BA952: Assignment 2

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1 Summary Statistics

Table 1: Summary Statistics

	Obs.	Mean	Median	SD
Total mutual fund ownership %	4377	22.3	21.9	11.8
Passive ownership %	4377	1.91	1.7	1.36
Active ownership %	4377	20	19.4	11.2
Unclassified ownership %	4377	.387	.244	.474
Independent director %	2660	65	66.7	18
Poison pill removal	1754	.0143	0	.119
Greater ability to call special meeting	1754	.0057	0	.0753
Indicator for dual class shares	1754	.128	0	.334
Mngt. proposal support %	1359	95.9	97.5	5.69
Shareholder gov. proposal support %	108	34.2	26.9	24.9
ROA	3409	.0326	.0386	.113

Even though with slightly fewer observations, I still get almost the same summary statistics as the one in the paper. There are some notable differences from the original summary statistics centered on passive ownership and unclassified ownership. This is probably due to the differences in the detailed process of treating missing values when cleaning data.

According to the paper, flag a fund as passively managed if its fund name includes a string that identifies it as an index fund or if the CRSP Mutual Fund Database classifies the fund as an index fund. We then classify all other mutual funds that can be matched to the CRSP mutual fund data as actively managed, and funds that cannot be matched are left unclassified. However, there are funds in the S12 mutual fund holdings data that can be matched to the CRSP Mutual Fund Database but both fund names and indicator for index fund would be missing in the CRSP Mutual Fund Database. Thus, I treat these observations as active ownership rather than unclassified. But it might be the case that the authors did otherwise.

2 First-stage estimation

Table 2: Impact of index assignment on mutual fund ownership.

Dependent variable =	Percent of firm's common shares held by:			
	(1)	(2)	(3)	(4)
	All mutual funds	Passive	Active	Unclassified
R2000	1.416**	0.349***	1.034*	0.0326
	(0.528)	(0.0457)	(0.524)	(0.0195)
Bandwidth	250	250	250	250
Polynomial order, N	3	3	3	3
Float control	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
# of firms	1719	1719	1719	1719
Observations	4365	4365	4365	4365
R-squared	0.223	0.589	0.161	0.142

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In terms of the first stage regression, I get similar results to the ones in the paper, which suggests that the relevance assumption of the IV estimation strategy holds. The relevance performs even better in this case, and the R squared also has a bigger value. Since we are going to use passive ownership percentage as the main variable of interest, we specifically invested the relevance between passive ownership percentage and the instrument in Table 3, which shows desirable significance.

3 How passive investors affect firms' corporate governance

3.1 Independent directors

However, as is shown in Table 4, the stability when we add third order polynomial is highly doubted. Note that I was able to take into account less firms when setting independent director as the dependent variable, and the IV regression coefficient becomes insignificant. To be honest, it doesn't make very much sense to me why the author would make up the polynomials of log form of the market cap as additional controls. Note that all of my IV regressions results presented here in this file use the package 'ivreghdfe'. I also tested using the package 'ivreg2', which is subject to estimated covariance matrix of moment conditions not being of full rank. The two packages produce results that are mostly similar in terms of coefficient signs and significance but slightly difference in the absolute value of the coefficient. Table 4 of 'ivreg2' version presents all highly

Table 3: First-stage estimation for ownership by passively managed funds.

Dependent variable =	Passive % scaled by its sample standard deviation		
	(1)	(2)	(3)
R2000	0.287***	0.285***	0.257***
	(0.0307)	(0.0304)	(0.0337)
Bandwidth	250	250	250
Polynomial order, N	1	2	3
Float control	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
# of firms	1719	1719	1719
Observations	4365	4365	4365
R-squared	0.587	0.588	0.589

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

significant results though.

Table 5 show a positive relationship between passive ownership and board independece. However, similar to the results in the paper, the significance of this relationship declined in the period 2003 - 2006. Unfortunately, in my results, the sample years 2003 - 2006 exhibit insignificance. Regardless of significance, I believe the over-clustering might be very problematic, as the number of observations is only about twice the amount of

3.2 Takeover defenses

In Table 6, I was only able to show that shareholders' greater ability to call special meeting is associated with passive ownership. The coefficients of poison pill removal is positive, as in the paper, but not significant.

3.3 Equal voting rights and dual class share structures

The results of Table 7 are aligned with the results in the paper. All three regressions have negative and significant coefficients, confirming a negative relationship between dual class structure adoption and ownership by passive investors that suggests passive ownership strengthen board governance.

Unfortunately, none of the coefficients in my results are significant. But all of the coefficients are positive, same as the signs in the paper. The positivity of the coefficients confirms that passive ownership increase the shareholder governance and decrease management power through the channel of proposal voting activities.

Table 4: Ownership by passive investors and board independence.

Dependent variable =	Independent director %		
	(1)	(2)	(3)
Passive %	0.520*	0.642**	0.260
	(0.240)	(0.221)	(0.307)
Bandwidth	250	250	250
Polynomial order, N	1	2	3
Float control	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
# of firms	1038	1038	1038
Observations	2655	2655	2655

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4 Conclusion

Overall, the results that I produced align with the results in the paper. Due to the limitation of data and other possible factors, I don't always get the same significance for the coefficient as in the paper, but the signs of the variables are all the same as we anticipated, showing a positive effect in favor of shareholder governance brought by passive ownership through mutual funds.

Table 5: Passive ownership and board independence, pre- versus post-2002 rule change.

Dependent variable =	Independent director %					
	Sample years=1998–2002			Sample years=2003–2006		
	(1)	(2)	(3)	(4)	(5)	(6)
Passive %	0.445	0.583**	0.256	1.255	1.411	0.936
	(0.238)	(0.216)	(0.267)	(1.284)	(1.365)	(1.154)
Bandwidth	250	250	250	250	250	250
Polynomial order, N	1	2	3	1	2	3
Float control	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
# of firms	822	822	822	541	541	541
Observations	1504	1504	1504	1151	1151	1151

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6: Ownership by passive investors and takeover defenses.

Dependent variable =	Poison pill removal			Greater ability to call special meeting		
	(1)	(2)	(3)	(4)	(5)	(6)
Passive %	0.266	0.278	0.381	0.698*	0.693*	1.019*
	(0.259)	(0.263)	(0.362)	(0.284)	(0.286)	(0.472)
Bandwidth	250	250	250	250	250	250
Polynomial order, N	1	2	3	1	2	3
Float control	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
# of firms	1012	1012	1012	1012	1012	1012
Observations	1751	1751	1751	1751	1751	1751

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7: Ownership by passive investors and dual class share structures.

Dependent variable =	Indicator for dual class shares %		
	(1)	(2)	(3)
Passive %	-1.868***	-1.952***	-2.625**
	(0.509)	(0.503)	(0.875)
Bandwidth	250	250	250
Polynomial order, N	1	2	3
Float control	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
# of firms	1012	1012	1012
Observations	1751	1751	1751

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8: Ownership by passive investors and shareholder support for proposals.

Dependent variable =	Management proposal support %			Governance proposal support %		
	(1)	(2)	(3)	(4)	(5)	(6)
Passive %	-0.579	-0.594	-0.872	0.584	0.551	0.636
	(0.324)	(0.313)	(0.567)	(0.589)	(0.500)	(0.540)
Bandwidth	250	250	250	250	250	250
Polynomial order, N	1	2	3	1	2	3
Float control	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
# of firms	664	664	664	69	69	69
Observations	1359	1359	1359	108	108	108

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$