Empirical Corporate Finance: Assignment 2

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Table 1: Summary Statistics

	Mean	SD	p50
Total mutual fund ownership	21.6440	14.4925	19.3122
Active ownership	16.0728	11.3559	14.2258
Passive ownership	2.4245	2.6399	1.7094
Unclassified ownership	3.1522	3.3339	2.2577
inddir	64.8964	18.0483	66.6667
PPremoval	0.0440	0.2052	0.0000
ability_call	0.0266	0.1611	0.0000
Dual Class Common Stock	0.1303	0.3367	0.0000
roa, Winsorized fraction .01	0.0308	0.1535	0.0391

Table 2: R2000 and fundholdings

	All mutual funds	Passive	Active	Unclassified
	(1)	(2)	(3)	(4)
R2000	1.810***	0.502***	1.152***	0.155
	(0.398)	(0.0696)	(0.345)	(0.112)
_cons	-4.243	202.1***	-242.6	35.97
	(241.5)	(45.30)	(198.3)	(66.18)
Year FE	Yes	Yes	Yes	Yes
Float control	Yes	Yes	Yes	Yes
of firms	4325	4319	4325	4322
R-squared	0.463	0.562	0.332	0.250

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: R2000 and passive fundholdings

	passive % scaled by its sample SD		
	(1)	(2)	(3)
R2000	0.178***	0.177***	0.190***
	(0.0295)	(0.0278)	(0.0264)
_cons	1.622***	33.86***	76.54***
	(0.516)	(5.884)	(17.16)
Year FE	Yes	Yes	Yes
Float control	Yes	Yes	Yes
of firms	4319	4319	4319
R-squared	0.485	0.557	0.562

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: R2000 and independent director

	independent director %		
	(1)	(2)	(3)
passive_scaled	3.429**	4.262**	3.645***
	(1.345)	(2.004)	(1.346)
Year FE	Yes	Yes	Yes
Float control	Yes	Yes	Yes
of firms	2582	2582	2582
R-squared	-6.323	-8.065	-5.687

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: R2000 and independent director: separate sample years

	Sample years = 1998-2002			Sample years = 2003-2006		
	(1)	(2)	(3)	(4)	(5)	(6)
passive_scaled	70.60***	85.44***	75.76***	93.81	84.97	54.64**
	(20.78)	(23.97)	(20.78)	(133.7)	(68.39)	(22.33)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Float control	Yes	Yes	Yes	Yes	Yes	Yes
of firms	1481	1481	1481	1101	1101	1101
R-squared	-2.770	-3.130	-2.172	-30.13	-15.43	-5.143

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Passive ownership and takeover defense

	Greater ability to call special meeting		
	(1)	(2)	(3)
passive_scaled	0.0646	0.0765	0.0730
	(0.0498)	(0.0579)	(0.0518)
Year FE	Yes	Yes	Yes
Float control	Yes	Yes	Yes
of firms	1727	1727	1727
R-squared	-0.0694	-0.0752	-0.0667

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Passive ownership and dual class share structures

	Indicator for dual class shares		
	(1)	(2)	(3)
passive_scaled	-0.555***	-0.649***	-0.586***
	(0.181)	(0.223)	(0.174)
Year FE	Yes	Yes	Yes
Float control	Yes	Yes	Yes
of firms	1727	1727	1727
R-squared	-1.285	-1.416	-1.092

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Discussion

1. What is the economic model underlying the relationship between passive ownership and governance?

   Answer: The relationship between passive ownership and corporate governance is estimated using IV, and the underlying assumption is that, after controlling for firm's market capitalization (the authors use third order polynomials to provide sufficient control), the inclusion in the Russell 2000 index of a firm doesn't affect the corporate governance output, except the impact of passive fund ownership.

2. In the specific setting of this paper, what is the endogeneity concern that the authors face? How might this concern bias the estimation in a setting that is not endogeneity-proof? You can address this issue using formulas as in basic econometrics textbooks. Explain what are the two conditions that a valid IV should satisfy and how the authors propose to deal with these two conditions.

   Answer: The endogeneity problem is: the passive fund ownership may be correlated with the error term in regressions (i.e, unobserved factors which affect the corporate governance results), contaminating the estimated effect of passive fund ownership. The two conditions for a valid IV is exogeneity and relatedness condition: $E(XZ) \neq 0$ and $E(Z\epsilon) = 0$. With the assumption that conditional on the market capitalization, the difference of corporate governance between the firms at bottom Russell 1000 and top Russell 2000 is purely caused by the passive fund holdings, we have the two conditions: (1) `r2000` is independent with unobservables; (2) `r2000` is related with passive fund ownership.

3. What are the economic rationale behind using the inclusion into Russell-1000 or Russell-2000 indices as one of the determinants of ownership structure of firms?

   Answer: Since Russell-1000 firms are larger, and attract more attention on the market, it is invested more by the passive mutual funds. What's more, the change from bottom `r1000` to top `r2000` will increase the firm's importance to passive funds. By selecting the 500 firms around the 1000/2000 cutoff, the authors tried to control the unobservables and make the difference of firm characteristics within the sample as small as possible.

4. How do Table 2 and Table 3 help to justify this rationale?

   Answer: In the paper, Table 2 shows that the passive fund ownership contributes the most to the relationship between `r2000` inclusion and fund ownership, meaning that only passive fund holdings rely heavily on the index benchmark. Table 3 shows that the relationship between `r2000` and passive holdings is robust to the polynomial order.

5. How does the econometric setup in this paper compare to other related recent work?

   Answer: For the paper of Schmidt and Fahlerbrach, as well as Crane, Michenaud, and Weston, they used the same dataset (Russell and Thomson Reuters S12) as the paper we're replicating, and the advantage of these datasets is: more precise identification on the passive funds affected by the index reconstitution. The change of constitution of Russell index provides exogenous variation of the institutional ownership.

   The identification of the effect of passive ownership on corporate governance is based on this variation. The problem of this method is, the IV assumption could be damaged by the strategic change of corporate governance in response to the firm's position in Russell index. Also, there may be reverse causality problem: the changing corporate governance may affect future business outcome, thus market capitalization of firms, leading to the change of their positions in Russell index and the passive fund holdings.