中国股票型开放式基金的规模报酬

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摘要

本次研究采集国内主动管理的股票型开放式基金数据，运用递归除值法消除向下偏误，发现仍存在个体层面的规模报酬递减。此外，本次研究还发现换手率能够影响规模报酬递减的速度，但影响程度较小，无法解释规模报酬递减的成因。

关键词：开放式基金 规模报酬递减 换手率

Returns to Scale in China's Equity Mutual Funds

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ABSTRACT

In this study, recursive demeaning is employed to eliminate downward bias and there is still evidence of decreasing returns to scale in fund level with data from China's actively managed equity mutual fund. And there is also evidence that fund turnover slightly attributes to decreasing returns to scale and is not the main reason.

Keywords: mutual funds, decreasing returns to scale, turnover

1. Introduction

Funds are investment vehicles with professional management, pooling money from lots of investors to purchase securities. They are classified into open-end funds (i.e. mutual funds) and closed-end funds. The former redeem or issue shares at net asset value, and the latter do not. According to primary investment target, they can also be classified into equity funds, bond funds, money market funds etc.[1] And there is difference between active management which adjusts portfolio to earn excess returns, and passive management which follows an index.

Since 1998, when the first fund was built, China's fund market has been growing rapidly. Until the end of 2017, there were over 10000 funds in China, while only circa 3500 quoted companies.[2]

The performance of actively managed equity mutual funds has being of interest to both investors and researchers for a long time. Previous researches have suggested many factors in influence. With the growth of the fund market, a new problem has risen. Does scale matter? Do larger funds perform worse? This study will focus on returns to scale in China's actively managed equity mutual fund.

The whole paper is organized as follows. Section1 introduces the background of this study. Section 2 is a review on prior literatures. Section 3 analyzes the effect of fund scale and potential biases in regressions. Section 4 presents regression models and estimation methods. Section 5 describes data. Section 6 reports empirical results. Section 7 tests robustness. Section 8 concludes and admits some limitations.

2. Review

In developed countries, especially the United States, there has been a lot of research on the relation between fund scale and fund performance, but still no consensus.

Some papers report evidence for decreasing returns to scale. And this finding is attributed to liquidity (Yan, 2008), the way of organization (Chen et al., 2004), trading costs (Edelen et al., 2007), the indexation strategy in larger funds (Petajisto, 2013), etc.

Some papers contrarily report evidence in the US for increasing returns to scale. And possible reasons are private information (Bhojraj et al., 2012), managerial incentives (Ma et al., 2017), etc.

Some papers find non-linear relation between fund scale and fund performance, and there may be an optimal fund scale (Indro et al., 1999; Collins et al., 1997).

1 Bodie Z., Kane A., Marcus A.J., 2014, "Investments (10th Edition)", McGraw-Hill Education, PP 92-116
2 http://fund.jrj.com.cn/2018/02/01103524043567.shtml

Others argue that fund scale is unrelated to fund performance with empirical evidence (Grinblatt et al., 1994; Pástor et al., 2015; Phillips et al., 2017), or the inverse relation between fund scale and fund performance does not prevail outside the United States (Ferreira et al., 2003).

The history of funds in China is not long, and there are not many papers about returns to scale in mutual funds. There is evidence of U-shaped relation (Du, 2008; Jiang, 2012), and of no prevail relation as well (She et al., 2010).

The divergence between previous researches mainly results from different regression models and estimation methods. Different empirical results draw different explanations. Thus, to report a reliable result is an important step to study returns to scale. Some recent papers, such as Pástor et al. (2015) and Phillips et al. (2017), use new estimation methods to avoid endogeneity in fund scale and fund performance and show there is actually no significant relation between them.

In this study, the recursive demeaning method introduced in Pástor et al. (2015) will be employed to avoid endogeneity, and the empirical result will be more reliable. Besides, new empirical evidence in China will improve the universality.

3. Effect and bias

3.1 Fund scale effect

A popular explanation for decreasing returns to scale in funds is liquidity and price impact. It's easy for a small fund to put all of money in its best investment target. But a large fund may be faced with illiquidity, which means there are not enough ideal stocks to buy, and it has to take more positions than the optimal or allocate much capital to an inferior one. At the same time, a larger capital flow from mutual funds has a bigger impact on price (Khan et al., 2012). Thus it's harder for a larger fund to enter or exit timely before price moves to an ideal level.

And turnover closely relates to liquidity and price impact. A high turnover often appears with trading large amounts, which implies illiquidity and big price impact.

To examine the idea about liquidity and price impact in China, two hypotheses are raised as follows.

H1: There are decreasing returns to scale in actively managed equity mutual funds.

H2: Fund turnover improves the degree of decreasing returns to scale.

3.2 Omitted-variable bias

A simple regression on lagged fund scale obviously leads to omitted-variable bias. In this study, two potential omitted variables are recognized.

First, the whole industry is composed by individual funds, so industry scale has a direct relation with fund scale. And in a larger industry, it's more possible for funds to

chase the same investment opportunities, which reduces the return of an individual fund (Pástor et al., 2012). Thus, industry scale should be considered in regression models.

Second, a manager with a higher skill will bring a larger fund scale with a good performance. Thus, manager skill should be considered in regression models.

3.3 Finite-sample bias

Fund scale and fund performance have a positive correlation in the same period, which leads to finite-sample bias in regressing on lagged fund scale.

There are two reasons for the positive correlation. One is that a good performance earns more money for the fund, the other is that investor will allocate more money to the fund after watching a positive excess return. And a bad performance earns less and attracts less investment.

Since the sample is finite, the existence of the positive correlation may bring a downward bias (Stambaugh, 1999). For simplicity, assume a two-period sample that follows a white noise process as

$$y_{i,t} = \pi_{i,t} \tag{1}$$

where $\pi_{i,t}$ is the disturbance term with zero mean, $y_{i,t}$ is the excess return of an individual fund. Define $x_{i,t}$is the scale of an individual fund. Under the condition of $y_{i,1} > 0$, the fund earns more and attracts more investment, which leads to $x_{i,1} > x_{i,0}$. A white noise process exhibits mean reversion, which means $y_{i,2}$ tends to be closer to the average, i.e. $E(y_{i,2}) = E(\pi_{i,2}) = 0$, so $y_{i,2} < y_{i,1}$. Here $x_{i,t-1}$ is higher and $y_{i,t}$ is lower, and if to do a regression as

$$y_{i,t} = \alpha_i + \beta_i x_{i,t-1} + \varepsilon_{i,t} \tag{2}$$

a negative correlation between y_t and x_{t-1} , or $\beta_i < 0$, will be found. But Eq. (1) shows $y_{i,t}$ has no relation with $x_{i,t-1}$, so there is downward bias in β_i. And the condition of $y_{i,1} < 0$ results in the same downward bias. In a fixed effects model as

$$y_{i,t} = \alpha_i + \beta_{FE} x_{i,t-1} + \varepsilon_{i,t} \tag{3}$$

where $\beta_{FE} = \sum w_i \beta_i$, $\sum w_i = 1$, and $w_i > 0$, the downward bias in β_{FE} is just the weighted average of downward biases in each β_i. Therefore, both in a simple and a fixed effects model, decreasing returns to scale will be found even it does not exist.

That bias can be eliminated by recursive demeaning (Hjalmarsson, 2010). The method will be explained in Section 4.

4. Methodology

4.1 Regression models

At first, a simple regression model is raised as

$$P_{i,t} = \alpha + \beta F_{i,t-1} + \varepsilon_{i,t} \tag{4}$$

where $P_{i,t}$ if fund performance and $F_{i,t-1}$ is fund scale.

And then, assume there is a linear relation between fund scale effect and fund turnover as

$$\beta_{i,t} = \beta_1 + \beta_2 V_{i,t} \tag{5}$$

where $\beta_{i,t}$ is the β in Eq.(4) and $V_{i,t}$ is fund turnover. Substitute Eq.(5) in Eq.(4), an interaction regression model is derived as

$$P_{i,t} = \alpha + \beta_1 F_{i,t-1} + \beta_2 \left(F_{i,t-1} \times V_{i,t}\right) + \varepsilon_{i,t} \tag{6}$$

Define $U_{i,t} = F_{i,t-1} \times V_{i,t}$, and the function is changed into

$$P_{i,t} = \alpha + \beta_1 F_{i,t-1} + \beta_2 U_{i,t} + \varepsilon_{i,t} \tag{7}$$

Finally, to avoid the omitted-variable bias caused by industry scale, a control variable is added. And since it's hard to observe manager skill, a fixed effects model is designed to control skill and other unrecognized omitted variables that are time-invariant. Besides, skill may change as time passes, so fund age is also considered as a control variable to control skill variation and other unrecognized omitted variables that are time-variant. The final model is

$$P_{i,t} = \alpha_i + \beta_1 F_{i,t-1} + \beta_2 U_{i,t} + \beta_3 I_{t-1} + \beta_4 A_{i,t} + \varepsilon_{i,t} \tag{8}$$

where I_{t-1} is industry scale and $A_{i,t}$ is fund age.

4.2 Estimation methods

A common method for fixed effects model is time demeaning (TD), which can be explained as

$$\begin{aligned} \frac{1}{T_i}\sum_{t=1}^{T_i} P_{i,t} &= \frac{1}{T_i}\sum_{t=1}^{T_i}\left(\alpha_i + \beta_1 F_{i,t-1} + \beta_2 U_{i,t} + \beta_3 I_{t-1} + \beta_4 A_{i,t} + \varepsilon_{i,t}\right) \\ \overline{P_i} &= \alpha_i + \beta_1 \overline{F_i} + \beta_2 \overline{U_i} + \beta_3 \bar{I} + \beta_4 \overline{A_i} + \overline{\varepsilon_i} \end{aligned} \tag{9}$$

where T_i is the total number of time periods given fund *i*. And then Eq. (8) subtract Eq. (9) as

$$\begin{aligned} P_{i,t} - \bar{P}_i &= \alpha_i - \alpha_i + \beta_1\left(F_{i,t-1} - \bar{F}_i\right) + \beta_2\left(U_{i,t} - \overline{U_i}\right) \\ &\quad + \beta_3(I_{t-1} - \bar{I}) + \beta_4\left(A_{i,t} - \bar{A}_i\right) + \left(\varepsilon_{i,t} - \bar{\varepsilon}_i\right) \\ \tilde{P}_{i,t} &= \beta_1 \tilde{F}_{i,t-1} + \beta_2 \tilde{U}_{i,t} + \beta_3 \tilde{I}_{t-1} + \beta_4 \tilde{A}_{i,t} + \tilde{\varepsilon}_{i,t} \end{aligned} \tag{10}$$

where unobserved term α_i has disappeared and coefficients can be estimated by ordinary least square (OLS).[1]

To eliminate finite-sample bias, recursive demeaning (RD) is employed. A recursively forward-demeaned variable is defined as

$$\hat{x}_{i,t} = x_{i,t} - \frac{1}{T_i - t + 1}\sum_{k=t}^{T_i} x_{i,k} \tag{11}$$

and a recursively backward-demeaned variable is defined as

1 Stock J.H., Watson M.W., 2015, "Introduction to Econometrics (Updated 3rd Edition)", Pearson Education, PP 403-407

$$\check{x}_{i,t} = x_{i,t} - \frac{1}{t-1}\sum_{k=1}^{t-1} x_{i,k} \tag{12}$$

Replace time-demeaned variables $\tilde{x}_{i,t}$ in Eq. (10) by forward-demeaned variables $\hat{x}_{i,t}$, a new regression equation is got as

$$\hat{P}_{i,t} = \beta_1 \hat{F}_{i,t-1} + \beta_2 \hat{U}_{i,t} + \beta_3 \hat{I}_{t-1} + \beta_4 \hat{A}_{i,t} + \hat{\varepsilon}_{i,t} \tag{13}$$

Here coefficients can be estimated by two stage least squares (2SLS) with $\check{F}_{i,t-1}$ and $\check{U}_{i,t}$ as instrumental variables for $\hat{F}_{i,t-1}$ and $\hat{U}_{i,t}$ (Pástor et al., 2015).

5. Data

5.1 Data collection

Row data about basic information and semiannual total net asset value (TNA) are collected from CSMAR Research Data Services [1]. Row data about weekly Fama-French three factors in A-share market, weekly risk-free return, weekly ex-right and ex-dividend date adjusted return of funds, semiannual A-share market value, and semiannual stock position change of funds are collected from RESSET Financial Research Database[2]. Except for basic information, all of data are in a period from the first half of 2004 to the first half of 2017, or total 27 semiannual intervals. EXCEL and MATLAB are employed in data processing.

Only actively managed equity mutual funds found before 2016 are considered. Structured funds and umbrella funds are excluded. Abroad-oriented and sector-oriented funds are excluded by judging self-designated benchmark. In other words, benchmark of chosen funds should relate to HS300, CSI500 or CSI800. As a result, 134 funds are included in the sample, showed in the appendix.

5.2 Variable definition

Fund performance ($P_{i,t}$) is represented by weekly excess return or alpha within half a year derived by Fama-French three-factor model as

$$r_{i,w} - r_{f,w} = \alpha_i + \beta_{i,M} R_{M,w} + \beta_{i,SMB} SMB_w + \beta_{i,HML} HML_w + e_{i,w} \tag{14}$$

where, given week *w*, $r_{i,w}$ is ex-right and ex-dividend date adjusted return of the fund, $r_{f,w}$ is risk-free return, α_i is weekly fund excess return, $R_{M,w}$ is the difference between the return of market portfolio and risk-free return, SMB_w is the difference between the return of small-stock portfolio and the return of large-stock portfolio, and HML_w is the difference between the return of high-book-to-market-stock portfolio and the return of low-book-to-market-stock portfolio (Fama et al., 1996).

1 http://www.gtarsc.com/
2 http://www.resset.cn/

Fund scale ($F_{i,t-1}$) is the natural logarithm of TNA as

$$F_{i,t-1} = ln\left(TNA_{i,t-1}\right) \tag{15}$$

Fund turnover ($V_{i,t}$) is defined as

$$V_{i,t} = \frac{min\left(Buy_{i,t}, Sell_{i,t}\right)}{\left(TNA_{i,t-1} + TNA_{i,t}\right)/2} \tag{16}$$

where $Buy_{i,t}$ is the accumulated value of stocks bought between time *t-1* and *t*, $Sell_{i,t}$ is the accumulated value of stocks sold between time *t-1* and *t*.

Industry scale (I_{t-1}) is a relative value, which is the sum of TNA in sample divided by A-share circulation market value as

$$I_{t-1} = \frac{\sum_i^n TNA_{i,t-1}}{Market\ Value_{t-1}} \tag{17}$$

Here *n*=134. It reflects the fraction of A-share market value owned by funds in sample at time *t-1*.

Fund age ($A_{i,t}$) is the difference between time *t* and the time corresponding to adjusted found date. Time *t* is set as 1 in Jun.30, 2002, 2 in Dec.31, 2002, 3 in Jun.30, 2003 and so on. Adjusted found date is the nearest one of Jun.30 and Dec.12 to found date.

5.3 Descriptive statistics

Table 1 shows some descriptive statistics of variables. The mean of fund performance is negative, which is in line with common opinion that active management fails to earn excess returns on average (Fama et al., 2010). And the minimum and maximum of fund performance are nearly symmetry, which implies there are no outliers.

Table 1 Descriptive statistics

Variable	Unit	Obs.	Mean	Std.	Min	Max
Fund performance	%	1102	-0.0787	0.3890	-1.8318	1.6033
Fund scale	log(RMB)	1102	20.5575	1.5915	16.1662	24.5981
Fund turnover	1	1102	1.3710	1.5235	0.0074	17.3106
Industry scale	%	27	0.9281	0.5814	0.3643	2.4820
Fund age	half a year	1102	7.5780	5.9115	1	30

6. Empirical results

To acquire information as more as possible, coefficients are estimated in all of models mentioned in Section 4. STATA and MATLAB are employed in estimation. Table 2 shows results and standard errors are showed in brackets. Significance at 1%,

5% and 10% level is indicated by ***, **, and * respectively.

As showed, coefficients of fund scale are all negative and are significant after considering omitted-variable bias and infinite-sample bias, which means there is an inverse relation between fund scale and fund performance in China, and this finding is hold under the condition that the downward bias is eliminated by recursive demeaning.

Coefficients of the interaction term are all negative and significant as well, so a high turnover really leads to steeper decreasing returns to scale. But the coefficient values of the interaction are small compared with that of fund scale, which means the effect of turnover is not large. If the theory about liquidity and price impact is true, there will be two possible explanations: one is that turnover is not a good proxy of liquidity; the other is that liquidity is not the main reason for decreasing returns to scale.

Table 2 Coefficient estimation results (Jun.30, 2004-Dec.12, 2017)

Variable	(1)	(2)	(3)	(4)	(5)
Fund scale	-0.0027	-0.0211***	-0.1201***	-0.4384***	-0.4197***
	(0.0068)	(0.0073)	(0.0241)	(0.1302)	(0.1227)
Fund scale*turnover		-0.0029***	-0.0035***		-0.0031**
		(0.0005)	(0.0007)		(0.0014)
Industry scale			0.0636*	0.1976***	0.1982***
			(0.0368)	(0.0708)	(0.0655)
Fund age			-0.0073*	-0.0114**	-0.0103**
			(0.0039)	(0.0049)	(0.0046)
Constant	-0.0226	0.4340***			
	(0.1426)	(0.1567)			
Observations	1102	1102	1102	1102	1102
Fixed effects	No	No	Yes	Yes	Yes
Method	OLS	OLS	TD&OLS	RD&2SLS	RD&2SLS

Coefficients of industry scale are all positive and significant, which is contrary to evidence in the United States (Pástor et al., 2012; Pástor et al., 2015). A possible explanation is that there may be a nonlinear relation between industry scale and fund performance which has positive effect on funds in young industry (e.g. in China) and negative effect on funds in mature industry (e.g. in the United States).

Coefficients of fund age are all negative and significant, which implies there are some time-variant factors eroding returns. A possible explanation is that new funds are more skillful and capture returns from old funds.

7. Robustness

7.1 Half the period

To test robustness, the whole period in sample is divided equally into two parts, Jun.30, 2004-Dec.31, 2010 and Jun.30, 2011-Jun.30, 2017. In the former period, there were non-tradable shares reform, a huge bull market and subsequent financial crisis, which may have some influences on the empirical result. And in the latter period, there are still enough observations for regressions. So the former period is excluded in the first robustness test. Table3 shows estimation results after adjusting the period.

As showed, coefficients of fund scale and the interaction term are still negative and significant, while that of industry scale and fund age turns to insignificant in regression (3) and (5). It's possible that there are some structural changes in different periods, but it does not overthrow the evidence of decreasing returns to scale in fund level and effects of fund turnover.

Table 3 Coefficient estimation results (Jun.30, 2011-Jun.30, 2017)

Variable	(1)	(2)	(3)	(4)	(5)
Fund scale	-0.0150*	-0.0351***	-0.1116***	-0.4737***	-0.4642***
	(0.0081)	(0.0087)	(0.0307)	(0.1402)	(0.1362)
Fund scale*turnover		-0.0030***	-0.0039***		-0.0029*
		(0.0006)	(0.0007)		(0.0014)
Industry scale			0.0397	0.0615***	0.1279
			(0.2041)	(0.2731)	(0.2620)
Fund age			-0.0006	-0.0303**	-0.0246*
			(0.0082)	(0.0130)	(0.0132)
Constant	0.2045	0.6987***			
	(0.1662)	(0.1824)			
Observations	943	1102	1102	1102	1102
Fixed effects	No	No	Yes	Yes	Yes
Method	OLS	OLS	TD&OLS	RD&2SLS	RD&2SLS

7.2 Bull and bear periods

Various relations between fund scale and fund performance in a bull market and a bear market are reported in previous research (She et al., 2010). To test robustness in different market trends, a line chart of CSI800 is plotted in Figure 1.

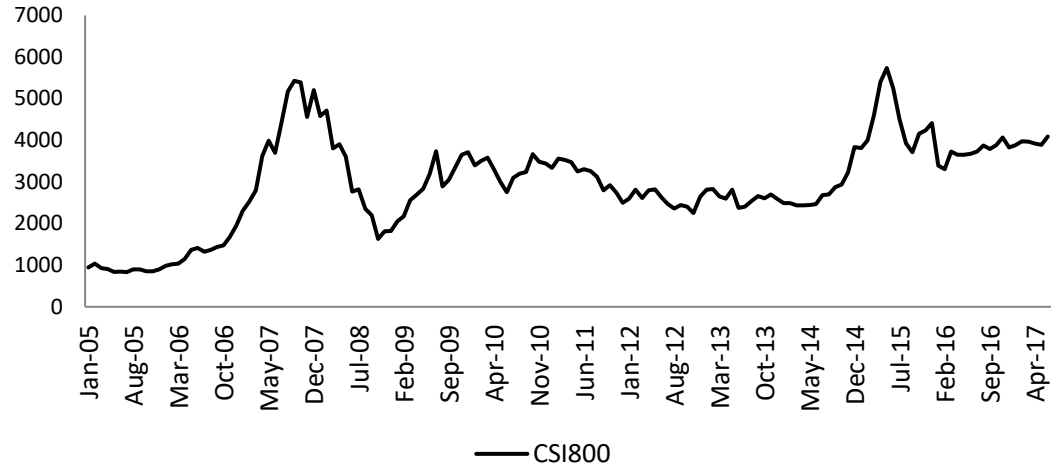

Figure 1 Line chart of CSI800

According to the line chart, bull and bear trends are recognized and the whole sample is divided into two parts as showed in Table 4.

Table 4 Bull and bear periods

Trend	Bull	Bear
Time points	Jun.30, 2004-Dec.31, 2007	Jun.30, 2008-Dec.31, 2008
	Jun.30, 2009-Dec.31, 2009	Jun.30, 2010
	Dec.31, 2010	Jun.30, 2011-Dec.31, 2011
	Jun.30, 2012-Dec.31, 2012	Jun.30, 2013
	Dec.31, 2013	Jun.30, 2014
	Dec.31, 2014-Jun.30, 2015	Dec.31, 2015-Jun.30, 2016
	Dec.31, 2016-Jun.30, 2017	
Observations	650	452

Data in bull period and bear period are used in regressions separately. And new coefficient estimation results are showed in Table 5 and Table6.

In bull period, as Table 5 showed, coefficients of fund scale is still negative and significant, but that of the interaction term are not significant when employing recursive demeaning. Coefficients of industry scale and fund age are instable in significance.

Table 5 Coefficient estimation results (bull period)

Variable	(1)	(2)	(3)	(4)	(5)
Fund scale	0.0018	-0.0206**	-0.1221***	-0.8560***	-0.8314***
	(0.0092)	(0.0100)	(0.0292)	(0.2172)	(0.2125)

Fund scale*turnover		-0.0035***	-0.0035***		-0.0018
		(0.0007)	(0.0011)		(0.0022)
Industry scale			0.0397	0.3956***	0.3956***
			(0.0508)	(0.1426)	(0.1358)
Fund age			-0.0075*	-0.0031	-0.0030
			(0.0040)	(0.0096)	(0.0092)
Constant	-0.0973	0.4604**			
	(0.1905)	(0.2139)			
Observations	650	1102	1102	1102	1102
Fixed effects	No	No	Yes	Yes	Yes
Method	OLS	OLS	TD&OLS	RD&2SLS	RD&2SLS

In bear period, as Table 6 showed, coefficients of fund scale and the interaction term are all negative and significant. And coefficients of industry scale and fund age are still instable in significance.

Table 6 Coefficient estimation results (bear period)

Variable	(1)	(2)	(3)	(4)	(5)
Fund scale	-0.0061	-0.0184*	-0.0724**	-0.5331**	-0.3942**
	(0.0104)	(0.0087)	(0.0307)	(0.2114)	(0.1362)
Fund scale*turnover		-0.0019**	-0.0039***		-0.0070***
		(0.0010)	(0.0012)		(0.0015)
Industry scale			0.1035*	0.0268	0.0831
			(0.0544)	(0.0683)	(0.0630)
Fund age			-0.0022	-0.0451***	-0.0233
			(0.0074)	(0.0193)	(0.0173)
Constant	0.0202	0.3247			
	(0.2200)	(0.2380)			
Observations	452	1102	1102	1102	1102
Fixed effects	No	No	Yes	Yes	Yes
Method	OLS	OLS	TD&OLS	RD&2SLS	RD&2SLS

Therefore, an inverse relation between fund scale and fund performance prevails both in a bull market and a bear market. But the effect of turnover is not robust enough. There is a possible explanation. Turnover contributes to decreasing returns to

scale, but the effect is too small. In a bull market, other factors affect more appreciably, which make the effect of turnover less recognizable. And in a bear market, turnover is much more important owing to lack of perfect short-mechanism in China's market. Most funds are not able to earn excess returns, but it's more convenient for smaller funds to escape from the bear market while larger funds have to bear much more losses before dealing a huge transaction.

8. Summary

8.1 Conclusions

In this study, the relation between fund scale and fund performance in China's actively managed equity mutual fund is explored. After eliminating omitted-variable bias and infinite-sample bias with fixed effects model and recursive demeaning method, an inverse relation is found. And this finding passes two robust tests, which suggests that there are decreasing returns to scale in the fund level.

And the interaction term combined by fund scale and fund turnover shows significantly and slightly negative effects, except for in a bull market where it is not effective enough. It can be concluded that fund turnover improves the degree of decreasing returns to scale, but is not a main factor in influence.

8.2 Limitations

In evaluating fund performance, Fama-French three-factor model is employed as benchmark. However, there have been updated five-factor model and six-factor model which are proved more efficient than three-factor model in China's market (Li et al., 2017). If new models are used, the result will be more reliable.

A U-shaped relation between fund scale and fund performance is reported in previous research in China (Du, 2008; Jiang, 2012). But nonlinear relation is not empirically examined in this study.

This study tries to find the reason of decreasing returns to scale, but fails to get an ideal explanation, which needs more research.

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Appendix: Chosen funds in the sample

#	Code	Name	Found date	#	Code	Name	Found date
1	000120	中银美丽	6/30/2013	68	001528	诺安先进	6/30/2015
2	000309	大摩品质	12/31/2013	69	001542	国泰互联网	6/30/2015
3	000411	景顺优质	12/31/2013	70	001577	嘉实低价策略	6/30/2015
4	000418	景顺成长之星	12/31/2013	71	001605	国富沪港深	12/31/2015
5	000432	中银优企	12/31/2013	72	001628	招商体育文化	6/30/2015
6	000457	上投核心	12/31/2013	73	001637	嘉实大数据	12/31/2015
7	000471	富国城镇	12/31/2013	74	001651	工银新蓝筹	6/30/2015
8	000513	富国高端制造	6/30/2014	75	001663	中银互联网	6/30/2015
9	000520	上银新兴	6/30/2014	76	001672	国寿智慧	6/30/2015
10	000524	上投民生	12/31/2013	77	001677	中银战略	12/31/2015
11	000532	景顺优企	12/31/2013	78	001692	南方国策	6/30/2015
12	000549	华安大国	6/30/2014	79	001705	泓德战略	12/31/2015
13	000577	安信价值	6/30/2014	80	001719	工银国家	12/31/2015
14	000591	中银健康	6/30/2014	81	001736	圆信生活	12/31/2015
15	000592	建信改革	6/30/2014	82	001849	前海共识 100 强	12/31/2015
16	000594	大摩进取	6/30/2014	83	001917	招商精选	12/31/2015
17	000688	景顺精选	6/30/2014	84	002229	华夏经济转型	12/31/2015
18	000729	建信中小盘	6/30/2014	85	050009	博时新兴	6/30/2007
19	000746	招商行业	6/30/2014	86	050201	博价值贰	6/30/2006
20	000756	建信新蓝筹	6/30/2014	87	070013	嘉实精选 A	6/30/2008
21	000761	国富健康	6/30/2014	88	070017	嘉实量化	12/31/2008
22	000803	工银研究	12/31/2014	89	070019	嘉实价值	6/30/2010
23	000828	泰达机遇	12/31/2014	90	070021	嘉实动力	12/31/2010
24	000854	鹏华产业	12/31/2014	91	070022	嘉实领先	6/30/2011
25	000867	华宝生活	12/31/2014	92	070027	嘉实周期	12/31/2011
26	000884	民生优选	12/31/2014	93	070099	嘉实优质	12/31/2007
27	000893	工银创新	12/31/2014	94	090001	大成价值	12/31/2002
28	000916	前海 100 强	12/31/2014	95	090006	大成 2020	6/30/2006
29	000925	汇添富外延	12/31/2014	96	090009	大成行业	6/30/2009
30	000955	南方产业活力	12/31/2014	97	100039	富国主题	6/30/2010
31	000971	诺安新经济	12/31/2014	98	100060	富国高新	6/30/2012
32	000974	安信医药	12/31/2014	99	160133	南方天元	6/30/2014

33	000978	景顺量化	12/31/2014	100	160919	大成产业	12/31/2014
34	000985	嘉实逆向	12/31/2014	101	161601	融通新蓝筹	6/30/2002
35	000991	工银战略	12/31/2014	102	161606	融通行业	6/30/2004
36	000996	中银新动力	12/31/2014	103	163110	申万量化	6/30/2011
37	001009	上投安全	12/31/2014	104	163822	中银主题	6/30/2012
38	001028	华安物联网	12/31/2014	105	164205	天弘文化	6/30/2010
39	001036	嘉实企业	12/31/2014	106	206012	鹏华价值精选	6/30/2012
40	001040	新华策略	12/31/2014	107	217010	招商大盘	6/30/2008
41	001042	华夏领先	6/30/2015	108	240001	华宝消费	6/30/2003
42	001043	工银美丽城镇	12/31/2014	109	290006	泰信蓝筹	6/30/2009
43	001048	富国新兴产业	12/31/2014	110	290008	泰信发展	12/31/2010
44	001050	汇添富成长	12/31/2014	111	290014	泰信现代	12/31/2012
45	001054	工银新金融	12/31/2014	112	310308	申万精选	6/30/2004
46	001070	建信信息	12/31/2014	113	310328	申万新动力	12/31/2005
47	001072	华安智能	6/30/2015	114	310388	申万消费	6/30/2009
48	001097	华泰积极	12/31/2014	115	320016	诺安多策略	6/30/2011
49	001104	华安新丝路	6/30/2015	116	376510	上投大盘	12/31/2010
50	001105	信达创新	6/30/2015	117	400011	东方动力	6/30/2009
51	001163	银华中国梦	6/30/2015	118	420003	天弘永定	12/31/2008
52	001167	金鹰科技	6/30/2015	119	420005	天弘策略	12/31/2009
53	001178	前海再融资	6/30/2015	120	519039	长盛同德	12/31/2007
54	001186	富国健康	6/30/2015	121	519089	新华成长	6/30/2008
55	001188	鹏华改革	6/30/2015	122	519158	新华领航	6/30/2013
56	001277	博时企改	6/30/2015	123	519606	国泰金鑫	6/30/2014
57	001291	大摩多策略	6/30/2015	124	590001	中邮优选	6/30/2006
58	001313	上投互联	6/30/2015	125	590002	中邮成长	6/30/2007
59	001396	建信互联网	6/30/2015	126	590005	中邮主题	6/30/2010
60	001409	工银互联网	6/30/2015	127	610006	信达产业	6/30/2011
61	001410	信达新能源	6/30/2015	128	671010	西部策略	12/31/2010
62	001416	嘉实驱动	6/30/2015	129	688888	浙商成长	6/30/2011
63	001421	南方量化成长	6/30/2015	130	690003	民生精选	12/31/2009
64	001473	建信大安全	6/30/2015	131	690004	民生稳健	6/30/2010
65	001482	上投服务	6/30/2015	132	690007	民生景气	12/31/2011
66	001496	工银聚焦 30	6/30/2015	133	740001	长安策略	12/31/2011
67	001521	国寿成长	12/31/2015	134	770001	德邦优化	6/30/2012