
Broker initiated	5,578	0.202	0.40	0.000	4,011	0.234	0.42	0.000	621	0.156	0.36	0.000	3.01**
Type of violation - customer initiated													
Unsuitable	5,578	0.370	0.48	0.000	4,011	0.353	0.48	0.000	621	0.385	0.49	0.000	−0.83
Misrepresentation	5,578	0.424	0.49	0.000	4,011	0.413	0.49	0.000	621	0.414	0.49	0.000	0.56
Unauthorized	5,578	0.100	0.30	0.000	4,011	0.088	0.28	0.000	621	0.108	0.31	0.000	−0.69
Omission	5,578	0.215	0.41	0.000	4,011	0.215	0.41	0.000	621	0.185	0.39	0.000	1.90
Fee/commission	5,578	0.024	0.15	0.000	4,011	0.023	0.15	0.000	621	0.016	0.13	0.000	1.42
Fraud	5,578	0.394	0.49	0.000	4,011	0.390	0.49	0.000	621	0.380	0.49	0.000	0.75
Fiduciary duty	5,578	0.628	0.48	1.000	4,011	0.605	0.49	1.000	621	0.634	0.48	1.000	−0.37
Negligence	5,578	0.586	0.49	1.000	4,011	0.574	0.49	1.000	621	0.580	0.49	1.000	0.35
Risky	5,578	0.055	0.23	0.000	4,011	0.061	0.24	0.000	621	0.031	0.17	0.000	2.85**
Churning/excessive trading	5,578	0.061	0.24	0.000	4,011	0.046	0.21	0.000	621	0.092	0.29	0.000	−3.43***
Type of violation - firm/broker initiated													
Slander/libel/defamation	5,578	0.051	0.22	0.000	4,011	0.050	0.22	0.000	621	0.045	0.21	0.000	0.70
Interference	5,578	0.032	0.18	0.000	4,011	0.031	0.17	0.000	621	0.035	0.19	0.000	−0.44
Unfair practices	5,578	0.015	0.12	0.000	4,011	0.012	0.11	0.000	621	0.035	0.19	0.000	−4.63***
Wrongful termination	5,578	0.023	0.15	0.000	4,011	0.017	0.13	0.000	621	0.045	0.21	0.000	−3.91***
Other employment related	5,578	0.205	0.40	0.000	4,011	0.230	0.42	0.000	621	0.221	0.41	0.000	−1.00
Observations	5,578				4,011				621				5,578

Table 3

Brokerages with the greatest frequency of expungement.

   This table ranks firms by the frequency of expungement after restricting to firms with more than 100 registered brokers. Column (1) ranks firms based on the number of expungement requests. Column (2) ranks firms by the ratio of expungement requests to total misconduct disclosures. Column (3) ranks firms by the ratio of expungement requests to the total number of registered brokers. Column (4) ranks firms by the ratio of expungement requests to the total number of registered retail brokers.

| Greatest number of expungements	N	Highest % of expungements relative to misconducts	p	Highest % of expungements relative to total brokers	p	Highest % of expungements relative to retail brokers	p
Morgan Stanley	572	Peachcap	100%	UBS Financial Services Incorporated Of Puerto Rico	6%	Ace Diversified Capital, Inc	100%
Wells Fargo Clearing Services, LLC	522	Candlewood Securities, LLC	100%	Rockwell Global Capital LLC	6%	RP Capital LLC	67%
Merrill Lynch, Pierce, Fenner & Smith Inc	437	Willis Securities, Inc	100%	RP Capital LLC	5%	Kensington Capital Corp	27%
UBS Financial Services Inc	404	Newbury Street Capital LP	100%	NSM Securities, Inc	4%	iTRADEdirect.com Corp	25%
Ameriprise Financial Services, Inc	175	Swedbank Securities US, LLC	100%	Portfolio Advisors Alliance, LLC	3%	The Delta Company	25%
LPL Financial LLC	151	Metropolitan Capital Investment Banc, Inc	100%	Network 1 Financial Securities Inc	3%	Accelerated Capital Group	23%
Edward Jones	115	Calvert Investment Distributors, Inc	100%	Accelerated Capital Group	3%	Lighthouse Capital Corporation	18%
Charles Schwab & Co, Inc	107	SC Distributors, LLC	50%	Peachcap	3%	MSC - BD, LLC	17%
Securities America, Inc	90	Jefferies Bache Securities, LLC	50%	iTRADEdirect.com Corp	3%	Blackbook Capital, LLC	17%
Stifel, Nicolaus & Company, Incorporated	80	Presidio Merchant Partners LLC	50%	First Standard Financial Company LLC	3%	RW Towt & Associates	17%
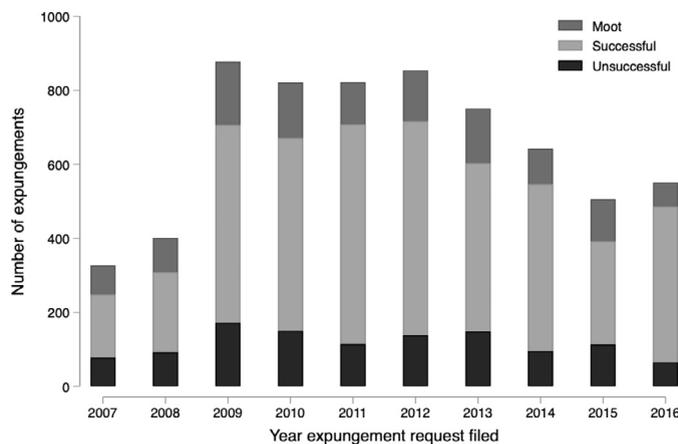
Fig. 1. Expungement outcomes by year. This figure shows the number of successful, unsuccessful, and moot expungement requests from 2007 to 2016. An expungement is "successful" if granted, "unsuccessful" if denied, and "moot" if resolved prior to adjudication (i.e., the request was not resolved on the merits). The year reflects when the expungement request was filed.

mean settlement exceeded $200,000, suggesting that the underlying claims had some validity. If we include the additional cases where we identified a $0 settlement, the mean settlement continues to exceed $68,000 in all years.

4. Empirical analysis

   This section presents our evidence on the effect of expungement on recidivism and career outcomes. Both the descriptive regressions and our IV analysis are based on an unbalanced panel of BrokerCheck data that is merged with the expungement data. We keep only one observation per broker per year, meaning that we include only one expungement per year if a broker has multiple expunge-

ments in the same year. The expungement included is randomly chosen.

4.1. Descriptive analysis on expungement and recidivism

   As a preliminary inquiry, we provide descriptive analysis on the relation between expungement and future misconduct. Fig. 4 plots the conditional probabilities of future misconduct and shows that brokers who are granted expungement have an elevated probability of misconduct throughout their careers. Concretely, we estimate what fraction of brokers with a misconduct or expungement at time $t=0$ record a future misconduct at $t=1,2,3...8$ (future misconduct includes misconduct in BrokerCheck and
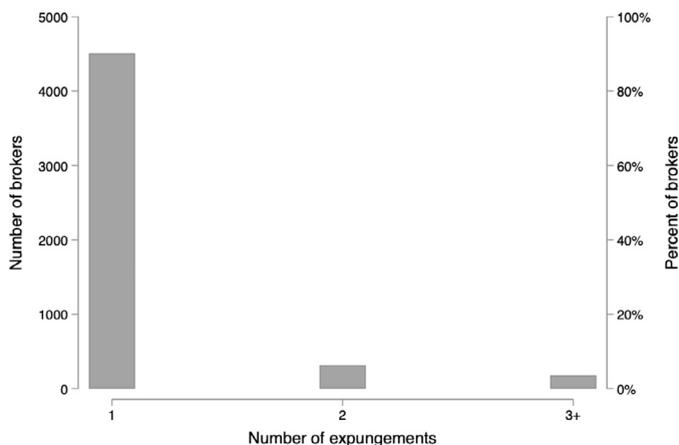
Fig. 2. Brokers with multiple expungement requests. This figure shows the proportion of brokers who filed one, two, or three or more expungement requests from 2007 to 2016. The left-hand axis reflects the number of brokers, and the right-hand axis reflects the percentage of total brokers. The figure is limited to brokers who filed for expungement at least once in our sample period.

expunged misconduct). We limit this analysis to 8 years (spanning 2009–2017) because we only observe expungements claimed from 2007 onward and cases typically take 1.5 years to resolve. We also drop observations where a broker records both an expungement and an unrelated misconduct in the same year.

Fig. 4 illustrates these conditional probabilities relative to the baseline (unconditional) misconduct rate (0.70%). After one year, 5.81% brokers with a successful expungement record a misconduct—more than eight times the baseline rate. Notably, these elevated misconduct rates are persistent. In the sixth year following an expungement, 3% of brokers with a successful expungement reoffend. This is 4.3 times the baseline rate and is comparable to the conditional probability for those with a prior misconduct (3.15%). These long-term "effects" suggest that the association between expungement and recidivism is not driven by short-term idiosyncrasies (e.g., same underlying offense recorded as multiple misconducts in different years).

Table 4 formalizes this descriptive analysis in a regression setting. Consider the probability that broker i, at firm j, in county c is reprimanded for misconduct at time t. We estimate the following linear probability model:

$$Misconduct_{ijct}$$
$$= \beta_0 + \beta_1 Prior\ s.\ expungement_{ijct} + \beta_2 Prior\ misconduct_{ijct}$$
$$+ \beta_3 Prior\ s.\ expungement_{ijct} \times Prior\ misconduct_{ijct}$$
$$+ \beta_4 Prior\ u.\ expungement_{ijct} \times Prior\ misconduct_{ijct}$$
$$+ \beta_5 Prior\ s.\ expungement_{ijct} \times Prior\ u.\ expungement_{ijct}$$
$$\times Prior\ misconduct_{ijct} + \beta X_{it} + \mu_{jct} + \epsilon_{ijct} \quad (1)$$

The dependent variable $Misconduct_{ijct}$ is a dummy variable that reflects whether the broker received one or more allegations of misconduct (including successfully expunged misconduct) at time t. $Prior\ s.\ expungement_{ijct}$, the main independent variable of interest, is a dummy variable indicating whether the broker had a successful expungement prior to time t. The other independent variable $Prior\ misconduct_{ijct}$ analogously captures whether the broker had a misconduct prior to time t (please note that this variable captures brokers with prior unsuccessful expunge-

ments and those with prior misconduct that they did not attempt to expunge). The inclusion of interaction terms (including with $Prior\ u.\ expungement_{ijct}$) means that β_1 is identified using brokers with no prior misconduct or prior unsuccessful expungement at time t and thus reflects the pure "effect" of a successful expungement (it is, of course, possible for the same broker to have both a prior expungement and a prior misconduct). Some specifications include controls for the broker's gender, years of experience, and qualifications X_{it} and/or firm-year-county fixed effects μ_{jct}. Standard errors are clustered by firm in all columns.

On paper, brokers with a prior successful expungement and no other prior misconduct (or prior unsuccessful expungement) look like "clean" brokers with no misconduct. And if they were no more likely to offend than brokers without misconduct, we would expect to find $\beta_1 = 0$. Instead, the coefficient in column (1) is 2.3 percentage points.[17] Given a baseline misconduct rate of 0.70 percentage points, this implies that brokers with a prior successful expungement are 3.3 times (2.3 + 0.70 / 0.70) as likely to engage in future misconduct as the average broker in any given year. These elevated misconduct probabilities remain when comparing successfully expunged brokers to "clean" brokers within a specific branch of a firm in any year. Table 4 also shows that the recidivism rates of brokers with prior unsuccessful expungements are not significantly different from those with prior misconducts, who reoffend at 6.2 (5.2 + 0.70 / 0.70) times the rate of the average broker.

Simply noting a positive association between expungement and recidivism is not sufficient to conclude that the expungement system is not working as intended. For example, a well-functioning expungement process could generate a positive association because of the successful expungement of marginal misconduct. Imagine that bad behavior is ranked from 0 to 10. Anything over 5 should

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[17] Without the interaction terms, the coefficient on prior successful expungement is 2.9 percentage points. This combines the "pure" expungement effect on recidivism with the effect of having both a prior misconduct and prior expungement.

Panel: A
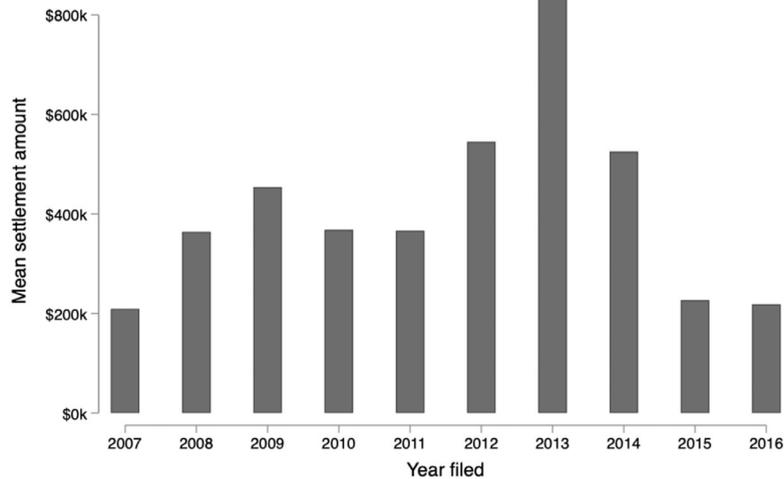
Panel: B
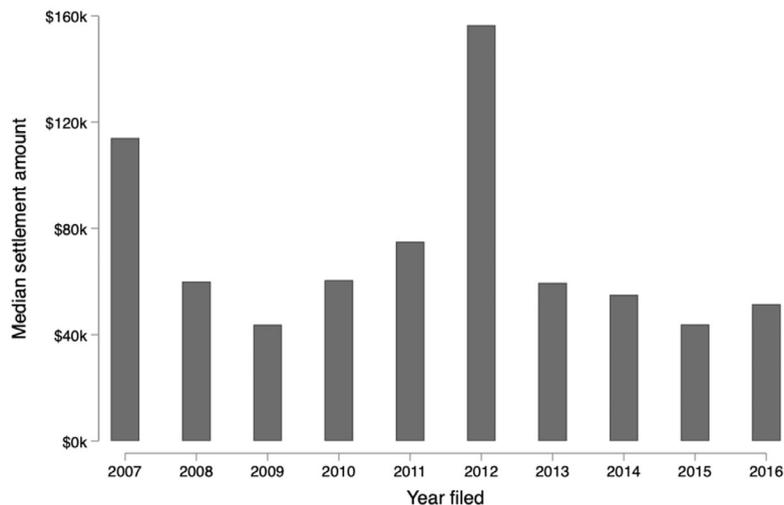
Fig. 3. Broker settlements in expungement awards. This figure shows the distribution of nonzero settlements for customer arbitrations that include a request for expungement. Panel A plots the mean settlement, and Panel B plots the median settlement. The year represents when the expungement request was filed. Settlements are only included if the settlement amount is disclosed in the arbitration award, and one outlier settlement of $9.4 million has been dropped.

be classified as misconduct, whereas anything below 5 should be expunged. Under a well-functioning process, a 4 would be expunged—but that broker would be more likely to reoffend than a 0 (assuming that past malfeasance predicts future malfeasance). However, taken together, the magnitude and persistence of the descriptive analyses presented in Fig. 4 and Table 4 cast doubt on whether arbitrators are striking the right balance between incorrectly classifying someone as "crooked" versus erasing a prior instance of misconduct.

4.2. Descriptive analysis on expungement and career outcomes

We next examine expungement and long-term career outcomes in Table 5. Panel A provides summary statistics, and Panels B, C, and D present regressions. The first

two columns of Panel A use the full sample of brokers and show that brokers with successful expungements are more likely to maintain their current employment in the following year relative to brokers with unsuccessful expungements (88% versus 81%). Further, if these brokers do leave their current firm, they are more likely to join a different firm as a registered broker-dealer within the next year (71% versus 48%)—and they are more likely to join a firm with a lower misconduct rate, where the misconduct rate is defined as the average number of misconducts (including expunged misconducts) per retail broker per year. The final two columns include only the subset of "one-misconduct" brokers (i.e., the subset of brokers who would appear "clean" after an expungement). We separately examine this subset because the effects of expungement—and incentives to apply for expungement—are likely to be greatest for this subsample. Indeed, the

Fig. 4. Recidivism following expungement requests. This figure shows the probability of misconduct or successful expungement at time $t = 1$, 2, 3…8 conditional on recording a misconduct or expungement at $t = 0$. We drop observations where a broker records both an expungement an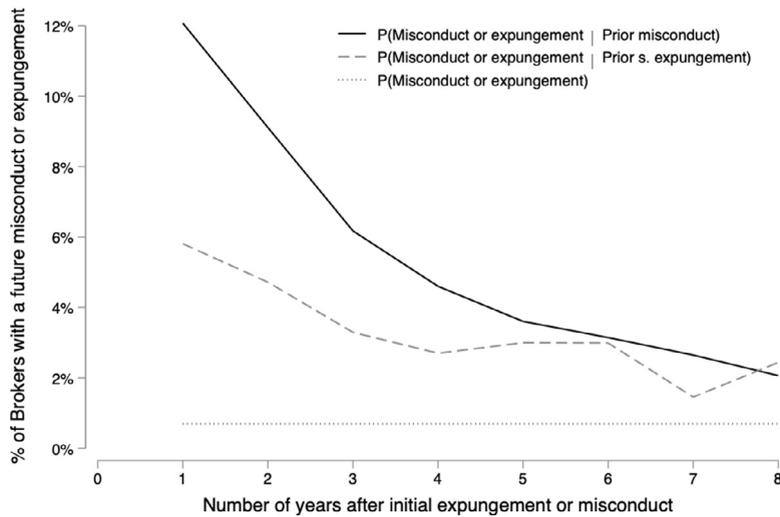d misconduct in the same initial year. To aid interpretation of the magnitudes, we also plot the baseline (unconditional) misconduct rate (including successful expungements).

Table 4

Estimates of the relation between successful expungements and future misconduct.

This table examines the relation between expungement and recidivism through the linear probability model outlined in Eq 1. The dependent variable is a dummy variable set to 1 if the broker received one or more misconduct disclosures or successful expungements at time t. The independent variables capture whether the broker had an expungement and/or misconduct prior to time t. Observations are at the broker by year level. Columns (2) and (3) control for the broker's years of experience, gender, race and total qualifications. Column (3) also includes year-firm-county fixed effects. Standard errors are clustered by firm, and standard errors are in parentheses. Statistical significance of 10%, 5%, and 1% is represented by *, **, and ***, respectively.

	(1) Misconducts/expungements this year	(2) Misconducts/expungements this year	(3) Misconducts/expungements this year
Prior successful expungement=1	0.023***	0.020***	0.018***
	(0.002)	(0.002)	(0.002)
Prior misconduct=1	0.052***	0.050***	0.042***
	(0.003)	(0.003)	(0.002)
Prior successful expungement=1 ×Prior misconduct=1	0.025**	0.025**	0.016**
	(0.012)	(0.012)	(0.008)
Prior misconduct=1 ×Prior unsuccessful expungement=1	0.014*	0.013	0.007
	(0.008)	(0.008)	(0.007)
Prior misconduct=1 ×Prior unsuccessful expungement=1 ×Prior successful expungement=1	0.034	0.036	0.028
	(0.036)	(0.036)	(0.027)
Other broker characteristics			
Female		−0.003***	−0.003***
		(0.000)	(0.000)
Non-White		0.002***	0.000***
		(0.000)	(0.000)
Experience		0.001***	0.001***
		(0.000)	(0.000)
Total qualifications		0.001***	0.001***
		(0.000)	(0.000)
Controls		Yes	Yes
Year ×Region ×Firm FE			Yes
Observations	7,778,966	7,420,784	6,920,583
Adj. R-squared	0.008	0.009	0.058

trends are generally similar, but the successfully expunged one-misconduct brokers are far more likely to join a larger firm.

$Employment\ outcome_{ijt}$

$$= \beta_0 + \beta_1 Successful\ expungement_{t-1} + \beta X_{it} + \epsilon_{ijt} \quad (2)$$

Using Eq. (2), Panel B of Table 5 formalizes the analysis in Panel A and presents a regression controlling for observable broker characteristics. All control variables are defined in the Appendix, and standard errors are clustered by firm in this panel and the subsequent panels. The analysis shows that brokers who receive a successful expungement

Table 5

Estimates of the relation between successful expungements and future career outcomes.

This table presents cross-sectional results on career outcomes for brokers in the year following an expungement award. Panel A presents descriptive statistics, and Panels B, C, and D present OLS regression results using the specification in Eq (2). The summary statistics in Panel A are presented first (in columns (1) and (2)) using the full sample of brokers and second (in columns (3) and (4)) using brokers with only one misconduct in total (i.e., brokers who would appear "clean" after an expungement request). Within each category, statistics are presented separately for two categories of brokers: (1) those with successful expungements and (2) those with unsuccessful expungements. A broker remains with her firm if she is registered with the same firm in the year following her expungement award. A broker leaves his firm if he registers with a new firm ("join a new firm") or becomes unregistered ("leave the industry"). A broker joins a larger (smaller) firm if, conditional on joining a new firm, the new firm has more (fewer) brokers than his previous firm. If the new firm has more (fewer) than 100 brokers, the broker moved to a big (small) firm. Finally, the average firm misconduct rate is defined as the average number of allegations of misconduct (including expunged misconduct) per retail broker registered to a firm in a given year. Panels B-D present OLS regressions of these career outcomes controlling for observable broker characteristics. Panel B uses the full sample of brokers with expungement requests resolved on the merits but restricts to one randomly selected expungement in a given year if there are multiple expungement requests. Panel C replicates the analysis in Panel B but restricts the analysis to only the brokers with one misconduct. Panel D replicates the analysis in Panel B but restricts the analysis to only the brokers with successful expungements classified as "erroneous" under FINRA Rule 2080. These "erroneous" expungements should reflect the weakest claims of misconduct. In Panels B, C and D, the control variables are the same as Table 4, and standard errors are clustered by firm and included in parentheses. Statistical significance of 10%, 5%, and 1% is represented by *, **, and ***, respectively.

Panel A

	All misconduct		One misconduct sample	
	Unsuccessful expungement	Successful expungement	Unsuccessful expungement	Successful expungement
Remain with the firm	81%	88%	87%	90%
Leave the firm	19%	12%	13%	10%
Conditional on leaving the firm:				
Join a new firm (within 1 year)	48%	71%	60%	73%
Leave the industry	52%	29%	40%	27%
Conditional on joining a different firm:				
Join a larger firm	47%	52%	27%	53%
Join a smaller firm	53%	48%	73%	47%
Join a big firm (>= 100 brokers)	81%	82%	87%	85%
Join a small firm (<100 brokers)	19%	18%	13%	15%
New firm's properties:				
Avg. misconduct rate (misconducts plus expungements per retail broker per year)	0.10	0.06	0.06	0.04

Panel B

	(1) Leave firm	(2) Join new firm	(3) Larger firm	(4) Big firm	(5) Firm avg. misconduct rate
Successful expungement	0.072***	0.211***	0.050	0.002	0.034
	(0.020)	(0.060)	(0.081)	(0.066)	(0.021)
Female	0.002	0.119*	0.152*	0.077	0.013
	(0.016)	(0.065)	(0.078)	(0.062)	(0.026)
Non-White	0.008	0.004	0.037	0.012	0.007
	(0.026)	(0.082)	(0.119)	(0.090)	(0.020)
Experience	0.042***	0.102***	0.048	0.045*	0.011
	(0.009)	(0.034)	(0.037)	(0.026)	(0.007)
Total qualifications	0.014*	0.011	0.004	0.018	0.005
	(0.008)	(0.030)	(0.038)	(0.034)	(0.010)
Constant	0.325***	0.321***	0.560***	0.658***	0.135***
	(0.047)	(0.105)	(0.137)	(0.131)	(0.043)
Observations	3,674	458	302	302	300
Adj. R-squared	0.019	0.082	0.002	−0.001	0.005

Panel C

	(1) Leave firm	(2) Join new firm	(3) Larger firm	(4) Big firm	(5) Firm avg. misconduct rate
Successful expungement	−0.037	0.092	0.275**	−0.031	−0.022
	(0.026)	(0.101)	(0.137)	(0.091)	(0.017)
Female	0.013	−0.149*	0.253***	0.064	−0.013
	(0.019)	(0.081)	(0.090)	(0.076)	(0.011)
Non-White	−0.014	0.091	−0.137	0.207***	−0.014
	(0.036)	(0.150)	(0.169)	(0.053)	(0.010)
Experience	−0.033***	0.124***	−0.085*	0.055*	−0.005
	(0.011)	(0.035)	(0.047)	(0.030)	(0.004)
Total qualifications	−0.025**	0.026	−0.044	−0.007	0.004
	(0.010)	(0.037)	(0.048)	(0.047)	(0.008)
Constant	0.279***	0.336**	0.536***	0.750***	0.064*
	(0.056)	(0.144)	(0.202)	(0.173)	(0.036)
Observations	1,927	197	141	141	139
Adj. R-squared	0.013	0.081	0.061	−0.004	−0.013

Table 5
(*continued*)

Panel D

	(1) Leave firm	(2) Join new firm	(3) Larger firm	(4) Big firm	(5) Firm avg. misconduct rate
Erroneous success	−0.085***	0.214***	−0.027	0.027	−0.044**
	(0.022)	(0.069)	(0.098)	(0.072)	(0.020)
Female	−0.008	−0.218*	−0.099	0.012	−0.036
	(0.021)	(0.117)	(0.163)	(0.120)	(0.022)
Non-White	0.022	−0.015	0.002	−0.077	−0.000
	(0.039)	(0.106)	(0.168)	(0.140)	(0.031)
Experience	−0.047***	0.050	0.005	0.064*	−0.018***
	(0.012)	(0.042)	(0.058)	(0.034)	(0.006)
Total qualifications	−0.015	−0.032	0.050	0.025	−0.011
	(0.011)	(0.047)	(0.060)	(0.050)	(0.010)
Constant	0.344***	0.504***	0.343*	0.609***	0.167***
	(0.055)	(0.146)	(0.181)	(0.178)	(0.044)
Observations	1,814	224	138	138	137
Adj. R-squared	0.031	0.067	−0.028	0.000	0.081

are 7 percentage points less likely to leave their firm the following year and are 21 percentage points more likely to reregister with a new firm conditional on leaving. Panel C of Table 5 repeats this analysis but restricts the sample to the subset of brokers with one misconduct. Interestingly, the brokers who receive successful expungements are no more likely to leave the firm or to be rehired (although the null result may be due to a lack of power). However, conditional on leaving, the successfully expunged one-misconduct brokers are significantly more likely to be hired by a larger firm.

Finally, Panel D restricts the set of successful expungements to only those classified by as "erroneous" under FINRA Rule 2080 (i.e., the arbitrator determined that the initial infraction was clearly erroneous). These expungements theoretically represent the weakest claims of misconduct. Panel D shows that the positive career consequences are stronger for this subset of expungements, suggesting the benefits of expungement may be greater for those who remove the weakest claims (in unreported tests, we compare the coefficients from Panel D to those in Panel B and find that the difference is significant at the 10% level).

Using the sample of one-misconduct brokers, Fig. 5 provides further evidence that brokers with successful expungements have better career outcomes than those with unsuccessful expungements—and that there is likely significant selection in the brokers who apply for expungement, as they appear to be those who want to remain in the industry. The figure shows the nonparametric out-of-industry survival curves for all separations preceded by an expungement award in the previous year. It suggests that successful expungement reduces the length of time spent out of the industry after leaving one's firm. Brokers who do not attempt expungement experience the longest out-of-industry spells. Interestingly, however, brokers with unsuccessful expungements have shorter out-of-industry spells than those who do not apply for expungement. In sum, the figure suggests that expungement improves career prospects but also highlights selection in the brokers who apply for expungement.

Although our preliminary analysis suggests that successful expungement improves long-term career outcomes,

there are two obvious concerns with this analysis. First, the trends only describe careers of brokers who remain registered brokers. It is unclear what happens to the brokers who exit the BrokerCheck database. Second, as highlighted by Table 2 and Fig. 5, there is significant selection in the brokers who request—and receive—expungement. We address these questions as best possible in Table 6 and, later, using our IV analysis.

Table 6 presents descriptive data on brokers who exit the BrokerCheck database by reviewing employment history for 1515 randomly selected brokers who applied for expungement and experienced at least one employment separation. For the observations with missing employment information, we hand-collect the information as best as possible. The table summarizes the postseparation outcomes for this sample of brokers and shows several trends. First, exiting the BrokerCheck database is often a negative career signal. In many instances, especially when brokers exited the database after expungements, we could find no employment records for these individuals and categorized them as "unknown." Presumably, they are not employed in a professional capacity.

Second, brokers who cease employment as registered brokers often continue to work in finance—especially those brokers who exit BrokerCheck after an expungement. These brokers tend to fall into two groups. Some continue to work for FINRA-registered firms despite that the individual is no longer a registered broker (individuals employed at registered brokerages may be exempt from FINRA registration if their tasks do not require that they be actively engaged in the investment banking or securities business). Others work solely as investment advisers rather than dually registered broker-dealer investment advisers (registered investment advisers are regulated primarily by the SEC rather than FINRA and do not appear in BrokerCheck unless they have been dually registered). As one such example, consider Kimon P. Daifotis—the individual who applied for expungement 39 times. He eventually dropped the broker-dealer title and worked as an investment adviser (he was the chief investment officer for fixed income at Charles Schwab Investment Management) until he was barred from the industry by the SEC. Thus, although exits are a negative signal, many
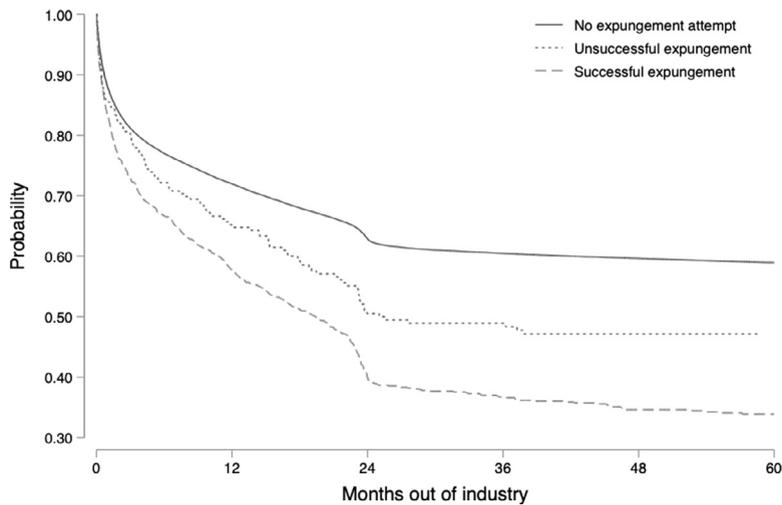
Fig. 5. Employment outcomes following the first incidence of misconduct. This figure examines career consequences for the subset of expungement brokers with only one misconduct (i.e., brokers who would have "clean" records after a successful expungement). The figure compares the "clean" brokers (i.e., those with successful expungements) and the two categories of one-misconduct brokers (those with unsuccessful expungements and those with no expungement attempt). The figure plots the out-of-industry survival function for all employment separations preceded by an expungement award in the previous year.

Table 6

Career outcomes for brokers who exit the BrokerCheck database.

This table examines employment outcomes for a random sample of 1515 brokers who applied for expungement and experienced at least one employment separation. Column (1) records the most popular destinations for brokers who switched roles prior to the expungement award. Column (2) records the most popular destinations for brokers who switched roles after a successful expungement award. Column (3) records the most popular destinations for brokers who switched roles after an unsuccessful expungement award.

	Career switches before expungement award		Career switches after successful expungement award		Career switches After unsuccessful expungement award	
	N	p	N	p	N	p
FINRA-registered firm in registered capacity	1264	86%	411	67%	79	50%
FINRA-registered firm in unregistered capacity	30	2%	29	5%	7	4%
Nonfinancial company	19	1%	32	5%	8	5%
Non-FINRA-registered financial firm	38	3%	32	5%	16	10%
Nonprofit/government	3	0%	4	1%	1	1%
Prison	2	0%	0	0%	0	0%
Retired	5	0%	1	0%	0	0%
Self-employed	1	0%	3	0%	0	0%
Unemployed	1	0%	3	0%	0	0%
University	2	0%	3	0%	0	0%
Unknown	98	7%	89	15%	46	29%
Deceased	0	0%	2	0%	0	0%
Number of unique brokers	866		398		102	
Total switches	1,463		609		157	

brokers who exit the database remain in the financial industry.

4.3. Instrumental variable analysis

Studying the effect of a successful expungement is inherently difficult. Brokers with successful expungements are presumably "less bad" than those with unsuccessful expungements, and the variables that predict a successful expungement are likely correlated with outcomes such as recidivism that we would like to test. A simple OLS regression will lead to biased estimates of the effect of expungement success even with the inclusion of fixed effects for broker and firm characteristics. Moreover, as noted in the preceding analysis on recidivism, a positive association between expungement and recidivism could be consistent

with a well-functioning expungement process due to the successful expungement of marginal misconducts. A Bayesian would infer that a broker with an expunged misconduct has a higher propensity to reoffend than a broker with no expungement or misconduct history.

4.3.1. Instrument calculation

To overcome these obstacles and to identify the causal impact of expungement on broker outcomes, we use the randomly generated list of potential arbitrators as an IV that predicts the likelihood that the broker will succeed on his request for expungement. As stated earlier, FINRA assigns the initial list of potential arbitrators randomly, subject only to geographic restrictions. Although the list of potential arbitrators is not public information—only the arbitrator(s) selected are publicly known—FINRA

provided us with this information for the expungement awards in our sample.[18] The use of randomized arbitrators as an instrument follows prior literature using randomized judges or investigators as an instrument, such as Kling (2006), Chang and Schoar (2013), Doyle (2007, 2008), Dobbie and Song (2015), Cheng et al. (2019), Sampat and Williams (2019), and Dobbie et al. (2018). The key identification assumption is that the randomly generated list of arbitrators will significantly affect the broker's likelihood of success but will not affect recidivism—except through the decision whether to grant the expungement.

We use this randomized list to create two instruments: the relative leniency of the (1) mean and (2) median arbitrator on the list, where "relative" is determined in comparison with other arbitrators in the same year and region. First, we calculate the leave-out success rate for each arbitrator in our sample. The leave-out success rate is the number of times each arbitrator has successfully awarded expungement relative to the number of expungement requests over which she has presided (excluding that particular award). The success rate is highly autocorrelated within arbitrators and ranges from 0% to 100% for arbitrators with five or more awards (in other words, some arbitrators in our sample have denied every expungement and others have approved every expungement).[19] Moot expungement requests are not included in this calculation. Further, if the arbitrator has not presided over any expungement cases, we set the missing arbitrator history equal to the mean success rate in the region in that year.

Second, we merge the leave-out success rate for each arbitrator with the FINRA data identifying the potential arbitrators selected for the randomly assigned panel. Using those data, we calculate the mean (or median) success rate of the panel and subtract the annual mean leave-out success rate in the geographic region (region is defined as the hearing site of the arbitration).[20] This process allows us to generate *List leniency (mean)* and *List leniency (median)*, our two instruments. Fig. 6 plots the distribution of these instruments. Panel A plots *List leniency (mean)* and Panel B plots *List leniency (median)*.

4.3.2. First stage regression

Our first-stage regression is presented below as Eq. (3). S_{it} reflects whether the broker i successfully obtained an expungement, X_{it} is a set of control variables, and μ_{rt} is a region by award year fixed effect that addresses region-specific time variation. The variable Z_{jrt} is the instrument (i.e., the average leave-out success rate of the initial list of

randomly assigned arbitrators j relative to the year t mean leave-out rate in region r).

$$S_{it} = \beta_1 Z_{jrt} + \beta X_{it} + \mu_{rt} + \epsilon_{it} \qquad (3)$$

The results of the first-stage regressions are shown in Panel A of Table 7. The first two columns show the results using *List leniency (mean)*, and the final two columns show the results using *List leniency (median)*. The results show our calculated success rate is strongly positively correlated with the likelihood of success, and that this relation is robust to the inclusion of control variables and to fixed effects.[21] To put the results in perspective, the table indicates that, for a 10 percentage point increase in the relative leniency of the arbitrator panel, the broker's likelihood of success increases by 9–14 percentage points.

Panels B and C of Table 7 provide additional tests of the strength of the instruments. Panel B provides comfort that panel assignment is random by showing that brokers who receive low success rate panels are not systematically different from those who receive high success rate panels. Both columns use the same specification to test whether our observable broker and firm characteristics are predictive of each instrument and show that arbitrators of different leniencies are assigned similar cases; F-tests of joint significance are not statistically significant.[22] Panel C provides an analysis of one testable implication of the monotonicity assumption—that the first-stage results should be positive for different subsets of brokers. Panel C divides brokers by gender, race, and employment characteristics. The coefficient on the list leniency variable remains positive across these subsamples.

A visual representation of the first-stage results in Panel A of Table 7 is provided in Fig. 7. The figure plots the relation between the residualized success rate and each instrument. To construct the binned scatter plots, we first regress an indicator for successful expungement on the year-region fixed effects. We then group observations

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[18] FINRA provided us with anonymous IDs for each of the arbitrators selected for the panel as well as an indicator for whether the arbitrator was selected. We back out the arbitrators selected for the cases in our sample using this information, but we are unable to identify arbitrators who have not served on an expungement case in our sample.

[19] The variability in expungement rates across arbitrators suggests that they are swayed by their preferences—an intuition consistent with Choi, Fisch, and Pritchard (2010, 2014).

[20] FINRA determines the location of the arbitration, and we have 83 hearing sites in our sample. For cases involving investors, FINRA typically selects the location closest to the investor's residence at the time of the events giving rise to the dispute. See FINRA Rule 12213, available at https://www.finra.org/rules-guidance/rulebooks/finra-rules/12213 (last accessed on January 17, 2020).

[21] There are fewer observations than in Table 2 because we restrict to expungement requests adjudicated on the merits (i.e., moot requests are omitted). Further, FINRA was unable to locate the deanonymized arbitrators for all awards in our sample. This leaves us with 4,031 observations, which is further reduced to 3,918 observations with full control variables. For the first-stage results, this is reduced to 3793 observations (125 singletons). Although we include all expungements that are not moot in the first stage (i.e., if a broker has multiple expungements in the same year, all such expungements are included), the results are very similar if we randomly select one expungement per broker. For the recidivism and career consequences tests, where we can have only one expungement award per year per broker, the sample is reduced to 3561 observations. This is reduced to 3,266 observations after we restrict to brokers with expungements prior to 2017 (the sample for which we can observe consequences). From there, we have 3,135 observations in the regressions (131 singletons).

[22] Although the prior successful expungement variable is correlated with our IVs, other authors using our same test for random assignment have also found that one or more variables is significantly correlated with the IV (see, e.g., Doyle, 2008; Dobbie and Song, 2015; Dobbie et al., 2019)–but have reported confidence in random assignment based on the F-test. Panel B contains more observations than Panel A because we examine the assignment of all expungement cases in our sample, including those later not resolved on the merits (i.e., "moot" cases). Further, we omit the case characteristics variables (e.g., settlement), as these are plausibly determined by the arbitrator. Following Dobbie et al. (2018), standard errors in this panel are clustered by broker and lead arbitrator.

Panel: A

Panel: B

Fig. 6. Distribution of IV. This figure shows the distribution of relative leniencies of the randomly assigned list of arbitrators. Panel A shows the relative leniency of the mean arbitrator on the randomly assigned list of arbitrators, while Panel B shows relative leniency of the median arbitrator on the randomly assigned list of arbitrators. To determine relative leniency, we calculate the leave-out success rate (i.e., the number of expungements awarded relative to the number of expungement requests presided over) of all arbitrators on the list and determine the mean (or median) arbitrator on that list. We then subtract the mean success rate of all potential arbitrators in the same region and year.

into 20 bins and plot mean values of the x and y variables within each bin. To aid visual interpretation of the plot, we also show the best-fit line from an OLS regression. We note that the probability of successful expungement does not increase one-for-one with our measure of list leniency. This is likely driven by measurement error, which attenuates the effect toward zero, and cases where the parties do not select the mean (or median) arbitrator.

4.4. Effect of expungement on recidivism and career outcomes

The empirical strategy described above is implemented in Tables 8 and 9, which study the effect of expungement on recidivism and career outcomes, respectively. The generic second-stage model is shown below in Eq. (4).

$y_{i,T>t}$ is the outcome variable for broker i at time T after their expungement decision at time i, $\widehat{S_{it}}$ is the predicted likelihood of success for each expungement award estimated from the first-stage model, X_{it} is the set of controls, and μ_{rt} is a region by award year fixed effect. In effect, β_1 represents the causal effect of expungement success on outcome $y_{i,T>t}$ (recidivism in Table 8 and career outcomes in Table 9).

$$y_{i,T>t} = \beta_1 \widehat{S_{it}} + \beta X_{it} + \mu_{rt} + \epsilon_{it} \qquad (4)$$

In Tables 8 and 9, columns (1) and (2) reflect the results using OLS, columns (3) and (4) reflect the 2SLS results using *List leniency (mean)*, and columns (5) and (6) reflect the 2SLS results using *List leniency (median)*. The odd-numbered columns include only fixed effects and the even-numbered columns include full controls. All models

include region-year fixed effects and standard errors are clustered by firm.

Two conditions are required to interpret the 2SLS results as the local average treatment effect (LATE). First, the exclusion principle must hold, meaning that the arbitrator panel assignment only impacts broker recidivism

and career outcomes through the probability of expungement. Although we think this assumption is reasonable, this condition is fundamentally untestable. Our results should be interpreted with this caveat in mind. Second, the monotonicity assumption must hold, meaning that the brokers expunged by a strict arbitrator would also

Table 7

Tests of instrument quality.

  This table presents the first-stage results and robustness checks. Panel A presents the first-stage results for the two instruments: List leniency (mean) and List leniency (median). The instruments reflects the relative leniency of the randomly assigned list of potential arbitrators. The relative leniency of the arbitrator list is calculated as the mean (or median) leave-out success rate of all arbitrators on the list minus the mean annual success rate in the FINRA geographic region. Success rate is the number of successful expungement awards divided by the total number of expungement awards over which the arbitrator has presided. The dependent variable is equal to one if the expungement was successful. Standard errors are clustered by firm and included in parentheses. Panel B presents reduced form results testing the random assignment of arbitration panels. This panel (Panel B) contains more observations than Panel A because we examine the assignment of all expungement cases in our sample, including those later not resolved on the merits (i.e., "moot" cases). Columns (1) and (2) report estimates from an OLS regression of the two instruments on the set of broker and firm characteristics from Panel A. The *p*-value from an *F*-test of the joint significance of the variables listed in the rows is reported at the bottom of the table. All control variables are defined in the appendix, and standard errors are double-clustered by broker and lead arbitrator. All models include year-region fixed effects. Panel C presents the first-stage results separately by the following broker characteristics: gender, race, retail broker, years of experience, and number of qualifications. In line with the monotonicity assumption, we find that the coefficients are consistently positive and sizable in all subsamples. Statistical significance of 10%, 5%, and 1% is represented by *,**, and ***,respectively.

Panel A

	(1) Successful expungement	(2) Successful expungement	(3) Successful expungement	(4) Successful expungement
List leniency, mean	1.420***	1.308***		
	(0.107)	(0.089)		
List leniency, median			0.954***	0.924***
			(0.089)	(0.071)
Broker characteristics				
Prior successful expungement		0.030		0.036*
		(0.021)		(0.021)
Prior unsuccessful expungement		0.030		0.026
		(0.052)		(0.050)
Female		0.027*		0.026*
		(0.015)		(0.015)
Non-White		0.005		0.007
		(0.028)		(0.029)
Experience		0.001		0.004
		(0.007)		(0.007)
Total qualifications		0.005		0.005
		(0.008)		(0.008)
Settlement		0.038**		0.039**
		(0.018)		(0.019)
Opposed		0.187***		0.192***
		(0.017)		(0.017)
Intra industry		0.007		0.016
		(0.027)		(0.027)
Customer initiated		0.016		0.023
		(0.022)		(0.021)
Firm characteristics				
Taping and/or disciplined firm		0.204		0.225
		(0.136)		(0.140)
Num. brokers		0.000**		0.000***
		(0.000)		(0.000)
Total expungements per year		0.000		0.000
		(0.000)		(0.000)
Total misconducts per year		0.000		0.000
		(0.000)		(0.000)
Arbitrator characteristics				
Female		0.001		0.001
		(0.010)		(0.011)
Panel of arbitrators		0.055***		0.074***
		(0.015)		(0.016)
Controls		Yes		Yes
Year ×Region FE	Yes	Yes	Yes	Yes
Observations	3,793	3,793	3,793	3,793

Table 7
(*continued*)

Panel B

	(1) List leniency, mean	(2) List leniency, median
Broker characteristics		
Prior successful expungement	0.009*	0.017***
	(0.005)	(0.005)
Prior unsuccessful expungement	−0.004	−0.006
	(0.008)	(0.011)
Female	0.004	0.004
	(0.004)	(0.005)
Non-White	−0.007	−0.008
	(0.005)	(0.006)
Experience	−0.002	0.001
	(0.001)	(0.002)
Total qualifications	−0.000	−0.001
	(0.002)	(0.002)
Firm characteristics		
Taping and/or disciplined firm	0.001	0.020
	(0.025)	(0.021)
Num. brokers	0.000*	0.000
	(0.000)	(0.000)
Total expungements per year	−0.000	0.000
	(0.000)	(0.000)
Total misconducts per year	−0.000	−0.000
	(0.000)	(0.000)
Year ×Region FE	Yes	Yes
Joint F-test	0.176	0.143
Observations	4,564	4,564

Panel C

Sample restriction	List leniency, mean		List leniency, median	
	(1)	(2)	(3)	(4)
Full sample	1.576***	1.342***	1.066***	0.904***
	(0.109)	(0.103)	(0.096)	(0.090)
Male	1.580***	1.333***	1.095***	0.911***
	(0.122)	(0.116)	(0.109)	(0.102)
Female	1.774***	1.609***	1.106***	1.073***
	(0.363)	(0.351)	(0.356)	(0.322)
White	1.582***	1.350***	1.070***	0.911***
	(0.111)	(0.105)	(0.099)	(0.092)
Non-White	0.414	0.393	0.275	0.535
	(0.480)	(0.511)	(0.492)	(0.541)
>10 years' experience	1.547***	1.312***	1.058***	0.902***
	(0.114)	(0.106)	(0.103)	(0.095)
<= 10 years' experience	1.452*	1.253	0.902	0.694
	(0.753)	(0.795)	(0.602)	(0.584)
>3 qualifications	1.963***	1.683***	1.209***	0.875**
	(0.388)	(0.392)	(0.390)	(0.379)
<= 3 qualifications	1.550***	1.308***	1.111***	0.954***
	(0.112)	(0.102)	(0.101)	(0.091)
Controls		Yes		Yes
Year ×Region FE	Yes	Yes	Yes	Yes

be expunged by a lenient arbitrator, and brokers denied by a lenient arbitrator would also be denied by a strict arbitrator (as discussed earlier, Panel C of Table 7 provides an analysis of a testable prediction of this assumption). If the monotonicity assumption is violated, the 2SLS assumption would be a weighted average of marginal treatment effects, but the weights would not sum to one (Angrist et al., 1996; Heckman and Vytlacil, 2005). Under these two conditions, we are able to identify the causal effect of successful expungement on the subset of brokers who are on the margin of expungement (the "compliers").

However, it is plausible that the causal effect of successful expungement differs for brokers who are always granted or always denied expungement by the arbitrators in our sample.

4.4.1. Expungement and recidivism

Assuming the exclusion and monotonicity assumptions are met, Table 8 provides evidence that the LATE of successful expungement on recidivism is economically meaningful—and that this result is driven by repeat expungements. In Panel A, the dependent variable reflects
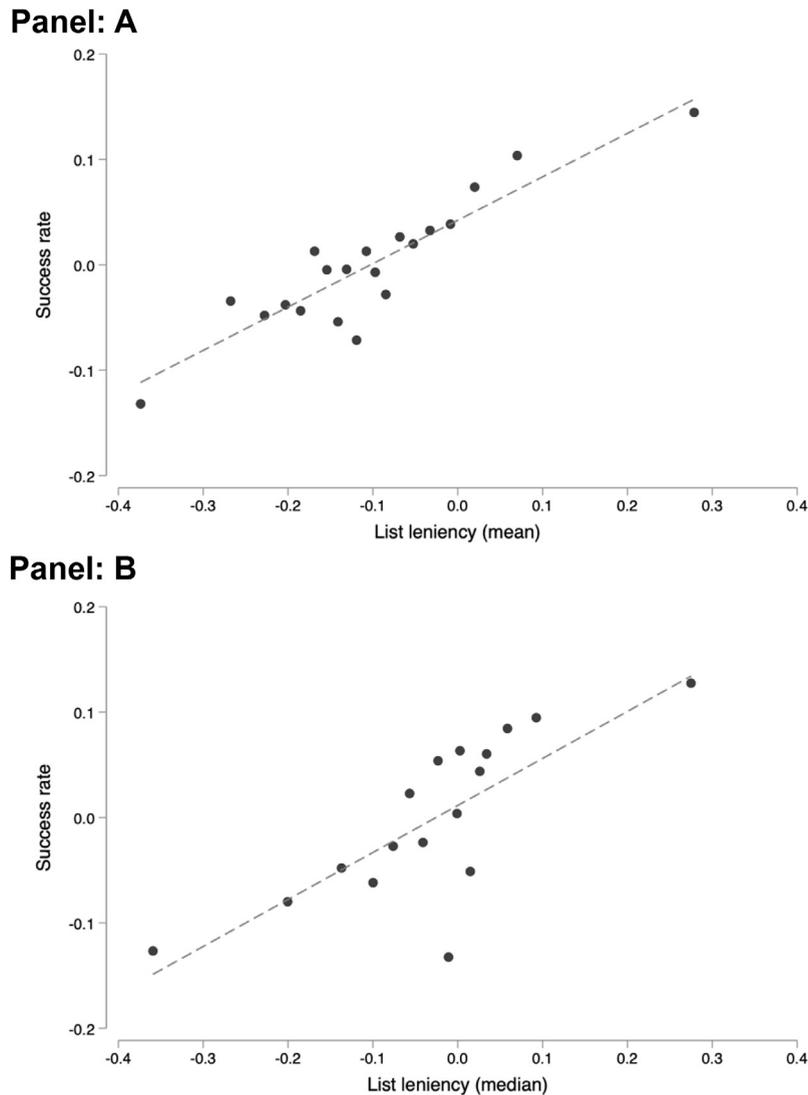
Panel: A

Panel: B

Fig. 7. Strength of IV. This figure plots the relation between the relative leniency of the list of potential arbitrators and a success indicator. To construct the binned scatter plots, we first regress an indicator for successful expungement on year-region fixed effects. We then group observations into 20 bins and plot mean values of the x and y variables within each bin. Panel A shows the mean leniency of the randomly assigned list of arbitrators, while Panel B shows median leniency of the randomly assigned list of arbitrators.

the number of future years with allegations of misconduct (or expunged misconduct) after the initial expungement request. In Panel B, the dependent variable reflects the number of future years with successfully expunged misconduct. Both panels are restricted to brokers with expungements adjudicated prior to 2017 so that we can monitor at least one year of future outcomes.

In Panel A, the OLS results show a negative relation between successful expungements and future recidivism, but the results flip in the 2SLS models. The coefficient on the predicted success variable is positive in all models and statistically significant in two models, indicating that marginal expunged brokers are significantly more likely to reoffend than those denied expungement. Using full controls, column (6) shows that the marginal expunged broker has 0.31 more years with misconduct than a broker denied expungement.

Panel B examines the effect of a successful expungement on future expungements (i.e., the dependent variable reflects only expunged misconduct rather than all misconduct). All six models are positive and statistically significant, suggesting that the relation between successful expungements and recidivism is driven by future expungements. With full controls, Panel B shows that the marginal expunged broker has 0.16–0.20 more years with misconduct than a broker denied expungement.

In additional analyses, we tested whether the increase in future expungements is driven by an increase in expungement requests, an increase in the likelihood of success, or both. These tests are presented in Exhibits 6 and 7 of the Online Appendix. Exhibit 6 replicates Table 8, but the dependent variable reflects the number of years with expungement requests (i.e., the dependent variables includes all expungement requests, as opposed to only

those that were successful). Exhibit 7 examines the likelihood of future success conditional on (1) the outcome of the broker's initial expungement request and (2) the relative leniency of the list of randomly assigned arbitrators.

The results provide evidence that the increase in expunged misconduct in Panel B of Table 8 is driven by both factors.

As noted previously, there are several explanations for the finding that expungements increase recidivism—and,

Table 8

IV estimates of the effect of expungement on recidivism.

This table shows the effect of a successful expungement on recidivism. In Panel A, the dependent variable reflects the number of future years with allegations of misconduct (including expunged misconduct) after the initial expungement request. In Panel B, the dependent variable reflects the number future years with successful expungements after the initial expungement request. Only brokers who applied for expungement prior to 2017 are included. Columns (1) and (2) reflect the OLS results. Columns (3)-(6) use 2SLS, where the instrument is the relative leniency of the randomly assigned list of potential arbitrators. The relative leniency of the arbitrator list is calculated as the mean (or median) leave-out success rate of all arbitrators on the list minus the mean annual success rate in the FINRA geographic region. Success rate is the number of successful expungement awards divided by the total number of expungement awards over which the arbitrator has presided. Columns (3) and (4) reflect the results using the first instrument: List leniency (mean) (the relative leniency of the mean arbitrator on the initial list). Columns (5) and (6) reflect the results using the second instrument: List leniency (median) (the relative leniency of the median arbitrator on the initial list). All control variables are defined in the appendix, and all models include region-year fixed effects. Standard errors are clustered by firm. Statistical significance of 10%, 5%, and 1% is represented by *, **, and ***, respectively.

Panel A						
	OLS (1) Num. yrs. w/ misc.	OLS (2) Num. yrs. w/ misc.	2SLS (3) Num. yrs. w/ misc.	2SLS (4) Num. yrs. w/ misc.	2SLS (5) Num. yrs. w/ misc.	2SLS (6) Num. yrs. w/ misc.
Successful expungement	0.142** (0.056)	0.107** (0.050)				
Predicted success (using list leniency, mean)			0.048 (0.112)	0.042 (0.101)		
Predicted success (using list leniency, median)					0.332** (0.134)	0.307** (0.123)
Broker characteristics						
Prior successful expungement		1.429*** (0.112)		1.434*** (0.111)		1.444*** (0.109)
Prior unsuccessful expungement		1.320*** (0.205)		1.330*** (0.202)		1.349*** (0.196)
Female		0.030 (0.049)		0.036 (0.050)		0.046 (0.050)
Non-White		0.126* (0.067)		0.129* (0.068)		0.135* (0.070)
Experience		0.028* (0.017)		0.028* (0.017)		0.029* (0.017)
Total qualifications		0.006 (0.020)		0.006 (0.020)		0.008 (0.020)
Case characteristics						
Settlement		0.052 (0.036)		0.046 (0.037)		0.037 (0.039)
Opposed		0.017 (0.034)		0.013 (0.039)		0.065 (0.040)
Intra industry		0.191* (0.112)		0.186* (0.112)		0.178 (0.110)
Customer initiated		0.196* (0.108)		0.193* (0.107)		0.187* (0.105)
Firm characteristics						
Taping and/or disciplined firm		1.001*** (0.289)		1.025*** (0.287)		1.067*** (0.289)
Num. brokers		0.000*** (0.000)		0.000*** (0.000)		0.000*** (0.000)
Total expungements per year		0.001 (0.001)		0.001 (0.001)		0.001 (0.001)
Total misconducts per year		0.000 (0.000)		0.000 (0.000)		0.000 (0.000)
Arbitrator characteristics						
Female		0.024 (0.018)		0.023 (0.018)		0.021 (0.018)
Panel of arbitrators		0.035 (0.037)		0.033 (0.038)		0.031 (0.039)
Controls		Yes		Yes		Yes
Year ×Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,135	3,135	3,135	3,135	3,135	3,135

Table 8
(*continued*)

Panel B

	OLS (1) Num. yrs. w/ exp.	OLS (2) Num. yrs. w/ exp.	2SLS (3) Num. yrs. w/ exp.	2SLS (4) Num. yrs. w/ exp.	2SLS (5) Num. yrs. w/ exp.	2SLS (6) Num. yrs. w/ exp.
Successful expungement	0.103*** (0.024)	0.114*** (0.024)				
Predicted success (using list leniency, mean)			0.201*** (0.053)	0.163*** (0.061)		
Predicted success (using list leniency, median)					0.248*** (0.087)	0.198** (0.097)
Broker characteristics						
Prior successful expungement		1.156*** (0.098)		1.157*** (0.098)		1.159*** (0.098)
Prior unsuccessful expungement		0.663*** (0.140)		0.667*** (0.139)		0.669*** (0.138)
Female		0.048 (0.043)		0.046 (0.043)		0.044 (0.042)
Non-White		−0.038 (0.026)		−0.037 (0.026)		−0.036 (0.026)
Experience		0.008 (0.008)		0.008 (0.008)		0.008 (0.008)
Total qualifications		0.018* (0.010)		0.018* (0.010)		0.018* (0.010)
Case characteristics						
Settlement		0.008 (0.023)		0.006 (0.023)		0.005 (0.024)
Opposed		−0.021 (0.021)		−0.012 (0.024)		−0.005 (0.023)
Intra industry		−0.095 (0.092)		−0.094 (0.092)		−0.093 (0.092)
Customer initiated		−0.121 (0.095)		−0.120 (0.095)		−0.119 (0.095)
Firm characteristics						
Taping and/or disciplined firm		0.280 (0.273)		0.288 (0.273)		0.294 (0.271)
Num. brokers		−0.000*** (0.000)		−0.000*** (0.000)		−0.000*** (0.000)
Total expungements per year		0.000 (0.001)		0.000 (0.001)		0.000 (0.001)
Total misconducts per year		0.000* (0.000)		0.000* (0.000)		0.000* (0.000)
Arbitrator characteristics						
Female		0.005 (0.012)		0.005 (0.012)		0.004 (0.012)
Panel of arbitrators		−0.035* (0.019)		−0.035* (0.019)		−0.034* (0.019)
Controls		Yes		Yes		Yes
Year ×Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,135	3,135	3,135	3,135	3,135	3,135

specifically, lead to future expungements. The first comes from the behavioral economics literature. After undesirable outcomes, people typically become more cautious (e.g., Laming, 1968; Rabbitt and Phillips, 1967; Rabbitt and Rodgers, 1977). By contrast, success arguably breeds overconfidence (Mizruchi, 1991), which can lead to excessive risk-taking (e.g., Odean, 1998; Camerer and Lovallo, 1999). Moreover, psychologists have found that a higher incidence of unethical behavior is likely to occur if unethical decision-making is rewarded (Hegarty and Sims, 1978).

As applied to our setting, these behavioral findings suggest results consistent with what we find. Relative to those brokers denied expungement, brokers granted expungement may have increased incidences of recidi-vism (and corresponding expungement requests) due to the following: (1) greater risk-taking with client assets, (2) overconfidence that the broker can obtain another expungement, and/or (3) more frequent incidences of unethical behavior, as the broker has received external signals that his initial behavior was appropriate. Finally, the literature on repeat players in litigation suggests that an expunged broker will be more likely to succeed on future expungement requests, as he will have learned from the process during the earlier case (Epstein et al., 2013).

Second, these results are consistent with the incentives created by FINRA's accelerating sanctions regime. As noted previously, FINRA suggests that its adjudicators impose more severe sanctions when the broker in question

Table 9

IV estimates of the effect of expungement on future employment outcomes.

This table shows the effect of a successful expungement on career outcomes. In Panel A, the dependent variable is a dummy variable for whether the broker separated from her employer after the expungement request. In Panel B, the dependent variable captures the number of years the broker is registered after the expungement request. Only brokers with expungements adjudicated prior to 2017 are included. Columns (1) and (2) reflect the OLS results. Columns (3)-(6) use 2SLS, where the instrument is the relative leniency of the randomly assigned list of potential arbitrators. The relative leniency of the arbitrator list is calculated as the mean (or median) leave-out success rate of all arbitrators on the list minus the mean annual success rate in the FINRA geographic region. Success rate is the number of successful expungement awards divided by the total number of expungement awards over which the arbitrator has presided. Columns (3) and (4) reflect the results using the first instrument: List leniency (mean) (the relative leniency of the mean arbitrator on the initial list). Columns (5) and (6) reflect the results using the second instrument: List leniency (median) (the relative leniency of the median arbitrator on the initial list). All control variables are defined in the appendix, and all models include region-year fixed effects. Standard errors are clustered by firm. Statistical significance of 10%, 5%, and 1% is represented by *, **, and ***, respectively.

Panel A

	OLS (1) Separation	OLS (2) Separation	2SLS (3) Separation	2SLS (4) Separation	2SLS (5) Separation	2SLS (6) Separation
Successful expungement	0.138*** (0.027)	0.087*** (0.031)				
Predicted success (using list leniency, mean)			0.242*** (0.082)	0.211** (0.086)		
Predicted success (using list leniency, median)					0.146 (0.089)	0.111 (0.094)
Broker characteristics						
Prior successful expungement		0.085** (0.040)		0.081** (0.041)		0.085** (0.041)
Prior unsuccessful expungement		0.257*** (0.079)		0.248*** (0.077)		0.255*** (0.079)
Female		0.048* (0.026)		0.043 (0.026)		0.047* (0.026)
Non-White		0.033 (0.037)		0.030 (0.037)		0.032 (0.038)
Experience		0.061*** (0.012)		0.061*** (0.012)		0.061*** (0.012)
Total qualifications		0.017 (0.012)		0.018 (0.012)		0.017 (0.012)
Case characteristics						
Settlement		0.024 (0.022)		0.020 (0.022)		0.023 (0.022)
Opposed		0.017 (0.022)		0.007 (0.027)		0.013 (0.028)
Intra industry		0.087* (0.050)		0.083* (0.050)		0.086* (0.050)
Customer initiated		0.007 (0.048)		0.004 (0.047)		0.006 (0.048)
Firm characteristics						
Taping and/or disciplined firm		0.311*** (0.112)		0.292*** (0.103)		0.307*** (0.111)
Num. brokers		0.000*** (0.000)		0.000*** (0.000)		0.000*** (0.000)
Total expungements per year		0.001* (0.001)		0.001* (0.001)		0.001* (0.001)
Total misconducts per year		0.000 (0.000)		0.000 (0.000)		0.000 (0.000)
Arbitrator characteristics						
Female		0.008 (0.012)		0.007 (0.013)		0.008 (0.012)
Panel of arbitrators		0.020 (0.022)		0.019 (0.022)		0.020 (0.022)
Controls		Yes		Yes		Yes
Year ×Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,135	3,135	3,135	3,135	3,135	3,135

has similar past misconduct and/or a pattern of causing investor harm. This disciplinary regime could drive our results for two interconnected reasons. First, brokers denied expungement are on a shorter leash because they face increasing costs of misconduct. Second, brokers granted expungement are reset to a lower baseline, meaning they can expect the costs of engaging in misconduct to be lower. Presumably, this regime increases (reduces) the attractiveness of misconduct for those granted (denied) expungement.[23]

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[23] To attempt to distinguish the "accelerating sanctions" and "behavioral" explanations, we limit the analysis in Table 8 to only the first expungement for each broker. In theory, the behavioral explanation implies

Table 9
(*continued*)

Panel B

	OLS (1) Num. yrs. reg'd	OLS (2) Num. yrs. reg'd	2SLS (3) Num. yrs. reg'd	2SLS (4) Num. yrs. reg'd	2SLS (5) Num. yrs. reg'd	2SLS (6) Num. yrs. reg'd
Successful expungement	0.446*** (0.133)	0.464*** (0.128)				
Predicted success (using list leniency, mean)			0.650** (0.318)	0.613** (0.310)		
Predicted success (using list leniency, median)					0.416 (0.336)	0.301 (0.353)
Broker characteristics						
Prior successful expungement		1.907*** (0.130)		1.912*** (0.131)		1.901*** (0.129)
Prior unsuccessful expungement		1.851*** (0.386)		1.861*** (0.387)		1.839*** (0.387)
Female		0.136 (0.083)		0.142* (0.084)		0.130 (0.084)
Non-White		0.037 (0.113)		0.039 (0.113)		0.033 (0.115)
Experience		0.250*** (0.053)		0.250*** (0.053)		0.249*** (0.054)
Total qualifications		0.120** (0.051)		0.120** (0.051)		0.119** (0.051)
Case characteristics						
Settlement		0.075 (0.081)		0.080 (0.082)		0.069 (0.083)
Opposed		0.015 (0.067)		0.044 (0.086)		0.017 (0.089)
Intra industry		0.043 (0.103)		0.038 (0.105)		0.048 (0.104)
Customer initiated		0.075 (0.072)		0.078 (0.073)		0.071 (0.072)
Firm characteristics						
Taping and/or disciplined firm		0.755 (0.733)		0.731 (0.725)		0.782 (0.760)
Num. brokers		0.000*** (0.000)		0.000*** (0.000)		0.000*** (0.000)
Total expungements per year		0.000 (0.002)		0.000 (0.002)		0.000 (0.002)
Total misconducts per year		0.000 (0.001)		0.000 (0.001)		0.000 (0.001)
Arbitrator characteristics						
Female		0.058* (0.032)		0.057* (0.032)		0.060* (0.033)
Panel of arbitrators		0.050 (0.062)		0.049 (0.062)		0.052 (0.062)
Controls		Yes		Yes		Yes
Year ×Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,135	3,135	3,135	3,135	3,135	3,135

Finally, it is possible that expungement improves career outcomes, thus providing marginal expunged brokers with greater opportunity to commit misconduct because they

that the likelihood of bad behavior grows exponentially with each expungement. By contrast, the accelerating sanctions argument seems to suggest that, after brokers are restored to the same baseline in terms of misconduct, the likelihood of bad behavior similarly returns to the same baseline (i.e., a broker who is granted expungement will have the same likelihood of misconduct as she did before the initial misconduct that was expunged). The results are reported in Exhibit 8 to the Online Appendix and show that the findings are directionally consistent but notably weaker in terms of magnitude and statistical significance. These results suggest that repeat expungements have an outsize effect on our results, which seems more consistent with the behavioral explanation—although it does not rule out the accelerating sanctions theory.

are more likely to remain in the industry. Although we are not aware of any literature studying the removal of broker misconduct on career consequences, much literature finds that the addition of misconduct negatively affects career outcomes (e.g., Srinivasan, 2005; Fich and Shivdasani, 2007; Karpoff et al., 2008; Egan et al., 2019a) and leads to "assortative mating" (e.g., Cook et al., 2020). Therefore, we study whether successful expungements affect long-term career prospects in Table 9.

4.4.2. Expungement and career outcomes

Table 9 uses two proxies for career outcomes. Panel A studies whether successfully expunged brokers are more likely to separate from their employer at any point following the expungement. Panel B studies whether

Table 10

Reduced-form estimates of the effect of arbitrator leniency on recidivism.

This table presents the reduced-form OLS regressions of future recidivism on each of the instrumental variables: List leniency (mean) (the relative leniency of the mean arbitrator on the initial list of randomly assigned arbitrators) and List leniency (median) (the relative leniency of the median arbitrator on the initial list of randomly assigned arbitrators). To determine the relative leniency of the mean (or median) arbitrator on the initial list, we calculate the leave-out success rate of all arbitrators on the list minus the mean annual success rate in the FINRA geographic region. The success rate is the number of successful expungement awards divided by the total number of expungement awards over which the arbitrator has presided. In columns (1)-(4), the dependent variable reflects the number of future years with allegations of misconduct (including expunged misconduct) after the initial expungement request. In columns (5)-(8), the dependent variable reflects the number of future years with successful expungements after the initial expungement request. All control variables are defined in the appendix, and all models include region-year fixed effects. Standard errors are clustered by firm. Statistical significance of 10%, 5%, and 1% is represented by *, **, and ***, respectively.

	(1) Num. yrs. w/ misc.	(2) Num. yrs. w/ misc.	(3) Num. yrs. w/ misc.	(4) Num. yrs. w/ misc.	(5) Num. yrs. w/ exp.	(6) Num. yrs. w/ exp.	(7) Num. yrs. w/ exp.	(8) Num. yrs. w/ exp.
List leniency, mean	0.068 (0.156)	0.055 (0.131)			0.284*** (0.077)	0.212** (0.082)		
List leniency, median			0.315** (0.128)	0.278** (0.109)			0.235*** (0.087)	0.179** (0.088)
Broker characteristics								
Prior successful expungement		1.432*** (0.111)		1.430*** (0.111)		1.150*** (0.099)		1.150*** (0.099)
Prior unsuccessful expungement		1.328*** (0.202)		1.330*** (0.203)		0.656*** (0.145)		0.657*** (0.146)
Female		0.035 (0.050)		0.037 (0.050)		0.050 (0.043)		0.050 (0.042)
Non-White		0.129* (0.068)		0.130* (0.068)		0.038 (0.026)		0.039 (0.026)
Experience		0.028* (0.017)		0.028* (0.017)		0.008 (0.008)		0.008 (0.008)
Total qualifications		0.006 (0.020)		0.007 (0.020)		0.017* (0.010)		0.017* (0.010)
Case characteristics								
Settlement		0.048 (0.036)		0.046 (0.037)		0.011 (0.023)		0.011 (0.023)
Opposed		0.005 (0.035)		0.008 (0.034)		0.041* (0.022)		0.041* (0.022)
Intra industry		0.187* (0.112)		0.188* (0.111)		0.098 (0.093)		0.099 (0.093)
Customer initiated		0.194* (0.107)		0.193* (0.107)		0.122 (0.096)		0.123 (0.095)
Firm characteristics								
Taping and/or disciplined firm		1.020*** (0.287)		1.020*** (0.286)		0.268 (0.276)		0.264 (0.277)
Num. brokers		0.000*** (0.000)		0.000*** (0.000)		0.000*** (0.000)		0.000*** (0.000)
Total expungements per year		0.001 (0.001)		0.001 (0.001)		0.000 (0.001)		0.000 (0.001)
Total misconducts per year		0.000 (0.000)		0.000 (0.000)		0.000* (0.000)		0.000* (0.000)
Arbitrator characteristics								
Female		0.023 (0.018)		0.022 (0.018)		0.006 (0.012)		0.006 (0.013)
Panel of arbitrators		0.035 (0.038)		0.051 (0.040)		0.042** (0.019)		0.047** (0.021)
Controls		Yes		Yes		Yes		Yes
Year ×Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,135	3,135	3,135	3,135	3,135	3,135	3,135	3,135

Table 11

Reduced-form estimates of the effect of arbitrator leniency on future employment outcomes.

This table presents the reduced-form OLS regressions of career outcomes on each of the instrumental variables: List leniency (mean) (the relative leniency of the mean arbitrator on the initial list of randomly assigned arbitrators) and List leniency (median) (the relative leniency of the median arbitrator on the initial list of randomly assigned arbitrators). To determine the relative leniency of the mean (or median) arbitrator on the initial list, we calculate the leave-out success rate of all arbitrators on the list minus the mean annual success rate in the FINRA geographic region. The success rate is the number of successful expungement awards divided by the total number of expungement awards over which the arbitrator has presided. In columns (1)–(4), the dependent variable is a dummy variable for whether the broker separated from her employer. In columns (5)–(8), the dependent variable captures the number of years the broker is registered after the expungement request. Only brokers with expungements adjudicated prior to 2017 are included. All control variables are defined in the appendix, and all models include region-year fixed effects. Statistical significance of 10%, 5%, and 1% is represented by *, **, and ***, respectively.

	(1) Separation	(2) Separation	(3) Separation	(4) Separation	(5) Num. yrs. reg'd	(6) Num. yrs. reg'd	(7) Num. yrs. reg'd	(8) Num. yrs. reg'd
List leniency, mean	0.342***	0.275**			0.918*	0.799*		
	(0.123)	(0.117)			(0.468)	(0.423)		
List leniency, median			0.138	0.101			0.395	0.273
			(0.085)	(0.085)			(0.330)	(0.328)
Broker characteristics								
Prior successful expungement		0.090**		0.090**		1.885***		1.887***
		(0.040)		(0.040)		(0.130)		(0.129)
Prior unsuccessful expungement		0.262***		0.262***		1.820***		1.820***
		(0.080)		(0.081)		(0.389)		(0.389)
Female		0.049*		0.050*		0.124		0.121
		(0.026)		(0.026)		(0.080)		(0.081)
Non-White		0.032		0.034		0.034		0.029
		(0.039)		(0.039)		(0.115)		(0.116)
Experience		0.062***		0.061***		0.251***		0.249***
		(0.012)		(0.012)		(0.054)		(0.054)
Total qualifications		0.017		0.017		0.119**		0.118**
		(0.012)		(0.012)		(0.051)		(0.051)
Case characteristics								
Settlement		0.026		0.026		0.063		0.060
		(0.022)		(0.022)		(0.080)		(0.080)
Opposed		0.031		0.033		0.065		0.072
		(0.020)		(0.020)		(0.065)		(0.065)
Intra industry		0.088*		0.089*		0.052		0.057
		(0.051)		(0.051)		(0.105)		(0.104)
Customer initiated		0.007		0.009		0.069		0.065
		(0.049)		(0.049)		(0.073)		(0.072)
Firm characteristics								
Taping and/or disciplined firm		0.318***		0.325***		0.809		0.828
		(0.117)		(0.119)		(0.779)		(0.782)
Num. brokers		0.000***		0.000***		0.000***		0.000***
		(0.000)		(0.000)		(0.000)		(0.000)
Total expungements per year		0.001*		0.001*		0.000		0.000
		(0.001)		(0.001)		(0.002)		(0.002)
Total misconducts per year		0.000		0.000		0.000		0.000
		(0.000)		(0.000)		(0.001)		(0.001)
Arbitrator characteristics								
Female		0.009		0.008		0.062*		0.061*
		(0.012)		(0.012)		(0.032)		(0.033)
Panel of arbitrators		0.028		0.027		0.076		0.072
		(0.022)		(0.024)		(0.064)		(0.068)
Controls		Yes		Yes		Yes		Yes
Year ×Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,135	3,135	3,135	3,135	3,135	3,135	3,135	3,135

successfully expunged brokers are more likely to remain in the industry. As before, both panels are restricted to brokers with expungements adjudicated prior to 2017 so that we can monitor at least one year of future outcomes.

Panel A shows that successfully expunged brokers are more likely to remain employed at their current position, indicating that expungement has positive career outcomes for marginal expunged brokers. The dependent variable is set to one if the broker separated from his employer in any year after the award, either by registering with another firm or by exiting the database. The coefficients of interest are statistically significant at standard levels in four of the six models. Using full controls, column (4) indicates that, at the margin, a successfully expunged broker is 21 percentage points less likely to separate from her employer than a broker denied expungement.

Similarly, Panel B provides evidence that expungement increases the likelihood that a broker will remain in the industry. The dependent variable reflects the number of years the broker remains a FINRA-registered broker following the initial expungement. The coefficients of interest are statistically significant in four of the six models and indicate that, at the margin, a successfully expunged broker enjoys 0.61 more years as a registered broker (with full controls).

On the whole, the results in Table 9 are consistent with our descriptive statistics and indicate that successful expungements improve career outcomes. On the one hand, the results are perhaps surprising. Current employers presumably know about the expungement, and future potential employers can ask about prior expungements during the application process.[24] Even if expungement removes information from regulators and consumers, it is not clear that expungement removes information from employers. Thus, it is not clear that expungement should affect employment outcomes.

On the other hand, there are explanations for why successful expungements would improve career prospects. First, at least some anecdotal evidence indicates that firms have different levels of tolerance for private misconduct (known only within the firm) and publicly known misconduct. A firm may be unwilling to employ a broker with a publicly tarnished reputation, but may be happy to employ a broker who committed the same infractions but has a "clean" public reputation.[25] Second, firms may learn from

the expungement award itself. Indeed, in prior conversations with firms, some have indicated that they think the expungement award provides additional information on the underlying infraction. If an expungement was denied, some firms view the underlying infraction as more severe than if it was granted (and vice versa).[26]

4.5. Robustness tests

In Tables 10 and 11, we present the reduced-form regressions of our outcome variables on our instruments. The generic model is presented below in Eq. (5). $y_{i,T>t}$ is the outcome variable for broker i at time T after their expungement decision at time t, Z_{jrt} is the instrument (i.e., the average leave-out success rate of the initial list of randomly assigned arbitrators j relative to the year t mean leave-out rate in region r), X_{it} is the set of controls, and μ_{rt} is a region by award year fixed effect. In effect, β_1 represents the causal effect of being randomly assigned a relatively more lenient list of arbitrators on outcome $y_{i,T>t}$. Table 10 presents the reduced-form regressions with respect to recidivism, and Table 11 presents the reduced-form regressions with respect to career outcomes. All models use OLS. As before, the results are presented using both *List leniency (mean)* and *List leniency (median)*.

$$y_{i,T>t} = \beta_1 Z_{jrt} + \beta X_{it} + \mu_{rt} + \epsilon_{it} \qquad (5)$$

The results in Table 10 are consistent with those in Table 8. Columns (1)-(4) use the number of following years with an allegation of misconduct (or successfully expunged misconduct) as the dependent variable, and columns (5)-(8) use the number of following years with a successfully expunged misconduct as the dependent variable. The coefficient of interest is statistically significant in six of the eight models.

Similarly, the results in Table 11 are consistent with those in Table 9. Columns (1)–(3) show that brokers who happen to draw a relatively lenient list of arbitrators are less likely to separate from their employer (the coefficients of interest in columns (3)–(4) are negative but not statistically significant). The results indicate that, for a 10 percentage point increase in the relative leniency of the arbitrator list, the broker is 1.01–3.42 percentage points less likely to separate from her employer. Similarly, the results in columns (5)–(8) are consistent with the 2SLS models in Panel B of Table 9 and show that brokers

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[24] For example, a recent JP Morgan job application asked candidates the following question: "Are you currently or have you ever been, a named defendant/respondent in any civil lawsuits or arbitrations involving allegations of misconduct related to financial services?" This phrasing is broad enough that a broker with expunged misconduct should answer in the affirmative.

[25] Exhibits 9 and 10 in the Online Appendix attempt to test this possibility empirically. In particular, Exhibit 9 splits the sample between firms with higher/lower than average misconduct rates. Assuming that firms with lower misconduct rates will be more concerned with their public reputation, we should see more severe career consequences for brokers at firms with lower misconduct rates. Following a similar intuition, Exhibit 10 examines the effect of expungement on separation, but splits the sample into one-misconduct brokers and multiple-misconduct brokers. Assuming the reputational effect of public misconduct will be greater for the one-misconduct brokers, we should see more severe career consequences for one-misconduct brokers. The results are presented first using

OLS and are followed by both IVs. To summarize, we do not find evidence that public reputation drives our results on the effect of expungement on separation, but we are hesitant to form definitive conclusions based on null results (particularly given the low number of observations).

[26] Exhibit 11 of the Online Appendix attempts to test this intuition. This exhibit presents IV analysis on the effect of expungement on separation using (1) "erroneous" expungements and (2) expungements that are not erroneous (under Rule 2080, "erroneous" expungements theoretically represent the weakest claims of misconduct). Thus, if firms learn from the award, "erroneous" expungements should theoretically lead to lower rates of separation than expungements granted under other standards. The results are presented first using OLS and are followed by both IVs. To summarize, although the magnitudes are consistent with this intuition, neither the F-tests nor the coefficients of interest are consistently significant (however, this may be due to a lack of power).

assigned to a lenient list of arbitrators are more likely to remain in the industry for longer periods.

5. Conclusion

We provide the most thorough analysis of the BrokerCheck expungement process, which allows brokers to remove allegations of misconduct from FINRA's public records. We show that brokers with prior expungements are 3.3 times as likely to engage in new misconduct as the average broker. This is consistent with the concerns of state regulators, who have argued that expungements impair their ability to monitor effectively by making it more difficult to identify potential bad actors.

Further, using an IV based on FINRA's randomly generated list of potential arbitrators, we provide causal evidence on the effect of expungement. In particular, we show that expungement increases recidivism (measured as future allegations of misconduct or expunged misconduct). Further tests show that the increase in recidivism is driven by successfully expunged misconduct—in other words, successful expungements cause an increase in future expungements. Robustness tests indicate that the increase in future expungements is caused by an increase in expungement requests and a greater likelihood of success. Finally, we provide evidence that expungements improve career outcomes. Our descriptive analysis shows that brokers with successful expungements are more likely to remain with their firm and, conditional on leaving the firm, to be rehired by another brokerage firm. The evidence from our IV analysis is consistent with the descriptive results and shows that marginal expunged brokers are less likely to separate from their firm and are more likely to remain FINRA-registered brokers going forward.

Appendix A. Variable definitions

Broker Characteristics	
Prior successful expungement	Dummy =1 if broker has a prior successful expungement
Prior unsuccessful expungement	Dummy =1 if broker has a prior unsuccessful expungement
Female	Dummy =1 if broker name is female (as matched to GenderChecker database)
Non-White	Dummy =1 if broker name is Black, API (Asian and Pacific Islander), AIAN (American Indian and Alaska Native), multiple race (more than two races), or Hispanic according to NamePrism (Junting et al., 2017)
Experience	Number of years since the broker first appeared in BrokerCheck as a registered broker dealer (divided by ten)

Broker Characteristics	
Total qualifications	Number of exams passed among six specific qualifications (S63, S7, S6, S66, S65, and S24). These are the six most popular qualification exams taken by investment professionals (scraped from BrokerCheck)

Case characteristics	
Settlement	Dummy = 1 if the arbitration award states that there was a monetary settlement
Opposed	Dummy =1 if the arbitration award states that the customer was opposed to the expungement request
Intra industry	Dummy =1 if a customer was not involved in the case
Customer initiated	Dummy =1 if the customer filed the complaint and was listed as the claimant on the FINRA award

Firm characteristics	
Taping and/or disciplined firm	Dummy =1 if the firm has been disciplined by FINRA and/or is subject to taping rules under FINRA Rule 3170
Num. brokers	Number of broker-dealers registered with the firm in each year
Total expungements per year	Number of expungement requests made by broker-dealers registered with the firm in each year
Total misconducts per year	Number of misconducts recorded by broker-dealers registered with the firm in each year

Arbitrator characteristics	
Female	Dummy =1 if arbitrator name is female (as matched to GenderChecker database)
Panel of arbitrators	Dummy =1 if the case was heard by a panel of arbitrators as opposed to a single arbitrator

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