The Revolving Door and Insurance Solvency Regulation

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Federal Reserve Board[1]

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[1]The views in this paper are solely the author's and do not reflect the views of the Board of Governors or the Federal Reserve System

Motivation

- Insurance in the U.S. is a $8.5T industry whose solvency is heavily regulated.
- Regulation is at the state level and is directed by an **insurance commissioner**.
- Some attempts to standardize financial oversight.
- However, commissioners still have a lot of personal discretion, which can lead to **inconsistent regulation across states**.
  - Previous studies show inconsistent regulation is inefficient.
    (Brennan and Schwartz, 1982; Viscusi, 1983; Prager, 1989; Teisberg, 1993; Agarwal et al., 2014)
  - Problematic because insurance firms do business across state lines and some insurers carry systemic risks.

Research Question

- Potential distortion: job after term ends (**revolving door**).

> *"... Many [commissioners] consider the job an audition for a better-paying job."*
>
> Sally McCarty, former Indiana commissioner

This paper: **How does the revolving door affect financial oversight in insurance?**

Research Question

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In theory, it can lead to regulators being:

- **Less strict**: quid-pro-quo, signal interest to future employers.
- **More strict**: schooling hypothesis, show expertise/effort to future employers.

Empirically, which effect prevails depends on the setting.

Results Overview

Revolvers: 37% of commissioners work in insurance after their term.

What are the effects of the revolving door on insurance regulation?

(1) Revolvers are **more lenient** with financial oversight.

(2) Lenient regulation implications:

- For insurance-specific credit ratings and insurance demand.
  - $\Rightarrow$ Consumers may be overpaying for insurance up to $27bn/yr.
- For bond price misreporting in the '08 financial crisis.
  - $\Rightarrow$ States ran by revolvers underestimated insurers' capital by 10%.

(3) Policy implications: "cooling-off" laws:

- Revolvers get stricter after it becomes harder to revolve.
- This implies that difference driven by incentives.

Literature

Revolving door studies:

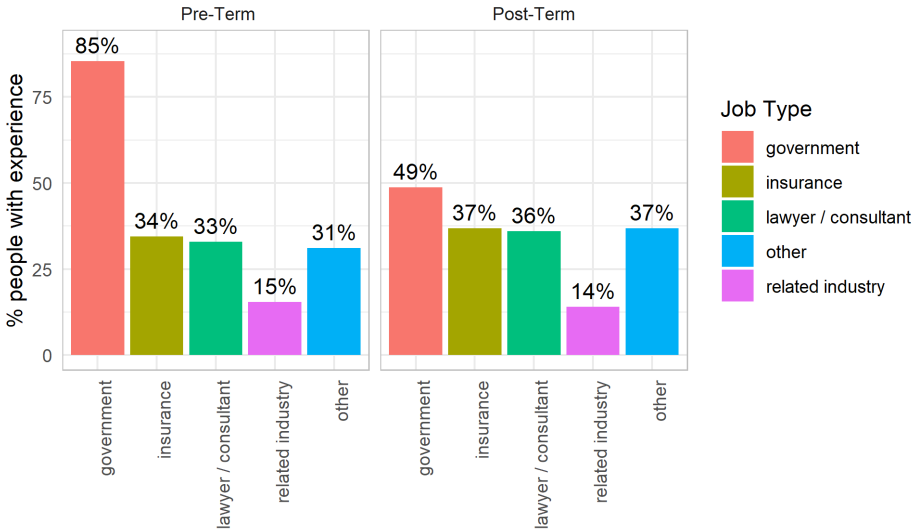
1. First study to link revolving door and insurance financial regulation
   - In insurance price regulation: Grace and Phillips (2007)
   - In fin. regulation: Agarwal et al. (2014); Lucca et al. (2014); DeHaan et al. (2015); Shive and Forster (2017)
   - In other settings: financial rating agencies (Kempf, 2018; Cornaggia et al., 2016), federal lobbyists (Bertrand et al., 2014; Blanes I Vidal et al., 2012), US patents (Tabakovic and Wollmann, 2018), electricity prices (Law and Long, 2012)
2. Revolving door: effect in insurance opposite to effect in other fin. regulation settings
   - Revolving door distortions can lead to either more or less strict oversight - depends on the institutional setting
   - In insurance: revolving door $\Rightarrow$ LESS strict oversight
   - In other financial regulation settings: revolving door $\Rightarrow$ MORE strict oversight
   - Potentially due to differences between state (insurance) and federal (banking, etc.) regulators (Agarwal et al., 2014; Charoenwong et al., 2019)

Insurance regulation studies: a new source of inconsistency in insurance regulation.

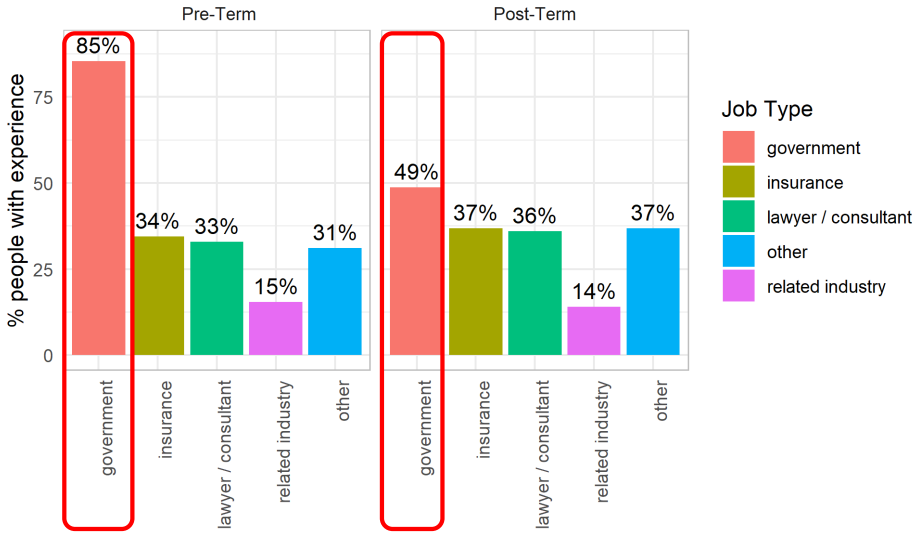
- existence of regulation heterogeneity: Ellul et al. (2015); Koijen and Yogo (2016); Kim (2017)
- insurers respond to financial solvency regulations by making significant changes in their balance sheets: Merrill et al. (2012); Becker and Ivashina (2015); Becker and Opp (2013); Kim (2017); Ge (2019); Sen (2019); Ellul et al. (2011, 2014)
- sources of inconsistency: Leverty and Grace (2018), Liu and Liu (2018)

Data on Revolvers

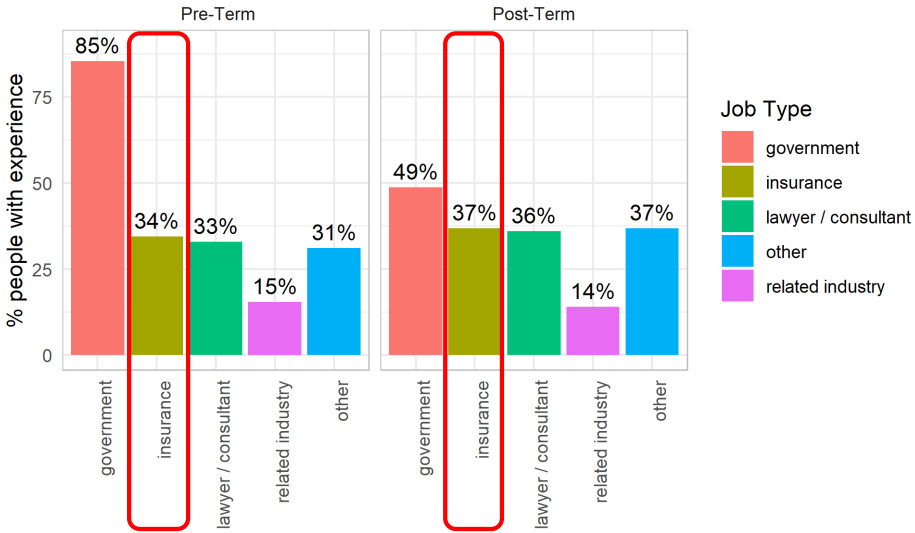
Employment History Summary



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Government Relations Positions among Revolvers

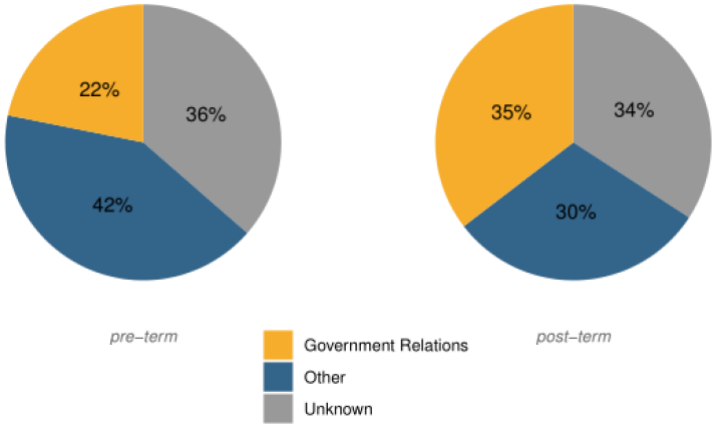


Figure: %Revolvers working in a government relations position.

I. Revolvers are Less Strict

Institutional Background: Financial Exams

I use **financial exams** as a proxy for oversight strictness.

- Regulators assess each insurer's ability to pay claims *at least* once every 5 years.
- The main responsibility is on the headquarter state.

Significance of financial exams:

- For insurers: time-consuming, can result in negative outcomes.
  - **Financial restatements**: insurer must adjust its filed financial statements.
  - 30% of exams result in restatements.
- For commissioners: significant personal discretion and importance.

Revolvers are Less Strict Regulators

1. Revolvers perform 9% **fewer exams** for every year they are in office.

$$\log(\text{n Exams}_{s,t}+1) = \alpha_s + \alpha_t + \beta I^{POST}_{s,t} + \gamma X_{s,t} + \epsilon_{s,t}$$

   - n $\text{Exams}_{s,t}$: n exams completed in state s, year t
   - $I^{POST}_{s,t} = 1$ if commissioner in state s, year t ends up in insurance after term.

$\Rightarrow$ *Revolvers exert lower effort.*

	$\log(\text{n Exams}_{s,t}+1)$	
	(1)	(2)
$I^{POST}_{s,t}$	-0.109^{**}	-0.087^{**}
	(0.048)	(0.040)
E[LHS]	2.99	2.99
Controls	No	Yes
FEs	$s+t$	$s+t$
Obs.	834	829
Adj. R^2	0.860	0.864

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2. For a given insurer, if a revolver is in office, an **early exam** is less likely ...
   - by 13.6%, all risk observables equal.
   - if key risk observable deteriorate (i.e. revolvers are less sensitive to risk).

   $\Rightarrow$ *Revolvers are not better at picking out distressed firms.*

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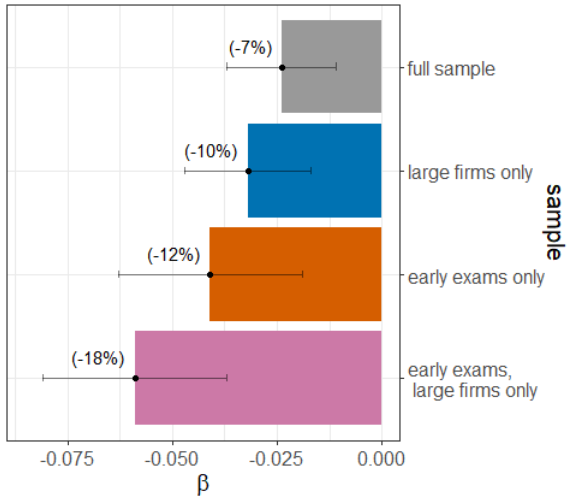
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3. Exam outcomes? ...

Revolver Exams have Fewer Negative Outcomes

$$\text{Fin. Restatement}_{i,t} = \beta \text{I}_{s,t}^{\text{POST}} + \beta_r \text{Risk Vars}_{i,t} + \gamma_x \text{X}_{i,s,t} + \alpha_s + \alpha_t + \epsilon_{i,t}. \quad (1)$$

- Fin. Restatement$_{i,t} = 1$, if: insurer i had to adjust its filed financial statements due to exam in year t.
- Revolver exams are 7% to 18% less likely to result in a restatement, depending on the sample.



Revolvers are Less Strict Regulators

1. Revolvers perform 9% **fewer exams** for every year they are in office
2. Revolvers are less likely to call for an **early exam** ...
   - ... by 13.6% overall.
   - ... when key risk observable deteriorate (i.e. are less sensitive to risk)
3. Revolver exams are 7% less likely to result in **negative outcomes** for insurers
   - Effect larger for early (so discretionary) exams
   - Effect larger for big insurers (potential employers)

$\Rightarrow$ **Post-term revolvers are less strict regulators.**

II. Consequences of Less Strict Oversight

Exam Outcomes and *AM Best*'s Financial Strength Ratings

Are exams consequential for insurers?

Look at effects of restatements on insurers' AM Best's Financial Strength Ratings (FSR) - **insurance-specific credit ratings**.

Rating events: 1) 1st rating, 2) re-evaluation ($\sim$ annual), 3) firm exits rating universe.

For each rating event of insurer i in year t:

$$Y_{i,t} = \beta_f \text{ new fin. restatement}_{i,t-1} + \gamma_r \text{Risk Vars}_{i,t} + \gamma_x X_{i,s,t} + \alpha_s + \alpha_t + \epsilon_{i,t}$$

$$Y_{i,t} = \begin{cases} \text{Change in implied default Pr of } \textit{AM Best's} \text{ FSR rating,} \\ \text{0/1: Did insurer } i \text{ choose to no longer be rated (exit)?} \end{cases}$$

new fin. restatement$_{i,t} = 1$ if insurer i restated its filing because of an exam in $t-1$

Exam Outcomes and *AM Best*'s FSR: Results

$$Y_{i,t} = \beta_f \text{ new fin. restatement}_{i,t-1} + \gamma_r \text{Risk Vars}_{i,t} + \gamma_x X_{i,s,t} + \alpha_s + \alpha_t + \epsilon_{i,t}$$

	Δ Default Probability$_{i,t}$%		$I^{remove}_{i,t}$	
	(1)	(2)	(3)	(4)
new fin. restatement$_{i,t}$	0.072*	0.079*	0.015*	0.015*
	(0.044)	(0.044)	(0.008)	(0.008)
E[LHS]	0.0239	0.0239	0.0236	0.0236
Fixed Effects	$s + t$	$s \times t$	$s + t$	$s \times t$
Observations	5,658	5,643	6,384	6,349
Adjusted R^2	0.026	0.021	0.032	0.021

- A restatement $\Rightarrow$ implied default Pr $\uparrow$ 7bps.
- A restatement $\Rightarrow$ Pr insurer no longer rated $\uparrow$ 63%.
- *AM Best* confirmed that fin. restatements trigger automatic rating review

Implications of Revolvers' Leniency on Consumer Demand for Insurance

Lenient exams lead to inflated *AM Best*'s FSRs:

- Bad exam outcomes (restatements) lower *AM Best* ratings . . .
- . . . but revolvers force fewer restatements.

$\Rightarrow$ **Market/Consumers are potentially less informed** about insurers' risks.

Quantifying drop in demand due to restatements:

- I find after restatements insurance premiums (sales) drop.
- **Estimation**: due to revolver leniency consumers overpay up to \$27B a year.

Bond Price Misreporting in the '08 Crisis

Sen and Sharma (2021):

1. Show U.S. life insurers used internal valuation models to over-report the value of corporate bonds they held during the financial crisis.
2. Estimate each state's misreporting level in 2008.
3. Show more supervision can help curb misreporting.

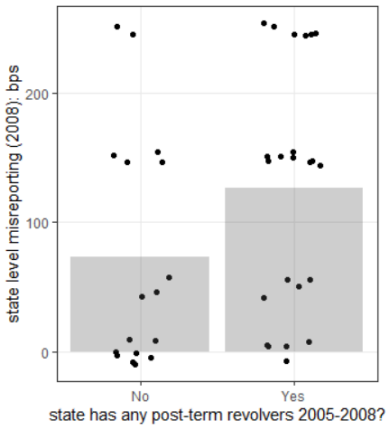
This paper: Misreporting was *higher* in states lead by revolvers leading up to the crisis.

$$\underbrace{\text{Misreporting}_{s,2008}}_{\text{from SS'20}} = \alpha + \beta\, \bar{I}^{POST}_{s,2008-t} + \underbrace{\gamma_s\, \text{Supervision}_{s,2008} + \gamma_x\, X_s}_{\text{as in SS'20}} + \epsilon_s$$

Bond Price Misreporting and Revolvers

$$\underbrace{\text{Misreporting}_{s,2008}}_{\text{from SS'20}} = \alpha + \beta\, \bar{I}^{POST}_{s,2008-t} + \underbrace{\gamma_s\, \text{Supervision}_{s,2008} + \gamma_x\, X_s}_{\text{as in SS'20}} + \epsilon_s$$

	misreporting$_{s,2008}$		
	(1)	(2)	(3)
$I^{POST}_{s,t-i:\,t}$	73.055**	82.614***	59.546*
	(29.476)	(28.464)	(32.572)
E[LHS]	98.81	98.81	98.81
Period $t-i$ to t	2000 to 2008	2005 to 2008	2007 to 2008
Controls	Yes	Yes	Yes
Observations	40	39	38
Adjusted R^2	0.258	0.314	0.183



Bond Price Misreporting and Insurers' Capitalization in 2008

Revolvers' lenient regulation associated with more misreporting in 2008:

- SS'20: Misreporting allowed insurers to overstate their capital by \$9-\$18 bn, or by 30% of the reported capitalization.
- A revolver $\Rightarrow \uparrow$ average state misreporting by a third of the baseline effect, and is very economically significant.
- For context, some insurers were under significant strain during the crisis and several applied for TARP aid.

III. Policy Implications

Policy Implications: "Cooling-off" Laws

- **"Cooling-off" laws** are a common way to curb the revolving door.
- The laws set a period, when regulators can't represent regulated firms.
  - → Such laws make revolvers less valuable for employers, especially if their job is based on connections (e.g. VP of Government Relations).
- Are the laws effective?
  - → Depends on if revolvers' act different because of **incentives** or **selection** only.

Do "Cooling-off" Laws Lead to Stricter Regulation?

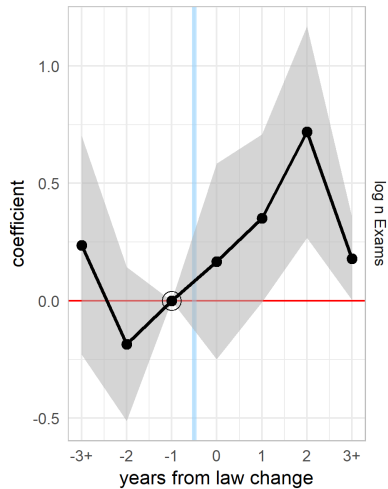
Do revolvers change behavior after changes to state revolving doors laws?

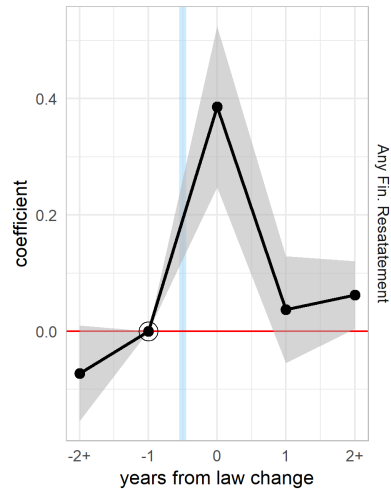
- 2000 to 2017: 12 states had changes in "cooling-off" laws.
- The changes affected all state employees, and were not targeting commissioners.
- If the laws are effective (i.e. commissioners respond to incentives), when laws gets tougher, revolvers will become stricter.
  - Test in a DiD setting: $Y = I_{s,t}^{POST} + I_{s,t}^{\Delta LAW} + I_{s,\tilde{t}}^{POST} \times I_{s,t}^{\Delta LAW} + X + \epsilon$
  - $I_{s,t}^{\Delta LAW}$ shock indicator: law was passed in state s before year t.

After law changes: Revolvers' n exams↑ and Pr(bad exam outcome|revolver) ↑

- Implies cooling-off laws are effective tool in this setting

$$Y_{s,t} = \alpha_s + \alpha_t + I_{s,t}^{POST} + \sum_{\tilde{t}=-2}^{2} I_{s,\tilde{t}}^{POST} \times I_{s,\tilde{t}}^{\Delta LAW} + \epsilon_{s,t}$$





Conclusion

- I find that revolvers are less strict regulators, which negatively affect market transparency.
- Insurers have only one regulator, but can sell insurance in all states, so lenient regulation of one state can affect the consumers in the rest of the country.
- COVID put significant strain on the liabilities of life insurers, some of which are systemically important institutions.
- Results here are likely a lower bound, since I focused on **supervision**, and commissioners also have discretion in rule-making.