

## 机构投资者异质性与公司业绩<sup>1</sup>

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### 摘要

基于中国证券市场上机构投资者的发展,文章从四个维度(机构持股集中度、投资期限、持股稳定性及机构的独立性)研究了机构投资者的异质性与公司业绩的关系,通过联立方程控制内生性,利用两阶段最小二乘法进行回归分析。实证结果显示,各类机构整体持股比例与公司业绩正相关,其中,大机构投资者比小机构投资者发挥着更好的治理效应,其持股比例与公司业绩正相关关系更强,独立机构投资者比非独立机构投资者发挥着更好的治理效应,其持股比例与公司业绩正相关关系更强,长期机构投资者比短期机构投资者发挥着更好的治理效应,其持股比例与公司业绩正相关关系更强。从机构投资者持股稳定性对公司业绩的动态关系研究得出,机构投资者持股波动性越小公司业绩越好。这些结果说明,在中国证券市场上,长期、独立的大机构投资者已经积极地参与了公司治理,提高了公司业绩。

关键词:机构投资者异质性、公司业绩、2SLS

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## 一、引言

近几十年来，全球机构投资者发展迅速，截至2005年底，全球机构投资者持股占总市值的比例为38.5% (Ferreira and Matos, 2008)。在美国，以投资基金、养老金和保险金为主的机构投资者持股占美国普通股总市值的比例从1950年的6.1%上升到1980年的32%，2007年底，这一比例已达到68% (Lewellen, 2011)。在“超常规发展”的战略下，截至2007年底，中国各类机构投资者持有的上市公司A股流通市值占比约为73.5%，达到历史新高(根据WIND数据库整理而得)。全球范围内机构投资者的蓬勃发展，对各国的资本市场和公司治理产生了巨大影响。市场经济体制下，机构投资者在公司治理中扮演着一个重要的角色，他们不仅通过自身的专业优势为控股股东提供最小化风险最大化利润的机会，而且以信息优势和资金优势代表中小投资者利益让控股股东听到中小投资者的声音(Del Guercio and Hawkins, 1999; Gillan and Starks, 2000)。在“新兴加转轨”经济体制的中国，作为最大流通股股东的机构投资者能够改善公司治理结构，使上市公司的经营更加规范、有效(程书强, 2006)。

公司绩效与公司治理相关，良好的公司治理能够提高公司绩效，给中小股东带来更大的收益(Dahya *et al.*, 2008)，而机构投资者股东积极主义能够明显改善公司治理(Gillan and Starks, 2007)，而且，为了良好的公司治理需求，许多机构投资者愿意参与股东积极行动，使用手中的投票权去接受(拒绝)有益(有害)建议(McCahery, Sautner, and Starks, 2010)。股东积极主义与机构投资者持股规模、投资期限、绩效期望和压力敏感性等因素相关，具体来讲，机构投资者持股规模越大、持股时间越长越可能采取积极主义行动，压力抵制型机构投资者与股东积极主义正相关，总财富最大化绩效期望与股东积极主义正相关(Rubach and Sebor, 2009)。一些学者从机构投资者影响具体的公司事件出发进行了深入的研究，比如反接管条例(Brickley, Lease, and Smith, 1988)、研发支出(Bushee, 1998)、经理薪酬(Almazan, Hartzell, and Starks, 2005)、并购绩效(Chen, Harford, and Li, 2007)等等，结果表明，持股期限长、集中持股和独立于公司的机构投资者更可能去监督经理。Ramalingegowda and Yu (2012)把长期机构投资者和独立机构投资者定义为监督型机构投资者，认为监督型机构投资者能改善公司治理结构、提高公司绩效。

不同的机构投资者有不同的投资策略，一些选择监督公司内部人行为，另一些关注信息收集和短期交易利润，这些选择取决于机构投资者的特征(持股集中度、投资期限和独立性)(Woidtke, 2002; Chen *et al.*, 2007; Ramalingegowda and Yu, 2012)。以往的研究大多关注机构投资者持股比例对公司治理的影响，本文在考虑机构持股比例的基础上讨论了机构持股稳定性对公司绩效的影响，从更微观的层面讨论机构投资者持股对公司绩效的影响。同时，从机构投资者与公司是否存在业务联系以及机构投资者受政府干预程度的维度，研究独立机构投资者和非独立机构投资者对公司绩效的不同影响，识别出不同类型机构投资者在公司治理中的不同行为。公司绩效的高低受到机构持股期限及持股水平的影响，反过来，机构持股期限及持股水平受公司绩效的影响，因此，机构持股与公司绩效是内生变量，为了消除解释变量的内生性问题，本文建立联立方程，采用2SLS计量方法，从公司绩效的视角考察机构投资者在公司治理中是否扮演积极的监督角色。

本文的主要贡献在于：(1) 以前的研究大多视机构投资者为同质的，本文深入机构投资者内部特征，剖析机构投资者的异质性，从四个维度研究了不同机构投资者对公司业绩产生的不同影响：大机构vs小机构，长期vs短期，稳定vs不稳定，独立vs非独立；(2) 以前研究公司业绩与机构持股关系时主要用持股比例来衡量机构投资者的影响，但是持股比例不能充分刻画机构投资者的监督动机。比如，两个公司中机构持股比例相同，一个公司中的机构持股比例经常变化或减少，而另一个公司中的机构持股比例保持不变或只增加，不难推出，后者更可能对公司业绩产生影响。本研究考虑了机构持股比例和持股稳定性对公司业绩的影响，而且用多个指标度量机构持股的稳定性，即持股长短期、持续持股季度数以及持股波动性，研究了机构持股与公司业绩之间的动态关系。

余下的章节是这样安排的：第二节文献综述及假说提出；第三节样本选取和模型构建；第四节实证分析；第五节结论及建议。

## 二、文献综述及假说提出

Shleifer and Vishny (1986)、Maug (1998) 等从理论上阐释了机构投资者面临两种选择：为中小股东利益实施监督或者为自己短期利益进行投机交易。大量学者 (Bushee, 1998; Woitdtk, 2002; Cornett *et al.*, 2007; Elyasiani and Jia, 2010) 就机构投资者能否秉承价值投资理念、积极参与公司治理并监督管理层进行了实证研究，结果发现，不同的机构投资者持有不同的投资观点，有的选择对管理者施加影响，提高公司绩效，有的注重收集私人信息以获取短期交易收益。但是，大部分研究都认为，机构投资者是介于公司控股股东与外部中小股东之间的第三方力量，他们凭借自身的信息、资金、专业等方面的优势对上市公司控股股东、高管人员的行为进行监督，反映中小股东的要求，传递市场信息，以较小的成本改善公司治理，提高公司市场价值 (Hartzell and Starks, 2003; Jiang *et al.*, 2010)。公司治理水平与机构持股正相关，机构持股比例变化引起公司治理变化，从而引起公司价值 (Tobin's Q) 变化，反过来并不成立，表明机构投资者确实改善了公司治理水平 (Aggarwal *et al.*, 2011)。机构投资者持股不仅增加公司市场价值而且改善公司经营绩效 (Demiralp *et al.*, 2011)，他们从多方面参与公司治理，从而提高公司绩效，比如：监督公司的投资决策，遏制管理者的短视行为，促使管理层加大厂房设备和研发投入 (Bushee, 1998; Wahal and McConnell, 2000)、盈余管理 (Koh, 2007)、经理薪酬 (Almazan, Hartzell, and Starks, 2005)、并购决定 (Chen, Harford, and Li, 2007)、反接管事件 (Brickley, Lease, and Smith, 1988) 等等。除了主要利用投票权和股东建议等方式参与公司治理、提升股价、改善公司的经营绩效 (Gillan and Starks, 2000; Del Guercio *et al.*, 2008; Morgan *et al.* 2011) 之外，机构投资者还通过私人谈判影响管理层的决定，改善公司治理 (Carleton *et al.*, 1998)。当股东与管理层之间的利益冲突无法用投票、建议和谈判方式解决时，他们也会借助诉讼手段谋求解决，Cheng *et al.* (2010) 以 1996 至 2005 年美国大量证券诉讼案件为对象进行实证研究，结果表明，诉讼手段不仅有效地保护了中小投资者所有权，还提高了董事会独立性，改善了公司治理。许多文献直接研究了机构持股与公司绩效的关系，McConnell and Servaes (1990) 发现机构投资者持股比例与公司 Tobin's Q 正相关，Smith (1996)、Del Guercio and

Hawkins (1999)、Cornett *et al.* (2007)、Yuan *et al.* (2008)和Elyasiani and Jia (2010)也发现机构投资者持股比例与不同指标度量的公司绩效正相关。

随着机构投资者队伍的壮大,对我国资本市场和公司治理的影响也越来越大,这些变化引起了国内学术界的研究兴趣,尤其近五年的研究成果颇丰。国内大部分研究表明机构投资者在保护中小投资者利益、改善公司治理等方面发挥了积极的作用。王奇波(2005)通过构造理论模型,将机构投资者引入上市公司控制权竞争之中,形成制衡的股权结构,有助于减少大股东控制权私人收益,他发现机构投资者通过积极地参与公司的控制权竞争来改善公司治理,提高公司业绩。翁洪波和吴世农(2007)从机构投资者持股比例与上市公司股利政策的关系入手,研究发现机构投资者对股利政策的制定起到了监督作用,抑制了上市公司“恶意派现”行为。李维安和李滨(2008)利用2004至2006年沪深两市3470家样本的实证结果显示,机构投资者在提升公司治理水平方面发挥了重要的作用,降低了代理成本,机构投资者持股比例与公司绩效存在显著的正相关关系。薄仙慧和吴联生(2009)从机构投资者持股和上市公司盈余信息关系的视角出发,以2004至2006年沪、深A股的数据进行实证分析,结果发现机构投资者在非国有公司发挥了积极的治理作用。石美娟和童卫华(2009)以2005年至2007年已股改公司为研究对象,结果发现后股改时期机构投资者持股比例与公司价值正相关。

一般来讲,持股比例大的机构容易接近董事会成员和高级管理人员(Carleton, Nelson, and Weisbach, 1998),因此,大机构比小机构监督成本要低、监督收益要大(Almazan, Hartzell and Starks, 2005; Chen, Harford, and Li, 2007)。持股规模越大的机构投资者越有能力阻止管理者的短视行为(Bushee, 1998)、越可能改善公司绩效(Elyasiani and Jia, 2010),而且,机构持股比例较高的公司越可能更换业绩不佳的CEO,而且公司价值会逐步得到改善(Aggarwal *et al.*, 2011)。

根据以上分析,文章提出以下假设:

**H1: 在其他情况不变的条件下,机构投资者持股比例与公司业绩正相关。**

**H2: 在其他情况不变的条件下,大机构投资者比小机构投资者可能发挥着更好的治理效应,其持股比例与公司业绩正相关关系更强。**

机构投资者在上市公司中是采取长期的战略性投资策略还是采取短期的投机策略反映到持股稳定性上,稳定的投资者有动机去监督公司行为,也有条件参与公司治理、提高公司业绩,因此,持股稳定性是机构投资者对公司绩效产生影响的重要因素(Elyasiani and Jia, 2008, 2010)。而已有的研究主要以机构总的持股比例来衡量机构投资者对公司治理的影响(Woidtke, 2002; 李维安和李滨, 2008; 石美娟和童卫华, 2009)。忽视所有权维度,只考虑所有权水平,仅仅加总或分散机构持股比例不足以说明其对公司价值的影响。比如,如果一家机构投资者开始在两个上市公司中的持股比例相同,后来,机构投资者在一个上市公司中买卖交易频繁,而在另一个公司中的持股保持不变,显然,机构投资者不会用心监督进行频繁交易的那个公司,相反,在持股稳定的公司里,他们会为了提高公司价值而积极参与公司治理。

而且,稳定的机构投资者可以促使所持股公司注重长远投资视角、改善公司治理、扩大业务范围,机构持股稳定性的变化可以帮助我们更准确地理解稳定性、监督与公司绩效之间的关系(Chen *et al.*, 2007)。稳定的机构投资者可以通过三种途径参与公司治理,提高公司绩效。首先,稳定的机构投资者与资本市场联系紧密,有能力、有动机监督公司,可以减少代理冲突和信息不对称问题,减少投资不足,提高公司经营业绩(Myers and Majluf, 1984)。再者,稳定的机构投资者可以缓解管理层的短视问题,鼓励经理投资长期的可获利项目,扩展工厂建设、添置设备、加大研发投入(Bushee, 1998; Wahal and McConnell, 2000)。第三,稳定的机构投资者常常会采用激励手段,增加奖金或提高薪水,更好地满足那些对股东有利的管理者,从而促使管理者为股东利益更加努力,提升公司绩效(Hartzell and Starks, 2003)。

持股时间不同的机构投资者表现出不同的行为:投机行为和治理行为。一般来讲,持股时间越长的机构投资者,他们通常在少数几家公司集中持股,有足够的时间搜集信息、处理信息、了解公司的行为,因此,与短期机构投资者相比,长期投资的机构投资者付出的监督成本更低、获得的经济利益更高(Chen, Harford, and Li, 2007);持股时间短的机构投资者通常在许多公司持股,但持股量较少,他们不关心公司治理,随时寻找机会套利,进行动量交易(Porter, 1992)。短期机构投资者,由于持股比例相对较少而且换手率较高,他们不可能积极监督管理层,相反,长期机构投资者,即使持股比例不大,他们都有动机实施监督并从监督中获取相应的收益(Coffee, 1991; Gaspar, Massa, and Matos, 2005)。持股比例越高的机构投资者越倾向于长期投资策略,持股时间越长就越有可能去监督管理层(Maug, 1998)。Bushee (1998)根据机构投资者过去的投资偏好(换手率、多元化、动量交易),把机构投资者分为短期、长期、准指数投资者。研究结果表明持股比例较高的长期机构投资者发挥了监督作用,他们对管理层施加压力,约束盈余管理,增加研发投入,增加了公司价值,相反,短期机构投资者鼓励管理者的短视投资行为一削减研发投入以满足盈余管理。Koh (2007)沿用Bushee (1998)的方法把机构投资划分为短期和长期两种类型,研究证明长期机构投资者积极参与了公司治理,其持股比例与操控性应计负相关,而短期机构投资者持股比例与向上盈余管理正相关,不利于公司治理水平提高。

相应地,我们提出如下假设:

**H3:** 在其他情况不变的条件下,长期机构投资者可能比短期机构投资者发挥着更好的治理效应,其持股比例与公司业绩正相关关系更强。

**H4:** 机构持股水平一定时,持股稳定性与公司业绩正相关。

不同的机构投资者在激励机制、利益冲突(指机构投资者与所持股公司之间的利益关系)、管制和法律、文化背景和管理方式、投资策略、竞争环境等方面存在着明显的差异,这些差异使一些机构投资者能够在公司治理中起带头作用而其他机构投资者成为跟随者(Del Guercio, 1996)。与公司有密切业务联系的机构投资者,更可能采用支持公司管理层的投票政策,减少管理层的风险,这样做可能导致公司

价值损失；相反，与公司业务联系较少的机构投资者很少采用“亲管理者”的投票方案，他们认为股东价值增加带来的好处要大于得罪管理者造成的损失(Davis and Kim, 2007)。Cornett (2007)根据机构投资者与公司潜在的业务关系，把机构投资者分为压力敏感型和压力抵制型机构投资者，研究了不同类型机构投资者与公司绩效的关系，结果发现只有与公司没有业务联系的压力抵制型机构投资者持股比例才与公司经营现金收益(operating cash flow returns)成正比。而与公司有潜在业务联系的压力敏感型机构投资者持股对公司经营现金收益没有影响，表明这些机构投资者为了保护与公司的业务关系而不会做出积极的监督行为。国家控制的机构投资者，比如社保基金，由于经营方式受政府干预，他们的目标不是最大化股东的利益，政治和社会压力造成基金经理与其他股东之间存在潜在的利益冲突，这类机构投资者不会改善公司绩效(Romano, 1993)。Woidtke (2002)的研究证实了这一观点，他的研究结果显示，受政府干预的公共养老基金持股比例与行业调整托宾Q负相关，而私人养老基金持股比例与行业调整托宾Q正相关，并认为两者存在明显差异的原因是公共养老基金相对于私募养老基金面临较大的政治压力，而且公共养老基金的激励机制与绩效脱钩。另外，外国机构投资者和独立机构投资者持股比例高的公司有更高的公司价值、更好的经营绩效，而且有更低的资本支出，表明外国机构投资者和独立机构投资者与公司没有潜在业务联系，他们积极参与公司监督活动(Ferreira and Matos, 2008)。Aggarwal *et al.* (2011)也证明与公司没有业务联系的独立机构投资者改善公司治理质量，比如外国机构投资者、共同基金和投资顾问，但是，非独立机构投资者没有发挥这个作用。钱露(2010)也认为不同类型的机构投资者在公司治理方面作用是不同的，证券投资基金作为压力不敏感型机构投资者积极参与公司管理，有助于缓解我国上市公司中的代理问题，从而提高公司经营绩效和市场价值；而作为压力敏感型机构投资者的证券公司，由于与上市公司有潜在的业务联系和利益关系，他们不会参与到公司治理中去。袁蓉丽等(2010)的研究也得出了同样的结论，认为不同的机构投资者对公司业绩有不同的影响，证券投资基金的持股对公司业绩有正面作用，而证券公司的持股对公司业绩没有显著影响。

基于以上分析，提出假设5：

**H5：在其他情况不变条件下，独立机构投资者可能比非独立机构投资者发挥着更好的治理效应，其持股比例与公司业绩正相关关系更强。**

### 三、研究方法

#### 3.1 样本和数据

本文选取2005年至2009年间公布了年报数据的沪、深A股所有上市公司作为初始样本。之所以从2005年开始选样本，是因为2004年以后机构持股的季度数据才齐全，而文中用到的某些变量是采用滞后一年的数据计算的，实际用到了2004至2009年间的样本数据。根据研究需要按以下原则对样本进行了筛选：(1)剔除上市未满两年的公司；(2)剔除金融类公司，由于金融类公司有不同的法律约束和财务处理方法；(3)剔除ST类公司和数据缺失的公司。经过上述操作，最终得到五年的共计5448个公司年，数据筛选过程如表1所示。数据主要来源于万德(Wind)数据库、色诺芬

(CCER)和国泰安(CSMAR)数据库。

表1 样本筛选过程

	2005	2006	2007	2008	2009	合计
所有A股上市公司	1352	1435	1547	1603	1693	7630
减：上市不满两年的	(115)	(80)	(191)	(203)	(176)	(765)
金融类	(9)	(13)	(16)	(16)	(28)	(82)
ST类	(106)	(149)	(171)	(155)	(154)	(735)
数据缺失	(99)	(147)	(73)	(114)	(167)	(600)
最终所选样本	1023	1046	1096	1115	1168	5448

### 3.2 模型建立

机构投资者参与公司治理的动因，归纳起来主要有以下几点：代理成本存在、机构投资者队伍壮大、政府管制放松、机构投资者的逐利偏好和自身发展需要。由于第一类和第二类代理问题，内部控制人(经理和控股股东)对中小投资者进行利益攫取，随着持股比例的增加，机构投资者不甘心内部人的掠夺，为了自身利益，他们不得不主动积极监督公司行为，减少利益损失。而且，我国证监会和国务院多次强调要发挥机构投资者在公司治理中的作用，这些政策规定促使我国机构投资者愈来愈倾向于高调扮演“积极投资者”角色。当机构投资者资金规模达到一定程度、资本市场发展到一定程度，并且监管机制逐步完善时，机构投资者必须从长期持股中才能获利，即采取“价值”型投资理念，而且，在目前全球资金过剩的情况下仅仅通过价值发现投资获利越来越困难，信息透明度的提高、各个机构投资者价值发现能力的增强，很难找到一只价值被人工低估的股票，为了获得更多收益，机构投资者必将运用其掌握的资金、信息和能力，积极参与到所投资公司的治理中去。一些研究认为(翁洪波和吴世农，2007；李维安和李滨，2008；袁蓉丽，肖泽忠，邹宏，2010)，中国机构投资者正逐步从价值发现阶段过渡到价值创造阶段。

机构投资者作为中小投资者的代表，为了减轻内部控制人的利益侵占、降低代理成本，他们会积极监督公司行为，比如：管理层薪酬契约的制定、关联交易中利益侵占行为以及信息披露等问题，通过改善公司治理提高公司绩效，获取更多收益。机构投资者实现参与公司治理的传导效应，必然需要路径依赖。机构投资者主要是通过股东大会、董事会、管理层和其他方式实现公司治理的功能。例如：大商股份(600694)前十大流通股东中就有六位是机构投资者，分别是富国天惠、鹏华基金、富兰克林、华夏红利、华夏复兴和诺安平衡。近几年来，大商股份业绩不错，但是因为对管理层激励不够，导致这个公司发展有障碍、长期存在治理问题：管理层与股东关系不融洽，好几年没分红了，机构就分红方案和大商股份管理层交流了多次也没起作用；而且公司股价表现也不佳。为了维护股东利益、提高公司市场价值，2011年11月，鹏华基金、国海富兰克林基金、深圳合赢投资、天弘基金、中信证券以及华夏基金等多家机构，联名起草了一份提案，提请大商股份召开股东大会，希望董事会能够给予管理层更多的现金激励。机构的这份《提案》建议对大商股份高管的激励分配比例为：董事长35%，其他高管45%，业务骨干20%。具体方案

计算依据为：以大商股份 2011 年 4 亿元净利润为基数，超过 4 亿元至 5 亿元之间的提取税后净利润的 6% 作为管理层的现金激励，5 亿元以上的，按照 12% 提取；另外，2012 年至 2013 年，激励条件为净利润增长率 20% 不提取，20% 至 25% 之间提取 2%；此后，每增加 5%，即提取 2%；如果增长 50% 以上，按照 12% 提取。图 1 展示了机构投资者参与公司治理的主要路径。

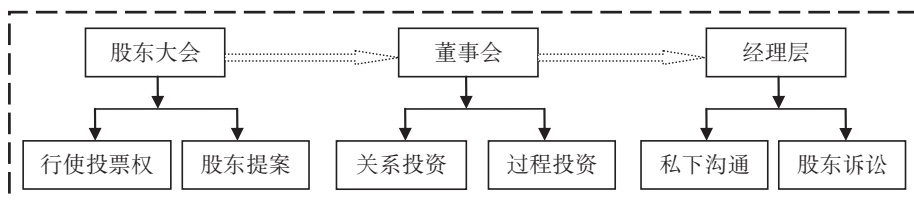


图 1 机构投资者参与公司治理的路径

一方面，机构投资者积极参与公司治理能够缓解公司治理中的中小股东“搭便车”等问题，通过对上市公司管理者的监督，提高“内部人”代理行为的“机会主义成本”，改进公司的决策水平和质量，提高公司的绩效或市场价值；另一方面，机构投资者也可能非常关注企业的短期绩效指标和未来的获利能力，这样一种价值发现功能可能被认为是一种价值创造功能。由于机构持股时既可能保持沉默，也可能监督，所以对机构持股与公司绩效正相关的解释，除了机构积极参与公司治理带来的影响外，还有一种可能那就是机构投资者由于拥有较强的信息分析能力和挖掘能力，能够找出那些在未来盈利状况良好的行业和企业，即“价值发现”功能。换句话说，机构投资者持股可以提高公司绩效，反之，高绩效公司容易吸引投资者的眼球，鼓励投资者采取长期投资视线 (investment horizon)。Chung and Zhang (2011) 研究发现机构投资者持股比例不仅随着公司治理质量结构的改善而增加，而且公司持股中的机构数也随着治理质量的提高而增加。因此，机构投资者持股与公司绩效之间有相互影响的因果关系，普通最小二乘法估计无法准确解释变量间的相关关系，为了克服变量之间的内生性问题，我们建立联立方程 (1)、(2)，把机构投资者持股、公司绩效当作内生变量处理，利用两阶段最小二乘法进行估计。

$$PERFOR = \alpha_0 + \alpha_1 INST + \rho X + \gamma C + YEAR + \varepsilon \quad (1)$$

$$INSH = \beta_0 + \beta_1 PERFOR + \sigma Y + \lambda C + YEAR + \omega \quad (2)$$

方程 (1)、(2) 中的  $PERFOR$  和  $INSH$  是内生变量：公司绩效和机构持股，具体含义见表 1 定义，向量  $X$ 、 $Y$  分别是公司绩效和机构持股的工具变量，向量  $C$  和年度虚拟变量是两个方程的共同控制变量。 $\varepsilon$ 、 $\omega$  分别是两个方程的干扰项。



### 3.3 变量构建

#### 3.3.1 公司绩效

国外的研究中常用公司价值Tobin's Q来衡量机构的监督效应(Woidtke, 2002; Ferreira and Matos, 2008), 这个指标是市场一账面价值比率, 通过市场价值因素反映公司的成长机会和未来前景预期, 易受公司流通股比例、股本结构等因素影响。资产收益率(ROA)也用得较多, 它是衡量企业收益能力的指标, 比Tobin's Q更能真实反映当前公司绩效(Cornet *et al.*, 2007)。在考核企业利润目标的实现情况时, 投资者往往关注与投入资产相关的报酬实现效果, 其中最重要的就是资产收益率, 资产收益率的高低直接反映了公司的竞争实力和发展能力(陈小悦和徐晓东, 2001; Mahoney and Roberts, 2007)。息税前收益率(EBIT)也是一个度量公司绩效的好指标, 它反映了企业营业费用、管理费用和财务费用等期间费用的情况及其变化(陈小悦和徐晓东, 2001)。根据前人的研究, 本文选用资产收益率(ROA)和公司价值Tobin's Q作为公司绩效的代理变量, 由于ROA和TQ的水平和变化可能受到外部行业的影响, 对其进行的估计就会受到行业因素影响, 因此我们采用行业调整的总资产收益率和公司价值Tobin's Q, 即IAROA和IATQ, IAROA等于每个公司ROA值减去当年行业中值; IATQ等于每个公司TQ减去当年行业中值。最后, 文章用行业调整的息税前收益率(LAEBIT)做稳健性检验。

#### 3.3.2 机构持股

机构投资者的特征, 包括持股集中度、投资期限、持股稳定性和机构投资者的独立性, 会影响他们对公司的监督动机(Ramalingegowda and Yu, 2012; Elyas and Jia, 2008), 进而影响公司绩效(Chen *et al.*, 2007), 因此, 本文从这四个维度综合考察机构投资者对公司绩效的影响。

##### 1) 各类机构持股的集中度

首先, 采用各类机构持股比例研究整体机构对公司绩效的影响程度, 即上市公司中各类机构年末持股数占A股总股的比例TINSH,<sup>3</sup>没有机构参股的, 取值为0。之所以选择占A股总股比例而不是占流通股的比例, 是因为在后股权分置改革时期, 流通盘随着限售股的解禁而扩大, 这对机构持股占流通股比例会有个自然稀释作用, 使得机构持股的变化受到非机构行为的影响。其次, 持股比例可能限制机构投资者的话语权, 持股比例太小的机构投资者可能有监督的动机而没有监督的实力。我国公司法规定了股东的提案权(第103条第二款), 单独或者合计持有3%以上股份的股东可以提出临时议案, 董事会要将该议案提交股东大会审议。2001年, 证监会颁布了《关于在上市公司建立独立董事制度的指导意见》, 意见规定, 合并或者持有1%股份比例的股东可以提出独立董事候选人。因此, 文章把持股比例为3%及以上的称为大机构投资者, 持股比例小于3%的称为小机构投资者, 分别研究大机构投资者和小机构投资者的治理作用。

<sup>3</sup> 本文的各类机构包括在某公司持股的除指数型基金以外所有机构投资者, 而大、小机构, 长、短期机构和独立、非独立机构均只包括基金、保险公司、企业年金、信托公司、QFII、券商这六类机构投资者; 因为指数基金一般属于被动持仓, 不参与公司治理, 所以在研究中去掉了这部分机构投资者; 文中所有涉及到机构持股比例都是指占A股总股的比例。

## 2) 机构投资者持股期限 (investment horizon)

Bushee (1998) 根据机构在公司持股的平均规模、投资组合换手率、对当前盈余信息的交易敏感性, 采用聚类分析方法, 把机构投资者分为短期机构投资者、准指数机构投资者和长期机构投资者。Gaspar, Massa, and Matos (2005) 根据投资组合中的平均换手率 (turnover) 把机构投资者分为长期和短期机构投资者。Chen *et al.* (2007) 认为连续持股在一年及以上的为长期机构投资者, 他们主要从监督公司行为中获取收益, 持股在一年以下的为短期机构投资者, 主要从短期交易中攫取利益。本文根据 Chen *et al.* (2007) 的方法, 把每个机构投资者在每家上市公司中连续持股一年及以上的定义为长期机构投资者, 其他的为短期机构投资者。一家上市公司中所有长期机构投资者一年四季平均持股比例之和为该上市公司的长期机构投资者持股比例  $LINSH$ , 其它为短期机构投资者持股比例  $SINSH$ 。

## 3) 持股稳定性

Bohren *et al.* (2005) 采用非零点法 (non-zero-points) 和保持股权点法 (maintain-stake-points) 研究持股稳定性, Elyas and Jia (2008, 2010) 采用机构持股持续性 ( $IOP$ ) 和持股波动性 ( $STDIN$ ) 研究机构持股稳定性对公司绩效的影响。本文采用两个变量度量机构投资者持股稳定性: 第一, 用机构持股波动性 ( $STDIN$ ) 作为机构持股稳定性的替代变量,<sup>4</sup> 研究其动态变化对公司绩效产生的作用, 采用公司中的每个长期机构投资者 (连续持股在一年及以上的) 持股比例一年四季的平均标准差来度量机构持股波动性 ( $STDIN$ ), 计算公式如下:

$$STDIN_i = \sum_{j=1}^{N_i} std(p_{i,t}^j) / N_i \quad (3)$$

方程 (3) 中,  $P_{i,t}^j$  表示公司  $i$  中机构投资者  $j$  在第  $t$  季度的持股比例 ( $t = 1, 2, 3, 4$ ),  $N_i$  是公司  $i$  中所有机构投资者的数量。显然, 持股波动性越高表示持股稳定性越低。第二, 用机构持股持续非零点 ( $NZP$ ) 作为机构持股稳定性的替代变量。采用机构投资者两年 (前一年和样本年的 8 个季度) 在上市公司中连续非零持股的季度数来表示。

## 4) 独立与非独立机构投资者

为检验不同类型的机构投资者对公司业绩的影响, 我们按照机构投资者与上市公司的关系以及他们受政府干预的程度分为独立机构投资者和非独立机构投资者。根据已有研究 (Chen *et al.*, 2007; Ferreira and Matos, 2008; 等等), 文章把证券投资基金和 QFII 定义为独立机构投资者, 上市公司中各独立机构投资者年末持股比例之和为独立机构投资者持股比例  $IDINSH$ ; 把社保基金、券商、保险公司、信托投资公司定义为非独立机构投资者, 上市公司中各非独立机构投资者年末持股比例之和为非独立机构投资者持股比例  $UIDINSH$ 。

<sup>4</sup> 因为持股波动性需要一年四季连续持股的数据, 所以只有长期机构投资者才计算持股波动性。

文中涉及到的所有变量如表2所示：

表2 变量描述

	变量	具体定义
被解释变量	<i>IAROA</i>	行业调整的资产收益率，公司净利润/平均总资产-当年行业中值
	<i>IAREBIT</i>	行业调整的息税前收益率，息税前收益/平均总资产-当年行业中值
	<i>IATQ</i>	行业调整的公司市场价值，等于(股权价值+负债账面价值)/平均总资产，其中，股权价值为(流通股本*股价+非流通股本*每股净资产)
解释变量	<i>TINSH</i>	机构投资者持股比例，年末机构投资者持股数占A股总股数之比
	<i>LGINSH</i>	大机构持股比例，年末所有大机构持股数占A股总股数之比
	<i>SMINSH</i>	小机构持股比例，年末所有小机构持股数占A股总股数之比
	<i>IDINSH</i>	独立机构投资者持股比例，年末独立机构投资者持股数占A股总股数之比
	<i>UIDINSH</i>	非独立机构投资者持股比例，年末非独立机构投资者持股数占A股总股数之比
	<i>LINSH</i>	长期机构投资者持股比例，长期机构一年四季平均持股数占A股总股数之比
	<i>SINSH</i>	短期机构投资者持股比例，年末短期机构投资者持股数占A股总股数之比
	<i>STDIN</i>	机构持股波动性，公司中每个长期机构投资者一年四季持股比例标准差的平均值
	<i>NZP</i>	非零持股点，采用两年中(前一年和样本年共8个季度)每个机构投资者在上市公司连续持股的季度数之和除以机构数量表示
公司绩效	<i>FIRST</i>	公司第一大股东持股比例，第一大股东持股数/总股数
工具变量	<i>FIRSTSQ</i>	公司第一大股东持股比例的平方
	<i>SEP</i>	两权分离度，最终控制人控制权与所有权之差
	<i>MPAY</i>	高管薪酬，采用高管前三名薪酬总额的自然对数计算
	<i>LEV</i>	资产负债率，年末总负债除以年末总资产
机构持股	<i>TURNOVER<sub>t</sub></i>	换手率，用前一年日交易量除以流通股股数的平均值度量
工具变量	<i>RTS<sub>t</sub></i>	流通股比例，即前一年流通A股占全部A股比例
	<i>RPB<sub>t</sub></i>	市净率，采用前一年年末每股市价除以当年每股净资产计算
	<i>BETA<sub>t</sub></i>	市场风险，前一年52周(一年)股票的Beta值
	<i>DIVID<sub>t</sub></i>	股利支付率，采用前一年每股股利除以每股收益计算
共同控制变量	<i>SIZE</i>	公司规模，采用年末资产总额的自然对数计算
	<i>GROWTH</i>	公司成长性，用公司三年主营业务销售收入平均增长率度量(前两年和样本年)
	<i>AGE</i>	公司上市年限
	<i>BH</i>	是否在其他市场挂牌上市虚拟变量，是为1，否则为0
	<i>STATE</i>	是否国有控股虚拟变量，是取1，否则取0
	<i>YEAR</i>	年度虚拟变量，控制不同年份宏观经济因素的影响，共4个年度虚拟变量

### 3.3.3 工具变量

最好的工具变量应该是所有外生变量和滞后内生变量的线性组合，它们与回归方程中的内生变量高度相关，而与联立方程中的误差项无关(Wooldtke, 2002)。Del Guercio (1996)、Bushee (1998)、Wooldtke (2002)等认为，机构投资者往往根据公司上一期的相关指标进行投资决策，他们偏好于资本市场化力度大、公司盈利能力强、市场风险小、市净率低的高成股。Ferreira and Matos (2008)认为所有的机构投资者都强烈偏好规模大的公司，Chung and Zhang (2011)认为机构投资者喜欢投资那些市场流动性高的公司。Grinstein and Michaely (2005)认为股利支付政策影响机构投资者的投资决策：机构投资者回避不支付股利的公司，但是在支付股利公司中，他们偏好那些股利支付相对较少的公司。外国机构投资者也偏好股利支付低的公司(Ferreira and Matos, 2008)。因此，对于机构持股，我们选择上一期的换手率、流通股比例、市场风险、股利支付率、市净率作为工具变量。

机构投资者作为外部因素影响公司绩效，而公司的内部治理机制：第一大股东持股比例、独立董事比例、高管薪酬及最终控制人两权分离度等，影响着公司内部控制人的决定权，以及经理—股东之间的利益冲突，从而影响公司绩效(McConnell and Servaes, 1990；Cornett, 2007；Elyasiani and Jia, 2010)。公司的上市年龄和成长性也会影响公司经营绩效，这些变量与公司绩效高度相关，与干扰项无关，因此，我们把这些变量作为绩效的工具变量。

### 3.3.4 控制变量

根据我国资本市场的具体情况和国外的研究(Mahoney and Roberts, 2007；Bhattacharya and Graham, 2009；Elyasiani and Jia, 2010)，文章选取公司规模、资产负债率、公司风险、是否国有控股、是否在其它市场挂牌上市作为两个方程中的共同控制变量。

## 3.4 样本描述统计

表3列出了变量的描述性统计，可以看出，经过行业调整处理以后，各个公司的业绩差异不大，*IAROA*的平均值为-0.002，最大、最小值分别为-0.513、0.236，标准差为0.067；*IAEBIT*的平均值为-0.004，最大、最小值分别为-0.706、0.254，标准差为0.074。各类机构持股占A股总股的平均比例为15.2%，各公司差异较大，最大的有95%，最小的不到0.1%。平均每家上市公司中有14.4个机构参与投资，各公司差异较大，最多的有236个机构，最少的只有1家(除了没有机构参股的公司)。所选样本中只有753家公司中有持股占A股总股比例达到3%的机构投资者，其持股占A股总股的平均比例也只有5.3%，表明目前我国大机构投资者并不多。独立机构投资者平均持股比例(6.7%)远大于非独立机构投资者平均持股比例(1.8%)，而长期机构投资者在每家上市公司中占的比例(平均持股比例为3.9%)要小于短期机构投资者(平均持股比例为10.8%)，说明我国目前短期机构投资者仍然占主流。两年内机构投资者连续持股时间(*NZP*)平均为2个季度，机构持股平均波动性为72.8%，表明持股不是很稳定，波动性较大。第一大股东持股比例平均37%，公司间差异很大，最小的

5.1%，最大的85.2%。所选样本中，沪、深A股在其它市场挂牌上市的公司不多，只占8.9%左右；国有控股公司占了三分之二以上，“一股独大”现象依然突出。

表3 主要变量的描述性统计

连续变量	样本个数	平均值	中值	标准差	最小值	最大值
<i>IAROA</i>	5448	-0.002	-0.001	0.067	-0.513	0.236
<i>IAEBIT</i>	5448	-0.004	-0.001	0.074	-0.706	0.254
<i>IATQ</i>	5448	0.195	-0.012	0.816	-1.006	6.459
<i>TINSH</i>	5279	0.152	0.084	0.182	0.000	0.950
<i>LGINSH</i>	753	0.053	0.042	0.032	0.030	0.449
<i>SMINSH</i>	4087	0.068	0.029	0.092	0.000	0.616
<i>IDINSH</i>	4279	0.067	0.021	0.096	0.000	0.661
<i>UIDINSH</i>	2007	0.018	0.012	0.022	0.000	0.449
<i>LINSH</i>	1840	0.039	0.025	0.038	0.001	0.280
<i>STDIN</i>	1840	0.728	0.518	0.881	0.000	20.630
<i>NZP</i>	3969	2.077	1.852	0.926	1.000	8.000
<i>SINSH</i>	3439	0.108	0.045	0.152	0.000	0.918
<i>SIZE</i>	5448	21.620	21.522	1.068	18.724	25.404
<i>LEV</i>	5448	0.510	0.523	0.181	0.074	0.994
<i>FIRST</i>	5448	0.370	0.353	0.155	0.051	0.852
<i>SEP</i>	5448	5.779	0.000	8.202	0.000	46.950
<i>MPAY</i>	5448	13.445	13.476	0.796	10.361	15.524
<i>BH</i>	5448	0.089	0.000	0.284	0.000	1.000
<i>GROWTH</i>	5448	0.260	0.179	0.438	-0.459	3.864
<i>AGE</i>	5448	9.093	9.000	3.535	2.000	19.000
<i>STATE</i>	5448	0.682	1.000	0.466	0.000	1.000
<i>TURNOVER<sub>-1</sub></i>	5448	5.849	4.856	3.834	0.578	19.726
<i>BETA<sub>-1</sub></i>	5448	1.116	1.125	0.278	0.000	1.886
<i>RPB<sub>-1</sub></i>	5448	3.253	2.242	3.024	-3.601	29.853
<i>DIVD<sub>-1</sub></i>	5448	0.303	0.063	0.574	0.000	5.909
<i>RTS<sub>-1</sub></i>	5448	0.491	0.469	0.180	0.056	1.000

表4给出了主要变量间的相关性检验，行业调整的资产收益率(*IAROA*)和行业调整的公司价值Tobin's Q (*IATQ*)与各类机构持股比例(*TINSH*)和机构非零持股点(*NZP*)均显著正相关，与长期机构持股波动性(*STDIN*)显著负相关，与控股股东的两权分离度(*SEP*)显著负相关，而与高管薪酬(*MPAY*)显著正相关。解释变量间基本符合逻辑上的相关性(比如说公司第一大股东持股比例与控股股东两权分离度显著正相关)，限于篇幅，不一一解释。另外，我们看到解释变量间的相关系数都小于0.4，有很大一部分在0.1以下，而且多重共线性VIF (variance inflation factor)检验值都小于2，因此，多元回归中出现多重共线性的可能性小。同时，D-W值为1.982，表明我们的数据没有正或负的自回归问题。

表 4 主要变量间的 Pearson 相关性分析

	IAROA	IATQ	TINSH	NZP	STD	LEV	FIRST	SEP	MPAY	SIZE	GROWTH	AGE
IAROA	1.000											
IATQ	0.248** (0.00)	1.000										
TINSH	0.237** (0.00)	0.299** (0.00)	1.000									
NZP	0.062** (0.00)	0.017* (0.04)	0.094** (0.00)	1.000								
STDIN	-0.038* (0.03)	-0.042* (0.03)	-0.140** (0.00)	-0.260 (0.00)	1.000							
LEV	-0.362** (0.00)	-0.280** (0.00)	-0.019 (0.19)	-0.001 (0.92)	0.052* (0.02)	1.000						
FIRST	0.100** (0.00)	-0.134** (0.00)	-0.032* (0.02)	0.011 (0.45)	0.015 (0.52)	-0.013 (0.37)	1.000					
SEP	-0.005* (0.02)	-0.004* (0.05)	-0.029 (0.07)	-0.022 (0.12)	0.071** (0.00)	0.003 (0.59)	0.091** (0.00)	1.000				
MPAY	0.303** (0.00)	0.032** (0.02)	0.326* (0.04)	0.080* (0.03)	-0.013 (0.56)	0.003 (0.80)	-0.016 (0.26)	-0.016 (0.26)	1.000			
SIZE	0.143** (0.00)	-0.305** (0.00)	0.213** (0.00)	-0.076** (0.00)	-0.099** (0.00)	0.288** (0.00)	0.259** (0.00)	-0.042** (0.00)	0.398** (0.00)	1.000		
GROWTH	0.167** (0.00)	0.026** (0.00)	0.006* (0.04)	0.048** (0.00)	-0.075** (0.00)	0.109** (0.00)	0.138** (0.00)	0.004 (0.79)	0.060** (0.00)	0.111** (0.00)	1.000	
AGE	-0.068** (0.00)	0.007** (0.00)	0.099** (0.00)	-0.027 (0.06)	-0.070** (0.00)	0.080** (0.00)	-0.158** (0.00)	-0.049** (0.00)	0.165** (0.00)	0.120** (0.00)	-0.037** (0.00)	1.000
STATE	-0.044** (0.00)	-0.120** (0.00)	-0.012 (0.40)	0.008 (0.55)	-0.043 (0.06)	0.051 (0.00)	0.238** (0.00)	-0.309** (0.00)	0.050** (0.00)	0.208** (0.00)	-0.036* (0.01)	0.09** (0.00)

注：\*\*、\* 分别表示在 1%、5% 水平下显著（双尾 t 检验）。

## 四、实证结果分析

### 4.1 各类机构持股与公司绩效

由于研究期间(2005至2009年)涵盖了几个重要事件,比如2005年开始进行股权分置改革、2007年正式实施新会计准则、2008年发生全球金融危机。统计结果显示(未报告,需要可向作者索取),在这期间,上市公司业绩普遍经历了一个前高后低的趋势,机构持股比例也经历了同样的变化,机构持股比例和公司业绩之间在时间序列上存在机械相关。因此,为了排除时间趋势对本文研究结论的影响,在研究各类机构持股集中度对公司绩效的影响时,在控制内生性的条件下,文章既做了五年非平衡面板数据回归还分年度进行了回归,表5报告了联立方程(1)、(2)对公司行业调整的资产收益率(*IAROA*)的回归结果。全样本回归中,各类机构持股比例与公司绩效(*IAROA*)在1%的水平上正相关(回归系数0.230,  $t$ 值4.42),表明机构投资者发挥了改善公司绩效的作用。分年度样本回归中,各年机构持股比例都与公司绩效在1%的水平上显著正相关,但是就回归系数和 $t$ 值来看,2007年是个拐点,机构持股对公司绩效的影响从2005年到2007年有增强趋势(回归系数从0.391增加到0.428,  $t$ 值从5.04增加到9.45),从2007年到2009年有下降趋势(回归系数从0.428减小到0.125,  $t$ 值从9.45减小到4.16)。以上结果证明假设1成立。从全样本回归看,公司第一大股东持股比例与公司绩效的关系是非线性的(*FIRST*的回归系数显著为正, *FIRSTSQ*的回归系数显著为负),但这个关系在分年度回归中各年相异,在2005年和2007年不显著,而在其他三年都显著,而最终控制人两权分离度与公司绩效不管是在全样本回归中还是分年度回归中都显著负相关,但回归系数均很小。公司高管薪酬水平与公司绩效不管是在总样本回归中还是在各年度回归中都在1%的水平上显著正相关,表明公司高管薪酬越高,经理人员越愿意为提高公司绩效而努力工作。另外,公司绩效与公司规模和成长机会显著正相关,而与公司资产负债率和国有控股的关系为负,公司上市年龄与公司业绩虽然在全样本回归中显著负相关,但是在各年回归中他们的关系并不明显。

利用联立方程(1)、(2)回归分析了各类机构持股比例与行业调整的公司价值Tobin's *Q* (*IATQ*)的关系,表6报告了回归结果。与表5一样,同时进行了全样本的非平衡面板回归和分年度的截面回归,其结果也与表5类似,全样本回归中,各类机构持股比例与公司价值(*IATQ*)在1%的水平上正相关(回归系数2.493,  $t$ 值8.56),其回归结果比表5报告的更显著,表明机构投资者确实发挥了改善公司价值的作用。分年度样本回归中,各年机构持股比例都与公司价值在1%的水平上显著正相关。就回归系数和 $t$ 值来看,2007年是达到最大值,机构持股对公司价值的影响从2005年到2007年有增强趋势(回归系数从2.777增加到9.707,  $t$ 值从12.04增加到14.03),2008年急剧下降(回归系数从9.707下降到2.174,  $t$ 值从14.03减小到9.29),2009年有回升趋势(回归系数上升到4.639,  $t$ 值却下降到7.82),分年度回归结果的变化趋势与表5报告的基本相同,只是在2009年机构持股对市场价值的正向作用增强了,而对公司业绩的正向作用没有加强。以上结果再次证明假设1成立。从回归结果还可以看出,公司高管薪酬水平与公司市场价值的正向关系只在全样本回归中和2006年的样本回归中显著正相关,在其他四年中关系均不显著;公司规模和财务杠杆均与市场价值显著负相关,而公司上市年龄与市场价值显著正相关,表明上市公司越成熟市场价值越高。

表5 机构持股与公司绩效相关性的2SLS回归

<i>IAROA</i>	(1) 全样本	(2) 2005	(3) 2006	(4) 2007	(5) 2008	(6) 2009
<i>TINSH</i>	0.230*** (4.42)	0.391*** (5.04)	0.426*** (8.07)	0.428*** (9.45)	0.236*** (7.18)	0.125*** (4.16)
<i>LEV</i>	-0.189*** (-31.22)	-0.190*** (-15.36)	-0.144*** (-13.96)	-0.136*** (-12.30)	-0.124*** (-10.59)	-0.142*** (-13.76)
<i>FIRST</i>	0.077** (2.49)	0.065 (0.97)	0.107** (1.99)	0.031 (1.57)	0.159*** (2.84)	0.041* (1.77)
<i>FIRSTSQ</i>	-0.057* (-1.66)	-0.022 (-0.29)	-0.106* (-1.71)	-0.059 (-0.85)	-0.110* (-1.67)	-0.057* (-1.89)
<i>SEP</i>	-0.001* (-1.90)	-0.002* (-1.76)	-0.002* (-1.82)	-0.001* (-1.75)	-0.001* (-1.69)	-0.001* (-1.71)
<i>MPAY</i>	0.016*** (10.29)	0.013*** (3.90)	0.011*** (3.77)	0.005** (2.55)	0.013*** (3.98)	0.020*** (7.20)
<i>BH</i>	-0.014*** (-2.89)	-0.007 (-0.94)	-0.003 (-0.71)	0.002 (0.34)	-0.011* (-1.82)	-0.020*** (-2.99)
<i>SIZE</i>	0.013*** (8.79)	0.014*** (4.51)	0.006** (2.39)	0.002** (2.03)	0.002*** (1.97)	0.009*** (4.73)
<i>GROWTH</i>	0.027*** (13.80)	0.037*** (7.66)	0.028*** (5.84)	0.020*** (4.22)	0.025*** (6.02)	0.026*** (6.83)
<i>AGE</i>	-0.001*** (-2.77)	-0.001 (-0.91)	-0.001 (-0.51)	0.001 (1.25)	-0.001 (-1.27)	-0.001 (-0.99)
<i>STATE</i>	-0.010*** (-3.82)	-0.004 (-0.82)	-0.001 (-1.14)	-0.010** (-2.38)	-0.006* (-1.87)	-0.020*** (-4.62)
<i>CONS</i>	-0.407*** (-11.20)	-0.404*** (-5.32)	-0.227*** (-3.848)	-0.043*** (-0.70)	-0.227*** (-3.92)	-0.413*** (-8.94)
<i>YEAR</i>	Control					
R <sup>2</sup>	0.3271	0.3730	0.2812	0.2101	0.1768	0.2532
Chi2	1893.47 (0.000)	659.76 (0.000)	584.80 (0.000)	483.23 (0.000)	489.07 (0.000)	542.24 (0.000)
Obs.	5448	1023	1046	1096	1115	1168

注：1.\*\*\*、\*\*、\*分别表示在1%、5%和10%水平下显著；2.括号里的数字为t值或p值。



表6 机构持股与公司价值相关性的2SLS回归

<i>IATQ</i>	(1) 全样本	(2) 2005	(3) 2006	(4) 2007	(5) 2008	(6) 2009
<i>TINSH</i>	2.493*** (8.56)	2.777*** (12.04)	3.296*** (12.49)	9.707*** (14.03)	2.174*** (9.29)	4.639*** (7.82)
<i>LEV</i>	-0.422*** (-5.34)	-0.080** (-2.19)	-0.239*** (-3.79)	-1.425*** (-5.73)	-0.253*** (-3.04)	-1.091*** (-5.38)
<i>FIRST</i>	-2.283*** (-5.67)	-0.219* (-1.71)	-0.657** (-2.00)	-3.318*** (-2.69)	-0.817** (-2.05)	-4.402*** (-4.22)
<i>FIRSTSQ</i>	2.771*** (5.80)	0.541** (2.40)	1.139*** (2.84)	5.351*** (3.41)	1.054** (2.11)	4.711*** (3.77)
<i>SEP</i>	-0.005*** (-3.06)	-0.001* (-1.70)	-0.002* (-1.71)	-0.007** (-2.22)	-0.002* (-1.82)	-0.019*** (-3.93)
<i>MPAY</i>	0.045** (2.23)	0.003 (1.28)	0.011* (1.81)	0.293 (1.53)	0.022 (0.99)	0.053 (1.09)
<i>BH</i>	0.084 (1.26)	0.033 (1.42)	0.090** (2.22)	0.082 (0.53)	0.002 (0.04)	0.088 (0.68)
<i>SIZE</i>	-0.395*** (-19.77)	-0.147*** (-15.59)	-0.193*** (-12.96)	-0.625*** (-11.23)	-0.175*** (-10.27)	-0.552*** (-14.15)
<i>GROWTH</i>	0.052** (2.12)	0.005* (1.65)	0.043* (1.66)	0.057* (1.73)	0.071** (2.37)	0.177** (2.35)
<i>AGE</i>	0.011** (2.05)	0.008*** (3.48)	0.011*** (3.00)	0.070*** (5.14)	0.008* (1.81)	0.027*** (2.70)
<i>STATE</i>	-0.070** (-1.97)	-0.005 (-0.29)	0.015 (0.58)	-0.074 (-0.77)	-0.024 (-0.77)	-0.429*** (-4.99)
<i>CONS</i>	8.435*** (17.73)	3.051*** (13.59)	4.262*** (11.79)	13.845*** (11.89)	4.084*** (9.91)	13.309*** (14.63)
<i>YEAR</i>	Control					
R <sup>2</sup>	0.2980	0.1847	0.2410	0.2691	0.1938	0.1644
Chi2	1099.27 (0.000)	435.18 (0.000)	446.19 (0.000)	464.42 (0.000)	416.36 (0.000)	542.32 (0.000)
Obs.	5448	1023	1046	1096	1115	1168

注：1.\*\*\*、\*\*、\*分别表示在1%、5%和10%水平下显著；2.括号里的数字为t值或p值。

#### 4.2 大、小机构投资者与公司绩效

为了验证大机构投资者是否比小机构投资者发挥更好的治理作用，文章利用联立方程(1)、(2)回归分析了大、小机构投资者持股比例与公司业绩的关系，表7报告了回归结果。第(1)、(2)列报告了大、小机构持股比例与行业调整的资产收益率(*IAROA*)的关系，其中，大机构持股比例与公司业绩(*IAROA*)在1%的水平上显著正相关(回归系数1.432，t值5.89)，小机构持股比例与公司业绩(*IAROA*)在5%的水平上显著正相关(回归系数0.487，t值1.98)。表7第(3)、(4)列报告了大、小机构持股比

例与行业调整的Tobin's Q (*IATQ*)的关系,其中,大机构持股比例与公司业绩(*IATQ*)在1%的水平上显著正相关(回归系数10.392,  $t$ 值6.16),小机构持股比例与公司业绩(*IATQ*)在10%的水平上显著正相关(回归系数2.686,  $t$ 值1.79)。这些结果表明这两类机构投资者持股比例均与公司绩效正相关,但是,大机构持股与公司业绩的正相关关系更强,证明假设2成立,股东持股比例高低是监督实力的表征之一。

表7 大、小机构投资者与公司业绩相关性的2SLS回归

	(1) <i>IAROA</i>	(2) <i>IAROA</i>	(3) <i>IATQ</i>	(4) <i>IATQ</i>
<i>LGINSH</i>	1.432*** (5.89)		10.392*** (6.16)	
<i>SMINSH</i>		0.487** (1.98)		2.686* (1.79)
<i>LEV</i>	-0.155*** (-8.93)	-0.148*** (-10.42)	-0.606*** (-3.05)	-0.226** (-2.08)
<i>FIRST</i>	-0.079** (-1.98)	-0.054* (-1.69)	-2.046** (-2.06)	-1.339*** (-2.82)
<i>FIRSTSQ</i>	0.166* (1.67)	0.005* (1.73)	2.163* (1.74)	2.162*** (3.80)
<i>SEP</i>	-0.002* (-1.68)	-0.001* (-1.73)	-0.022* (-1.69)	-0.002* (-1.93)
<i>MPAY</i>	0.019*** (4.45)	0.011*** (5.56)	0.155*** (3.24)	0.048* (1.66)
<i>BH</i>	-0.006 (-0.62)	0.006 (1.20)	-0.022 (-0.16)	0.331*** (3.95)
<i>SIZE</i>	0.003* (1.81)	-0.001 (-0.40)	-0.266*** (-5.87)	-0.508*** (-16.38)
<i>GROWTH</i>	0.011** (2.25)	0.019*** (8.90)	0.059 (1.01)	0.011 (1.04)
<i>AGE</i>	0.003 (0.29)	0.004 (1.21)	0.007* (1.64)	0.012* (1.95)
<i>STATE</i>	-0.012* (-1.66)	-0.009*** (-3.20)	-0.039 (-0.44)	-0.067* (-1.65)
<i>CONS</i>	-0.261*** (-3.12)	-0.074 (-1.52)	4.157*** (4.13)	11.68*** (15.17)
<i>YEAR</i>	Control	Control	Control	Control
R <sup>2</sup> (Overall)	0.1255	0.3219	0.2289	0.2696
Chi2	256.03 (0.000)	1276.32 (0.000)	208.26 (0.000)	798.72 (0.000)
Obs.	753	4087	753	4087

注: 1.\*\*\*、\*\*、\*分别表示在1%、5%和10%水平下显著; 2.括号里的数字为 $t$ 值或 $p$ 值。

表8 机构持股期限/稳定性与公司绩效的2SLS回归

	(1) <i>IAROA</i>	(2) <i>IAROA</i>	(3) <i>IAROA</i>	(4) <i>IATQ</i>	(5) <i>IATQ</i>	(6) <i>IATQ</i>
<i>LINSH</i>	0.570*** (4.85)			10.415*** (4.61)		
<i>SINSH</i>		0.015 (0.53)			-0.539 (-0.26)	
<i>STDIN</i>	-0.075*** (-2.57)			-1.623*** (-3.01)		
<i>NZP</i>			0.030*** (4.64)			0.264*** (3.11)
<i>TINSH</i>			0.013*** (2.88)			1.179*** (14.17)
<i>LEV</i>	-0.102*** (-4.59)	-0.186*** (-25.72)	-0.156*** (-22.47)	-0.059* (-1.74)	-0.205** (1.97)	-0.474*** (-4.98)
<i>FIRST</i>	0.110 (1.48)	0.145*** (3.89)	0.044 (1.30)	-0.418 (-0.29)	-1.697** (-2.17)	-1.756*** (-3.79)
<i>FIRSTSQ</i>	-0.049 (-0.59)	-0.149*** (-3.36)	-0.029 (-0.73)	0.530 (0.33)	1.938** (2.01)	2.081*** (3.87)
<i>SEP</i>	-0.001** (-1.99)	-0.002* (-1.89)	-0.001* (-1.68)	-0.004* (-1.66)	-0.005* (-1.70)	-0.003* (-1.65)
<i>MPAY</i>	0.018*** (5.54)	0.016*** (9.03)	0.016*** (9.80)	0.079* (1.74)	0.057* (1.67)	0.043* (1.91)
<i>BH</i>	0.023* (1.67)	-0.018*** (-3.13)	-0.008* (-1.75)	0.507* (1.95)	0.189* (1.82)	0.137* (1.68)
<i>SIZE</i>	-0.009* (-1.70)	0.019*** (11.03)	0.004** (2.55)	-0.522*** (-5.03)	-0.443*** (-16.63)	-0.416*** (-18.62)
<i>GROWTH</i>	0.032*** (4.79)	0.027*** (11.66)	0.023*** (9.93)	0.247* (1.94)	0.014* (1.73)	0.072** (2.38)
<i>AGE</i>	-0.002*** (-2.73)	-0.001* (-1.75)	-0.001** (-2.50)	-0.048*** (-2.84)	0.021*** (2.78)	0.002 (0.35)
<i>STATE</i>	-0.015*** (-2.65)	-0.009*** (-2.82)	-0.009*** (-3.08)	-0.099* (-1.91)	-0.049* (-1.81)	-0.034* (-1.78)
<i>CONS</i>	0.038 (0.31)	0.553** (-15.28)	-0.265*** (-7.46)	11.092*** (4.83)	8.981*** (11.62)	8.576*** (17.36)
<i>YEAR</i>	Control	Control	Control	Control	Control	Control
R <sup>2</sup> (Overall)	0.1789	0.2220	0.2311	0.2422	0.1963	0.2604
Chi2	271.92 (0.000)	1063.56 (0.000)	1146.44 (0.000)	342.30 (0.000)	700.25 (0.000)	1129.58 (0.000)
Obs.	1840	3439	3969	1840	3439	3969

注：1.\*\*\*、\*\*、\*分别表示在1%、5%和10%水平下显著；2.括号里的数字为t值或p值。

### 4.3 机构投资者的持股期限与公司绩效

为检验机构投资者持股期限与公司绩效的关系，我们首先把机构投资者按持股时间的长短分为长、短期机构投资者，然后从两个层次研究机构投资者持股稳定性对公司绩效的影响，其一是从机构对某公司股票持续非零持股季度数入手，其二是针对长期机构投资者进行动态研究持续非零持股的数量变化对公司业绩的影响。为了展开讨论，仍然利用联立方程(1)、(2)对行业调整的资产收益率和行业调整的息税前收益率进行回归，表8报告了回归结果，表8第(1)-(3)列报告了对行业调整的资产收益率的影响，第(4)-(6)列报告了对行业调整的公司价值Tobin's Q的影响。可以看出，长期机构投资者持股比例与公司绩效在1%的水平上显著正相关(回归系数0.57， $t$ 值4.85/回归系数10.415， $t$ 值4.61)，发挥了改善公司业绩的作用，而短期机构投资者持股比例与公司业绩的相关性不显著，这些结果证实了H3。机构非零持股季度数(*NZP*)与公司业绩正相关(回归系数0.03， $t$ 值4.64/回归系数0.264， $t$ 值3.11)，说明连续持股时间越长公司业绩越好，而且，长期机构持股比例的波动性(*STDIN*)与公司绩效显著负相关(回归系数-0.057， $t$ 值-2.57/回归系数-1.623， $t$ 值-3.01)，表明长期机构持股波动性越大公司业绩越差，这些结果证明假设4成立。

### 4.4 机构投资者的独立性与公司绩效

并不是所有类型机构投资者都是积极型机构投资者，为检验不同类型的机构投资者对公司业绩的影响，我们按照机构投资者与上市公司的关系以及他们受政府干预的程度分为独立机构投资者和非独立机构投资者。利用联立方程(1)、(2)回归分析了独立与非独立机构持股比例与行业调整的资产收益率(*IAROA*)和行业调整的公司价值Tobin's Q (*IATQ*)的关系，表9第(1)-(4)列报告了回归结果。独立机构投资者持股比例与公司业绩在1%的水平上显著正相关(回归系数0.499， $t$ 值13.42/回归系数2.543， $t$ 值17.95)，非独立机构投资者持股比例与公司业绩的关系不显著(回归系数0.137， $t$ 值1.00/回归系数-0.106， $t$ 值-0.72)，这些结果说明独立机构投资者比非独立机构投资者发挥了更好的治理作用，结果证明假设5成立。表明只有与公司没有业务联系和受政府干预少的机构投资者才会积极地监督公司行为、改善公司经营绩效、提高公司市场价值，而那些与公司存在潜在业务联系的机构投资者为了维护自身的利益不会积极地监督内部控制人的侵占行为。

## 五、稳健性检验

为了验证上面回归结果的可靠性，用行业调整的息税前收益率(*IAEBIT*)做被解释变量通过联立方程(1)、(2)重复了上文的回归检验，其回归结果与被解释变量为*IAROA*的回归结果极为相似，因此，在此不做报告。

文章还做了以下几种稳健性检验：(1)用未进行行业调整资产收益率、息税前收益率和Tobin's Q做被解释变量，分别重复了上文的回归；(2)用滞后一期的机构持股的变量作为解释变量进行了OLS回归；(3)按照Bushee (1998)的方法进行长、短期机构投资者分类进行了回归，这些研究得出的结论与前文的基本一致，再一次表明我们的结论是稳健的。

表9 机构独立性与公司绩效的2SLS回归

	(1) <i>IAROA</i>	(2) <i>IAROA</i>	(3) <i>IATQ</i>	(4) <i>IATQ</i>
<i>IDINSH</i>	0.499*** (13.42)		2.543*** (17.95)	
<i>UIDINSH</i>		0.137 (1.00)		-0.106 (-0.72)
<i>LEV</i>	-0.141*** (-23.64)	-0.217** (-2.44)	-0.558*** (-7.11)	-0.705*** (-5.99)
<i>FIRST</i>	0.088*** (2.82)	0.109 (0.42)	-1.051*** (-2.63)	-2.154*** (-3.70)
<i>FIRSTSQ</i>	-0.071* (-1.95)	0.148 (0.45)	1.398*** (2.98)	2.304*** (3.37)
<i>SEP</i>	-0.002* (-1.86)	-0.001* (-1.73)	-0.004** (1.99)	-0.003* (-1.72)
<i>MPAY</i>	0.007*** (4.01)	0.019*** (10.00)	0.046** (2.41)	0.085*** (3.09)
<i>BH</i>	-0.011** (-2.19)	-0.004 (-0.70)	0.110* (1.82)	0.060* (1.68)
<i>SIZE</i>	0.010*** (6.83)	0.005*** (3.19)	-0.339*** (-19.22)	-0.313*** (-12.96)
<i>GROWTH</i>	0.020*** (8.82)	0.019*** (7.26)	0.039** (2.24)	0.037* (1.66)
<i>AGE</i>	-0.001*** (-2.69)	-0.001*** (-2.75)	0.008 (1.27)	-0.013** (-2.01)
<i>STATE</i>	-0.011*** (-4.52)	-0.013*** (-3.60)	-0.071** (-2.05)	0.032 (0.64)
<i>CONS</i>	-0.097*** (-2.71)	-0.284*** (-7.40)	7.113*** (18.28)	6.558*** (12.20)
<i>YEAR</i>	Control	Control	Control	Control
R <sup>2</sup> (Overall)	0.2920	0.2860	0.2742	0.2185
Chi2	1700.69 (0.000)	552.25 (0.000)	1169.53 (0.000)	422.03 (0.000)
Obs.	4279	2007	4279	2007

注：1.\*\*\*、\*\*、\*分别表示在1%、5%和10%水平下显著；2.括号里的数字为t值。

## 六、结论及建议

文章以中国沪、深A股2005至2009年的上市公司为样本，检验了机构持股与公司业绩之间的相关关系。为控制机构持股与公司业绩的内生性，文章建立联立方程，运用两阶段最小二乘(2SLS)统计方法进行研究。采用行业调整的资产收益率(IAROA)、公司价值Tobin's Q (IATQ)以及息税前收益率(IAEBIT)作为衡量公司绩效的指标，从机构投资者的四个特征(持股集中度、投资期限和稳定性以及机构的独立性)入手，深入研究了不同特征的机构投资者对公司业绩产生的不同影响。实证结果显示，各类机构整体持股比例与公司业绩正相关，其中，大机构投资者比小机构投资者发挥着更好的治理效应，其持股比例与公司业绩正相关关系更强，独立机构投资者比非独立机构投资者发挥着更好的治理效应，其持股比例与公司业绩正相关关系更强，长期机构投资者比短期机构投资者发挥着更好的治理效应，其持股比例与公司业绩正相关关系更强。从机构投资者持股稳定性对公司业绩的动态关系研究得出机构投资者持股波动性越小公司业绩越好。这些结果说明，在中国证券市场上，长期、独立的大机构投资者已经积极地参与了公司治理，有效地提高了公司业绩，相对来讲，短期、非独立的小机构投资者对公司业绩还没有明显的改善作用。回归结果还告诉我们，建立以业绩为基础的薪酬契约、缩小最终控制人两权分离度也有助于提高公司业绩。

基于以上结果提出几点建议：(1)逐步完善资本市场化，创造宽松的投资环境。目前我国公司法限制了机构在一家公司的持股比例，这一规定制约了机构投资者对第一大股东的制衡和对管理层的有效监督。我们的研究表明机构持股比例越高，越有可能选择长线投资，也越有动机和能力监督管理者，提高公司绩效。因此，加快大小非解禁步伐，推动市场投资主体机构化，可以减少债务融资成本和代理成本，发挥机构在上市公司的治理作用。(2)减少政府干预，充分发挥机构的监督作用，研究中发现，受政府干预的社保基金持股比例与公司业绩负相关。(3)打压道德风险行为，增强监管力度。放宽投资环境的同时，加强对机构投资者的监管，机构投资者对公司绩效的影响尤如一把“双刃剑”：一方面，一些机构投资者会凭借自身信息优势和资金实力操纵市场，诱导散户的买卖，这种以谋取暴利的道德风险行为损害中小投资者利益，扰乱了资本市场的正常运行；另一方面，股东积极主义的机构投资者，他们会凭借信息优势和专业技能，利用《公司法》捍卫中小投资者作为股东的权利和利益，如果采取“联合行动”，即使只有较小比例的持股也可以有效地对管理层实施监督。因此，我们要加强治理和监管，发挥机构投资者在公司治理中的正面作用。

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# Heterogeneity of Institutional Investors and Firm Performance<sup>1</sup>

Xiancong Wu and Xing Liu<sup>2</sup>

## Abstract

This study investigates the association between firm performance and four characteristics of institutional investors (institutional ownership concentration, independence, investment horizon, and ownership stability) based on data on institutional investors in the Chinese securities market. We use a simultaneous equation model treating firm performance and institutional ownership as endogenous variables, and we use two-stage least squares (2SLS) regressions. First, we find that there is a positive relationship between total institutional ownership and firm performance. Second, we show that only concentrated holdings by long-term and independent institutions are positively associated with firm performance. Further, the volatility of long-term institutional holdings is negatively related to firm performance. That is, the more stable institutional ownership, the better firm performance. However, there is no positive relationship between concentrated holdings by short-term and non-independent institutions and firm performance. Finally, policy suggestions are proposed.

**Keywords:** Heterogeneity of Institutional Investors, Firm Performance, 2SLS

**CLC Codes:** F275.5, F276.6

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## I. Introduction

In the past decades, institutional investors have been growing rapidly around the world. At the end of 2005, institutional investors accounted for 38.5 percent of global market capitalisation (Ferreira and Matos, 2008). In the United States, the proportion of outstanding common shares held by institutional investors—who mainly invest in funds, pension funds, and insurance—rose from 6.1 percent in 1950 to 32.0 percent in 1980, and to 68.0 percent by the end of 2007 (Lewellen, 2011). After adopting an unconventional strategy to promote economic development, China now has various kinds of institutional investors. As of the end of 2007, these institutional investors hold 73.5 percent of the market capitalisation of tradable A shares of Chinese-listed companies, reaching a record high proportion (data from the WIND database). The vigorous development of institutional investors worldwide has greatly influenced capital markets and corporate governance in many countries. Under the market economy system, institutional investors play an important role in corporate governance. On the one hand, they use their professional advantages to minimise risks and maximise profits for controlling shareholders; on the other hand, with their information and capital advantages, they represent the interests of small investors, bringing the voices of small and medium investors to the controlling shareholders (Del Guercio and Hawkins, 1999; Gillan and Starks, 2000). Under the emerging and transitional economic system of China, institutional investors—as the largest holders of tradable shares—can improve the corporate governance structure and make the operating activities of listed companies more effective and compliant with regulations (Cheng, 2006).

Corporate performance is closely related to corporate governance. Effective corporate governance can improve corporate performance and create more profits for small and medium shareholders (Dahya *et al.*, 2008). Institutional shareholder activism can improve corporate governance significantly and impact firm performance (Gillan and Starks, 2007). Moreover, many institutional investors are willing to take part in shareholder activism and use their voting rights to accept or refuse suggestions in order to improve corporate governance (McCahery, Sautner, and Starks, 2010).

Several factors affect whether institutional shareholders take part in corporate governance. Shareholder activities correlate with institutional investors' shareholding ratio, investment horizon, performance expectation, and pressure sensitivity. In other words, the higher the institutional investors' shareholding ratio and the longer the investment horizon, the more profitable it is for shareholders to join in oversight. Rubach and Sebor (2009) find that the pressure resistance of institutional investors and expectations of wealth maximisation are positively related to shareholder activism. Some scholars have focused on how shareholder monitoring and activism impact special company events, such as the anti-takeover ordinance (Brickley, Lease, and Smith, 1988), research and development (R&D) spending (Bushee, 1998), executive compensation (Almazan, Hartzell, and Starks, 2005), and post-merger performance

(Chen, Harford, and Li, 2007). Their findings show that institutional shareholders with long-term investment horizons or with independent and concentrated holdings are more likely to monitor company executives. Ramalingegowda and Yu (2011) conclude that long-term institutional investors and independent institutional investors are supervision-type institutional investors, and this type of institutional investor can improve corporate governance structure and corporate performance.

Monitoring by institutional investors is an important governance mechanism for corporate management. Theories suggest and empirical evidence confirms that institutional investors can provide active monitoring, which is difficult for smaller, more passive investors (Hartzell and Starks, 2003; Chen, Harford, and Li, 2007). Such research suggests that institutions that have long investment horizons, have concentrated shareholdings, and are independent from management are most likely to help improve firm performance.

Given that different institutional investors have different investment agendas and investment horizons (Woitke, 2002; Del Guercio, 1996), some focus on the poorly performing firms in their portfolios and pressure the management of such firms to improve performance, thus enhancing shareholder value. Others focus on information gathering and trading for short-term profit. The choice between these two strategies likely depends on institutional characteristics, such as investment horizons, concentration of shareholdings, and independence from firm management (Chen *et al.*, 2007; Ramalingegowda and Yu, 2011).

Prior research mainly pays attention to the influence that the percentage of institutional investors has on corporate governance. Based on previous studies, this study explores at a micro level the relations between (1) investment horizon and the stability of institutional ownership and (2) firm performance. Meanwhile, since institutional investors may have existing or potential business relations with their portfolio companies and may be partly controlled by the government, we study the influence of independent and non-independent institutional investors on corporate governance and identify different types of behavior that institutional investors have toward corporate governance. Furthermore, firm performance is affected by institutional investors' investment horizon and percent of shareholding; in turn, corporate performance should influence institutional investors' investment horizons and shareholding levels. Therefore, institutional ownership and corporate performance can be endogenous variables. In order to accurately identify the impact of institutional ownership on firm performance, we develop a system of simultaneous equations and use two-stage least squares (2SLS) regression to estimate its impact.

This study contributes to the literature in two ways. First, since there are many different types of institutional investors, this paper examines whether the characteristics of institutional investors influence the relations between institutional investors and firm performance, including large vs small size, long vs short investment horizons, stable vs

unstable, and independent vs non-independent. Second, prior studies on the relationship between firm performance and institutional ownership mainly use shareholding proportion as the measure of institutional investors' influence (Woidtke, 2002; Chen *et al.*, 2007). However, shareholding proportion alone may not fully capture the monitoring incentives of these investors. For example, two firms may have the same proportion of institutional ownership, but if the proportion of institutional shareholdings in one firm changes frequently (or decreases), while the proportion in the other firm remains the same (or increases), the latter institution is more likely to affect firm performance. In this article, we consider both the proportion and the stability of institutional ownership as determinants of firm performance. Three main indicators of institutional ownership stability are used to study the dynamic relation between institutional investors' ownership and firm performance: investment horizon, non-zero-points quarters, and institutional ownership persistence (defined as institutional ownership proportion standardised by its standard deviation).

The remainder of the paper is organised as follows. Section II provides the literature review and hypothesis development. Section III describes the methodology, data, sampling, and model variables. Section IV presents the empirical results on institutional ownership and firm performance. Section V provides the overall conclusion.

## II. Literature Review and Hypotheses

The theoretical analyses by Shleifer and Vishny (1986) and Maug (1998) highlight the choice institutions face between expending the effort to monitor for shared gains on behalf of small shareholders or simply trading for private short-term gains. That is, some institutions might focus on information gathering and trading, choosing not to expend the effort to influence management. To find out whether firms hold these two types of styles, researchers have conducted empirical studies of institutions' styles. Bushee (1998), Woidtke (2002), Cornett *et al.* (2007), and Elyasiani and Jia (2010) have shown that different institutional investors have different attitudes toward investment. Some choose to exert influence on the executives so as to improve corporate performance, while some focus on gathering private information to gain short-term profits.

Overall, most studies conclude that institutional investors are a third party that falls between controlling shareholders of a corporation and small and medium external shareholders. Most studies also conclude that institutional investors can supervise the controlling shareholder and the senior executives of a listed company by virtue of the information, capital, and the professional knowledge they have mastered. They can reflect the needs of small and medium shareholders, transmit market information, and consequently improve corporate governance at a low cost, increasing the market value of the corporation (Hartzell and Starks, 2003; Jiang *et al.*, 2010). The quality of corporate governance correlates positively with the proportion of institutional shareholding. A change in the institutional shareholding proportion will lead to a change in the quality

of corporate governance, and thus a change in corporate value (Tobin's Q [TQ]), but not vice versa. This shows that institutional investors really improve corporate governance (Aggarwal *et al.*, 2011).

Institutional investors' shareholding not only increases the corporate market value but also corporate operating performance (Demiralp *et al.*, 2011). Institutional investors take many measures to improve corporate performance, such as monitoring corporate investment decisions, restraining executives' short-sighted behaviour, and urging executives to expand investment in facilities and R&D (Bushee, 1998; Wahal and McConnell, 2000). They also keep an eye on earnings management (Koh, 2007), executive compensation (Almazan, Hartzell, and Starks, 2005), merger decisions (Chen, Harford, and Li, 2007), and anti-takeover events (Brickley, Lease, and Smith, 1988). Institutional investors can participate in corporate governance, raise the stock price, and improve corporate performance through their voting rights and feedback (Gillan and Starks, 2000; Del Guercio *et al.*, 2008; Morgan *et al.*, 2011).

In addition, institutional investors also influence management decisions through private negotiation (Carleton *et al.*, 1998). If conflicts of interest between the shareholders and executives cannot be solved through voting, suggestions, and negotiations, institutional investors sometimes take legal action. Cheng *et al.* (2010) have empirically examined US securities cases between 1996 and 2005 and found that litigations not only protect small and medium investors' ownership, but also protect the independence of the board of directors and improve corporate governance. Many scholars study the relation between institutional investors' shareholding and corporate performance. McConnell and Servaes (1990) find that the shareholding proportion of institutional investors is positively correlated with corporations' TQ. Smith (1996), Del Guercio and Hawkins (1999), Cornett *et al.* (2007), Yuan *et al.* (2008), and Elyasiani and Jia (2010) show that the shareholding proportion of institutional investors positively correlates with corporate performance measured by different indices.

In recent years, institutional investors have expanded rapidly and exerted great influence on China's capital market and corporate governance, raising the attention of mainland Chinese scholars. Most of their research shows that institutional investors play a positive role in protecting the interest of small and medium investors and improving corporate governance. Wang (2005) constructed a theoretical model that suggests that introducing institutional investors into the competition of a listed company's controlling power will result in a counterbalanced shareholding structure and will help reduce the probability that major shareholders will control the company and seek personal gains. He also finds that institutional investors' effect on corporate governance stems from their active role in the competition for controlling power and improving corporate performance. Weng and Wu (2007) have researched the relationship between the shareholding proportion of institutional investors and the dividend policy of listed companies, and they found that institutional investors can monitor a listed company's

dividend policy and restrict “malicious cash payouts” to some extent. Li and Li (2008) studied the 3,470 companies listed in the Shanghai Stock Exchange and Shenzhen Stock Exchange between 2004 and 2006 and found that institutional investors play an important role in improving corporate governance and reducing agency costs. Bo and Wu (2009) have selected samples of A-share companies listed in the Shanghai Stock Exchange and Shenzhen Stock Exchange between 2004 and 2006 and analyzed the relationship between institutional investors’ shareholding and company earnings. Their study shows that institutional investors have a positive effect on corporate governance in non-state-owned companies. Shi and Tong (2009) have selected companies experiencing the split share structure reform between 2005 and 2007 to examine the relation between firm performance and institutional ownership, and they find a positive relation after the reform.

Generally speaking, institutions holding a high proportion of shares have easier access to board members and senior executives (Carleton, Nelson, and Weisbach, 1998). Therefore, large institutions will spend less and gain more from monitoring firm performance (Almazan, Hartzell, and Starks, 2005; Chen, Harford, and Li, 2007). Institutions holding a higher proportion of shares can stop short-sighted executive behavior more easily (Bushee, 1998) and improve corporate performance more effectively (Elyasiani and Jia, 2010). Furthermore, a corporation in which institutions hold a high proportion of shares is more likely to replace an incapable CEO, which will gradually improve corporate value (Aggarwal *et al.*, 2011).

Based on the above analysis, we propose the following hypotheses:

**H1: Other conditions being equal, there is a positive relationship between firm performance and the proportion of institutional ownership.**

**H2: Other conditions being equal, large institutional investors will provide a better governance effect than small ones — that is, the larger the proportion of institutional shareholding, the stronger the positive relation with firm performance.**

The strategies institutional investors take (long-term investment strategies vs. short-term speculation) reflect their shareholding stability. Stable investors intend to monitor corporate actions and are able to participate in corporate governance to improve corporate performance. Therefore, shareholding stability is a key factor determining how much institutional investors influence corporate performance (Elyasiani and Jia, 2008, 2010). Previous studies measure the influence of institutional investors on corporate governance on the basis of the proportion of institutional shareholders (Woidtke, 2002; Li and Li, 2008; Shi and Tong, 2009), which emphasizes the ownership amount but overlooks the other characteristics of ownership.

Totalling or decentralising institutions' shareholding proportions is not enough to prove their influence on corporate value. For example, imagine that an institutional investor holds shares of two listed companies at the same proportion at the beginning and later trades frequently in one company but keeps its shareholding proportion the same in the other company. The institution would probably not spend much time monitoring the former company, but it would probably be active in the corporate governance of the latter company. In addition, stable institutional investors can urge the company to improve corporate governance and enlarge its business scope from a long-term investment angle. The change in institutions' shareholding stability is helpful in understanding the relation between shareholding stability, firm monitoring, and corporate performance (Chen *et al.*, 2007).

Stable institutional investors can participate in corporate governance and improve corporate performance through three channels. First, given their close connections with the capital market and that they are capable of monitoring firms, stable institutional investors can reduce agency and information asymmetry problems and, in turn, reduce underinvestment and improve operating performance (Myers and Majluf, 1984). Second, stable institutional ownership alleviates the problem of managerial myopia because it allows managers to invest in longer-term profitable projects, expand construction of facilities, add new equipment, and increase investment in R&D (Bushee, 1998; Wahal and McConnell, 2000). Third, stable institutional shareholding can better align the interests of the managers with those of the shareholders by increasing the compensation of the managers, such as increasing bonuses or salaries, thereby improving firm performance (Hartzell and Starks, 2003).

Institutions with different investment horizons behave differently: they can be speculative or governing. Generally speaking, institutions with a long investment horizon will intensively hold shares of a few companies, giving them enough time to gather information about the companies. Long-term institutional investors will concentrate on monitoring and exerting influence, rather than trading; thus they spend less on monitoring and gain more economic benefits (Chen, Harford, and Li, 2007). Institutions with a short investment horizon often invest in many companies at a low shareholding proportion and are not concerned about corporate governance; instead they are ready for arbitrage opportunities and momentum trading for profit (Porter, 1992). Since short-term institutional investors have a lower shareholding proportion and a higher turnover rate, they cannot actively monitor management; in contrast, long-term institutional investors—even if they hold a low proportion of shares—are motivated to oversee management and gain income from monitoring (Coffee, 1991; Gaspar, Massa, and Matos, 2005). Furthermore, institutional investors that hold a higher proportion of shares and hold them for longer are more inclined to use long-term investment strategies and oversee management (Maug, 1998).



Based on the institutional investors' expected investment horizon and ownership characteristics (portfolio turnover, portfolio diversification, and momentum trading vs. long-term trading), Bushee (1998) classifies them into three groups: transient, dedicated, and quasi-indexer investors. His study indicates that long-term institutional investors with a higher shareholding proportion can monitor more effectively, force management to restrict earnings management, and increase R&D investment. In contrast, short-term institutional investors encourage managerial myopia, such as cutting R&D investment to meet earnings management. Following Bushee's (1998) method, Koh (2007) categorises institutional investors as transient and long-term by their investment horizons. Koh finds that long-term institutional investors constrain accruals management among firms that manage earnings to meet earnings benchmarks. This suggests that long-term institutional investors focus on governance matters and can mitigate aggressive earnings management among their firms. Transient institutional ownership is not systematically associated with aggressive earnings management, and their shareholding proportion is positively correlated with upward earnings management, which is not helpful for corporate governance.

Accordingly, the following hypotheses are put forward.

**H3: Other conditions being equal, long-term institutional investors will probably provide a better governance effect than short-term ones, and the proportion of long-term institutional shareholders will show a stronger positive relationship with corporate performance than the proportion of short-term shareholders.**

**H4: There is a positive relationship between firm performance and institutional ownership stability, at a given level of institutional ownership.**

Different types of institutional investors vary sharply in their incentive system, conflict of interests (interest relations between institutional investors and the company in which they hold shares), regulations and laws, cultural background, management style, investment strategy, and competition environment. These differences lead some institutional investors to play leading roles in corporate governance and other institutional investors to follow suit (Del Guercio, 1996). Institutional investors (e.g. insurance companies and trust departments of banks) might want to protect existing or potential business relationships with firms and are therefore less willing to challenge management decisions. These are called "grey" institutional investors. In contrast, institutions like investment companies and independent investment advisors do not seek business relationships with the firms they invest in and are called "independent" institutional investors (Chen, Harford, and Li, 2007). Institutional investors with strong business ties may adopt voting policies and guidelines that lead to fewer votes against management of

firms in their portfolios, thereby reducing the risk of alienating the management of client firms. Institutional investors with fewer business ties may vote in a less management-friendly way, because they may deem that the benefits of voting to increase shareholder value outweigh the risk of offending management (Davis and Kim, 2007).

Based on the business relation between institutional investors and the company they invest in, Cornett (2007) classifies institutional investors into two types: pressure-sensitive (those with an existing or potential business relation with the firm) and pressure-resistant (those with no business relation with the firm). Cornett studies their relation with corporate performance, and finds that a positive relation between the proportion of institutional stock ownership and operating cash-flow returns, but the positive relation only exists for pressure-resistant institutional investors. The shareholding proportion of pressure-sensitive institutional investors in a firm has no influence on operating cash-flow returns, which indicates that their interests in protecting business relations with the firm compromise their ability to monitor the company.

Some research also shows that state-controlled institutional investors, such as social security funds, do not aim to maximise the shareholders' interest due to government intervention (Romano, 1993). That study also shows that political and social pressure results in a potential conflict of interests between fund managers and other shareholders, so this kind of institutional investor will not improve corporate performance (Romano, 1993). This idea was demonstrated by Woidtke (2002), and his research shows that the shareholding proportion of government-intervened public pension funds is negatively correlated with the industry-adjusted TQ, while the shareholding proportion of private pension funds is positively correlated with the industry-adjusted TQ. The reasons for the difference are that public pension funds face more political pressure than private ones, and the incentive system of public pension funds is not linked with corporate performance.

In addition, companies with higher proportions of foreign institutional investors and independent institutional investors have higher corporate value, better corporate performance, and less capital expenditure (Ferreira and Matos, 2008). This suggests that foreign institutional investors and independent institutional investors do not have potential business ties with the firm and will actively participate in corporate supervision. Aggarwal *et al.* (2011) find that independent institutional investors that do not keep business ties with the firm they invest in—such as foreign institutional investors, mutual funds, and investment consultants—can improve the quality of corporate governance, while non-independent institutional investors cannot play a monitoring role. Qian (2010) also argues that different types of institutional investors play different roles in corporate governance. Securities investment funds, as pressure-insensitive institutional investors, take part in corporate governance actively. As such, they help mitigate the agency problem in China's listed companies and improve companies' operating performance and market value. In contrast, securities companies, as pressure-sensitive institutional

investors, do not take part in corporate governance because of their potential business connections and interest relations with the listed companies they hold shares in. Yuan, Xiao, and Zhou (2010) draw the same conclusion—that different institutional investors exert different types of influence on corporate performance. They conclude that the proportion of shareholding by securities investment funds positively influences corporate performance, whereas the proportion of shareholding by securities companies has little influence on corporate performance.

Based on the above analysis, we propose the following hypothesis:

**H5: Other conditions being equal, independent institutional investors are likely to improve corporate governance more than non-independent ones, and the proportion of independent shareholders shows a stronger positive correlation with corporate performance than non-independent shareholders.**

### III. Research Methodology

#### 3.1 Sample and Data

This study samples A-share Chinese listed companies in both the Shanghai Stock Exchange and Shenzhen Stock Exchange between 2005 and 2009 that have released annual reports. The authors sample from year 2005 because the quarterly data of institutional investors are complete after year 2004. In addition, some variables in this study are calculated on the basis of one-year-lagged data, meaning that it uses data from between years 2004 and 2009. Samples are selected according to the following principles: (1) companies that have been listed for less than two years are excluded; (2) financial companies are excluded because they use different regulations, laws, and financial processing methods; (3) specially treated (ST) companies and companies with incomplete data are excluded. As a result, the final sample includes 5,448 observations. The data screening process is shown in Table 1. The data are mainly taken from the Wind, CCER, and CSMAR databases.

**Table 1** Screening Process of Samples

	2005	2006	2007	2008	2009	Total
All A-share listed companies	1,352	1,435	1,547	1,603	1,693	7,630
– Listed less than 2 years	(115)	(80)	(191)	(203)	(176)	(765)
Financial	(9)	(13)	(16)	(16)	(28)	(82)
ST	(106)	(149)	(171)	(155)	(154)	(735)
Missing data	(99)	(147)	(73)	(114)	(167)	(600)
Final selected samples	1,023	1,046	1,096	1,115	1,168	5,448

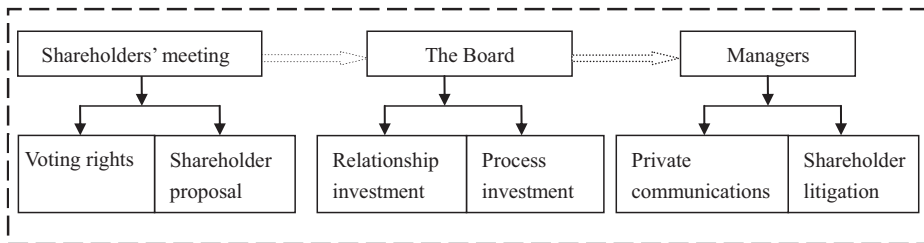
### 3.2 Models

The motivations for institutional investors to take part in corporate governance are summarised as follows: agency cost, the growth of institutional investors, government deregulation, institutional investors' preference for profit, and institutional need for self-development. Owing to the Class I and Class II agency problems, inside controllers (managers and controlling shareholders) of a corporation will override the interests of the small and medium investors. Therefore, institutional investors, with an increase in shareholding proportion, will not submit to inside controllers' influence, and they have to supervise the company so as to reduce their loss of benefits. Furthermore, the China Securities Regulatory Commission (CSRC) and the State Council make policies to urge institutional investors to play an active role in corporate governance, and these policies push institutional investors to be more and more inclined to play an active role. As institutional investors' capital scale increases, the capital market develops, and the supervision system improves, meaning that institutional investors have to make profit from long-term shareholding—that is, to adopt the “value investing” concept.

However, it is more and more difficult to make profit only through value investing when there is global overcapitalisation. With improvement in information transparency and institutional investors' ability to discover value, it is hard to find undervalued stocks. In order to make more profit, institutional investors will use their capital, information, and abilities to govern the company they have invested in. Some scholars' research (Weng and Wu, 2007; Li and Li, 2008; Yuan, Xiao, and Zhou, 2010) shows that the policy of China's institutional investors is transitioning from value discovery to value creation.

As representatives of small and medium investors, institutional investors take measures to monitor companies actively, reducing agency costs and preventing inside controllers' from securing their personal interests. For example, they will help negotiate executive compensation and disclose information about interest grabbing in affiliate transactions. In a word, they will conduct corporate governance to improve corporate performance and make more profit. Of course, institutional investors need some channels to realise the effect of corporate governance, such as the general meeting of shareholders, the board of directors, and management. For instance, six of the top 10 holders of tradable shares of Dashang Co., Ltd. (stock code: 600694) are institutional investors: Fullgoal Fund, Penghua Fund, Franklin Templeton Sealand Fund, China AMC Dividend Fund, China AMC Fuxing Fund, and Lion Balanced Fund. In recent years, Dashang has shown good corporate performance. However, due to the lack of an incentive system for management, Dashang has governance problems and obstacles to its development. For example, management was not on good terms with the shareholders, and the company did not pay out dividends for years. Institutional investors negotiated with management on dividend allocation schemes several times but could not reach a resolution. The company's share price did not perform well either.

In order to protect shareholder interest and improve the company's market value, the institutional investors jointly drafted a proposal in November 2011 and submitted it to the shareholder's meeting for approval. They proposed that the board of directors distribute more bonuses to management and that the bonus allocation proportions be as follows: 35 percent for the board chairman, 45 percent for other executives, and 20 percent for the business mainstay. The incentive bonus is calculated on the basis of the company's performance. For example, take Dashang's net profit in 2011 (RMB400 million). If the future net profit is between RMB400 million and RMB500 million, 6 percent of the after-tax net profit is drawn as the incentive bonus; if the future net profit is above RMB500 million, 12 percent of the after-tax net profit will be drawn. Moreover, if the net profit growth rate from 2012 to 2013 is less than 20 percent, no incentive bonus will be drawn; 2 percent of the after-tax net profit will be drawn as incentive bonuses when the net profit growth rate is between 20 percent and 25 percent; afterwards, an additional 2 percent would be drawn for every 5 percent growth in net profit. If the growth rate reaches 50 percent or above, 12 percent of the after-tax net profit would be drawn as incentive bonuses.



**Figure 1** Path of Corporate Governance by Institutional Investors

Figure 1 shows the ways in which institutional investors can conduct corporate governance. On the one hand, institutional investors taking part in corporate governance can mitigate the free-rider problem of small and medium shareholders. They can monitor executives and increase the opportunity cost of insiders' agency behaviour so as to improve the quality of decision-making and increase firm performance or market value. On the other hand, institutional investors probably pay close attention to the company's short-term performance indicators and future profitability, and this kind of value discovery can be regarded as value creation. Institutional investors can either keep silent or oversee corporate governance. The positive relation between institutional ownership and firm performance comes partly from institutions' ability to participate in corporate governance.

Moreover, institutional investors have strong ability to find and analyse information, so they can discover industries and enterprises that have profitable outlooks (this is the "value discovery" function of institutional investors). In other words, institutional investors' shareholding can improve firm performance. Or the other way around,

companies with good performance can attract investors and encourage them to take a long-term investment horizon. Chung and Zhang (2011) find that the percentage of shares held by institutions increases with the quality of company's governance structure, and the number of institutional shareholders in a firm increases with the company's governance quality. Therefore, institutional investors' shareholding and firm performance influence each other, and ordinary least squares (OLS) may not accurately explain the relation between the two variables. Thus, this study establishes the following simultaneous equations (1) and (2) so as to reduce the potential endogeneity between variables. In these two equations, institutional investors' shareholding and firm performance are taken as endogenous variables and two-stage least squares (2SLS) is used for estimation.

$$PERFOR = \alpha_0 + \alpha_1 INST + \rho X + \gamma C + YEAR + \varepsilon \quad (1)$$

$$INSH = \beta_0 + \beta_1 PERFOR + \sigma Y + \lambda C + YEAR + \omega \quad (2)$$

In the above equations, *PERFOR* and *INSH* are endogenous variables. *PERFOR* is corporate performance, and *INSH* is institutional investors' shareholding (please see definitions in Table 1). Vectors *X* and *Y* are the predetermined variables for *PERFOR* and *INSH*, respectively. Vector *C* and the yearly dummy variable are control variables.  $\varepsilon$  and  $\omega$  are error terms.

### 3.3 Variables

#### 3.3.1 Firm Performance

In Western studies, the corporate value TQ is often used to measure the effect of institutional investors' monitoring (Woidtke, 2002; Ferreira and Matos, 2008). TQ is the ratio of market value to book value, which reflects the company's growth opportunity and expected prospects using market value factors, and it is easily influenced by such factors as the proportion of tradable shares and capital stock structure. Return on assets (ROA) is another index that is often used to measure a company's earning capacity, and it can reflect current firm performance better than TQ. When assessing whether a company's profit meets expectations, investors focus on return realisation compared to invested assets, and ROA is the most important index of this. ROA reflects the company's competitive power and development power directly (Chen and Xu, 2001; Mahoney and Roberts, 2007). Earnings before interest and tax (EBIT) is another index of corporate performance, and it reflects the status of a company's period expenses (including operating expenses, administrative expenses, and financial expenses) and their changes (Chen and Xu, 2001).

Following previous studies, this paper chooses ROA and corporate value TQ as proxy variables of corporate performance. However, the level of and change in ROA and TQ may be influenced by industry-wide external factors (e.g. rising oil prices). Therefore,

this study uses industry-adjusted return on assets (*IAROA*) and industry-adjusted TQ (*IATQ*). *IAROA* is a company's ROA minus the industrial average of that year; *IATQ* is the company's TQ minus the industrial average of that year. In addition, industry-adjusted earnings before interest and tax (*IAEBIT*) are used as a test of robustness.

### 3.3.2 Institutional Investors' Shareholdings

Institutional investors can be characterised by ownership concentration, investment horizon, shareholding stability, and their independence from the firm, which affect their motivation to oversee the company (Ramalingegowda and Yu, 2011; Elyas and Jia, 2008) and influence corporate performance (Chen *et al.*, 2007). Therefore, we examine institutional investors' influence on corporate performance through the above four dimensions.

#### (1) Concentration of Institutional Shareholders

First, this study uses the total proportion of shares held by institutions of all A shares (*TINSH*).<sup>3</sup> If there is no institutional investor holding shares in a company, *TINSH* will take the value of 0. We choose institutions' shareholding in A shares rather than all tradable shares because the quantity of tradable shares increases as non-tradable shares become tradable after the split share structural reform, which dilutes institutional investors' shareholding proportion among all tradable shares and make institutions' ownership influenced by non-institutional acts.

Second, this study defines large institutional shareholders as institutions holding no less than 3 percent of the shares and those holding less than 3 percent as small institutional investors. This paper discusses the oversight of these two types of groups separately because the shareholding proportion may limit institutional investors' say. Institutions with a low proportion of shares may have the motivation to monitor but no power to do so. China's *Company Laws* (Paragraph Two of Article 103) stipulates that shareholders can put forward a provisional proposal if shareholders—individually or collectively—hold no less than 3 percent of the shares. The law then stipulates that the board of directors should submit it to the shareholders' meeting for discussion. In 2001, the CSRC promulgated the *Guiding Opinions on Establishment of Independent Director System in Listed Companies*, which stipulates that a listed company's board of directors, supervisory board, and shareholders who individually or collectively hold no less than 1 percent of the shares in the listed company may nominate candidates for independent director.

<sup>3</sup> The total institutions in this paper include all institutional investors except index funds. The institutions—whether large or small, long-term or short-term, independent or non-independent—include funds, insurance companies, corporate pensions, trust companies, QFII, and securities traders. Index funds are excluded from this study because they belong to the passive holding type, and they do not take part in corporate governance.

## (2) Institutional Investment Horizon

Using institutions' average size of shareholding and investment portfolios' turnover rate and sensitivity to current earnings information, Bushee (1998) uses cluster analysis and classifies institutional investors into three categories: transient, dedicated, and quasi-indexers. Gaspar, Massa, and Matos (2005) classify institutional investors into two types: long-term and short-term based on the turnover rate of their investment portfolios. Chen *et al.* (2007) define institutions who continuously hold shares of a listed company for at least one year as long-term institutional investors, and those who hold shares of a listed company for less than one year as short-term investors. They find that long-term institutional investors make profit by monitoring the company and short-term institutional investors by short-term transactions. This paper uses the classification of Chen *et al.* (2007) and defines long-term institutional investors as institutions holding shares of a listed company for at least one year and short-term investors as institutions holding shares for less than one year.

The proportion of shares held by long-term institutional investors in a listed company (*LINSH*) is defined as the sum of the yearly average proportions of shares held by all long-term institutional investors in a listed company. Similarly, the proportion of short-term shareholders in a listed company (*SINSH*) is defined as the sum of the yearly average proportions of shares held by all short-term institutional investors in a listed company.

## (3) Shareholding Stability

Bohren *et al.* (2005) use non-zero points and maintain-stake points to study institutions' shareholding stability. Elyas and Jia (2008, 2010) use institutions' ownership persistence and ownership volatility to study the influence of institutions' shareholding stability on corporate performance. Following their study, we use two variables to measure institutional investors' shareholding stability: institutions' ownership volatility (*STDIN*) and institutions' ownership continuous non-zero point (*NZP*). *STDIN* is taken as a proxy for institutions' shareholding stability,<sup>4</sup> and we study whether dynamic change in *STDIN* influences corporate performance. The average standard deviation of every long-term institutional investor's shareholding proportion is used to measure *STDIN*, which is calculated with the following formula:

$$STDIN_i = \sum_{j=1}^{N_i} std(p_{i,t}^j) / N_i \quad (3)$$

<sup>4</sup> *STDIN* is only calculated for long-term institutional investors because it requires continuous data for the entire year.



In the above equation,  $P_{i,t}^j$  refers to the proportion of shares institutional investor  $j$  has in listed company  $i$  in quarter  $t$  ( $t = 1, 2, 3, 4$ ).  $N_i$  refers to the number of institutional investors in listed company  $i$ . As can be seen, the higher the *STDIN*, the lower the shareholding stability.

In addition, *NZP* is used as another proxy for institutions' shareholding stability, and it refers to institutional investors' number of continuous shareholding quarters in a listed company for two consecutive years (the sample year and the prior year).

#### (4) Institutional Independence

To test different types of institutional investors' influence on corporate performance, we classify them as independent or non-independent according to their relation with the listed company and the extent of government intervention imposed on them. Based on previous research (Chen *et al.*, 2007; Ferreira and Matos, 2008), we regard securities investment funds and qualified foreign institutional investors (QFII) as independent institutional investors and social insurance funds, securities traders, insurance companies, and trust companies as non-independent institutional investors. The total shareholding proportion of all independent institutional investors in a listed company at the end of a year is termed *IDINSH*, and the total shareholding proportion of all non-independent institutional investors in a listed company at the end of a year is termed *UIDINSH*.

### 3.3.3 Instrumental Variable

Ideal instrumental variables would be the linear combination of exogenous variables and lagged endogenous variables that are highly correlated with endogenous variables in a regression equation but not related to the error term in simultaneous equations (Wooldidge, 2002). According to Del Guercio (1996), Bushee (1998) and Wooldidge (2002), institutional investors often make investment decisions based on past indices, and they prefer that stocks have strong capital financing capability, strong profitability, low market risk, and a low price-to-book ratio. Ferreira and Matos (2008) argue that all institutional investors strongly prefer large-scale companies when they make investments, and Chung and Zhang (2011) hold that institutional investors tend to invest in companies that have better market liquidity. Grinstein and Michaely (2005) report that the dividend-payout policy affects institutional investors' investment decisions. In other words, institutional investors avoid companies that do not pay dividends; however, they choose companies with a lower dividend payout proportion among the distribution of dividend-paying companies. According to Ferreira and Matos (2008), foreign institutional investors also prefer companies that pay fewer dividends. As a result, this study uses the turnover rate, proportion of tradable shares, market risk, dividend-payout proportion, and price-to-book ratio as instrumental variables.

As an external factor, institutional investors may affect firm performance. Companies' internal governance mechanisms can also influence corporate governance, such as the largest shareholder's proportion of shares, the proportion of independent directors, executive compensation, and the separation of ownership and control of the ultimate controller. These factors affect management's decision-making power and the conflicts between managers and shareholders, finally affecting corporate performance (McConnell and Servaes, 1990; Cornett, 2007; Elyasiani and Jia, 2010). The number of years companies have been listed and their growth opportunities may also influence their operating performance; these variables are highly correlated with corporate performance and have no relation with disturbance terms. Therefore, this study takes these variables as the instrumental variables representing firm performance.

### 3.3.4 Control Variable

Based on China's capital market situation and following Western studies (Mahoney and Roberts, 2007; Bhattacharya and Graham, 2009; Elyasiani and Jia, 2010), we choose the following factors as common control variables in the two equations: company scale, asset-liability ratio, company risk, state-owned or not, and listed in other markets or not.

## 3.4 Descriptive Statistics

Table 3 lists the descriptive statistics. According to the table, there is no sharp difference between each company's performance after industry adjustment. The average *IAROA* is -0.002; the maximum is 0.236; the minimum is -0.513; and the standard deviation is 0.067. The average *IAEBIT* is -0.004; the minimum is -0.706; the maximum is 0.254; and the standard deviation is 0.074. Total institutional investors hold an average of 15.2 percent of total A shares in sample firms, with a sharp difference between different companies. In some companies, institutions hold 95 percent of total shares; in other companies, institutions hold only less than 0.1 percent. On average, there are 14.4 institutional shareholders per listed company, but there is great variation between companies, ranging from a maximum of 236 institutions to a minimum of only 1 institution per company (excluding companies without institutional investors). Only 753 companies have institutional shareholders whose shareholding proportion reaches 3 percent of A shares, and those institutions' average shareholding proportion is only 5.3 percent of total A shares, which indicates that there are not many large institutional investors in China. Independent institutional investors' average shareholding proportion (6.7 percent) is much higher than that of non-independent institutional investors (1.8 percent). Long-term institutional investors' average shareholding proportion in listed companies (3.9 percent) is much lower than that of short-term ones (10.8 percent), which indicates that short-term institutional investors play a dominant role in China's current stock markets. Institutional investors' continuous shareholding time (*NZP*) is two quarters on average within two years, and institutional investors' shareholding volatility

**Table 2** Description of Variables

	Variables	Definitions
Dependent variables	<i>IAROA</i>	Industry-adjusted return on assets: a company's net income/total assets – median value of the industry.
	<i>IAREBIT</i>	Industry-adjusted proportion of earnings before interest and taxes: earnings before interest and taxes/total assets – median value of the industry.
	<i>IATQ</i>	Industry-adjusted market values: (equity value + liabilities book value)/total assets, where equity value = tradable stocks * stock price + untradeable stocks * net assets per share.
Independent variables	<i>TINSH</i>	Total institutional ownership: total shares held by all institutional investors divided by total outstanding A shares.
	<i>LGINSH</i>	Large institutional ownership: the percentage of shares held by large institutional investors.
	<i>SMINSH</i>	Small institutional ownership: the percentage of shares held by large institutional investors.
	<i>IDINSH</i>	Independent institutional ownership: the percentage of shares held by independent institutional investors.
	<i>UIDINSH</i>	Dependent institutional ownership: the percentage of shares held by dependent institutional investors.
	<i>LINSH</i>	Long-term institutional ownership: the percentage of shares held by long-term institutional investors.
	<i>SINSH</i>	Short-term institutional ownership: the percentage of shares held by short-term institutional investors.
	<i>STDIN</i>	Institutional ownership volatility: the average standard deviation of institutional shareholding proportions across all long-term institutional investors in a firm during the four quarters in a fiscal year.
	<i>NZP</i>	Non-zero points duration: the number of the 8 quarters over the two-year period that an institutional investor has non-zero holdings.
Predetermined variables for performance	<i>FIRST</i>	The largest shareholder's ownership in a firm: shares held by the largest shareholder divided by total outstanding A shares.
	<i>FIRSTSQ</i>	The square of the ownership proportion of the largest shareholder.
	<i>SEP</i>	Separation of ownership and control: control rights – ownership rights of the ultimate controller.
	<i>MPAY</i>	Management compensation: the natural logarithm of the top 3 executives' compensation in a company.
	<i>LEV</i>	Leverage: the debt-to-assets ratio.
Predetermined variables for institutional	<i>TURNOVER<sub>t</sub></i>	Turnover: the average value of daily trading volume/the number of tradable stocks in the prior year.
	<i>RTS<sub>t</sub></i>	Ratio of tradable shares: tradable A shares/total outstanding A shares in the prior year.
	<i>RPB<sub>t</sub></i>	Ratio of price-to-book: the market price per share at the end of the prior year/net assets per share in the current year.
	<i>BETA<sub>t</sub></i>	The market model beta, estimated over 52 weeks of the prior year.
Control variables	<i>DIVID<sub>t</sub></i>	Dividend yield: dividends per share/earnings per share in the prior year.
	<i>SIZE</i>	Firm size: the natural logarithm of total assets at the end of the year.
	<i>GROWTH</i>	Growth opportunities: the 3-year average sales growth rate of a company (sample year plus two prior years).
	<i>AGE</i>	Firm age: the number of years a firm has been public.
	<i>BH</i>	A dummy variable indicating whether the firm is listed on other markets (equal to 1 for B- or H-share firms and 0 otherwise).
	<i>STATE</i>	A dummy variable indicating whether the firm is state-owned (equal to 1 for state-owned firms and 0 otherwise).
	<i>YEAR</i>	The dummy variable for year, which controls for macroeconomic effects (equal to 1 for a fiscal year, and 0 otherwise).

is 72.8 percent on average, which reflects institutions' low shareholding stability and high volatility. The largest shareholder holds an average of 37 percent of shares in a listed company, but the proportion differs greatly between companies, ranging from 5.1 percent to 85.2 percent. 8.9 percent A-share companies listed in the Shanghai Stock Exchange or Shenzhen Stock Exchange are also listed in other stock markets. Meanwhile, state-owned companies make up to 68.2 percent of A-share companies, which reflects the common phenomenon of the "dictating shareholder" in China.

**Table 3** Descriptive Statistics of Main Variables

Continuous variables	Obs.	Mean	Median	SD	Min	Max
<i>IAROA</i>	5448	-0.002	-0.001	0.067	-0.513	0.236
<i>IAEBIT</i>	5448	-0.004	-0.001	0.074	-0.706	0.254
<i>IATQ</i>	5448	0.195	-0.012	0.816	-1.006	6.459
<i>TINSH</i>	5279	0.152	0.084	0.182	0.000	0.950
<i>LGINSH</i>	753	0.053	0.042	0.032	0.030	0.449
<i>SMINSH</i>	4087	0.068	0.029	0.092	0.000	0.616
<i>IDINSH</i>	4279	0.067	0.021	0.096	0.000	0.661
<i>UIDINSH</i>	2007	0.018	0.012	0.022	0.000	0.449
<i>LINSH</i>	1840	0.039	0.025	0.038	0.001	0.280
<i>STDIN</i>	1840	0.728	0.518	0.881	0.000	20.630
<i>NZP</i>	3969	2.077	1.852	0.926	1.000	8.000
<i>SINSH</i>	3439	0.108	0.045	0.152	0.000	0.918
<i>SIZE</i>	5448	21.620	21.522	1.068	18.724	25.404
<i>LEV</i>	5448	0.510	0.523	0.181	0.074	0.994
<i>FIRST</i>	5448	0.370	0.353	0.155	0.051	0.852
<i>SEP</i>	5448	5.779	0.000	8.202	0.000	46.950
<i>MPAY</i>	5448	13.445	13.476	0.796	10.361	15.524
<i>BH</i>	5448	0.089	0.000	0.284	0.000	1.000
<i>GROWTH</i>	5448	0.260	0.179	0.438	-0.459	3.864
<i>AGE</i>	5448	9.093	9.000	3.535	2.000	19.000
<i>STATE</i>	5448	0.682	1.000	0.466	0.000	1.000
<i>TURNOVER<sub>-1</sub></i>	5448	5.849	4.856	3.834	0.578	19.726
<i>BETA<sub>-1</sub></i>	5448	1.116	1.125	0.278	0.000	1.886
<i>RPB<sub>-1</sub></i>	5448	3.253	2.242	3.024	-3.601	29.853
<i>DIVD<sub>-1</sub></i>	5448	0.303	0.063	0.574	0.000	5.909
<i>RTS<sub>-1</sub></i>	5448	0.491	0.469	0.180	0.056	1.000

Table 4 shows the correlations between the main variables. *IAROA* and *IATQ* show positive correlations with institutions' shareholding proportion (*TINSH*) and institutions' non-zero point (*NZP*), but negative relations with long-term institutional investors'

shareholding volatility (*STDIN*) and the degree of separation of rights between ownership and controlling shareholder (*SEP*). In addition, there is a positive relationship between *IAROA* (*IATQ*) and senior executive compensation (*MPAY*). The relationships between explanatory are mostly related in logical ways (e.g. the largest shareholder's shareholding proportion is positively correlated with the separation of rights between ownership and controlling shareholder). We do not explain them one by one to save space. In addition, the correlation coefficients between explanatory variables are less than 0.4, and most are less than 0.1. The multicollinearity variance inflation factor (VIF) is less than 2. Therefore, there is a small possibility of a multicollinearity problem in the multiple regressions. Meanwhile, the D-W value is 1.982, which indicates that the data do not have positive or negative autoregressive problems.

## IV. Analysis of Empirical Results

### 4.1 Institutional Investors' Shareholdings and Firm Performance

During the research period (between 2005 and 2009), some important events happened, such as the split share structural reform in 2005, the implementation of the New Accounting Standards in 2007, and the global financial crisis in 2008. Meanwhile, as shown in the statistical results,<sup>5</sup> listed companies performed well at first, then poorly during the latter part of research period. Furthermore, the proportion of institutional investor shareholders changes along with company performance.

The proportion of institutional investors shows a mechanical correlation with firm performance in temporal sequence. In order to exclude the influence of time trends, we conduct regressions both on the 5-year unbalanced panel data and on each year when testing the influence of institutions' ownership concentration on firm performance. Table 5 reports the results of regressions with simultaneous equations (1) and (2) predicting industry-adjusted return on assets (*IAROA*). In all sample regressions, the proportion of institutional shareholders is positively correlated with firm performance (*IAROA*) and significant at the .01 level ( $b = 0.230$ ,  $t = 4.42$ ), which indicates that institutional investment is related to strong corporate performance.

In the yearly sample regressions, the proportion of institutional shareholders was positively correlated with corporate performance at the .01 level each year. The regression coefficients and  $t$  values showed a turning point in 2007: the relationship between institutional shareholding and corporate performance increases from 2005 to 2007 ( $b$  increases from 0.391 to 0.428, and  $t$  from 5.04 to 9.45), then decreases from 2007 to 2009 ( $b$  from 0.428 to 0.125, and  $t$  from 9.45 to 4.16). These results suggest that **H1** is valid. In all sample regressions, the shareholding proportion of the largest shareholder of a listed company shows a non-linear relation with corporate performance

<sup>5</sup> Complete statistics are not reported in this paper. Interested readers may contact the authors for the statistical data.

**Table 4** Pearson Correlations between Main Variables

	<i>IAROA</i>	<i>IATQ</i>	<i>TINSH</i>	<i>NZP</i>	<i>STD</i>	<i>LEV</i>	<i>FIRST</i>	<i>SEP</i>	<i>MPAY</i>	<i>SIZE</i>	<i>GROWTH</i>	<i>AGE</i>
<i>IAROA</i>	1.000											
<i>IATQ</i>	0.248** (0.00)	1.000										
<i>TINSH</i>	0.237** (0.00)	0.299** (0.00)	1.000									
<i>NZP</i>	0.062** (0.00)	0.017* (0.04)	0.094** (0.00)	1.000								
<i>STDIN</i>	-0.038* (0.03)	-0.042* (0.03)	-0.140** (0.00)	-0.260 (0.00)	1.000							
<i>LEV</i>	-0.362** (0.00)	-0.280** (0.00)	-0.019 (0.19)	-0.001 (0.92)	0.052* (0.02)	1.000						
<i>FIRST</i>	0.100** (0.00)	-0.134** (0.00)	-0.032* (0.02)	0.011 (0.45)	0.015 (0.52)	-0.013 (0.37)	1.000					
<i>SEP</i>	-0.005* (0.02)	-0.004* (0.05)	-0.029 (0.07)	-0.022 (0.12)	0.071** (0.00)	0.003 (0.59)	0.091** (0.00)	1.000				
<i>MPAY</i>	0.303** (0.00)	0.032** (0.02)	0.326* (0.04)	0.080* (0.03)	-0.013 (0.56)	0.003 (0.80)	-0.016 (0.26)	-0.016 (0.26)	1.000			
<i>SIZE</i>	0.143** (0.00)	-0.305** (0.00)	0.213** (0.00)	-0.076** (0.00)	-0.099** (0.00)	0.288** (0.00)	0.259** (0.00)	-0.042** (0.00)	0.398** (0.00)	1.000		
<i>GROWTH</i>	0.167** (0.00)	0.026** (0.00)	0.006* (0.04)	0.048** (0.00)	-0.075** (0.00)	0.109** (0.00)	0.138** (0.00)	0.004 (0.79)	0.060** (0.00)	0.111** (0.00)	1.000	
<i>AGE</i>	-0.068** (0.00)	0.007** (0.00)	0.099** (0.00)	-0.027 (0.06)	-0.070** (0.00)	0.080** (0.00)	-0.158** (0.00)	-0.049** (0.00)	0.165** (0.00)	0.120** (0.00)	-0.037** (0.00)	1.000
<i>STATE</i>	-0.044** (0.00)	-0.120** (0.00)	-0.012 (0.40)	0.008 (0.55)	-0.043 (0.06)	0.051 (0.00)	0.238** (0.00)	-0.309** (0.00)	0.050** (0.00)	0.208** (0.00)	-0.036* (0.01)	0.09** (0.00)

Notes: \*\* and \* indicate .01 and .05 significance levels, respectively.

(the regression coefficient of *FIRST* is positive, while that of *FIRSTSQ* is negative). The relation between the shareholding proportion of the largest shareholder and corporate performance differs in the yearly regressions, showing a non-significant relation in 2005 and 2007 and a significant relation in the other 3 years. However, the separation of power between ownership and the ultimate controllers is negatively correlated with corporate performance overall and in each yearly regression, but the regression coefficient is small.

Executive compensation is positively correlated with corporate performance at the .01 level in both the overall regression and the yearly regressions, which could mean that the higher the executive compensation, the harder the executives work to improve corporate performance. Moreover, corporate performance is positively correlated with corporate size and growth opportunities and negatively correlated with asset-liability ratio and state-owned status. The number of years listed and corporate performance are negatively correlated in the overall regression, but not significant in the yearly regressions.

Using simultaneous equations (1) and (2), we conduct a regression analysis on the relation between the overall proportion of institutional shareholders and the industry-adjusted TQ (*IATQ*) of corporate value. Table 6 shows the regression results. The results are similar to those of Table 5. In the overall regression, proportion of institutional shareholders and corporate value (*IATQ*) are positively related and significant at the .01 level ( $b = 2.493$ ,  $t = 8.56$ ). This relationship is stronger than that in Table 5, which suggests that institutional investors play a role in improving corporate value. In the yearly regressions, the proportion of institutional shareholders is positively correlated with corporate value at the .01 level each year.

The regression coefficients and  $t$  values reach their maximum in 2007. The influence of institutional investor shareholding on corporate value shows an increasing trend from 2005 to 2007 ( $b$  increases from 2.777 to 9.707, and  $t$  from 12.04 to 14.03), then a sharp decline in 2008 ( $b$  decreases from 9.707 to 2.174, and  $t$  from 14.03 to 9.29), and then another upturn ( $b$  rises to 4.639, and  $t$  declines to 7.82). The variation between the yearly regressions is almost the same as that in Table 5, but the influence of institutional investors on market value strengthens positively in 2009, although it does not have a positive effect on corporate performance. These results again suggest that **H1** is valid.

Executive compensation and market value are positively correlated in the overall sample regression and the 2006 regression, but they are not significantly related in the other 4 years. Corporate scale and financial leverage are negatively correlated with market value. The number of years listed is positively correlated with market value, which indicates that the more mature a listed company, the higher its market value.

## 4.2 Large/Small Institutional Investors and Firm Performance

In order to test whether large institutional investors perform better in corporate governance than small ones, this study uses simultaneous equations (1) and (2) and

**Table 5** 2SLS Analysis of the Correlation between Institutional Shareholdings and Corporate Performance

<i>IAROA</i>	(1) Total	(2) 2005	(3) 2006	(4) 2007	(5) 2008	(6) 2009
<i>TINSH</i>	0.230*** (4.42)	0.391*** (5.04)	0.426*** (8.07)	0.428*** (9.45)	0.236*** (7.18)	0.125*** (4.16)
<i>LEV</i>	-0.189*** (-31.22)	-0.190*** (-15.36)	-0.144*** (-13.96)	-0.136*** (-12.30)	-0.124*** (-10.59)	-0.142*** (-13.76)
<i>FIRST</i>	0.077** (2.49)	0.065 (0.97)	0.107** (1.99)	0.031 (1.57)	0.159*** (2.84)	0.041* (1.77)
<i>FIRSTSQ</i>	-0.057* (-1.66)	-0.022 (-0.29)	-0.106* (-1.71)	-0.059 (-0.85)	-0.110* (-1.67)	-0.057* (-1.89)
<i>SEP</i>	-0.001* (-1.90)	-0.002* (-1.76)	-0.002* (-1.82)	-0.001* (-1.75)	-0.001* (-1.69)	-0.001* (-1.71)
<i>MPAY</i>	0.016*** (10.29)	0.013*** (3.90)	0.011*** (3.77)	0.005** (2.55)	0.013*** (3.98)	0.020*** (7.20)
<i>BH</i>	-0.014*** (-2.89)	-0.007 (-0.94)	-0.003 (-0.71)	0.002 (0.34)	-0.011* (-1.82)	-0.020*** (-2.99)
<i>SIZE</i>	0.013*** (8.79)	0.014*** (4.51)	0.006** (2.39)	0.002** (2.03)	0.002*** (1.97)	0.009*** (4.73)
<i>GROWTH</i>	0.027*** (13.80)	0.037*** (7.66)	0.028*** (5.84)	0.020*** (4.22)	0.025*** (6.02)	0.026*** (6.83)
<i>AGE</i>	-0.001***	-0.001	-0.001	0.001	-0.001	-0.001
<i>STATE</i>	-0.010*** (-3.82)	-0.004 (-0.82)	-0.001 (-1.14)	-0.010** (-2.38)	-0.006* (-1.87)	-0.020*** (-4.62)
<i>CONS</i>	-0.407*** (-11.20)	-0.404*** (-5.32)	-0.227*** (-3.848)	-0.043*** (-0.70)	-0.227*** (-3.92)	-0.413*** (-8.94)
<i>YEAR</i>	Control					
R <sup>2</sup>	0.3271	0.3730	0.2812	0.2101	0.1768	0.2532
χ <sup>2</sup>	1893.47 [< 0.001]	659.76 [< 0.001]	584.80 [< 0.001]	483.23 [< 0.001]	489.07 [< 0.001]	542.24 [< 0.001]
Obs.	5,448	1,023	1,046	1,096	1,115	1,168

Notes: 1. \*\*\*, \*\*, and \* indicate .01, .05, and .10 significance levels, respectively.

2. The figures in parentheses are *t* values. Figures in brackets are *p* values.

conducts a regression analysis on the relation between the shareholding proportion of large/small institutional investors and firm performance. The regression results are shown in Table 7. Columns 1 and 2 show the relation between the proportion of large and small institutional investors and industry-adjusted return on assets (*IAROA*). The proportion of large institutional investors is positively correlated with corporate performance (*IAROA*) at the .01 level ( $b = 1.432$ ,  $t = 5.89$ ). The proportion of small institutional investors is positively correlated with corporate performance (*IAROA*) at the .05 level ( $b = 0.487$ ,  $t = 1.98$ ).



**Table 6** 2SLS Analysis of the Correlation between Institutional Shareholdings and Corporate Value

<i>IATQ</i>	(1) Total	(2) 2005	(3) 2006	(4) 2007	(5) 2008	(6) 2009
<i>TINSH</i>	2.493*** (8.56)	2.777*** (12.04)	3.296*** (12.49)	9.707*** (14.03)	2.174*** (9.29)	4.639*** (7.82)
<i>LEV</i>	-0.422*** (-5.34)	-0.080** (-2.19)	-0.239*** (-3.79)	-1.425*** (-5.73)	-0.253*** (-3.04)	-1.091*** (-5.38)
<i>FIRST</i>	-2.283*** (-5.67)	-0.219* (-1.71)	-0.657** (-2.00)	-3.318*** (-2.69)	-0.817** (-2.05)	-4.402*** (-4.22)
<i>FIRSTSQ</i>	2.771*** (5.80)	0.541** (2.40)	1.139*** (2.84)	5.351*** (3.41)	1.054** (2.11)	4.711*** (3.77)
<i>SEP</i>	-0.005*** (-3.06)	-0.001* (-1.70)	-0.002* (-1.71)	-0.007** (-2.22)	-0.002* (-1.82)	-0.019*** (-3.93)
<i>MPAY</i>	0.045** (2.23)	0.003 (1.28)	0.011* (1.81)	0.293 (1.53)	0.022 (0.99)	0.053 (1.09)
<i>BH</i>	0.084 (1.26)	0.033 (1.42)	0.090** (2.22)	0.082 (0.53)	0.002 (0.04)	0.088 (0.68)
<i>SIZE</i>	-0.395*** (-19.77)	-0.147*** (-15.59)	-0.193*** (-12.96)	-0.625*** (-11.23)	-0.175*** (-10.27)	-0.552*** (-14.15)
<i>GROWTH</i>	0.052** (2.12)	0.005* (1.65)	0.043* (1.66)	0.057* (1.73)	0.071** (2.37)	0.177** (2.35)
<i>AGE</i>	0.011** (2.05)	0.008*** (3.48)	0.011*** (3.00)	0.070*** (5.14)	0.008* (1.81)	0.027*** (2.70)
<i>STATE</i>	-0.070** (-1.97)	-0.005 (-0.29)	0.015 (0.58)	-0.074 (-0.77)	-0.024 (-0.77)	-0.429*** (-4.99)
<i>CONS</i>	8.435*** (17.73)	3.051*** (13.59)	4.262*** (11.79)	13.845*** (11.89)	4.084*** (9.91)	13.309*** (14.63)
<i>YEAR</i>	Control					
R <sup>2</sup>	0.2980	0.1847	0.2410	0.2691	0.1938	0.1644
χ <sup>2</sup>	1099.27 [< 0.001]	435.18 [< 0.001]	446.19 [< 0.001]	464.42 [< 0.001]	416.36 [< 0.001]	542.32 [< 0.001]
Obs.	5,448	1,023	1,046	1,096	1,115	1,168

Notes: 1. \*\*\*, \*\*, and \* indicate .01, .05, and .10 significance levels, respectively.

2. The figures in parentheses are *t* values. Figures in brackets are *p* values.

Columns 3 and 4 report the relation between the proportion of large and small institutional investors and industry-adjusted TQ (*IATQ*). The proportion of large institutional investors and corporate performance (*IATQ*) are positively correlated at the .01 level ( $b = 10.392$ ,  $t = 6.16$ ). The proportion of small institutional investors' and corporate performance (*IATQ*) are positively correlated at the .10 level ( $b = 2.686$ ,  $t = 1.79$ ). These results indicate that the proportion of large and small institutional

investors is positively correlated with corporate performance, but the correlation for large institutional investors is stronger. This suggests that **H2** is valid and that the proportion of institutional shareholders reflects their ability to monitor the company.

**Table 7** 2SLS Regression Predicting Corporate Performance from the Proportion of Large and Small Institutional Investors

	(1) <i>IAROA</i>	(2) <i>IAROA</i>	(3) <i>IATQ</i>	(4) <i>IATQ</i>
<i>LGINSH</i>	1.432*** (5.89)		10.392*** (6.16)	
<i>SMINSH</i>		0.487** (1.98)		2.686* (1.79)
<i>LEV</i>	-0.155*** (-8.93)	-0.148*** (-10.42)	-0.606*** (-3.05)	-0.226** (-2.08)
<i>FIRST</i>	-0.079** (-1.98)	-0.054* (-1.69)	-2.046** (-2.06)	-1.339*** (-2.82)
<i>FIRSTSQ</i>	0.166* (1.67)	0.005* (1.73)	2.163* (1.74)	2.162*** (3.80)
<i>SEP</i>	-0.002* (-1.68)	-0.001* (-1.73)	-0.022* (-1.69)	-0.002* (-1.93)
<i>MPAY</i>	0.019*** (4.45)	0.011*** (5.56)	0.155*** (3.24)	0.048* (1.66)
<i>BH</i>	-0.006 (-0.62)	0.006 (1.20)	-0.022 (-0.16)	0.331*** (3.95)
<i>SIZE</i>	0.003* (1.81)	-0.001 (-0.40)	-0.266*** (-5.87)	-0.508*** (-16.38)
<i>GROWTH</i>	0.011** (2.25)	0.019*** (8.90)	0.059 (1.01)	0.011 (1.04)
<i>AGE</i>	0.003 (0.29)	0.004 (1.21)	0.007* (1.64)	0.012* (1.95)
<i>STATE</i>	-0.012* (-1.66)	-0.009*** (-3.20)	-0.039 (-0.44)	-0.067* (-1.65)
<i>CONS</i>	-0.261*** (-3.12)	-0.074 (-1.52)	4.157*** (4.13)	11.68*** (15.17)
<i>YEAR</i>	Control	Control	Control	Control
R <sup>2</sup> (overall)	0.1255	0.3219	0.2289	0.2696
$\chi^2$	256.03 [< 0.001]	1276.32 [< 0.001]	208.26 [< 0.001]	798.72 [< 0.001]
Obs.	753	4,087	753	4,087

Notes: 1. \*\*\*, \*\*, and \* indicate .01, .05, and .10 significance levels, respectively.

2. The figures in parentheses are *t* values. Figures in brackets are *p* values.

### 4.3 Investment Horizon and Firm Performance

In order to test the relation between institutional investors' investment horizon and corporate performance, we classify institutional investors into long-term and short-term investors and test the relationship between their shareholding stability and corporate performance from two perspectives. First, we study the institutions' continuous non-zero shareholding quarters in a listed company; second, we make a dynamic study of the relationship between the volatility of long-term institutional investors' continuous non-zero shareholding and corporate performance.

Table 8 shows the results of a regression analysis on *IAROA* and industry-adjusted earnings before interest and tax (*IAEBIT*) using simultaneous equations (1) and (2). Columns 1, 2, and 3 show the relationship between investment horizon on *IAROA*, and Columns 4, 5, and 6 show the relationship with corporate value (*IATQ*). According to the results in Table 8, the relationship between the proportion of long-term institutional investors and firm performance is positive and significant at the 0.01 level ( $b = 0.57$ ,  $t = 4.85$  for *IAROA*;  $b = 10.415$ ,  $t = 4.61$  for *IATQ*). This suggests that long-term investors play a role in improving firm performance. In contrast, the proportion of short-term institutional investors is not significantly correlated with firm performance, suggesting that **H3** is valid.

The number of institutional investors' non-zero shareholding quarters (*NZP*) is positively correlated with firm performance ( $b = 0.03$ ,  $t = 4.64$  for *IAROA*;  $b = 0.264$ ,  $t = 3.11$  for *IATQ*), which suggests that the longer the institutional investors' investment horizon, the better the firm performance. Furthermore, volatility in the proportion of long-term institutional investors (*STDIN*) is negatively correlated with firm performance ( $b = -0.057$ ,  $t = -2.57$  for *IAROA*;  $b = -1.623$ ,  $t = -3.01$  for *IATQ*). This suggests that the larger the volatility, the worse the firm performance, supporting **H4**.

### 4.4 Institutional Investors' Independence and Corporate Performance

Not all institutional investors take an active approach to oversight. In order to test for the influence of different types of institutional investors on firm performance, we classify institutional investors into independent and non-independent according to their relation with the listed companies and the extent of government intervention imposed on them. Table 9 shows the relations between independent and non-independent institutional investors and firm performance (*IAROA* or *IATQ*) using simultaneous equations (1) and (2). According to the results in Columns 1 to 4, the proportion of independent institutional investors is positively correlated with firm performance at the 0.01 level ( $b = 0.499$ ,  $t = 13.42$  for *IAROA*;  $b = 2.543$ ,  $t = 17.95$  for *IATQ*). However, the proportion of non-independent institutional investors is not significantly correlated with firm performance ( $b = 0.137$ ,  $t = 1.00$  for *IAROA*;  $b = -0.106$ ,  $t = -0.72$  for *IATQ*). These results suggest that independent institutional investors lead to better corporate governance compared to

**Table 8** 2SLS Regression Predicting Corporate Performance from Institutional Investors' Investment Horizon and Stability

	(1) <i>IAROA</i>	(2) <i>IAROA</i>	(3) <i>IAROA</i>	(4) <i>IATQ</i>	(5) <i>IATQ</i>	(6) <i>IATQ</i>
<i>LINSH</i>	0.570*** (4.85)			10.415*** (4.61)		
<i>SINSH</i>		0.015 (0.53)			-0.539 (-0.26)	
<i>STDIN</i>	-0.075*** (-2.57)			-1.623*** (-3.01)		
<i>NZP</i>			0.030*** (4.64)			0.264*** (3.11)
<i>TINSH</i>			0.013*** (2.88)			1.179*** (14.17)
<i>LEV</i>	-0.102*** (-4.59)	-0.186*** (-25.72)	-0.156*** (-22.47)	-0.059* (-1.74)	-0.205** (1.97)	-0.474*** (-4.98)
<i>FIRST</i>	0.110 (1.48)	0.145*** (3.89)	0.044 (1.30)	-0.418 (-0.29)	-1.697** (-2.17)	-1.756*** (-3.79)
<i>FIRSTSQ</i>	-0.049 (-0.59)	-0.149*** (-3.36)	-0.029 (-0.73)	0.530 (0.33)	1.938** (2.01)	2.081*** (3.87)
<i>SEP</i>	-0.001** (-1.99)	-0.002* (-1.89)	-0.001* (-1.68)	-0.004* (-1.66)	-0.005* (-1.70)	-0.003* (-1.65)
<i>MPAY</i>	0.018*** (5.54)	0.016*** (9.03)	0.016*** (9.80)	0.079* (1.74)	0.057* (1.67)	0.043* (1.91)
<i>BH</i>	0.023* (1.67)	-0.018*** (-3.13)	-0.008* (-1.75)	0.507* (1.95)	0.189* (1.82)	0.137* (1.68)
<i>SIZE</i>	-0.009* (-1.70)	0.019*** (11.03)	0.004** (2.55)	-0.522*** (-5.03)	-0.443*** (-16.63)	-0.416*** (-18.62)
<i>GROWTH</i>	0.032*** (4.79)	0.027*** (11.66)	0.023*** (9.93)	0.247* (1.94)	0.014* (1.73)	0.072** (2.38)
<i>AGE</i>	-0.002*** (-2.73)	-0.001* (-1.75)	-0.001** (-2.50)	-0.048*** (-2.84)	0.021*** (2.78)	0.002 (0.35)
<i>STATE</i>	-0.015*** (-2.65)	-0.009*** (-2.82)	-0.009*** (-3.08)	-0.099* (-1.91)	-0.049* (-1.81)	-0.034* (-1.78)
<i>CONS</i>	0.038 (0.31)	0.553** (-15.28)	-0.265*** (-7.46)	11.092*** (4.83)	8.981*** (11.62)	8.576*** (17.36)
<i>YEAR</i>	Control	Control	Control	Control	Control	Control
R <sup>2</sup> (overall)	0.1789	0.2220	0.2311	0.2422	0.1963	0.2604
$\chi^2$	271.92 [< 0.001]	1063.56 [< 0.001]	1146.44 [< 0.001]	342.30 [< 0.001]	700.25 [< 0.001]	1129.58 [< 0.001]
Obs.	1,840	3,439	3,969	1,840	3,439	3,969

Notes: 1. \*\*\*, \*\*, and \* indicate .01, .05, and .10 significance levels, respectively.

2. The figures in parentheses are *t* values. Figures in brackets are *p* values.

non-independent ones, supporting **H5**. The above results also show that only institutional investors that do not have business relations with a listed company or are less influenced by the government can actively oversee a company and improve firm performance and market value. In contrast, institutional investors that have potential business relations with a listed company do not often monitor the inside controller's embezzlement for their own interest.

## V. Robustness Test

In order to test the stability of the findings, we repeat the regression using *IAEBIT* as the dependent variable and simultaneous equations (1) and (2). The result is very similar to the result with *IAROA* as the dependent variable. Thus, the regression result is not described here.

In addition, robustness tests with the same regression are also conducted with the following changes: (1) with return on assets (ROA), earnings before interest and tax (EBIT), and TQ as dependent variables, which are not industry-adjusted; (2) with lagged institutional investor shareholding variables as independent variables in an OLS regression; (3) and a regression based on Bushee's (1998) classification of long-term and short-term institutional investors. The results of these tests are consistent with those obtained in the previous part of the paper, suggesting that the conclusions are robust.

## VI. Conclusions and Suggestions

This paper examines the relationship between firm performance and institutional ownership in China's securities markets between 2005 and 2009. In order to control for the endogeneity between firm performance and institutional shareholding, this study uses 2SLS. We use industry-adjusted return on assets (*IAROA*), industry-adjusted TQ (*IATQ*), and industry-adjusted earnings before interest and tax (*IAEBIT*) as indicators of firm performance. We also intensively study the whether characteristics of institutional owners (ownership concentration, investment horizon, shareholding stability, and independence) influence the relationship between institutional investors and firm performance.

The empirical results show the overall proportion of institutional investors is positively correlated with firm performance. Specifically, a high proportion of large institutional investors is related to better corporate governance. In addition, the proportion of large institutional investors shows a stronger positive association with firm performance than the proportion of small institutional investors.

Furthermore, independent institutional investors are associated with better corporate governance than non-independent ones. The relationship between independent institutional investors and corporate performance shows a stronger positive association with firm performance than with non-independent ones. Meanwhile, long-term institutional investors are associated with better corporate governance than short-term ones, and the proportion of long-term institutional investors shows a stronger positive

**Table 9** 2SLS Regression Predicting Corporate Performance from Institutional Investors' Independence

	(1) <i>IAROA</i>	(2) <i>IAROA</i>	(3) <i>IATQ</i>	(4) <i>IATQ</i>
<i>IDINSH</i>	0.499*** (13.42)		2.543*** (17.95)	
<i>UIDINSH</i>		0.137 (1.00)		-0.106 (-0.72)
<i>LEV</i>	-0.141*** (-23.64)	-0.217** (-2.44)	-0.558*** (-7.11)	-0.705*** (-5.99)
<i>FIRST</i>	0.088*** (2.82)	0.109 (0.42)	-1.051*** (-2.63)	-2.154*** (-3.70)
<i>FIRSTSQ</i>	-0.071* (-1.95)	0.148 (0.45)	1.398*** (2.98)	2.304*** (3.37)
<i>SEP</i>	-0.002* (-1.86)	-0.001* (-1.73)	-0.004** (1.99)	-0.003* (-1.72)
<i>MPAY</i>	0.007*** (4.01)	0.019*** (10.00)	0.046** (2.41)	0.085*** (3.09)
<i>BH</i>	-0.011** (-2.19)	-0.004 (-0.70)	0.110* (1.82)	0.060* (1.68)
<i>SIZE</i>	0.010*** (6.83)	0.005*** (3.19)	-0.339*** (-19.22)	-0.313*** (-12.96)
<i>GROWTH</i>	0.020*** (8.82)	0.019*** (7.26)	0.039** (2.24)	0.037* (1.66)
<i>AGE</i>	-0.001*** (-2.69)	-0.001*** (-2.75)	0.008 (1.27)	-0.013** (-2.01)
<i>STATE</i>	-0.011*** (-4.52)	-0.013*** (-3.60)	-0.071** (-2.05)	0.032 (0.64)
<i>CONS</i>	-0.097*** (-2.71)	-0.284*** (-7.40)	7.113*** (18.28)	6.558*** (12.20)
<i>YEAR</i>	Control	Control	Control	Control
R <sup>2</sup> (overall)	0.2920	0.2860	0.2742	0.2185
Chi2	1700.69 [< 0.001]	552.25 [< 0.001]	1169.53 [< 0.001]	422.03 [< 0.001]
Obs.	4,279	2,007	4,279	2,007

Notes: 1. \*\*\*, \*\*, and \* indicate .01, .05, and .10 significance levels, respectively.

2. The figures in parentheses are *t* values. Figures in brackets are *p* values.

correlation with firm performance than short-term ones. These findings suggest that long-term and independent institutional investors actively participate in corporate governance and improve firm performance in China's securities markets. Relatively speaking, short-term and non-independent institutional investors have not played a significant role in improving firm performance. Moreover, the regression results also indicate that establishing compensation contracts based on performance and narrowing the separation of two rights of the ultimate controller also help improve firm performance.

Based on these findings, we put forward the following suggestions. First, the government should improve capital marketisation step by step to create a favourable investment environment. Currently, China's corporate laws stipulate that the proportion of institutional investors in a listed company should be less than a certain percentage, which limits institutional investors' ability to keep the largest shareholder in check and oversee management. According to the results of this study, the higher the proportion of institutional investors, the more possible it is to invest for the long term and monitor management, making it more likely that they can improve firm performance. Therefore, the government should lift the ban on non-tradable shares more quickly and promote the institutionalisation of investment bodies in markets, which can reduce debt-financing costs and agency costs and help institutional investors play a governance role in listed companies.

Second, the government should reduce intervention and allow institutional investors to give full play to their oversight function. This study shows that the proportion of shareholders from government-intervened social security funds is negatively correlated with corporate performance.

Lastly, the moral hazards of institutional investors should be suppressed and monitored more closely. While relaxing regulations in the investment environment, the government should also strengthen supervision of institutional investors so as to reduce moral hazards. Institutional investors' influence on corporate performance is just like a double-edged sword: on the one hand, some institutional investors may manipulate the securities market and induce trading among retail investors, making use of its information advantage and capital strength, damaging the interests of small and medium investors, and disturbing the operation of capital markets; on the other hand, with the help of corporate laws, institutional investors active in shareholder oversight may defend small and medium investors' rights and interests by right of their information advantage and professional skills, taking "collective actions" and supervising management effectively, even though they hold a small proportion of shares in the company. Therefore, we should strengthen corporate governance and monitoring, and we should allow institutional investors to contribute their positive influence on corporate governance.

## References

Please refer to pp. 22-25.