

Review of “Passive investors, not passive owners”

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I. Introduction

1. Passive institutional investors

There are more and more research focusing on the passive investors influence on the firms’ governance structure. Passive investing aims at maximizing returns over the long run by keeping the minimized buying and selling, so that avoids the fees and the drag on the performance that potentially happen from frequent trading, especially considering liquidity risk and execution costs (**bid-ask spread, market impact**). In the book “inefficient efficiency” by Pederson, investors concentrating on macro strategies such as Harding, can be considered as passive in this sense, in that they do not aim at making quick profit or playing with a huge great bet, but rather building slow steady beneficial portfolios in an intermediate or long run. The momentum strategies that by Debondt and Thaler (1985) and Jagadeesh and Titman (1993) also are based on intermediate and long run. Intuitively, passive investors behavior are much wiser in the long run and not tend to be the opportunists, they put much more focus on the firms’ management and health, and so their behaviors should associate with firms long term performance. The impact can be positive or negative, which is controversial generally speaking.

2. This literature

Actually, it does. This is one important and fascinating point by this paper. Differently from my surmise and experience, and the arguments both for and against passive investors’ influence on a firm, the authors give additional powerful evidence about this which I will talk about in details later. This literature makes a novel contribution to the study of the impact of passive institutional investors on corporate governance and performance, using various data sets and previous key results both in methodology and proxy findings.

Below is a summary of the passive investors role in affecting a firm

Table 1. Previous debates on whether Passive investors weaken firms’ governance and performance or not.

Passive investors weaken firms' governance and performance	
For	Against
1.Lack an incentive to monitor.	1.Monitor managers from overall market performance (Del Guercio and Hawkins, 1999), likely being engaged owners (Romano, 1993; Carleton, Nelson, and Weisbach, 1998).
2.Lack a traditional lever	2.Wield influence more (Del Guercio and Hawkins, 1999).
3.Insufficient resources.	3.Monitor firms' compliance from governance practices (Black 1992, 1998)
to research each one.	

Besides the previous papers by professor Brav and his peers we discussed in class, an opposite thinking on how important passive investors are to a firm can be the feedback effect (A. Edman, I. Goldstein, Wei Jiang 2015). Many active investors make the use of feedback effect to influence companies' decision, and even manipulate prices to benefit in short-term frequent trades. A good example is the Coca-Cola's acquisition of Quaker Oats was withdrawn after the negative response from the market, and HP's stock plunge and rebounding back. Similarly as that in U.S., the firms that have long steady shareholders, or passive investors, have steady ability in benefiting, such as Tongrentang, Haier and Lenovo. A steady existence of passive investors thus decrease the sensitivity of a firm's value to active market from this perspective.

II. Challenging points of this study

1.Endogeneity – 2SLS

The core relation to be explored by this literature is

$$\text{passive investors} \sim \text{corporate governance and performance}$$

The existence of noise factors makes the target challenging, considering:

- (1) firms' access to capital
- (2) firms' investment opportunities
- (3) ownership by active investors

This paper mainly aims at estimating the impact of passive institutional investors impact on the corporate governance and performance. There are mainly four variables to be considered as measures of corporate governance, based on the Vanguard CEO's speech previously. The ROA and Tobin's Q are two concerns about corporate performance.

Below are the variables the authors use

Table 2. Variables to be considered for identification issue

Dependent Variables (Y)		
Targets	Variables	Proxies
Performance		1.return on assets
		2.Tobin's Q
Governance	1.Board independence	share of directors on a firm's board that are independent.
	2.Removal of takeover defenses	1.likelihood of removing a poison pill 2.likelihood of reducing restrictions on shareholders' ability to call special meetings
	3.Unequal voting rights	Likelihood of having a dual class share structure
	4.Hedge fund activism	likelihood of a firm experiencing a hedge fund activism event or takeover event
	Level or composition of managerial pay	
Independent Variables		
Passive institutional investors' role	Passive ownership (X)	

The authors use the interest as the proxy for the firms' performance (I), and let the be the independent variable (X). Obviously, X and Y have severe endogeneity problem. To overcome this issue, the authors use the inclusion of Russel 2000 (Z) as their IV, instead of actual weighs or rankings (Chang, Hong, and Liskovich (2015) and Mullins (2014)), based on the following facts

- When we take passive hedge funds as the proxy for passive institutional investors, due to their value-weighted benchmarking, whether the firms enter R2000 or not will affect the ownership significantly. Thus, X is determined by Z.
- The inclusion of Russell 2000 (Z) is independent from the interest (I), board independence, removal of takeover defenses and having unequal voting rights.

So that the 2SLS can be constructed as follows

$$Y = \beta_0 + \beta_1 X + \epsilon \quad (1)$$

$$X = \alpha_0 + \alpha_1 Z + \delta \quad (2)$$

Specifically, to examine the interest on passive ownership, (1) can be rewrite as

$$Y_{it} = \alpha + \beta \text{Passive}\%_{it} + \sum_{n=1}^N \theta_n (\ln(\text{Mktcap}_{it}))^n + \gamma \ln(\text{Float})_{it} + \delta_t + \epsilon_{it} \quad (3)$$

Y_{it} – standardized outcome of interest for firm in reconstituition year t.

Passive%_{it} – standardized firm's share held by passive mutual funds.

Active% – standardized firm's share held by active mutual funds.

Unclassified – standardized firm's share held by unclassified mutual funds.

β – standardized marginal increase of interest.

Mktcap_{it} – CRSP market cap of stock i in year t.

N - is the polynomial order we use to control for market cap.

Float_{it} – float adjusted market cap calculated by Russell.

δ_t – reconstitution year fixed effect.

ϵ_{it} – s. e.

The first stage, (2), then should be

$$Passive\%_{it} = \eta + \lambda R2000\%_{it} + \sum_{n=1}^N \chi_n (\ln(Mktcap_{it}))^n + \sigma \ln(Float)_{it} + \delta_t + u_{it} \quad (4)$$

Where $R2000\%_{it}$ – dummy variable equal to one if stock i is in the Russell 2000 index for reconstitution year t.

Why do they do the regression like this? They control for float-adjusted market capitalization because it is used by Russell to compute portfolio weights within each index and could be related to a firm's stock liquidity, which might affect firms' governance and other corporate outcomes (Back, Li, and Ljungqvist, 2014; Edmans, Fang, and Zur, 2013). We also include reconstitution year fixed effects, δ_t , to ensure that the estimates are identified using within-year variation in ownership and are not driven by the aggregate upward trend in ownership by passive investors. This estimation can be viewed as one that makes use of a threshold event in a non-Regression Discontinuity (RD) estimation, as discussed in Bakke and Whited (2012).

One potential issue of this literature is whether the IV is related to the outcome of interest. In the following replicate works, they take the dependent variables as board independence, takeover defense (ability for shareholders to call a special meeting, another important aspect of governance), and equal voting rights (indicator that equals one if the firm has a dual class share structure, and zero otherwise, as determined by ISS). Failure to argue the independence between the IV and those variables will lead to bias estimation.

Previously, a good recap is Cremer's work on the short-term investors impact on firms' short term valuation and R&D expenses. He also adopts the Russell 2000 inclusion as the IV, and considers its randomness given its independence from the valuation and R&D cost. He argues that, the stock duration is endogenous since it is associated with unobserved firm fundamentals, and the instrument Russell 2000 entries, while correlated with stock duration, does not depend on and thus randomizes fundamentals. We are concerned about this argument of IV exogeneity, since it seems easy to come up with another story of index entry. Russell 2000 index entries bring into

firms a surge of demand from index-tracking funds, and for a small cap firm yet to be included into Russell 2000, that demand is very attractive. Thus, in anticipation of such demand surge, the firms may choose to cut R&D expenditure in order to get an earnings surprise, a short-term valuation boost and the opportunity to enter Russell 2000. This may be best framed as an omitted variable problem: unobserved firm management affects both the index entry and the interested outcomes, and thus the index entry and the residuals (which includes unobserved firm management, since it affects outcomes) are not orthogonal. This can also be interpreted from an equivalent (un-) randomized experiment perspective: firms with difference in Russell 2000 entries may have different fundamentals, and thus one cannot directly compare their outcomes.

Several pieces of evidence may be supportive to this argument. First, according to CPS, when stocks enter the Russell 2000 index, they experience a price increase. CPS uses this to support the relevance of index entry as an instrument, but this also supports the view that there is incentive for firms' management to try to get into the index. Second, Russell 2000 constituents are small cap firms, which need the index tracking demand more strongly than larger firms and have more incentives to try to get into the index.

Besides, the graphs in this paper show unexplained trend of valuation increase right before a firm's entering Russell 1000, and leave severe endogenous issue. In details, there is a conflict in the rationale in the IV as follows

Story in this paper	Alternative Story
short term investors coming in	firms anticipating a price effect after R2000 inclusion, cut R&D
→ R&D cut under pressure	→ earnings surprise generated
→ earnings surprise generated	→ short term valuation boost
→ short term valuation boost	→ getting into R2000
→ short term investors get reward	→ enjoying price effect

Similarly, the authors here need to justify the independence first to avoid the same misuse of Russell inclusion. This is different from using S&P 500 inclusion events, recently used in Aghion, van Reenen, and Zingales (2013). The choice of index entries as instruments is not new. Other index entries have been used as instruments, e.g. S&P 500 entries used as an instrument of institutional ownership by Philippe, Reneen and Zingales (2013). However, We argue that the index inclusion between S&P 500 and Russell 2000 are different. S&P 500 is constructed by selection of a committee, and it is difficult, if even possible, for a firm to apply short-term active management to get into the index. Russell 2000, however, is a purely capitalization based index, and a firm knows when it may possibly get into the index and when short-term active management may work. Therefore, the index entry of Russell 2000 does not enjoy the exogeneity of the index entry of S&P 500.

2. Judgement for passive or active

Based on the work by Busse and Tong (2012) and Iliev and Lowry (2015).

3. Placebo Test (no replicate work)

To measure Russell 2000 inclusion in a more general and controlled way, they take the following different factors into account

Table 3. Russell 2000 inclusion generality concerns

Russell 2000 inclusion generality concerns	1.functional form to control for firms' end-of-May 2.market cap 3.number of stocks investigated around the cutoff 4.firms' float-adjusted market cap 5.firms' industry 6.firms' past stock returns, 7.whether firms recently switched indexes
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4. Data resources and cleaning

Besides table A.2, here is a summary of data sources, the targets to be found from the data, the manipulations on the data and the main issues with the data.

Table 4. Data sources, the targets to be found from the data, the manipulations on the data and the main issues with the data.

Data Sources	S12 mutual fund holdings data & Thomson Reuters	Thomson Reuters data & CRSP mutual fund data (MFLINKS table)
Targets	Mmutual fund holdings (a percent of its market cap)	Passive fund names
Issues	<i>Unbalance data before and after 2004</i>	<i>Strings identification: Index, Idx, Indx, Ind_ Russell, S & P, S and P, S&P, SandP, SP, DOW, Dow, DJ, MSCI, Bloomberg, KBW, NASDAQ, NYSE, STOXX, FTSE, Wilshire, Morningstar, 100, 400, 500, 600, 900, 1000, 1500, 2000, and 5000</i>
Operations	1. populate missing holdings by assuming that the holdings from the earlier date stay constant, Use CRSP to compute imputed dollar values of these holdings. 2. calculate the total market cap of each stock using the CRSP monthly file as the sum of shares outstanding multiplied by price for each class of common stock associated with a firm	1. 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. 2. all other mutual funds that can be matched to the CRSP mutual fund data as actively managed, funds that cannot be matched are left unclassified 3. compute the percentage of each stock's market capitalization that is owned by passive, active, and unclassified mutual funds at the end of each quarter.

Table 4 (continued).

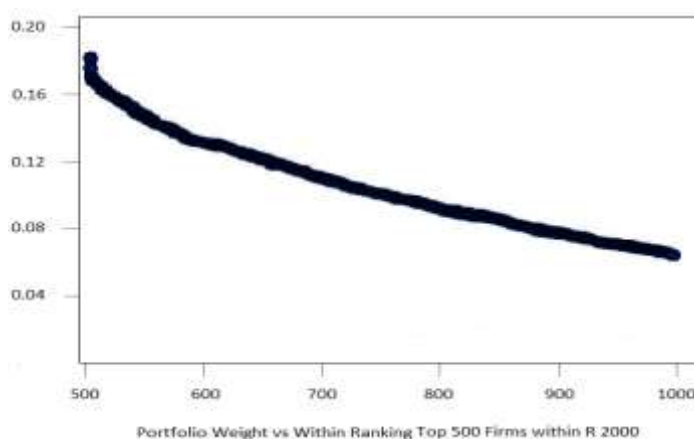
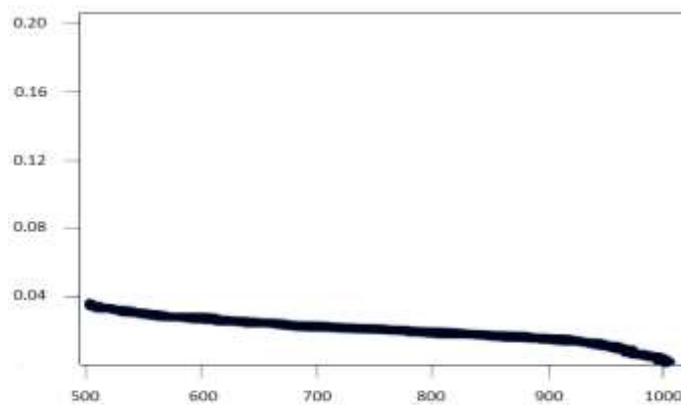
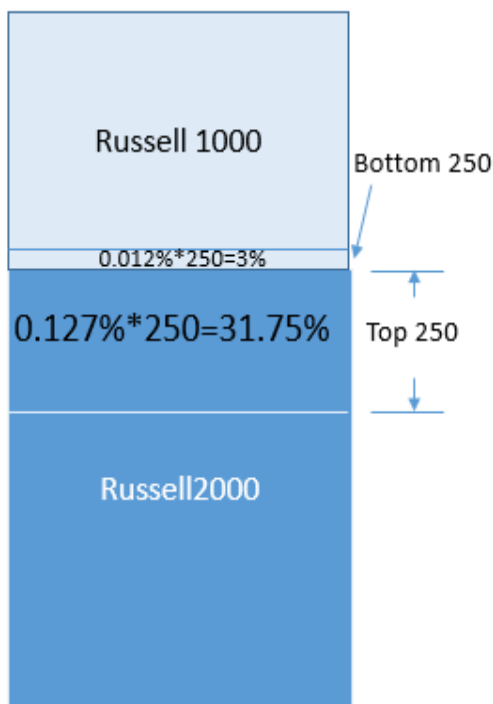
Russell Data	Institutional Shareholder Services (1.classification of a director's independence;
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	2.governance data set; 3.voting results database)
Russell 2000 inclusion	Governance and voting variables
<i>1. 1998(first year with its proprietary, float-adjusted market capitalization, which is used to determine the rank) to 2006 (implemented a new methodology no longer necessarily reflect stocks by caps)</i> <i>2. End-of-May total market cap values.</i>	<i>Available for alternating years in the sample, except for 1998 when there is a three-year lag</i>
1. Restrict sample to stocks in the 250 bandwidth around the cutoff using the end-of-June Russell-assigned portfolio weights for stocks within each index (midcap and small cap) 2. Each stock's weight in the index is then determined using its end-of-June float-adjusted market cap, which only includes the value of shares that are available to the public.	1.calculate the percentage of independent directors on the boards of each firm for each year in the sample from the director data set. 2. create indicator variables for whether a firm removes a takeover defense or has a dual class share structure in a given year, and construct other variables related to shareholder proposals and voting. 3. calculate the average percentage of shares that vote in support of management proposals at annual meetings and in support of shareholder-initiated governance proposals for each firm between reconstitutions of the Russell indexes between July of year t and June of year $t+1$

Based on the Russell data, we can have a portfolio weights distribution for the top part of Russell 2000 and the bottom part of Russell 1000, as follows,

Figure 1 (Replicate of Figure 3 and the distribution of top and bottom 250 of Russell 2000 and Russell 1000 index).

The Russell 1000 is about 10.8 times larger in total market cap than the Russell 2000 from 1998 to 2006. This fatal property of. In This figure we can find the distribution of portfolio weights of the bottom 500 firms in the Russell 1000 index and the top 500 firms in the Russell 2000 index for the end-of-June 2006. The fatal property of index assignment for passive ownership here is the fundamental of the intuition behind the constructing the IV for this literature.



Meanwhile, we have the replicate of the Table 1 as follows, which give the key statistics summary for the following work, based on the following variable definitions

Refer Table A.1 of the literature

Variable definitions.

Variable name	Source	Definition
<i>R2000</i>	Russell investments	Indicator equal to one if firm is in the Russell 2000
<i>Mutual fund ownership %</i>	Thomson Reuters S12 files	% of shares outstanding held by mutual funds in September of year t
<i>Passive %</i>	Thomson Reuters S12 files	% of shares outstanding held in September of year t by passively managed funds
<i>Active %</i>	Thomson Reuters S12 files	% of shares outstanding held in September of year t by actively managed funds
<i>Unclassified %</i>	Thomson Reuters S12 files	% of shares outstanding held in September of year t by unclassified funds
<i>Independent director %</i>	Riskmetrics (Directors)	% of board seats held by directors classified as independent by Riskmetrics
<i>Poison pill removal</i>	Shark Repellent (FactSet)	Indicator equal to one if poison pill is withdrawn or allowed to expire at time t
<i>Greater ability to call spec. meet.</i>	Riskmetrics (Governance)	Indicator equal to one if shareholders better able to call a special meeting at time t
<i>Indicator for dual class shares</i>	Riskmetrics (Governance)	Indicator equal to one if a firm has dual class shares at time t
<i>Mngt. proposal support %</i>	Riskmetrics (Voting Results)	Percentage of "Yes" votes for management proposals
<i>Shareholder gov. prop. support %</i>	Riskmetrics (Voting Results)	Percentage of "Yes" votes for shareholder governance proposals
<i>Indicator for hedge fund activism</i>	Brav, Jiang, and Kim (2010)	Indicator equal to one if a firm has an activism event at time t
<i>ROA</i>	Compustat	Net income (ni) / total assets (at)
<i>Institutional ownership %</i>	Thomson Reuters 13F files	% of shares outstanding held by institutional investors in September of year t
<i>Quasi-index %</i>	Brian Bushee website	% of shares outstanding held by quasi-indexer institutions in September of year t
<i>Dedicated %</i>	Brian Bushee website	% of shares outstanding held by dedicated institutions in September of year t
<i>Transient %</i>	Brian Bushee website	% of shares outstanding held by transient institutions in September of year t

Table 5 (Replicate of original Table 1).

Summary statistics. This table reports summary statistics of the key variables for the main sample: firms in the 250 bandwidth around the cutoff between the Russell 1000 and 2000 indexes from 1998–2006., except Poison pill removal, Mngt. proposal support, Shareholder gov. proposal support and Indicator for hedge fund activism

	Obs	Mean	Median	SD
<i>Total mutual fund ownership %</i>	4342	25.3	25.0	13.1
<i>Passive ownership %</i>	4342	3.1	2.7	2.4
<i>Active ownership %</i>	4342	18.9	18.0	11.0
<i>Unclassified ownership %</i>	4342	3.2	2.5	2.9
<i>Independent director %</i>	2792	65.0	66.9	18.4
<i>Greater ability to call special meeting</i>	1775	0.0063	0	0.084
<i>Indicator for dual class shares</i>	1775	0.13	0	0.34
<i>ROA</i>	4208	0.031	0.042	0.11

Compared with the original result, as follows

	Obs.	Mean	Median	SD
<i>Total mutual fund ownership %</i>	4,415	25.2	25.0	12.9
<i>Passive ownership %</i>	4,415	3.0	2.6	2.3
<i>Active ownership %</i>	4,415	18.9	18.1	10.9
<i>Unclassified ownership %</i>	4,415	3.2	2.5	2.9
<i>Independent director %</i>	2,871	65.1	66.7	18.1
<i>Poison pill removal</i>	2,957	0.04	0	0.19
<i>Greater ability to call special meeting</i>	1,858	0.006	0	0.08
<i>Indicator for dual class shares</i>	1,858	0.13	0	0.33
<i>Mngt. proposal support %</i>	1,288	84.7	87.2	11.9
<i>Shareholder gov. proposal support %</i>	202	36.3	31.5	22.8
<i>Indicator for hedge fund activism</i>	4,415	0.016	0	0.12
<i>ROA</i>	4,291	0.03	0.04	0.11

The summary statistics are very similar. The differences are too small to affect the general conclusion, mainly due to the merged data sets are a little bit smaller than the original numbers by the authors.

III. Main empirical finding with replicate examine

1. Ownership vs IV.

Together with (3), we run four first-stage for difference type of ownership to examine which one is the most significant factor on the Russell inclusion

$$\begin{aligned}
 MF\%_{it} &= \eta_p + \lambda_p R2000\%_{it} + \sum_{n=1}^N \chi_n (\ln(Mktcap_{it}))^n + \sigma_p \ln(Float)_{it} + \delta_t + u_{it} \\
 Passive\%_{it} &= \eta_p + \lambda_p R2000\%_{it} + \sum_{n=1}^N \chi_n (\ln(Mktcap_{it}))^n + \sigma_p \ln(Float)_{it} + \delta_t + u_{it} \\
 Active\%_{it} &= \eta_a + \lambda_a R2000\%_{it} + \sum_{n=1}^N \chi_n (\ln(Mktcap_{it}))^n + \sigma_a \ln(Float)_{it} + \delta_t + u_{it} \\
 Uncf\% &= \eta_i + \lambda_u R2000\%_{it} + \sum_{n=1}^N \chi_n (\ln(Mktcap_{it}))^n + \sigma_u \ln(Float)_{it} + \delta_t + u_{it}
 \end{aligned} \tag{5}$$

Note the Ownership% here is not standardized. We just want to examine if there is significant relationship between any type of investors and the inclusion of Russell 2000. The first stage is as follows, which is the replicate of Table 2.

Table 6 (Replicate of original Table 2).

This table reports estimates of a regression of mutual fund holdings on an indicator for membership in the Russell 2000 index plus additional controls. The sample consists of the top 250 firms in the Russell 2000 index and bottom 250 firms of the Russell 1000 index. The holdings data from Thomson Reuters Mutual Fund Holdings Database is matched with data from the monthly CRSP file. The model is estimated over the 1998–2006 period using a polynomial order control for $\ln(Mktcap)$ of $N=3$. The symbols * and *** indicate significance at the 10% and 1% levels, respectively.

<i>Dependent variable</i>	Percent of firm's common shares held by			
	All mutual funds	Passive	Active	Unclassified
<i>R2000</i>	1.208* (0.653)	1.075*** (0.062)	0.121 (0.605)	0.012 (0.137)
Bandwidth	250	250	250	250
Polynomial order, <i>N</i>	3	3	3	3
Float control	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
# of firms	1589	1589	1589	1589
Observations	4342	4342	4342	4342
<i>R</i> -squared	0.20	0.60	0.13	0.085

The first column shows that aggregate mutual fund ownership is significantly higher (at the 10% level) for the 250 stocks at the top of the Russell 2000 than for the 250 stocks at the bottom of the Russell 1000. The estimated coefficient is positive and significant at the 1% level for the passive funds (column 2), but insignificant for actively managed and unclassified funds. It is closed to the original results, the difference may due to the difference data sample size.

Below are the original results, which help build a comparison.

<i>Dependent variable =</i>	Percent of firm's common shares held by:			
	All mutual funds	Passive	Active	Unclassified
	(1)	(2)	(3)	(4)
<i>R2000</i>	1.216* (0.662)	1.086*** (0.067)	0.118 (0.604)	0.012 (0.135)
Bandwidth	250	250	250	250
Polynomial order, <i>N</i>	3	3	3	3
Float control	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
# of firms	1,654	1,654	1,654	1,654
Observations	4,415	4,415	4,415	4,415
<i>R</i> -squared	0.21	0.62	0.12	0.09

Again, the difference in sample here may be the main resources of the little differences in the results. The final conclusions, however, are not influenced at all since the difference are totally within tolerance.

With different levels of N, specifically focusing on Passive%, we have the following replicated table to display the robustness in different levels. The levels of N generally influence the robustness very little, thus the overall conclusion is consistent with table 2 that is replicated above.

Table 7 (Replicate of original Table 3).

This table reports estimates of the first-stage regression of passive ownership onto an indicator for membership in the Russell 2000 index plus additional controls.

<i>Dependent variable</i>	Passive % scaled by its sample standard deviation		
	(1)	(2)	(3)
<i>R2000</i>	0.518*** (0.031)	0.528*** (0.031)	0.492*** (0.032)
Bandwidth	250	250	250
Polynomial order, <i>N</i>	1	2	3
Float control	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
# of firms	1589	1589	1589
Observations	4342	4342	4342
<i>R</i> -squared	0.59	0.59	0.60

Compared with the original work

<i>Dependent variable =</i>	Passive % scaled by its sample standard deviation		
	(1)	(2)	(3)
<i>R2000</i>	0.505*** (0.028)	0.512*** (0.028)	0.473*** (0.029)
Bandwidth	250	250	250
Polynomial order, <i>N</i>	1	2	3
Float control	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
# of firms	1,654	1,654	1,654
Observations	4,415	4,415	4,415
<i>R</i> -squared	0.61	0.62	0.62

The difference of Table 2 and Table 3 is Table 3 take the standardized percent of passive mutual funds as the dependent variables instead of the original passive ownership. The R-squared are consistent for N=3 for the two tables for passive funds, which also validates the core regressions are the same. We consistently find an increase in ownership by passive funds of about a half of a sample standard deviation. In all cases, the increase is statistically significant at the 1% level. The results and conclusions from Table 2 and Table 3 as above together show that the IV is safe to use and endogeneity should be well controlled in this case.

Similarly, we conduct the 2SLS on the following regression, note both the X and Y are standardized here

$$Std\ Ind\ director\ \% = \alpha + \beta StdPassive\ \%_{it} + \sum_{n=1}^N \theta_n (\ln(Mktcap_{it}))^n + \gamma \ln(Float)_{it} + \delta_t + \epsilon_{it} \quad (6)$$

with

$$Std\ Passive\ \%_{it} = \eta + \lambda R2000\ \%_{it} + \sum_{n=1}^N \chi_n (\ln(Mktcap_{it}))^n + \sigma \ln(Float)_{it} + \delta_t + u_{it} \quad (7)$$

Which is exact the first stage finished in Table 3. Then we have the replicate of Table 4 as follows

2. Independent directors vs Passive ownership.

First study on the passive institutional investors' impact on corporate governance is the relationship between board independence with passive mutual funds' ownership.

Table 8 (Replicate of original Table 4).

This table reports estimates of 2SLS on the relationship between ownership by passive investors and board independence. The data consist of firms in the two Russell indexes for which we obtain holdings data from Thomson Reuters Mutual Fund Holdings Database and which we match with data from the monthly CRSP file. The model is estimated over the 1998–2006 period using 250 firms around the Russell 1000/2000 threshold, and polynomial order controls for $\ln(Mktcap)$ of $N = 1, 2$, and 3 .

<i>Dependent variable</i>	<i>Independent director %</i>		
	(1)	(2)	(3)
Passive %	0.708*** (0.165)	0.744*** (0.167)	0.629*** (0.164)
Bandwidth	250	250	250
Polynomial order, N	1	2	3
Float control	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
# of firms	1044	1044	1044
Observations	2792	2792	2792

Original results

<i>Dependent variable =</i>	<i>Independent director %</i>		
	(1)	(2)	(3)
<i>Passive %</i>	0.729*** (0.160)	0.762*** (0.162)	0.654*** (0.159)
Bandwidth	250	250	250
Polynomial order, N	1	2	3
Float control	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
# of firms	1,082	1,082	1,082
Observations	2,871	2,871	2,871

From the table above we find that there is a significant positive relation ($\alpha 1\%$) between *Passive%* and the percentage of independent directors. The result is robust to various polynomial order controls for market capitalization. A one standard deviation increase in ownership by passive funds is associated with a 0.62–0.74 standard deviation increase in the share of independent directors on a firm’s board.

Once we split the data into two parts given year of 2002, we have the following results, which is the replicate of table 5

Table 9 (Replicate of Table 5).

Same as table 4, this table reports estimates of the second-stage regression of the IV estimation used to identify the effect of passive investors on the percentage of independent board directors both before and after the 2002 change in exchange-listing requirements regarding board independence. The symbols *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

<i>Dependent variable</i>	<i>Independent director %</i>					
	1998–2002			2003–2006		
Passive %	1.358*** (0.310)	1.492*** (0.316)	1.281*** (0.310)	0.346*** (0.138)	0.329** (0.140)	0.277* (0.164)
Bandwidth	250	250	250	250	250	250
Polynomial order, <i>N</i>	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	855	855	855	528	528	528
Observations	1654	1654	1654	1138	1138	1138

We find that passive mutual funds plays more important role in impacting the board independence in more recent sample. One standard deviation increase in ownership by passive funds is associated with a 1.3–1.5 standard deviation increase in share of independent directors on a firm’s board prior to 2003, but only a 0.28–0.35 standard deviation increase after 2002.

Compared with the original work

<i>Dependent variable =</i>	<i>Independent director %</i>					
	<i>Sample years = 1998–2002</i>			<i>Sample years = 2003–2006</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Passive %</i>	1.314*** (0.298)	1.461*** (0.303)	1.257*** (0.297)	0.354*** (0.136)	0.324** (0.137)	0.264* (0.160)
Bandwidth	250	250	250	250	250	250
Polynomial order, <i>N</i>	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	882	882	882	549	549	549
Observations	1,682	1,682	1,682	1,189	1,189	1,189

The conclusions are basically the same.

3. Takeover defenses vs Passive ownership

Similarly, as that for independent directors percentage, we have

$$Std\ takeover\ defense = \alpha + \beta StdPassive\%_{it} + \sum_{n=1}^N \theta_n (\ln(Mktcap_{it}))^n + \gamma \ln(Float)_{it} + \delta_t + \epsilon_{it} \quad (8)$$

Here we only consider restrictions on shareholders' ability to call special meetings as the proxy for takeover defenses, which represents a potential impediment to effective governance by delaying dissident shareholders' ability to remove directors. This is a dummy variable. By the above equation, we then have the replicate of table 6

Table 10 (Partial replicate of Table 6).

This table reports estimates of the IV estimation used to identify the effect of institutional ownership by passive investors on takeover defense outcomes

<i>Dependent variable</i>	Greater ability to call special meeting		
	(1)	(2)	(3)
Passive %	0.314*** (0.101)	0.323*** (0.117)	0.352*** (0.123)
Bandwidth	250	250	250
Polynomial order, <i>N</i>	1	2	3
Float control	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
# of firms	1008	1008	1008
Observations	1775	1775	1775

We find that there is significant relationship between shareholders' ability to call special meetings and ownership by passive funds. The estimated coefficient is positive and statistically significant (at the 1% level) in all of the estimations, which is the same as original results. One standard deviation increase in passive ownership is associated with about a 0.31–0.35 standard deviation increase in the likelihood that a firm eliminates restrictions on shareholders' ability to call special meetings.

Here are the original results

<i>Dependent variable =</i>	Poison pill removal			Greater ability to call special meeting		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Passive %</i>	0.176*** (0.0647)	0.181*** (0.0650)	0.203*** (0.0741)	0.304*** (0.0999)	0.310*** (0.108)	0.341*** (0.114)
Bandwidth	250	250	250	250	250	250
Polynomial order, <i>N</i>	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	1,164	1,164	1,164	1,050	1,050	1,050
Observations	2,957	2,957	2,957	1,858	1,858	1,858

4. Equal voting rights and dual class share structures vs Passive Ownership

First, we need to construct an indicator proxy for the equal voting that equals one if the firm has a dual class share structure, and zero otherwise, as determined by ISS. And then conduct the following second-stage regression

$$\text{Std class share indicator} = \alpha + \beta \text{StdPassive\%}_{it} + \sum_{n=1}^N \theta_n (\ln(\text{Mktcap}_{it}))^n + \gamma \ln(\text{Float})_{it} + \delta_t + \epsilon_{it} \quad (9)$$

Then we have the replicate of Table 7

Table 11 (Replicate of Table 7).

This table reports estimates of the IV estimation used to identify the effect of passive investors on the likelihood of dual class shares. The data consist of firms in the two Russell indexes for which we obtain holdings data from Thomson Reuters Mutual Fund Holdings Database and which we match with data from the monthly CRSP file.

<i>Dependent variable</i>	Indicator for dual class shares			Indicator for dual class shares
	(1)	(2)	(3)	
Passive %	-0.869*** (0.181)	-1.023*** (0.175)	-0.997*** (0.173)	
Bandwidth	250	250	250	
Polynomial order, N	1	2	3	
Float control	Yes	Yes	Yes	
Year fixed effects	Yes	Yes	Yes	
# of firms	1008	1008	1008	
Observations	1775	1775	1775	

We see that ownership by passive funds is associated with firms being less likely to have a dual class share structure, negatively significant (at the 1% level) in all of the estimations. One standard deviation increase in Passive% is associated with 0.9-1.0 standard deviation decrease in the likelihood that a firm has a dual class share structure.

<i>Dependent variable =</i>	Indicator for dual class shares		
	(1)	(2)	(3)
<i>Passive %</i>	-0.886*** (0.179)	-1.031*** (0.167)	-1.005*** (0.181)
Bandwidth	250	250	250
Polynomial order, N	1	2	3
Float control	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
# of firms	1,050	1,050	1,050
Observations	1,858	1,858	1,858

IV. Extension thinking

As mentioned in the paper, Fund companies heavy into passive investing, like Vanguard Group, State Street and Dimensional Fund Advisors, say they are active owners, constantly pressing the firms they own to do better. Index-style fund companies seem to increasingly becoming more proactive in their proxy voting. Thus, passive institutional investors have a very important, yet unstudied and undocumented, influence on corporate governance. Because passive investors are unwilling to divest their positions in poorly performing stocks, which would lead to performance deviating from the benchmark, they may place an even greater weight than active fund managers on ensuring effective governance in the firms they own. Though passive owners cannot pressure managers by threatening to sell, holding large blocks of shares gets managers' ears, the size of passive investors' ownership stakes may facilitate activist investors' efforts to rally support for their demands, bringing just a few of these large passive investors on board can lend credibility to an activist campaign.

Additional questions, with some tentative thinking

1. Why have passive investors grown significantly in recent years?
2. What factors do prevent passive institutions from being more active? More generally out of this literature?

Maybe as mentioned at the beginning, one main target of passive investors is to minimize expenses and tracking errors than on affecting governance. Their holding variation in the bottom stocks do not make big difference, and this cause their inferiority in competing with other investors due to their higher fees.

The benchmarking lead to a coordinated increase in ownership by passive institutions. A same increase in ownership can be large for any individual passive fund. An increase in combined ownership by multiple passive funds may be expensive as well.

Compared with Crane, Michenaud, and Weston, 2016 "The effect of institutional ownership on payout policy", in which the authors show firms pay more dividends and repurchase more shares when they have higher levels of institutional ownership, even if the institutions are not activist investors. we see several similarities and differences

1. Their identification strategy relies on an instrument for ownership based on the Russell inclusion as well. They also implement a two-staged least squares estimation where the first stage models ownership as a function of the instrument and the second stage tests the effect of instrumented ownership on a variety of corporate policy variables. Their identification strategy has some distinct advantages and disadvantages as follows

Table 12. Empirical strengths and flaws of CMW(2016) paper.

Advantage	Disadvantages
(1) The cross sectional variation in institutional ownership near the threshold is driven by mechanical index rules, not by firm fundamentals. This helps rule out both simultaneity bias and omitted variable bias in measuring the effects of ownership on payout.	(1) Only drawing inference from variation in ownership in a small sample of firms near these index thresholds, which may limit external validity of the results to the population of public firms.
(2) Given the quasi-experimental nature of the research design, we can suggest a more direct causal inference than some other studies.	(2) Only speak to one direction of causality, from institutional ownership to corporate policies, and cannot confirm or rule out other directions of causality.
(3) Uses variation in institutional ownership for firms both included and excluded from the index based on mechanical rules. Index rules are generally transparent and mechanical.	(3) have the potential to introduce selection bias if they are not correctly accounted for.
2. Additionally, they test the hypothesis that institutional ownership affects payout through a monitoring channel by estimating the effect of instrumented ownership on voting outcomes.	
3. Data sets. First, the period of their data set is a little different from AGK paper. Their sample consists of the Russell 1000 and Russell 2000 index constituents including 8,307 unique firms from 1991 until 2006. These data are from Russell and are merged with firm level accounting data from Compustat, institutional holdings data from Spectrum 13F filings, and stock return data from CRSP.	

This paper generally give robust results that support agency models where institutional owners lower the marginal cost of delegated monitoring, suggesting that institutional investors play an important role in reducing manager/shareholder conflicts.

V. Conclusion

In this report I replicate and review the AGK paper on whether passive investors may impact firm' governance and performance. Specifically, AGK uses Russell 2000 index entry as the instrument and tries to identify how ownership of passive investors, may affect the outcome of interest as proxies of corporate governance.

While dealing with an interesting topic, this paper does well in the endogeneity considering the use of index inclusion as the IV.

The findings suggest that while passive institutional investors are not active owners in the traditional sense of accumulating or selling shares in a target company with the express purpose of influencing management, they are not passive owners either. Ownership by passively managed mutual funds is associated with more independent directors on a board, fewer takeover defenses, and more equal voting rights, as captured by a firm being less likely to have a dual class share structure. The observed differences in actual governance structures suggest that passive institutions are attentive to firms' corporate governance, and that they use their large voting blocs to exercise voice and exert influence.