The Effects of Revolving Doors on Financial Regulators' Enforcement Decisions: Evidence from Korea*

Sunjoo Hwang Hwa Ryung Lee Keeyoung Rhee

Korea Development Institute (KDI)

June 21, 2018

*The views expressed in this paper are those of the authors and should not represent those of Korea Development Institute.

Motivation

- Financial regulators have strong supervisory authorities to financial companies.
  - The regulators closely monitor how financial firms manage their risks.
  - If necessary, the regulators impose penalties on financial firms for their wrongdoings.
- The regulators' authority may lead to socially undesirable collusion with private firms.
  - The regulated companies may offer side contracts to "capture" the regulators.
    - Laffont and Tirole (1991)
- The "revolving door" is, although controversially, deemed as one of such side contracts.
  - Firms may expect to be favored by regulators in exchange for hiring ex-regulators.
  - But, ex-regulators' expertise may arguably enhance firms' risk management skills.
    - Che (1995), Bond and Glode (2014);
    - Cornaggia et al. (2016) , Kempf (2017), Shive and Forster (2017)

What We Do & Find

- We empirically analyze financial firms' motive of hiring ex-regulators ("revolving doors").
  - Do financial firms enhance their risk management by hiring ex-regulators?
  - Or, are the revolving doors an outcome of the regulatory capture?

- To this end, we build a unique dataset of Korean financial sector.
  - tracking whether executives in financial firms have past careers as regulators.
- Using this dataset, we show that:
  - *i.* Newly hired ex-regulators do not immediately enhance firms' prudential management.
    - No improvement in troubled asset ratio and RORWA in the subsequent quarters.
  - *ii.* But, the probability of receiving penalties decreases in the next quarter.

- This result is more consistent with "collusion" hypothesis than "schooling" hypothesis.
  - The current regulators may unduly favor firms hiring ex-regulators.

Institutional Background of the Financial Sector in Korea

- In Korea, a single agency assumes major practical tasks of financial regulation.
  - Financial regulatory institutions in Korea:
    - Ministry of Strategy and Public Finance (MoSF), Financial Supervisory Committee (FSC), Bank of Korea (BOK), Financial Supervisory Service (FSS).
  - Among them, FSS assumes major tasks of regulating financial firms.
    - Prudential regulation, consumer protection, market discipline, etc.
    - FSS collects information on firms' risk management and financial health.
    - FSS has an authority to penalize entities violating financial regulations.
- So, we focus on effects of revolving doors for ex-regulators with past careers at FSS.

Data Description

- Period: Jan 2010 – Jan 2017
- Data of regulated financial companies.
  - Source: Korea Information System (KIS), DART (provided by FSS), Bloomberg, etc.
  - Financial characteristics of regulated firms, such as:
    - Total asset, Tobin Q, ROE, ROA, Troubled Asset Ratios (TAR), RORWA.
    - regulatory capital ratios, liquidity ratios, etc.
  - Past records of regulatory actions (or penalties) released by FSS.
- Data of executives at regulated companies.
  - Source: KIS-Line (which collects executives' profiles as PDFs)
    - demographics (name, age, education, hometown, etc.);
    - work experience in FSS;
    - work experience in other public sectors, such as BOK, MoSF, or FSC.

Data Description: Summary Statistics of Firms

	Asset (Trillion KRW)	Profit (Trillion KRW)	ROA (%)	ROE (%)	Asset Growth* (%)	Tobin Q	TAR (%)	RORWA (%)	Regulatory Actions (= 1 if penalized)
mean	43.41	0.26	0.38	3.38	6.77	0.99	4.59	6.53	0.26
std. dev.	83.76	0.49	3.85	29.60	56.58	0.38	8.90	27.69	0.44
min.	0.01	-0.52	-68.99	-976.11	-71.42	0.19	0.00	-394.37	0.00
max.	405.00	3.21	22.50	82.57	1774.53	9.16	94.03	149.27	1.00
no. obs.	1520	1520	1510	1510	1517	1279	1518	1320	1763

*Note: Asset Growth is the percent increase in total assets over the past quarter.

Data Description: Summary Statistics of Executives

	No. Executives	From Public Sectors	FSS	FSS ratio*
mean	23.92	4.18	0.77	0.19
std. dev.	18.23	3.14	0.86	0.22
min.	4.00	0.00	0.00	0.00
max.	106.00	21.00	4.00	1.00
no. obs.	1763	1763	1763	1643

*Note: FSS ratio is the ratio of executives from FSS in regulated firms.

Testing "Schooling" Hypothesis

- We first study whether the revolving door enhances firms' risk management.
  - If schooling effects exist, firms hiring ex-regulators will be more financially sound.

- We test schooling hypothesis by estimating the following model:

$$Y_{i,t} = \alpha + \beta NewHire_{i,t-1} + \gamma \cdot X_{i,t} + \delta_i + \theta_t + \varepsilon_{i,t}$$

  - $Y_{i,t}$: measures of financial soundness (e.g. TAR, RORWA, Capital Ratios, etc.),
  - $NewHire_{i,t-1}$: a dummy variable of new hiring of ex-regulators in the past quarter,
  - $X_{i,t}$: control variables (lagged No. of executives, total asset, asset growth, Tobin Q).

- The result reveals no effect of the revolving door on financial soundness in the next quarter.
  - No improvement in either troubled asset ratios (TAR) or RORWA
  - This result is robust to $NewHire_{i,t-2}$, $NewHire_{i,t-3}$, and $NewHire_{i,t-4}$.

Testing "Schooling" Hypothesis

	(1)	(2)	(3)	(4)
Variables	TAR	RORWA	TAR	RORWA
lag FSS Hire	0.0585	-3.389*	0.0532	-2.864*
	(0.199)	(1.704)	(0.232)	(1.706)
lag FSC Hire			0.0950	-3.618
			(0.248)	(4.815)
lag MoSF Hire			0.0825	-2.186
			(0.320)	(2.151)
lag BOK Hire			-0.251	-3.505
			(0.191)	(2.638)
lag No. Executives	0.0198	0.294	0.0357	0.581
	(0.0328)	(0.466)	(0.0394)	(0.604)
Log Assets	-1.055	25.69	-1.150	23.83
	(1.788)	(18.42)	(1.786)	(16.52)
Asset Growth	5.46e-05	-0.113*	2.86e-04	-0.105**
	(0.00380)	(0.0557)	(0.00370)	(0.0485)
Tobin Q	-2.328**	14.43	-2.372**	14.87
	(0.968)	(9.697)	(0.995)	(9.898)
Obs.	1,036	873	1,036	873
R^2 (within)	0.092	0.095	0.094	0.107

Notes: 1) Robust s.e. in parentheses
2) *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
3) Firm f.e. and year dummies are included.

Testing "Collusion" Hypothesis

- We study whether the revolving door is a result of collusion between regulators and firms.
  - We estimate changes in the probability of receiving penalties after hiring ex-regulators.

Testing "Collusion" Hypothesis

- We study whether the revolving door is a result of collusion between regulators and firms.
  - We estimate changes in the probability of receiving penalties after hiring ex-regulators.

- We first find what the most correlated variable with the probability of penalties is.
- We estimate the following panel-logit model:

$$\log\left(\frac{\pi_{it}}{1-\pi_{it}}\right) = \gamma \cdot X_{i,t} + \delta_i + \theta_t$$

  - π_{it}: the probability that firm i is subject to regulatory actions.

- We find that TAR is the key variable to explain the characteristics of the penalized firms.
  - The higher TAR, the more likely the firms are to be subject to regulatory actions.

Testing "Collusion" Hypothesis

- We study whether the revolving door is a result of collusion between regulators and firms.
  - We estimate changes in the probability of receiving penalties after hiring ex-regulators.

- We next study whether hiring ex-regulators reduces the probability of receiving penalties.
- To this end, we estimate the following panel-logit model:

$$\log\left(\frac{\pi_{it}}{1-\pi_{it}}\right) = \beta \mathit{NewHire}_{i,t-1} + \gamma \cdot X_{i,t} + \delta_i + \theta_t$$

  - π_{it}: the probability that firm i is subject to regulatory actions.

- We find $\beta < 0$:
  - after hiring ex-regulators, firms can avoid regulatory penalties in the next quarter;
  - but this effect disappears in the next two ($t-2$), three ($t-3$), and four ($t-4$) quarters.

Testing "Collusion" Hypothesis

- We study whether the revolving door is a result of collusion between regulators and firms.
  - We estimate changes in the probability of receiving penalties after hiring ex-regulators.

- We next study whether hiring ex-regulators reduces the probability of receiving penalties
- We further estimate the following panel-logit model with an interaction term:

$$\log\left(\frac{\pi_{it}}{1-\pi_{it}}\right) = \beta \mathit{NewHire}_{i,t-1} + \lambda \mathit{NewHire}_{i,t-1} \times \mathit{TAR}_{i,t} + \gamma \cdot X_{i,t} + \delta_i + \theta_t$$

  - π_{it}: the probability that firm *i* is subject to regulatory actions.

- We find $\lambda < 0$ but $\beta = 0$:
  - the revolving door have no distinctive effect on the probability of getting penalties;
  - but, it weakens the link between TAR and the probability of getting penalties;
  - this result supports the collusion hypothesis more than the schooling hypothesis.

Testing "Collusion" Hypothesis

Variables		(1) Benchmark	(2) Basic	(3) Interaction	(4) Basic	(5) Interaction
lag FSS Hire			-0.802***	0.419	-0.595*	0.486
			(0.297)	(0.532)	(0.324)	(0.569)
	×TAR			-1.552***		-1.331**
				(0.558)		(0.595)
lag FSC Hire					-0.189	-0.650
					(0.392)	(0.473)
	×TAR					-0.549
						(1.462)
lag MoSF Hire					-0.200	0.704
					(0.397)	(0.609)
	×TAR					-0.705**
						(0.282)
lag BOK Hire					-0.753	0.036
					(0.484)	(1.462)
	×TAR					0.227***
						(0.085)
TAR		0.0849**	0.0837**	0.0826**	0.0849**	0.0970**
		(0.0385)	(0.0385)	(0.0394)	(0.0384)	(0.0420)
lag No. Exec.		-0.0406**	-0.0377*	-0.0359*	0.0365*	-0.0308
		(0.0204)	(0.0208)	(0.0208)	(0.0208)	(0.0209)
	...			...		...
Observations			802	802	802	802
Log Likelihood			-434.74	-431.23	-432.97	-425.37

Notes: 1) Some statistically insignificant estimation results are omitted.
2) Firm f.e. and year dummies are included.

Concluding Remark

- Using a unique dataset in Korea, we analyze financial firms' motives of hiring ex-regulators.
- Our empirical results are more consistent with the collusion hypothesis.
  - Regulatory indices for financial soundness are not improved after hiring ex-regulators.
    - TAR, RORWA, ...
  - The financial firms hiring ex-regulators are less likely to receive regulatory penalties.
- Future works:
  - More and more robustness checks;
  - Can ex-regulators' contribution to prudential management be unobserved?

Thank You!