Regulatory Breakdowns in Oversight of U.S. Stockbrokers

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ABSTRACT
Over the past two years, The Wall Street Journal has worked to obtain, organize and analyze data about the employment and disciplinary histories of the more than 630,000 stockbrokers in America. Because the bulk of the registration and disciplinary process is performed by private enterprise, obtaining this data required us to file public records requests with all 50 states. After an extensive period of data collection, cleaning and organization, we wrote a series of stories tracking the migratory patterns of troubled brokers; disclosing how bad actors avoided paying arbitration awards by closing up shop; revealing more than a thousand cases in which brokers failed to disclose serious red flags such as criminal histories and bankruptcies; and detailing how brokers who repeatedly failed one of the industry's entrance exams had worse than average disciplinary records. In this paper, we describe the data, how we got it and what we did with it, along with some of the results of our stories. [1]

Categories and Subject Descriptors
E.1 [**Data**]: Data structures – Records; D.2.7 [**Distribution, Maintenance, and Enhancement**]: Documentation; H.2.8 [**Database Management**]: Database Applications

General Terms
Algorithms, Documentation, Economics, Verification.

Keywords
Stockbrokers, Regulation, Data Analysis, Public Records

1. INTRODUCTION
As a result of a patchwork of legislation passed in the wake of the Great Depression, America's securities markets are laden with an inconsistent regulatory framework that alternatively tasks the federal government, the states, the exchanges and securities brokers themselves with the daunting task of overseeing the people trading stock on the country's markets. [2][3]

Ultimately, the U.S. Securities and Exchange Commission is responsible for the integrity of the U.S. financial markets, and one of its many tasks is the regulation of brokerage firms.

However, it delegates the task of licensing and monitoring firms and the individuals working at them – technically known as registered representatives – to the Financial Industry Regulatory Authority (Finra), a self-regulatory organization, and the states. [4]

The database containing information about all these entities is known as the Central Registration Depository (CRD). The CRD system contains ownership information, the location of firms and employment and disclosure histories for individuals.

While there have been dozens of portrayals in film and print of troubled stockbrokers, including *The Wolf of Wall Street*, *Boiler Room* and *Wall Street*, a comprehensive survey of the national picture has been nearly impossible as a result of restrictions placed on access to the underlying data.

2. GETTING THE DATA
Because Finra is a self-regulatory organization, it is not subject to public records requests. While it makes public most of the data about individual stockbrokers via its BrokerCheck system, it has declined to release these records in bulk or allow its database to be scraped, thus making it difficult to contextualize an individual broker's work and disciplinary history. [5]

Thankfully, because of the fragmented structure of the regulatory regime, brokers must register in each of the states in which they wish to sell securities. This means that while the CRD system is administered by Finra, it is jointly owned by each of the state regulators. Most states (with a few notable exceptions) interpret data filed with the CRD system pertaining to their registrants as public and subject to open records requests. [6]

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In early 2013, we filed public records requests with each of the 50 state regulators asking for their images of the CRD database. After some coaxing, most states agreed to provide the slice of the CRD containing their registrants, which is available to them via a feature of Finra's software called the state data download (SDD). That year, we obtained complete extracts from 21 states (several states had privacy laws in place that prevented them from providing key extracts, such as criminal histories, while others insisted on charging fees for the data that were outside the scope of our newsroom's budget) detailing just over 500,000 registered representatives, which is more than 78% of the national total. We repeated the requests in 2014 and thus far have obtained the complete data from 27 states representing data about 552,969 individuals.

The data in the CRD system consists of twenty one tables, including nine tables detailing disclosures (see Tables 1 & 2). The remaining tables detail employment and registration information, as well as other details, such as test scores and residential addresses. [7][8]

Table 1. Employment, registration and informational tables contained in CRD SDD

Table Name	Contents
composite	General information including name.
employmenthistory	Personal 10 year employment history (including non-finance).
Exams	Broker exam history.
identifyinginformation	Personal demographic information.
officeofemploymenthistory	Employment history as a registered stockbroker.
otherbusiness	Information about other business enterprises.
othernames	All nicknames, aliases and names used before or after marriage.
professionaldesignations	Professional designations (CFA, CFP, etc.).
registrationsactiveemployments	Active registrations.
registrationspprioremployments	Previous registrations.
residentialhistory	Past five years of residential addresses.
u4questions	Disclosure questions with "yes" answers.

Table 2. Disclosure tables contained in the CRD SDD

Table Name	Contents
bankruptcy	Bankruptcy filings and credit problems.
bond	Bonding Payouts or Revocations.
civiljudicial	Civil judicial actions.
criminal	Felony and some misdemeanor criminal charges.
customercomplaint	Customer complaints, arbitrations and civil litigations.
investigation	Formal pending investigations.
judgmentlien	Unsatisfied judgments and liens.
regulatoryaction	Regulatory actions by SEC, CFTC, FINRA, states and other regulators.
termination	Employment terminations for cause.

3. PROCESSING THE DATA

The data was provided to us in a variety of formats, including Excel, Access, CSV and XML. State regulators occasionally took it upon themselves to change the names of tables and fields: for instance, one regulator shortened the name of the "officeofemploymenthistory" table to "ofcemplhistory".

To convert the data into a useful format, we had to process the responses from all 27 states into a single composite database that replicates, to the best of our ability, the full contents of the CRD system. We're greatly aided in this venture by the fact that most brokers are registered in multiple states. For instance, of the 552,969 brokers in our analysis, more than two-thirds were registered in more than one of the 27 states. This overlap allows us to obtain better broker coverage at less cost, but also results in a significant amount of duplication. See Figure 1 for a density map illustrating the coverage we obtained.

We then needed a procedure to convert the sprawling state responses – 552 tables, 848 distinct fields and 111,289,369 rows – into a useful composite.

Each broker is identified by a primary key, known as a CRD number. To create our composite, we identified all the state SDDs in which each CRD number appeared. Because states created extracts on different dates, we identified the state with the most recently extracted data and labeled that the "best" state for the given CRD. We then iterated through our best state / CRD pairs and selected out of each state table all the records pertaining to each of the CRD numbers for which that state had the best information. We inserted these records into a composite database, to which we added a field detailing the source of the record. The structure of the composite database is detailed in Table 3.

Though most of the CRD disclosure tables contain keys that uniquely identify the disclosure, it is necessary to avoid duplicating data because some events – including bankruptcies older than 10 years and unfounded customer complaints – are routinely removed from brokers' records, and we wanted to have as accurate a count as possible of disclosures currently appearing on each broker's record.

Table 3. Composite CRD data used in WSJ analysis

Table Name	Records	Distinct Brokers	States
bankruptcy	30,963	21,786	27
Bond	126	121	27
civiljudicial	393	325	27
composite	549,706	549,706	27
customercomplaint	43,888	28,140	27
employmenthistory	4,585,955	552,866	27
judgmentlien	14,066	7,800	27
officeofemploymenthistory	2,970,208	552,926	27
otherbusiness	552,926	552,926	27
professionaldesignations	32,107	29,955	27
registrationsactiveemployments	657,864	552,926	27
registrationspprioremployments	623,689	263,394	27
regulatoryaction	10,270	7,293	27
termination	6,200	5,853	27
Criminal	13,428	11,616	27
Exams	2,144,028	518,249	27
investigation	310	300	27
u4questions	66,552	66,552	27
Othernames	467,965	278,634	26
identifyinginformation	324,516	324,516	13
residentialhistory	1,028,720	242,717	8

Several states declined to provide certain tables due to privacy laws; however, these data, which included residential address information, hair and eye color and aliases used, was not essential for our analysis. Our minimum basis for including a state's response in our analysis was the nine disclosure tables and the office of employment history table.

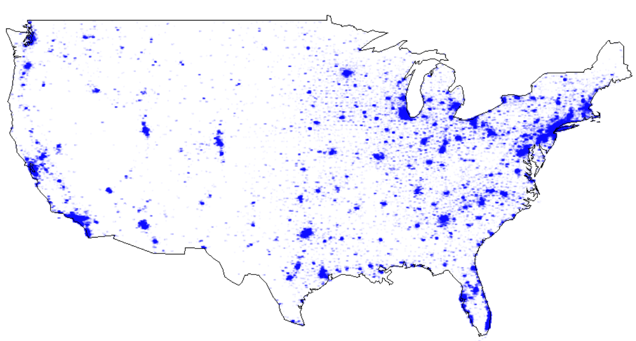


Figure 1. Density of registered representatives in analysis, U.S. mainland

4. ANALYSIS

We performed several analyses of the data contained in our CRD composite. The first project we undertook was an effort to track the migratory patterns of brokers associated with firms having troubled regulatory records – an industry practice secretly called "cockroaching."

4.1 Migratory Patterns

Industry lore indicates that groups of registered representatives travel together between troubled firms. [8] After a troubled firm is expelled from the industry by regulators, some of the registered representatives working at the firm may register at another (often newly formed) firm. In an effort to explore this phenomenon, we analyzed broker employment histories and Finra enforcement actions to see if we could quantify this practice.

For the purposes of developing our story's narrative, we created a database of broker associations from our employment data based on the amount of time brokers worked in the same offices together. Using the Gephi social network analysis software, we identified networks of brokers with related employment histories (see Figure 2); we then tracked the paths of brokers with troubled records.

Figure 2. Excerpt from a troubled broker migratory analysis

Out of this network, we identified movements where a high percentage of registered representatives had troubled records. One of the largest such flows persisting for many years was among the mostly Long Island-based firms pictured in Figure 2. We researched these firms and found a surprising number of them had been expelled by Finra.

We decided to quantify the prevalence of registered representatives shuttling between shuttered brokerages, which meant we needed a list of booted firms. Finra declined to provide us with the names of firms it had closed down, so we read through 105 of the regulator's monthly reports published between 2005 and 2012 in order to develop a list of brokerages the regulator had shuttered.

We identified 173 firms expelled between 2005 and 2012 (our data indicate brokers worked at at least 11,996 firms during that period). We cross-referenced these 173 firms with our broker employment database and found at least 5,504 brokers who had worked at these firms who were still licensed to sell securities and 610 brokers who had worked at more than one such firm expelled by Finra.

Our analysis – which identified one individual who had worked at six expelled firms – found that 58% of the brokers who had worked at more than one expelled firm had at least one disclosure and 25% had three or more. Among them, they had more than eight times as many disclosures as the industry average.

In addition to our story, we published a chord diagram tool allowing users for the first time to view the interconnections between the 173 firms that had been booted from the business (see Figure 3).

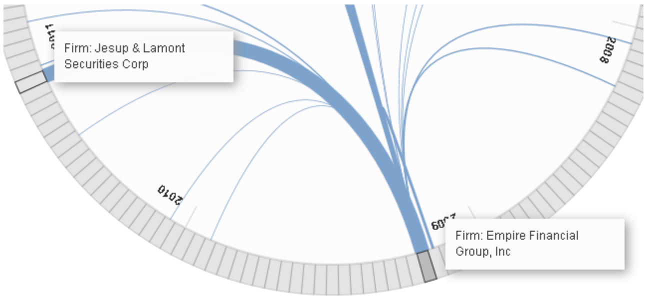


Figure 3: Migration between troubled firms, published in WSJ

We also found that the practice of shuttering firms helped some brokerages avoid paying arbitration fees. In total, we found $51 million of the $480.6 million in arbitration claims awarded in 2011 remained unpaid two years later.

4.2 Missing Disclosures

Registered representatives are required to promptly disclose all personal bankruptcy filings over the previous 10 years, certain criminal charges and other red flags to Finra.

We conducted an analysis of public records and identified more than 1,600 individuals who had accumulated disclosable events but not reported that information, including about 1,500 brokers with personal-bankruptcy filings from 2004 through 2012 and 150 brokers whose records didn't include criminal charges or convictions that should have been reported. We found the brokers with unreported bankruptcies were about 60% more likely to have three or more disclosures than the national average; nearly 140% more likely to have had their employment terminated for cause and about 40% more likely to be subject to a customer complaint (see Figure 4).

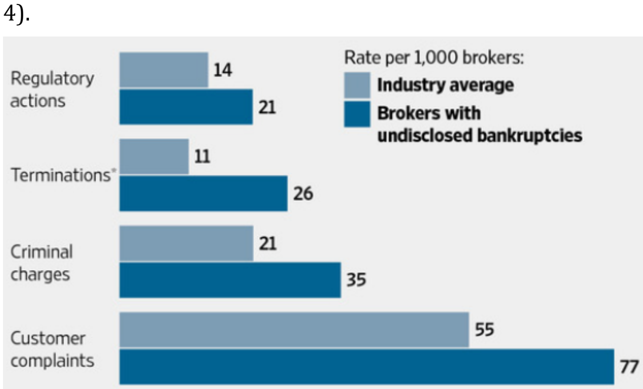
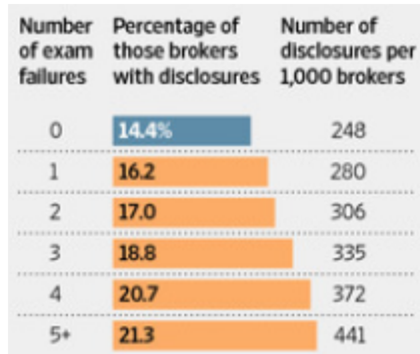


Figure 4. Disclosure types & undisclosed bankruptcies, published in WSJ

4.3 Exam Failures

While most information about individual brokers' histories is made available via Finra's BrokerCheck tool, one data point that's not publicly disclosed is the number of times a broker has failed the required Series 7 entrance exam before getting into the business. Finra has maintained that information about the test is irrelevant to investors, saying there is "no evidence to support a correlation between test scores and broker competence."



Number of exam failures	Percentage of those brokers with disclosures	Number of disclosures per 1,000 brokers
0	14.4%	248
1	16.2	280
2	17.0	306
3	18.8	335
4	20.7	372
5+	21.3	441

Figure 5. Disclosure rates & exam failures, published in WSJ

To test this statement, we used our database to review the test results for 368,000 brokers who had taken a state-administered exam known as the Series 63, which is reported in our CRD data. Both the Series 7 and the Series 63 can be taken an unlimited number of times, though regulators require trainees to wait six months between tests. Both the tests are multiple-choice and have a passing grade of 72%.

Figure 6. Disclosure types & exam failures, published in WSJ

We found that 14% of brokers who took the Series 63 failed it at least once, with 3,024 brokers failing it three or more times. We found brokers who repeatedly failed the test had on average worse disciplinary records than individuals who passed the test on the first try (see Figures 5 & 6).

5. RESULTS

In January, under pressure from lawmakers, Finra convened a task force to review brokers with extensive disciplinary histories and troubled migratory patterns. The regulator also deployed a new tool called the Broker Migration Model that will track the movement of brokers between expelled firms. [9][10]

The regulator said it was "deeply concerned" by the reporting failures disclosed by the Journal, and has approved rule changes that require brokerage firms for the first time to do formal background checks on new employees, including brokers hired from other firms. The SEC is currently reviewing the change. [11]

The regulator has also launched a study vetting the accuracy of the data in its broker database. [11]

Three days before the first Journal article ran, Finra suspended Kenneth Michael Dwyer, the broker detailed in the story's lead, and fined him $10,000 for engaging in "excessive trading in customer's accounts." He is no longer registered. The enforcement actions came several weeks after we asked Finra about Mr. Dwyer. [12]

The next month, in response to a letter from Sen. Edward Markey (D., Mass.) inquiring about the Journal's findings, Finra said that forty-two brokers had been targeted for "expedited investigation," and 16 had been expelled from the industry. [13]

Throughout 2014, Finra has made changes to the way it displays data on the BrokerCheck system. Where once users were required to wade through verbose reports to find disclosure information, the system now displays these details immediately, along with an easy to understand summary of each disclosure event.

6. CONCLUSION

From the outset, our series was about disclosure.

Though there's little doubt the data about people who control the nation's stock market are public record, the self-regulatory framework under which the system is run effectively conceals the bulk of this information from the public. And while federal paperwork indicates these records are delivered to the SEC's Division of Economic and Risk Analysis "on a weekly basis," the agency has maintained the data aren't available under FOIA. [14]

The public is thus forced to rely on the industry to scrutinize its own regulatory system. While this may be a perfectly adequate system, without access to the bulk regulatory records, it's impossible to judge the accuracy of industry statements as to the efficacy of this system. We believe our stories demonstrated deficiencies in the regulatory regime's ability to police those it oversees.

Through our work, we obtained but a slice of the full picture. While we were able to gather records about most currently registered representatives, there are literally millions of others who are no longer registered about whom we know nothing. Thus, we can't answer simple questions about the changing nature of regulatory enforcement or disclosure accuracy. [8]

Further, there is a large amount of information that is not currently disclosed to investors. This includes whether registered representatives are under internal review by their firms for problem behavior and how many customer complaints individuals have been able to wipe from their records. [15]

While we don't propose specific solutions to these problems – instead, focusing our energies on informing the public -- our guiding philosophy is best captured by U.S. Supreme Court Justice Louis Brandeis, who pointed out that "sunlight is said to be the best of disinfectants." The more access we collectively have to information about our financial markets and those who control them, the better positioned we'll be to make informed choices.

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