

Mandatory Registration and Return Misreporting by Hedge Funds

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Regulation of Hedge Funds

- ▶ Historically, little regulation of hedge funds
 - Hedge fund exemptions from the Investment Advisers Act
 - Hedge funds exempt from the Investment Company Act
- ▶ Hedge fund investors were responsible for protecting themselves

Return Misreporting by Hedge Funds

- ▶ Funds voluntarily report returns to commercial databases
 - ▶ Significant fraction of reported returns are suspicious
 - Bollen and Pool (2008, 2009, 2012)
 - Agarwal, Daniel, and Naik (2011)
 - ▶ Return misreporting generates higher fees or fund inflows
 - Bollen and Pool (2009); Jylha (2011)
 - ▶ Bollen and Pool (2012) find return misreporting is strongly related to SEC fraud cases & investor lawsuits
 - ▶ Capco (2003) shows that most hedge fund failures are due to operational issues – primarily return misreporting
 - ▶ 2003 SEC Staff Hedge Fund Report
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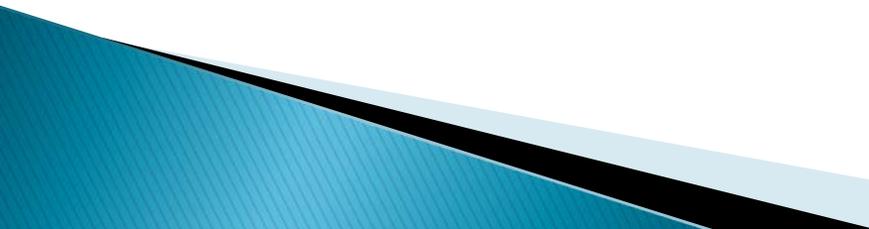
Rule IA-2333

- ▶ In 2004, the SEC passed Rule IA-2333, which required most advisors of U.S. hedge funds to register with the SEC
 - Permitted SEC to conduct compliance exams
 - Recordkeeping and documentation requirements related to reported performance
- ▶ In 2006, a federal court revoked Rule IA-2333

Issues

- ▶ Rule IA-2333 passed by a 3-2 vote. The two opposing SEC commissioners published a public dissent.
- ▶ Atkins (2006), one of the dissenting commissioners, argued that Rule IA-2333 was unlikely to reduce return misreporting
- ▶ Alan Greenspan (2004): “Even should the SEC’s proposed risk evaluation surveillance of hedge funds detect possible irregularities, which I doubt frankly, those irregularities will likely be idiosyncratic and of mainly historical interest”
- ▶ Many hedge funds argued against registration.
 - E.g., Amaranth stated the rule was unnecessary as “Amaranth already devotes significant resources to regulatory compliance.”
- ▶ **Question: Does registration reduce return misreporting?**

Our Study

- ▶ Use the initiation and revocation of Rule IA-2333
 - ▶ Differences-in-differences framework to test the relation between regulatory oversight and return misreporting by hedge funds
 - Return misreporting decreased for newly registered funds following the registration requirement
 - Following deregistration, return misreporting reverted to the same level as before the registration requirement
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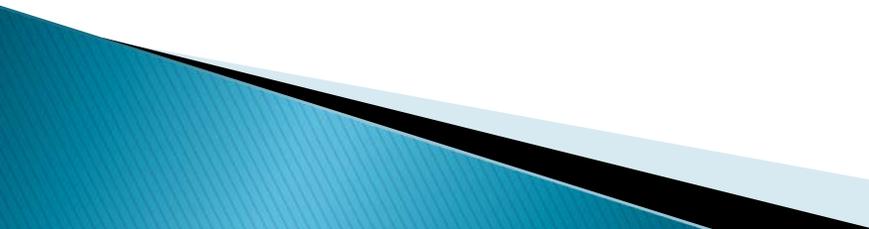
What Does Registration Entail?

1. Exams:

- Permitted SEC regional offices to conduct compliance exams of hedge fund advisors
- In year following Rule IA-2333, SEC examined 321 hedge fund advisors:
 - Issued deficiency letters to 294 (91.6%)
 - Charged 23 (7.2%) with fraud

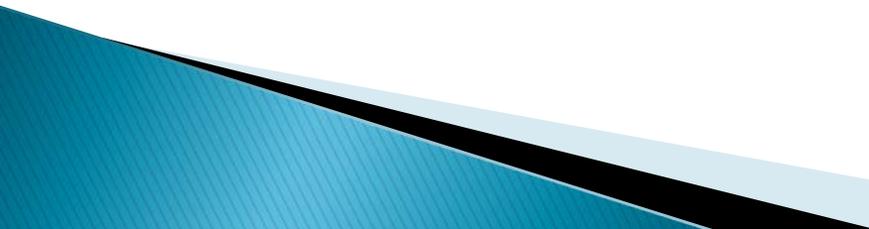
What Does Registration Entail?

2. Recordkeeping Requirements:

- For each individual security, document valuation and justification for valuation
 - Retain all records related to valuations and performance
 - Retain all internal communications including e-mails
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What Does Registration Entail?

3. Custody Rules:

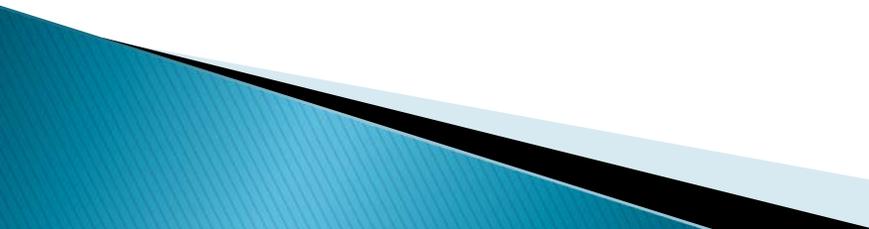
- Only qualified custodians permitted (bank or registered broker-dealer)
 - Custodian must provide quarterly reports directly to the client
 - If qualified custodian is a related party, additional audit requirements including at least one surprise inspection per year
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What Does Registration Entail?

4. Compliance Procedures:

- Appoint a Chief Compliance Officer
- Have a written compliance code that addresses valuation and performance claims

5. Registration and Disclosure:

- File Form ADV
 - Disclose: conflicts of interest, information about operations, and past regulatory and legal violations
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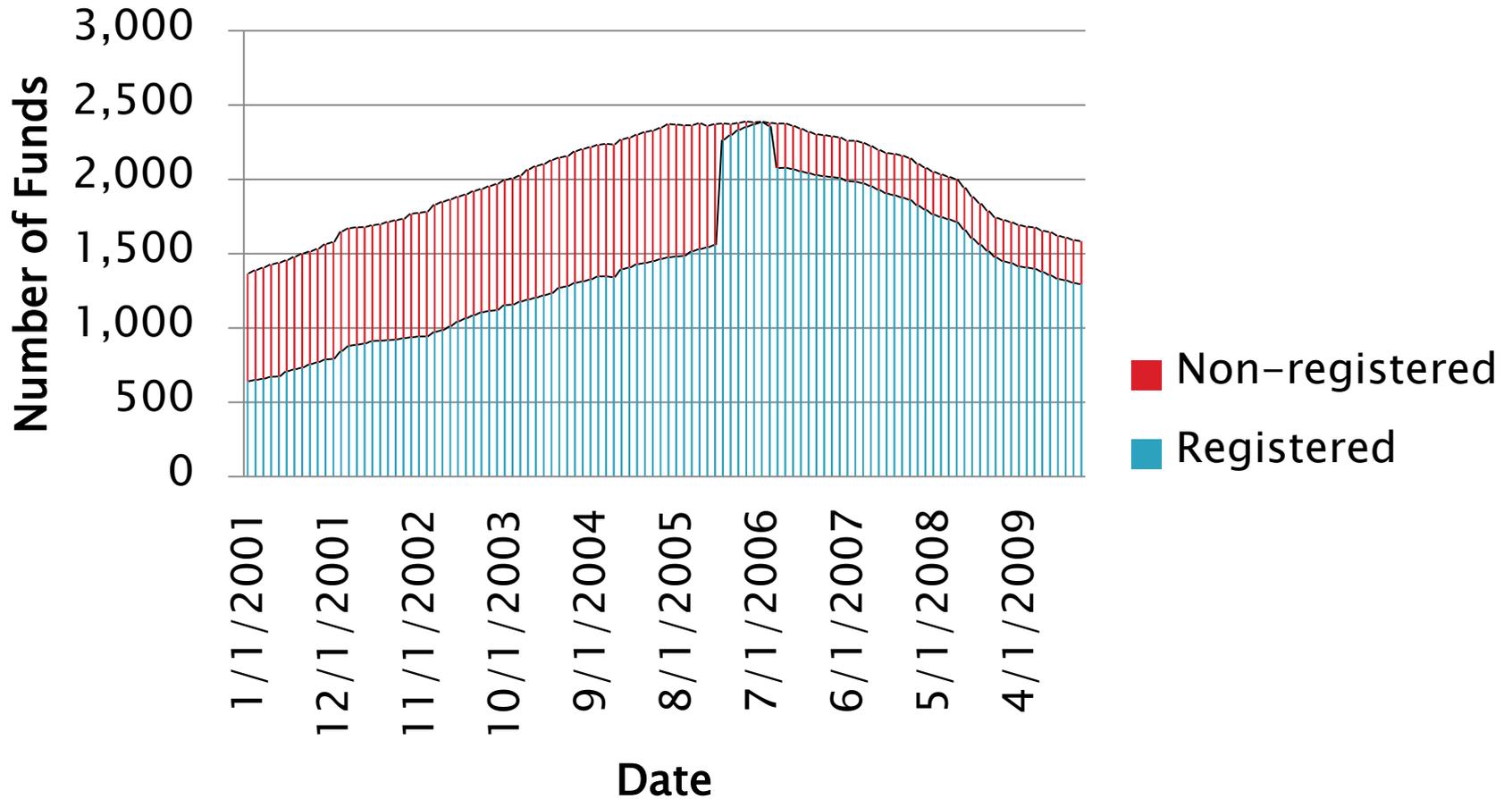
What Does Registration NOT Entail?

- ▶ No restrictions on investment strategies or trading behaviors
 - ▶ No requirement to report holdings under IA-2333
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Data

- ▶ Hedge fund registration: Form ADV filings
- ▶ Hedge fund returns: TASS & BarclayHedge
 - Merge TASS & BarclayHedge following Joenvaara, Kosowski, and Tolonen (2012)
- ▶ Merged data
 - Keep intersection of hedge fund registration and return databases
 - Restrict to US\$ denominated funds
 - Require 24-months of returns (to calculate misreporting flags)

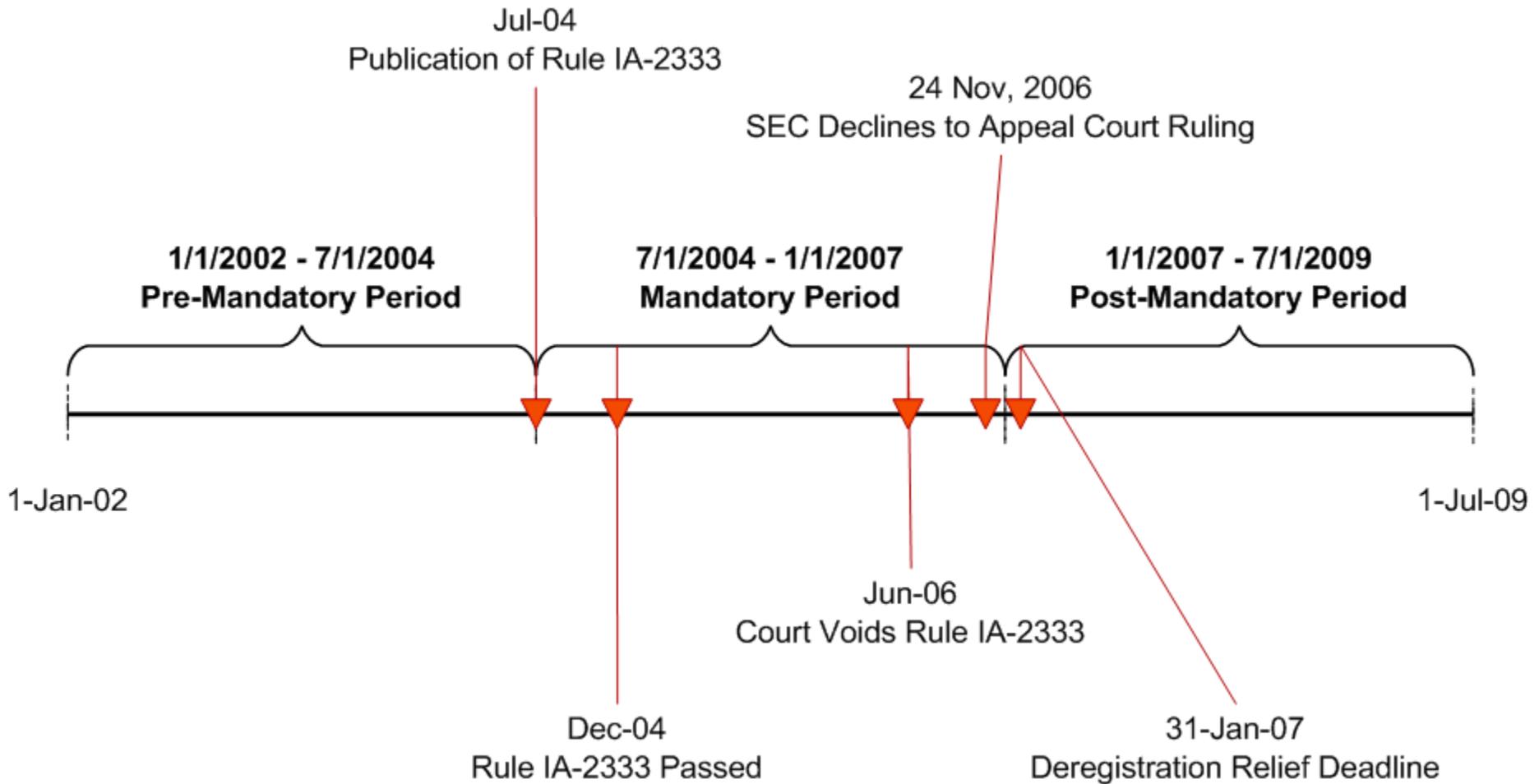
Hedge Funds with Registered Advisors



Which Advisers Register When?

- ▶ Prior to IA-2333, 627 of the 1,022 advisers are registered
 - They are larger, have non-HF investments (mutual/pension funds), tend to be located in US
- ▶ Of the 395 advisers that register in response to IA-2333
 - 276 remain registered after IA-2333 is revoked
 - 119 choose to deregister

Timeline

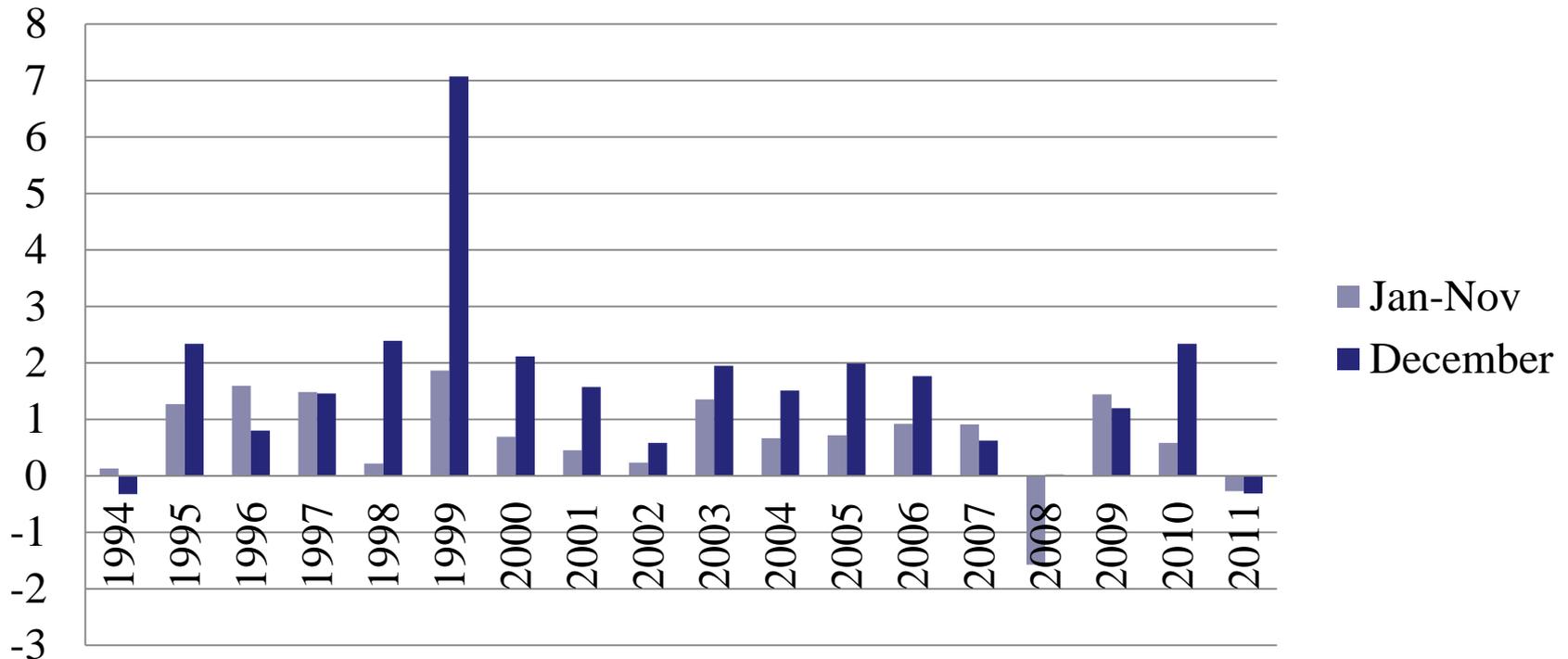


Return Misreporting Flags

- ▶ Main dependent variables are flags for return misreporting
 - ▶ We use flags identified in the existing literature
 - ▶ Prior studies show these flags are highly correlated with fraud and investor lawsuits [Bollen and Pool (2008, 2012)]
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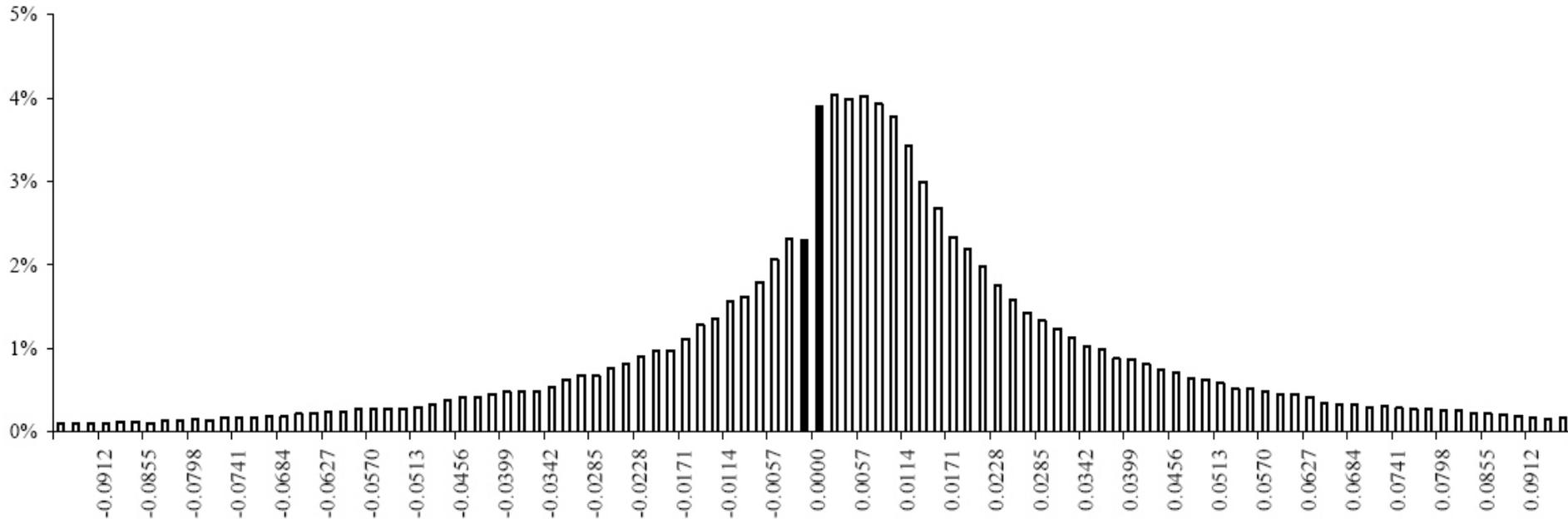
December Return Spike

- ▶ Agarwal, Daniel, and Naik (2011) “*Why is Santa so Kind to Hedge Funds?*”
 - Find a return spike in 11 of the 13 years
 - Also find a risk-adjusted residual spike



Kink (Return Discontinuity at Zero)

- ▶ Bollen and Pool (2009) show that hedge funds have too few slightly negative returns



Low Correlations with Other Assets

- ▶ Low Max R^2 : Find the combination of factors that gives the highest adjusted- R^2 for a hedge fund. If this is in bottom decile, triggers flag
 - ▶ Low Index β : If fund's β on its style index is not significant at the 10% level
 - ▶ Bollen and Pool (2012) show that both flags are significant predictors of fraud
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Any Misreporting Flag

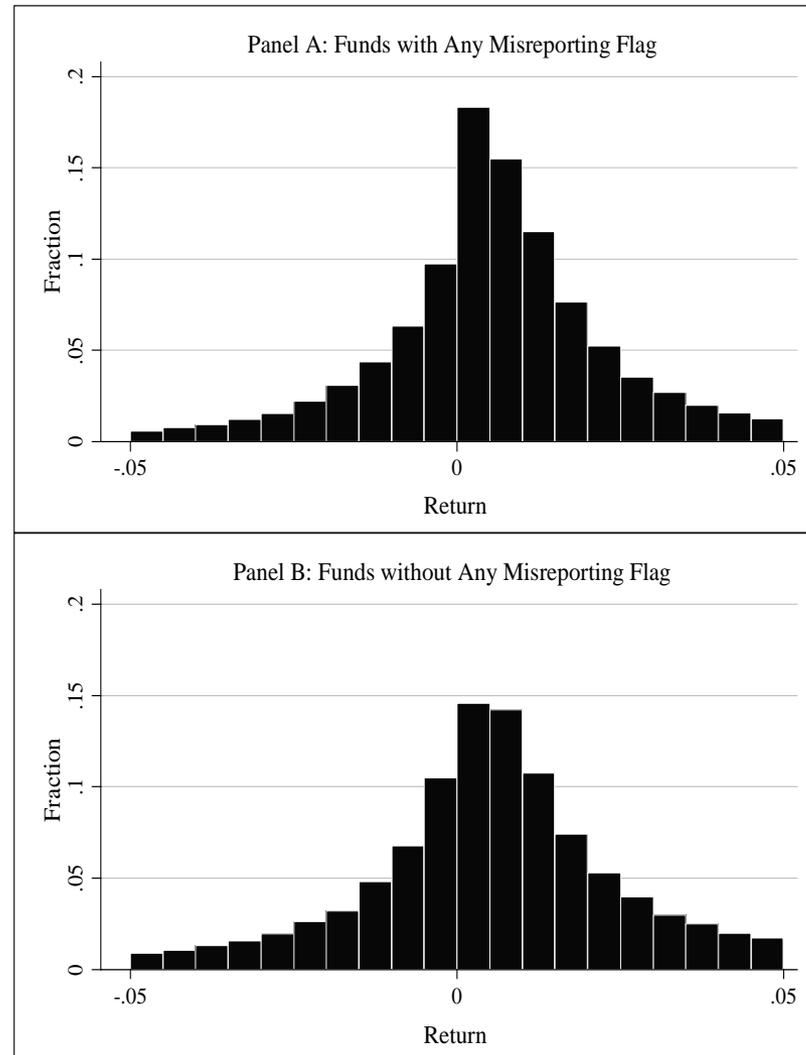
- ▶ Equal to one if the fund triggers any of the five misreporting flags just discussed

Misreporting Flags in the Pre-Mandatory Period

Panel A: All Funds

	IA-2333	Voluntary	Difference
Dec Return	12.9%	9.2	3.7 **
Dec Residual	19.0%	16.1	2.9 *
Kink	12.1%	12.6	-0.5
Low Max R ²	16.4%	10.0	6.4 ***
Low Index β	23.0%	19.7	3.3 *
Any Misreporting Flag	53.4%	48.0	5.4 **

Reported Returns and Misreporting Flags



The Initiation of Rule IA-2333

- ▶ Differences-in-differences: Compare change in misreporting by new registrants with change in misreporting by early registrants

$$Y_{i,t} = \alpha + \gamma_1 \cdot I_n + \beta_1 \cdot I_{t=Mandatory} + \delta_1 \cdot (I_{t=Mandatory} \cdot I_n) + \varphi \cdot X + \varepsilon_{i,t}$$

- ▶ Controls: returns, standard deviation, age, net asset value, advisor's total NAV, advisor country, style-period fixed effects, domicile-period fixed effects
- ▶ Fund fixed effects

Table 4: Rule IA-2333 & Return Misreporting

Any Misreporting Flag		
IA-2333 Fund	0.068 **	
	[2.00]	
IA-2333 × Mandatory Period	-0.073 *	-0.145 ***
	[1.74]	[2.86]
Fund Fixed Effects	No	Yes
Fund Characteristics	Yes	Yes
Style-Period Effects	Yes	Yes
Domicile-Period Effects	Yes	Yes
Observations	3,536	3,536

Table 4: Rule IA-2333 & Return Misreporting

	Dec Return	Dec Residual	Kink	Low Max R ²	Low Index β
IA-2333 Fund	0.030 [1.06]	0.041 [1.55]	0.003 [0.12]	0.067 *** [3.00]	0.040 [1.46]
IA-2333 \times Mandatory Period	-0.069 ** [2.12]	-0.078 ** [2.38]	0.007 [0.27]	-0.074 *** [2.83]	-0.017 [0.52]
Fund Characteristics	Yes	Yes	Yes	Yes	Yes
Style-Period Effects	Yes	Yes	Yes	Yes	Yes
Domicile-Period Effects	Yes	Yes	Yes	Yes	Yes
Observations	3,536	3,536	3,536	3,536	3,536

	Dec Return	Dec Residual	Kink	Low Max R ²	Low Index β
IA-2333 \times Mandatory Period	-0.082 ** [2.20]	-0.095 ** [2.43]	-0.013 [0.41]	-0.078 ** [2.58]	-0.061 * [1.92]

Initiation and Revocation of Rule IA-2333

- ▶ Three periods:
 - Pre-Mandatory: January 2003 – June 2004
 - Mandatory: July 2004 – December 2006
 - Post-Mandatory: January 2007 – June 2009
- ▶ Three groups:
 - Voluntary registrants
 - IA-2333 registrants – Remain registered
 - IA-2333 registrants – Deregister

$$Y_{i,t} = \alpha + \beta_1 \cdot I_{t=Mandatory} + \beta_2 \cdot I_{t=PostMandatory} + \gamma_1 \cdot I_d + \gamma_2 \cdot I_r \\ + \delta_1 \cdot (I_d \cdot I_{t=Mandatory}) + \delta_2 \cdot (I_d \cdot I_{t=PostMandatory}) \\ + \delta_3 \cdot (I_r \cdot I_{t=Mandatory}) + \delta_4 \cdot (I_r \cdot I_{t=PostMandatory}) + \varphi \cdot X + \varepsilon_{i,t}$$

Table 5: Initiation and Revocation of Rule IA-2333

Any Misreporting Flag			
Deregister	0.119 **		
	[2.39]		
Remain	0.038		
	[0.99]		
Deregister × Mandatory Period	-0.153 **	-0.217 ***	
	[2.39]	[2.92]	
Deregister × Post-Mandatory	-0.052	-0.069	
	[0.81]	[0.89]	
Remain × Mandatory Period	-0.036	-0.097 *	
	[0.70]	[1.78]	
Remain × Post-Mandatory	-0.004	-0.041	
	[0.07]	[0.75]	
Fund Fixed Effects	No	Yes	
Other Controls	Yes	Yes	
Observations	5,116	5,116	

Additional Time-Period

- ▶ After Post-Mandatory Period:
 - July 2009 – December 2011
 - Dodd-Frank Act introduced in Congress July 2009: Required hedge fund advisors to register (Act passed in July 2010; became effective January 2011)
 - Dodd-Frank Act requirement should affect the funds that deregistered, but not the other funds
- ▶ Evidence consistent with early findings as again drop in misreporting by funds that deregistered

Other Robustness Tests

- ▶ Use foreign funds that were not required to register as a placebo group
 - No change in return misreporting for foreign funds during the Mandatory period
- ▶ No controls or only a limited subset of controls
 - ▶ Results similar (slightly stronger)

Are the Results Consistent with Plausible Mechanisms?

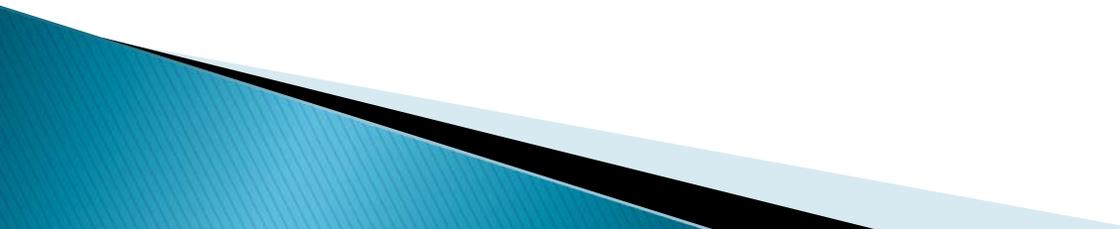
- ▶ Some provisions of Rule IA-2333 should affect certain advisors more than others
- ▶ Find observable characteristics that proxy for sensitivity to certain provisions of Rule IA-2333
- ▶ Triple differences models:
 - Do these characteristics explain variation in the sensitivity of return misreporting to registration/deregistration?
 - Use SEC Regional Office Experience and Distance, Internal Custody, Liquidity, U.S. Advisor, Delta, and Incentive
 - Relation between registration and return misreporting varies with fund characteristics

Flows

- ▶ If registration affects return misreporting, should also affect flows
 1. Levels:
 - Higher inflows following registration
 - Lower inflows following deregistration
 2. Flow-performance sensitivity:
 - After registration → Higher inflows following good returns
 - After registration → Lower outflows following bad returns

 - ▶ Empirically, we find that
 - Level of flows increases following registration
 - Funds suffer large outflows following deregistration
 - Sensitivity of flows to poor performance increases following deregistration
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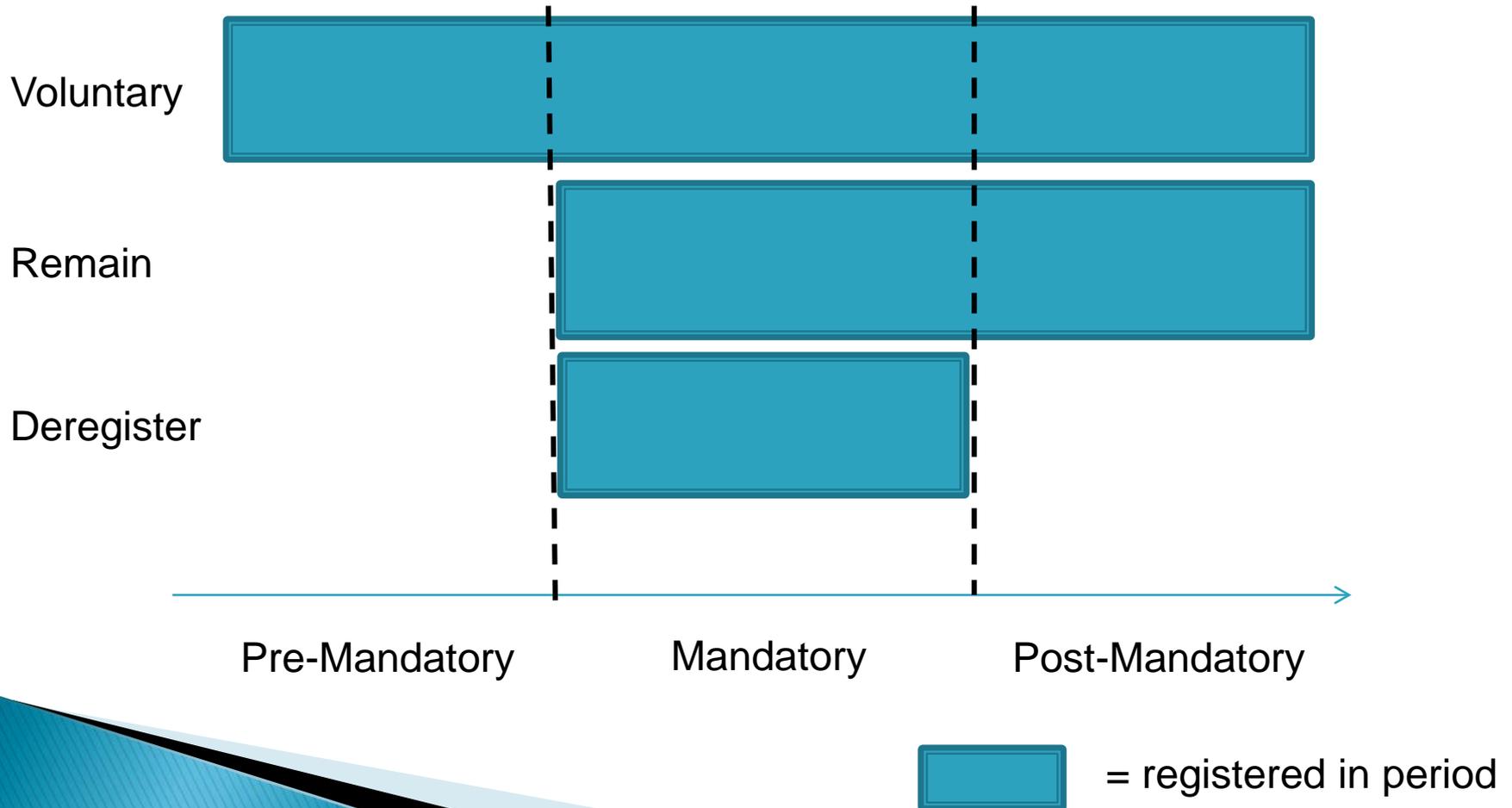
Conclusion

- ▶ We use the initiation and revocation of Rule IA-2333 to test whether regulatory oversight reduces return misreporting by hedge funds
 - ▶ Significant decrease in misreporting following registration
 - ▶ Return misreporting reverts to pre-registration level for those funds that deregister
 - ▶ Evidence is consistent with regulatory oversight reducing return misreporting
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Appendix



Classification of Funds



Which Advisors Were Registered Before Rule IA-2333?

Panel A: All Registrants

	IA-2333	Voluntary	Difference	
Advisors	395	627		
U.S. Advisor	70.4%	89.5	-19.1	***
Advisor Age (years)	4.9	5.5	-0.6	**
Funds per Advisor	2.9	3.7	-0.8	**
Advisor Total AUM (\$mil)	747.3	8,014.9	-7,267.6	***
Internal Custody	69.4%	54.7	14.7	***
SEC Regional Office HF Exp.	22.6%	18.2	4.4	***
SEC Regional Office Distance	59.9	71.2	-11.3	

Which Advisors Deregistered?

Panel B: IA-2333 Funds

	Deregister	Remain	Difference
Advisors	119	276	
U.S. Advisor	68.1%	71.4	-3.3
Advisor Age (years)	5.3	4.7	0.6
Funds per Advisor	2.5	3.1	-0.6
Advisor Total AUM (\$mil)	708.2	764.2	-55.9
Internal Custody	69.7%	69.2	0.5
SEC Regional Office HF Exp.	22.1%	22.9	-0.7
SEC Regional Office Distance	74.4	54.6	19.8

Which Funds Were Registered Before Rule IA-2333?

Panel A: All Funds

	IA-2333	Voluntary	Difference
U.S. Domiciled	35.0%	49.8	-14.8 ***
Fund NAV (\$mil)	103.7	150.6	-46.9 ***
Fund Age (years)	5.2	5.5	-0.2
Return	0.009	0.007	0.002 ***
Standard Deviation	0.029	0.026	0.003 **
Alpha	0.007	0.005	0.002 ***
Liquidity β	0.013	-0.001	0.013 **
Flows	0.027	-0.001	0.027 ***
Incentive Fee	15.9	15.1%	0.8 **
Delta	0.132	0.177	-0.045 *

Which Funds Deregistered?

Panel B: Funds from IA-2333 Registrants

	Deregister	Remain	Difference	
U.S. Domiciled	37.6%	34.0	3.6	
Fund NAV (\$mil)	110.0	101.0	9.0	
Fund Age (years)	5.3	5.2	0.1	
Return	0.012	0.008	0.004	***
Standard Deviation	0.037	0.025	0.012	***
Alpha	0.010	0.007	0.003	***
Liquidity β	0.022	0.009	0.012	
Flows	0.021	0.029	-0.008	
Incentive Fee	17.0%	15.5	1.5	**
Delta	0.142	0.127	0.015	

Table 6: Additional Time-Period

Deregister	0.126 **	
	[2.55]	
Remain	0.037	
	[0.97]	
Deregister × Mandatory	-0.156 **	-0.213 ***
	[2.37]	[2.89]
Deregister × Post-Mandatory	-0.061	-0.095
	[0.95]	[1.27]
Deregister × After Post-Mandatory	-0.130 *	-0.145 *
	[1.85]	[1.66]
Remain × Mandatory	-0.030	-0.086
	[0.59]	[1.57]
Remain × Post-Mandatory	0.001	-0.043
	[0.03]	[0.79]
Remain × After Post-Mandatory	0.027	-0.012
	[0.51]	[0.19]
Other Controls	Yes	Yes
Fund Fixed Effects	No	Yes
Observations	6,348	6,348

Table 7: Panel A

	SEC RO Experienced	SEC RO Distance
(1) IA-2333 × Mandatory	-0.112	-0.092
	[1.32]	[0.81]
(2) IA-2333 × M.P. × Var.	-0.033	-0.146
	[0.32]	[1.08]
Net Effect ((1) +(2))	-0.145 **	-0.237 ***
	[2.38]	[3.11]
Fund Characteristics	Yes	Yes
Style-Period Effects	Yes	Yes
Domicile-Period Effects	Yes	Yes
Fund Fixed Effects	Yes	Yes
Observations	3,446	2,656

Table 7: Panel A

	Internal Custody	High Liquidity β	U.S. Advisor	High Delta	High Incentive
(1) IA-2333 \times Mandatory	-0.033 [0.37]	-0.074 [0.88]	-0.056 [0.63]	-0.081 [0.92]	-0.094 [1.11]
(2) IA-2333 \times M.P. \times Var.	-0.176 [1.61]	-0.157 [1.16]	-0.133 [1.23]	-0.137 [1.07]	-0.079 [0.76]
Net Effect ((1) +(2))	-0.209 *** [3.27]	-0.231 *** [2.74]	-0.189 *** [3.00]	-0.217 ** [2.37]	-0.173 *** [2.77]
Fund Characteristics	Yes	Yes	Yes	Yes	Yes
Style-Period Effects	Yes	Yes	Yes	Yes	Yes
Domicile-Period Effects	Yes	Yes	Yes	Yes	Yes
Fund Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	3,536	3,536	3,536	2,465	3,531

Table 8: Panel A

	Pre-Mandatory	Mandatory	X^2 Test of Difference
IA-2333	-0.011 [0.55]	0.046 ** [2.34]	4.41 **
Low Performance	0.248 *** [5.16]	0.202 *** [5.72]	0.66
Low Performance \times IA-2333	0.031 [0.36]	-0.177 ** [2.41]	3.58 *
Mid Performance	0.085 ** [2.49]	0.038 [1.46]	1.20
Mid Performance \times IA-2333	0.030 [0.41]	0.096 * [1.84]	0.51
High Performance	0.351 *** [6.15]	0.323 *** [7.96]	0.19
High Performance \times IA-2333	0.183 * [1.67]	0.100 [1.20]	0.35
Fund Control Variables	Yes	Yes	
Fund-Quarter Observations	10,602	14,185	

Table 8: Panel B

	Pre-Mandatory	Mandatory	Post-Mandatory	χ^2 Tests of Differences		
	(1)	(2)	(3)	(1) vs. (2)	(1) vs. (3)	(2) vs. (3)
Deregister	0.004 [0.14]	0.043 [1.60]	-0.055 ** [2.36]	1.15	2.22	9.00 ***
Remain	-0.019 [0.84]	0.048 * [1.96]	0.017 [0.76]	3.98 **	1.24	0.96
Low Performance	0.249 *** [5.17]	0.203 *** [5.73]	0.237 *** [6.02]	0.65	0.04	0.42
Low Performance \times Deregister	0.025 [0.19]	-0.201 ** [2.10]	0.184 * [1.90]	2.15	0.85	8.95 ***
Low Performance \times Remain	0.038 [0.39]	-0.171 * [-1.85]	-0.095 [1.10]	2.40	0.97	0.36
Mid Performance	0.085 ** [2.49]	0.038 [1.45]	0.079 *** [2.61]	1.21	0.01	1.12
Mid Performance \times Deregister	-0.085 [0.76]	0.084 [0.91]	-0.139 [1.55]	1.25	0.17	2.92 *
Mid Performance \times Remain	0.071 [0.80]	0.099 * [1.72]	0.080 [1.18]	0.07	0.01	0.05
High Performance	0.351 *** [6.15]	0.322 *** [7.92]	0.348 *** [7.02]	0.19	0.01	0.17
High Performance \times Deregister	0.253 * [1.65]	0.150 [0.93]	0.235 * [1.71]	0.18	0.01	0.17
High Performance \times Remain	0.165 [1.19]	0.083 [0.95]	0.009 [0.10]	0.25	0.80	0.39