

高管腐败、传染效应与投资者保护 —— 基于白培中腐败案的实证分析[♦]

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投稿日：2013年6月24日 录用日：2014年1月6日
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摘要

本文以受到网络媒体广为关注的由小偷引出、公安部门试图封锁、经网络爆料的白培中腐败案为契机，首次研究了高管腐败的传染效应、影响因素及其传导机制。本研究发现，首先，白培中腐败案不仅使事件公司的股价下跌，而且由于信息传递作用，也对同行业公司产生了传染效应。其次，公司的政府控制性质对传染效应具有杠杆作用，加重了政府控制公司的传染效应。然而，公司如果由国际四大审计则对传染效应具有一定的抵减作用。再次，白培中的撤职对事件公司股价的下跌和传染效应均具有较为明显的抑制作用。最后，公司高管的在职消费等是市场传染效应的信息传导机制，潜在的腐败信号会加重公司的传染效应。此外，进一步分析还发现，传染效应不受同行业公司的盈余质量、财务重述行为的影响。

关键词：高管腐败、媒体负面报道、声誉、传染效应、在职消费、盈余管理

中图分类号：F275.5、F239

[♦] 本文是国家自然科学基金项目面上项目（项目编号：71172206）、青年项目（项目编号：71102159）和海外及港澳学者合作研究基金项目（项目编号：71328201）的中期成果之一。文中关于白培中腐败案的所有资料均来自公开媒体。首先感谢审稿人和执行编辑苏黎新教授富有建设性的修改建议。感谢2012年第十届中国实证会计国际研讨会、香港理工大学和上海交通大学举办的中国会计与财务研究国际研讨会的参会者对本文的讨论。感谢美国肯塔基大学谢宏教授、香港理工大学龚细和教授、西南财经大学蔡春教授、北京大学光华管理学院会计学博士后张娟博士对本文提出的富有建设性的修改建议。本文文责自负。

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一、问题的提出

近年来,从“天价烟”局长周久耕到“表哥”杨达才,从“房叔”蔡彬到雷政富的不雅视频等一系列事件,无一不是反映了全体国民通过网络对践踏社会公正的腐败的高度关注。据新华网调查,75%的人选择用网络曝光来参与反腐,²网络媒体成了近年来普通百姓参与反腐的首选利器。根据权威的“透明国际”对中国腐败形势进行的估计,2011年我国的腐败感指数(Corruption Perceptions Index)为3.6,在182个国家和地区中排在第75位。胡鞍钢经过计算估计,腐败所造成的经济损失和消费者福利损失,平均每年约为9875亿至12570亿元,占全国GDP总量的13.2%至16.8%。³可以看出,腐败已成为影响我国经济发展的一大隐患,普通百姓通过网络参与反腐也反映了全体国民对腐败的深切关注。基于此,近年来大量文献从宏观层面基于寻租理论、管制理论、委托代理理论、信息不对称理论去探讨腐败产生的原因(闫伟,1999;盛宇明,2000;张延人和顾江,2001;谢平和陆磊,2003;夏光和张胜波,2005;黄群慧,2006),以及所带来的各种后果:对政府政策制定的干预(高勇强和田志龙,2005)、对外商直接投资的影响(Cuervo-Cazurra,2006; Dong and Torgler,2010)、对公司成长的不利影响(Chan,2009)、对经济增长的阻碍(刘勇政和冯海波,2011)、所导致的银行业和证券业不良资产的增加(陆磊,2005)。只有较少的文献从公司层面研究了腐败产生的薪酬管制原因(陈信元等,2009)以及腐败对公司盈余信息(Fan *et al.*,2014)和债务融资方式(朱凯和陈信元,2007; Fan, Rui, and Zhao,2008)的影响。根据一个反腐败组织对腐败⁴的理解,腐败不仅包括公权力腐败(public corruption),也包括私权力腐败(private corruption)。公权力腐败是指当选的政客或获委任的公务员为获取私人利益而滥用公共权力的行为。私权力腐败是指通过遗产、教育、婚姻、选举、委任或其他方式滥用委托权力,以获取个人利益的行为。上述定义中腐败的主体不仅涵盖从政者和公务员,还包括公司的行政总裁(CEO)和财务总监(CFO)、医院的管理人或入院负责人、足球队的教练等等。在本文中,由于政府控制公司的董事长、总经理等还具有行政级别,因此,本文中政府控制公司高管的腐败可能兼具这两种腐败的特点,非政府控制公司高管的腐败则属于私权利腐败的范畴,但它们都有一个共同点:就是为了获取私人利益而滥用公司权力的行为。这也是本文对腐败的理解和界定。2011年由小偷盗窃山西焦煤集团董事长白培中家中财产、经网络爆料引起社会各界广泛关注的白培中腐败案,则为我们从公司层面研究全体股民对“腐败”的态度提供了一个较好的契机。我们之所以选择这个案例,是由于该案的出现具有“意外性”,并经网络爆料引起了全体国民的深切关注,政府相关反腐部门也迅速采取了行动,从而使该案案情较为简洁清楚,相关资料容易获取,有助于控制其他干扰因素的影响;二是该案的案情发展线索比较清楚,比较容易选择事件研究点,涉案的上市公司资料可以从公开渠道获取,从而使结论的可靠性更好。基于此,本文试图用事件研究法研究白培中

² 该数据引自:“网络反腐:不能止于猎奇泄恨”,《湖北日报》,2012年12月15日。

³ 该数据引自夏光和张胜波的论文“权力市场下的腐败机制和治理研究”,发表于《中国工业经济》2005年第8期。

⁴ 信息来源:<http://www.corruptie.org/en/corruption/what-is-corruption/>

腐败案的市场影响效果，首次从公司微观层面来研究公司高管腐败的市场传染效应。此研究有助于增进全体国民、相关部门、学术界和实务界等了解全体股民对“腐败”的深切关注态度，认识腐败之于社会的广泛影响。

传染效应⁵是指大公司的危机会给同行业的其他公司带来负面影响，使它们的股价下跌。对传染效应的研究最早始于银行破产事件，Aharony and Swary (1983) 发现一家银行的破产具有信息传递作用，揭示了银行业可能存在的问题，从而使投资者对整个银行业的信心降低，致使其他银行的股价也受到牵连而下跌。Hertzel *et al.* (2008) 则从破产或困境公司的供应商和顾客角度进行了进一步拓展，发现破产或困境公司对供应商也存在传染效应。传染效应的核心理论基础是一家公司的负面事件具有信息传递作用，由于同一个行业的公司具有较大的同质性，市场投资者会基于这个负面信息对同行业其他公司做出类似的判断。处于经济转型期的我国是一个腐败较为严重的新兴经济体 (He, 2000)，较弱的投资者保护与公司内外部治理机制的不足等，容易滋生公司高管的腐败行为。2011 年由小偷盗窃山西焦煤集团董事长白培家中财产而“意外”引出的颇具讥讽意义的白培中腐败案，引起了社会各界的广泛关注。这起由小偷而不是反腐部门揭露、公安部门试图封锁、⁶ 经网络媒体爆料引起全体国民广泛深切关注的腐败案，一定程度表明了外部监督机制和公司内部治理的失灵。更为严重的是，这起由小偷牵出的腐败案，引发了市场投资者对上市公司高管为自己谋利的隐性规则 (陈信元等, 2009) 的普遍忧虑，如高管的在职消费、货币性私有收益等。⁷ 那么，这起腐败事件是否会给同行业其他公司带来传染效应呢？其次，山西焦煤集团是一家国有控股的集团公司，旗下有西山煤电和山西焦化两家上市公司，分别属于采掘业和石油、化工、塑胶和塑料业 (以下简称石化塑料业)，这两个行业共有 73 家上市公司，其中政府控股 35 家，非政府控制 38 家，由于这两类公司的外部监督机制、代理问题等存在不同，市场对它们的反应是否存在明显差异呢？最后，Fan and Wong (2005) 认为，在东亚市场，审计师作为外部治理机制可以弥补公司内部治理机制的不足，那么，公司良好的外部治理机制是否可以缓解这种负面的传染效应呢？此外，中国证券市场通过近 10 年的发展，借助媒体报道逐渐形成了一种新的市场治理模式，具体表现为作为信息媒介 (Fang and Peress, 2009; Chen, Pantzalis, and Park, 2013) 的媒体负面报道通过舆论和市场压力倒逼了相关监管部门的处罚效率 (刘启亮等, 2013)。这种市场治理模式对投资者形成了一种有别于仅从司法体系产生的投资者保护。那么，这种市场治理带来的白培中撤职会减缓事件公司和同行业公司的股价下跌吗？或者说市场治

⁵ 公司危机的行业效应包括传染效应和竞争效应两种。竞争效应，是指行业内大公司的危机使得竞争对手获益、股价得到提升的现象。由于本文研究的腐败事件反应的是事件公司在管理中存在漏洞，投资者会对同行业公司进行管理上类似预期，不会存在同行业公司市场份额等方面因祸得福的情况，因此，本文对竞争效应不予涉及。

⁶ 事发后，太原市公安局主管刑侦的副局长戴来伟向办案民警下达封口令，要求绝对保密。

⁷ 中国气象局下属企业北京华风气象影视信息集团有限责任公司原总经理石永怡，由于觉得年薪 14 万的薪酬太低，2007 年 9 月至 2010 年 12 月间，她通过各种手段贪污公款 110 万元。尽管单位的下属知晓她虚报项目贪污公款，但没有一个员工予以检举。她本人也“一直以为我的做法都是很正常的”。这表明，石永怡在公司贪腐公款的行为已成为公司员工认同的一个隐性规则。

理带来的投资者保护会降低股民的不良预期吗？这些正是本文予以研究的主要问题之一。另外，如前所述，市场传染效应的核心是基于信息传递而引起连锁反应，那么，白培中腐败案是通过什么途径来传递相关的负面信息呢？这些正是本文要予以研究的主要问题之二。

本文以受到媒体广为关注的白培中腐败案为契机，本研究发现：首先，白培中腐败案不仅使事件公司的股价下跌，而且由于信息传递作用，也对同行业公司产生了传染效应；其次，公司的政府控制性质对传染效应具有杠杆作用，加重了政府控制公司的传染效应。然而，公司如果由国际四大审计则对传染效应具有一定的抵减作用；再次，白培中的撤职对事件公司股价的下跌和传染效应均具有较为明显的抑制作用；最后，公司高管的在职消费等是市场传染效应的信息传导机制，潜在的腐败信号会加重公司的传染效应。此外，进一步分析还发现，传染效应不受同行业公司的盈余质量、财务重述行为的影响。

本文的贡献在于：（1）近年来，一些学者从媒体报道角度研究了媒体负面报道对公司治理（如 Dyck *et al.*, 2008）和公司舞弊（如 Miller, 2006; Dyck *et al.*, 2010）的治理作用以及媒体报道的市场反应（如：Fang and Peress, 2009; Griffin *et al.*, 2011），本文从市场反应角度研究了腐败事件媒体报道的传染效应，进一步拓展了媒体治理领域的研究。（2）关于腐败的后果，学术界观点大致可分为“修正主义（Revisionist）观”和“负面效应（Negative Force）观”。⁸ 后者如腐败对国外直接投资（FDI）（Cuervo-Cazurra, 2006）、融资方式（朱凯和陈信元, 2007; Fan *et al.*, 2008）、资本收益（Cumming *et al.*, 2010）的影响等，本文首次从国民、市场参与者角度分析了他们通过“股价表决”方式对公司高管腐败的态度，拓展了对腐败“负面效应”的认识。（3）腐败是道德风险的一种极端表现形式（陈信元等, 2009）。尽管对腐败尤其是政府官员腐败的规范研究较多，但对公司高管腐败的研究文献非常少，尤其是能提供实证证据的研究。本文首次从市场角度研究公司高管腐败的行业效果，有助于增进对委托代理框架下的道德风险的进一步认识，具有学术增量贡献。（4）如文献综述部分所述，尽管目前有较多的文献从银行破产事件、盈余公告等几个方面发现了传染效应的存在，但尚无文献研究公司高管腐败的行业效果，并发现传染效应的信息传导机制，本文弥补了这些不足。（5）本文首次初步探讨了中国证券市场通过近 10 年发展形成的市场“倒逼机制”治理模式，发现了结合媒体报道形成的有别于司法体系的“倒逼机制”投资者保护方式。

本文后面部分的安排如下：第二部分是文献综述与研究假设，第三部分是事件回放、研究设计与描述性统计，第四部分是实证分析，第五部分是传染效应的信息传导机制分析，第六部分是进一步分析与稳健性检验，最后是结论与局限性。

二、文献综述与研究假设

（一）关于传染效应和高管腐败的文献综述

⁸ 前者以 Nye (1967) 和 Leff (1964) 为代表，认为腐败的收益（有助于资本形成、加速发展、使得政治更加“人性化”）超过了腐败带来的成本。

由于信息传递作用，一家公司的负面报道可能会引起投资者对整个行业做出类似的判断，从而降低投资者对整个行业未来的预期。对此的研究最早始于银行业的破产事件（如 Aharony and Swary, 1983）和其他行业的破产事件（如 Lang and Stulz, 1992）。随后，许多学者将此研究思维运用于其他事件：如盈余公告（Foster, 1981）、新股发行（Polonchek and Miller, 1999）、股利发放（Firth, 1996; Kohers, 1999; Caton *et al.*, 2003）、股票拆分和股票回购（Tawatnuntachai and Mello, 2002; Massa, Rehman, and Vermaelen, 2007）、财务重述（Xu, Naj, and Ziegenfuss, 2006; Gleason *et al.*, 2008）、审计失败（Chaney and Philipich, 2002）等，较为广泛和稳健地发现了负面事件的传染效应。在近期的研究中，Hertzel *et al.*（2008）从产业链的角度，将行业内破产公司的行业效应从横截面角度的分析拓展到了行业上下游企业。他们发现，一家公司的破产不仅对同行业公司市值造成冲击，对其上下游的供货商和顾客同样会造成影响。尤其对于供货商而言，下游行业某家企业的财务危机对其市值有很显著的负面影响，并且，下游行业的行业内传染效应越明显，供货商的市值下降程度就越大。

从公司微观层面研究高管腐败的研究文献较少，主要从两个方面来展开。一方面是关于腐败的影响因素。陈信元等（2009）发现薪酬管制可能诱发公司高管的腐败行为。Houston, Lin, and Ma（2011）发现，媒体的政府控制与集中度会影响银行借款融资中的腐败行为。Khalil *et al.*（2011）发现当财务报告需经外部审计师审计时有利于防止腐败，表明独立审计具有治理腐败的作用。另一方面是关于腐败的经济后果。Cuervo-Cazurra（2006）发现，腐败不仅导致国外直接投资的减少，甚至还会影响国外直接投资的来源。朱凯、陈信元（2007）使用银行腐败的调查数据发现，随着银行腐败成本的上升，公司更倾向于股权融资和长期信贷融资。Fan, Rui, and Zhao（2008）发现腐败因素会影响到公司债务融资的方式与债务期限。Fan *et al.*（2014）发现，与公司关联的腐败官员被查办以后，公司的盈余信息质量明显得到提高。Cumming *et al.*（2010）则发现私人权益资本的收益在腐败的国家更高。

可以看出，尽管腐败在我国已较为严重，可能是由于数据获取的难度，将腐败与公司财务、会计相结合的研究仍还较少，尚无文献将市场投资者对公司高管腐败的市场反应及行业效果进行研究。近年来，腐败已成为老百姓茶余饭后的一个忧国话题。通过股民对公司高管腐败的“股价表决”方式可以窥见全体国民对腐败的认知和深切关注态度。鉴于此，本文以白培中腐败案为契机，研究公司高管腐败的市场反应、影响因素及信息传递机制。

（二）研究假设

关于腐败的认知，一直是一个激烈争论的问题。一方面，以 Nye（1967）和 Leff（1964）为代表的“修正主义（Revisionist）观”认为腐败的收益（有助于资本形成、加速发展、使得政治更加“人性化”）超过了腐败带来的成本。在中国也有人认为，尽管转型经济的腐败现象明显多于成熟的市场经济，但近年来转型经济的发展明显好于成熟的市场经济，因此，在目前无法根除腐败的情况下，应允许“适度腐败”（腾讯网，2012年5月29日）。这可能表明腐败在一定程度上是一种有利于经济发展的“润滑剂”

(Nye, 1967)。这是因为：首先，由于我国存在较为明显的薪酬管制（陈信元等，2009），付出更多的公司高管为了自我实现价值，可能会给自己实现“租金补偿”，从而向市场传递一种努力工作的私有信息。如北京华风气象影视信息集团有限责任公司原总经理石永怡以及云南红塔集团的褚时健。这可能会有助于提高公司重要资产的使用效率（Nye, 1967），如褚时健让红塔集团从一个地方小厂成长为亚洲最大、世界第二的烟草集团。其次，在公司销售处于“卖方市场”的情况下，买方可能向卖方公司高管行贿，从而也向市场传递了公司良好的市场销售前景。因此，腐败可能预示着高管的努力程度以及公司的发展情景，从而传递一种积极信号。当白培中腐败案经网络曝光以后，就会产生这类信息的传递作用，使投资者对同行业其他公司产生类似的看法，从而会使股价上升。

另一方面，“负面效应（Negative Force）观”认为，腐败是一种影响经济发展的不利因素，如腐败会对国外直接投资（Cuervo-Cazurra, 2006）、融资方式（朱凯、陈信元，2007；Fan *et al.*, 2008）、资本收益（Cumming *et al.*, 2010）产生负面的影响等。在我国公司高管利用职权为自己谋取私利已成为一个较为普遍的现象。在山西焦煤集团所属的煤炭能源行业，产需规模经历了近 10 年的较快速扩张，煤炭消费量和产量年均增长率分别为 9.2%和 9.3%，尤其是近三年，煤炭消费量增幅大于产量增幅。⁹ 这就意味着，在煤炭市场是卖方市场，买方会通过关系和渠道去“搞定”卖煤公司的高管，以解决买煤问题。这样，就给公司高管提供了获取私利的机会和途径，从而可能损害公司的利益。同时，我国现行的反腐机制由于以下原因，还无法对贪腐者产生“威慑”作用：一是公司外部监督机制的不足。由于外部监督机构(如反贪局)的信息不对称，除非公司内部员工的举报，否则很难掌握公司高管腐败的证据，从而无法产生有效的阻吓作用。二是公司内部治理结构的失效，无法对公司高管形成权利制衡和监督，易于形成腐败的土壤。三是公司的激励机制不足，比如国有企业的薪酬管制等（陈信元等，2009），使公司高管心里产生落差，担心自己退位后再也无法过上优越的生活，因此，通过各种不法手段为自己谋取私利，如国内经常发生的“59 岁现象”（万华林和陈信元，2012）。在这种行业背景和治理机制下，投资者会更加担心腐败高管利用职权为自己谋利。由于同行业公司具有较大的同质性（贺小刚、李新春，2004），当白培中腐败案经网络曝光以后，就会产生信息传递作用，使同行业其他公司的投资者对自己持有股票的公司高管产生类似的担忧，修正对公司的期望从而降低对公司的估价，因为腐败的成本最终都是由投资者承担的。因此，本文提出两个竞争性的假设：

H1a：白培中腐败案会使同行业公司的个股日回报下降。

H1b：白培中腐败案会使同行业公司的个股日回报上升。

我国的上市公司主要由两类公司构成，即政府控制公司和非政府控制公司。这两类公司在外部监管和治理结构上存在较为明显的差异。首先，政府控股公司由反贪局等相关机构和各地国资委进行外部监管，而非政府控制公司主要由中小股东对大股东

⁹ 数据来源：“国内煤炭产业中长期发展趋势预测”，《中国能源报》，2012 年 9 月 12 日。

进行监督，由于反贪部门的信息不对称和国资委代行所有者的身份，他们的监管动机和监管目的都没有非政府控制公司的股东强烈（杨瑞龙，1997）；其次，在内部治理上，政府控制公司类似于我国的政府机构，具有行政级别，下级员工和同级员工为了自己的前途，不敢也不愿对公司高管“说三道四”，公司的其他股东由于股份太少，则可能表现出理性的“冷漠”，从而出现“内部人控制”（陈湘永等，2000；黄群慧，2000）。相反，在非政府控制公司，公司第一大股东之外的其他大股东一般都参与公司的治理，由于自己在公司有着巨大利益，他们有动机对可能代表第一大股东利益的公司高管的谋取私利的腐败行为进行监督。因此，相比于非政府控制公司，当公司高管的腐败行为发生时，市场投资者会对行业内政府控制公司的负面预期会更加严重。藉此，我们提出如下假设：

H2：政府控制公司的累计异常回报会明显低于非政府控制公司。

Fan and Wong（2005）发现，在东亚市场，外部审计师可以承担起外部治理机制的作用，弥补公司内部治理的不足。Khalil *et al.*（2011）也发现当财务报告需经外部审计师审计时有利于防止腐败，表明独立审计具有治理公司腐败的作用。2006年以后我国的法律要求审计师对审计失败要承担民事赔偿责任。由于大事务所在审计市场的份额较大，审计的客户规模也较大，因此，面临诉讼风险时的赔偿会更多。同时，大事务所的声誉要好于小事务所，一旦出现审计失败，其遭受的声誉惩罚成本会更高（Chaney and Philipich, 2002; Weber *et al.*, 2008）。因此，相比于小事务所，大事务所的审计质量会更高（DeAngelo, 1981），对客户的审计治理作用会更好。同时，客户聘请大事务所作为审计师，根据信号理论，也向市场表明公司的治理情况好于其他公司。因此，当公司高管的腐败行为带来传染效应时，公司聘请的大事务所可能会对传染效应产生一定的缓解效果。藉此，我们提出如下假设：

H3：大事务所审计公司的累计异常回报会明显高于小事务所审计的公司。

有别于司法体系形成的投资者保护，中国证券市场通过近 10 年的发展，借助媒体报道逐渐形成了一种新的市场治理模式（刘启亮等，2013），具体过程为：即先由媒体揭露存在的各种腐败等问题，然后，迫于舆论和市场压力，相关权利部门介入调查，然后对责任人做出相应的处罚。这样，作为信息媒介（Fang and Peress, 2009; Chen, Pantzalis, and Park, 2013）的媒体负面报道就倒逼了相关监管部门的处罚效率，从而对投资者的利益形成一种保护。这种市场治理模式——“倒逼机制”对投资者就形成了一种有别于仅从司法体系产生的投资者保护。从本文的案例来看，尽管太原市公安局主管刑侦的副局长戴来伟向办案民警下达封口令，要求绝对保密，但经网络披露该事件后，白培中腐败案被《山西晚报》以及包括人民网在内的各大型网络媒体疯狂转载，同时，卷入此案的两家上市公司及其同行业公司的股价也急剧下跌。迫于各种压力，就在案情首次披露后的一个多月后，中共山西省委快速高效地决定，免去白培中山西焦煤集团有限责任公司董事长、党委书记职务。这种高效的处理模式反映了市场“倒逼”治理的效果，对股东而言是一种利好消息。此举预示着公司将进行管理层重组，

实施新的发展战略和财务政策，而这预示着财务绩效和市场表现的好转（如 Huson, Parrino, and Starks, 2001; Huson, Malatesta, and Parrino, 2004），股东财富的增加（如 Denis and Denis, 1995; Kang and Shivdasani, 1995）。因此，可能会控制事件公司和同行业公司的股价下跌。藉此，我们提出如下假设：

H4：白培中撤职会缓解事件公司和同行业公司的股价下跌。

三、事件回放与研究设计

（一）事件回放与事件选择

白培中是山西焦煤集团的董事长和党委书记，年薪达百万。该集团公司组建于 2001 年 10 月，是中国煤炭行业第一家以资产为纽带，由原西山煤电、汾西矿业、霍州煤电三家国有重点煤炭企业合并重组设立的煤炭大集团，是中国目前规模最大、品种最全的炼焦煤生产企业。山西焦煤实行集团公司、子分公司、生产矿厂三级运行和管理体制，旗下设 12 个子分公司，其中 7 个煤炭产业公司，包括西山煤电集团公司、汾西矿业集团公司等，五个非煤产业类和现代服务型子（分）公司，包括山西焦化集团公司、国际发展公司等，拥有西山煤电股份公司（000983，SZ）和山西焦化股份公司（600740，SH）两家中国 A 股上市公司（见表 1）。其中，西山煤电属于煤炭采选业，由山西焦煤集团直接控股 54.4%。山西焦化属于石化塑料业，由山西焦煤集团的全资子公司山西焦化集团控股 19.24%，控股公司西山煤电控股 15.56%，最终山西焦煤集团间接控股该公司。

2011 年 11 月 13 日，山西焦煤集团董事长和党委书记白培中家中遭遇抢劫；11 月 24 日，山西前媒体人高勤荣在微博上爆料称，山西焦煤集团董事长白培中家中被劫，“其妻报案谎称被抢 300 万。犯罪嫌疑人被抓获后，（证实被盗钱财物品）总价值却近 5000 万元，其中：人民币 600 万元，港币 100 万元，美元 27 万，欧元 300 万。金条七八公斤，另外还有名表、钻戒、项链等名贵奢侈品。”这是白培中事件第一次在网络曝光。

由于原是白培中所住小区保安的两名犯罪嫌疑人被公安机关抓获后对上述犯罪事实供认不讳，¹⁰ 于是，检察机关于 2011 年 12 月 14 日（**事件 1**）对二人执行逮捕。这样，高勤荣在微博上爆料的信息开始逐渐得到证实。

2011 年 12 月 18 日（**事件 2**），山西省第一纸质媒体《山西晚报》报道了山西焦煤集团董事长白培中家中遭劫事件，原文称：“白妻报案称被抢 300 万。犯罪嫌疑人被抓获后，（证实被盗钱财物品）总价值却近 5000 万元。山西焦煤集团、白培中及太原警方采取了不‘辟谣’，亦不接受采访的沉默方式。”《山西晚报》报道后，白培中事件被包括人民网在内的各大型网络媒体疯狂转载。

2011 年 12 月 22 日（**事件 3**），中共山西省委决定，免去白培中山西焦煤集团有限

¹⁰ 事发后，太原市公安局主管刑侦的副局长戴来伟向办案民警下达封口令，要求绝对保密。

责任公司董事长、党委书记职务。

截至 2012 年 3 月底，白培中案调查工作接近尾声。但截至目前为止，对白培中的处分结果尚未可知。白培中身居要位，手握实权，控制了整个山西焦煤集团，白培中事件是一起典型的经网络爆料引起全体国民关注的国企高管腐败案。

表 1 山西焦煤集团的两家上市公司情况对比

	西山煤电	山西焦化
股票代码	000983	600740
所属板块	深证 A 股	上证 A 股
所属行业	煤炭采选业	石化塑料业
主营业务	煤炭的生产、洗选加工、发电和销售	焦炭加工及相关化工产品、硫酸铵(农用)的生产、销售
第一股东（持股比例）	山西焦煤集团（54.4%）	山西焦化集团（19.24%） ¹¹
第二股东（持股比例）	上海宝钢国际（1.35%）	西山煤电（15.56%）
交易状态	正常	正常

（二）研究设计

1、样本选择与 CAR 的计算

本文的研究问题是白培中腐败案对白培中控制的上市公司、同行业其他公司的传染效应和传染效应的影响因素，因此，初选样本包括山西焦煤集团控股的两家上市公司（000983 和 600740）和它们的同行业公司，即西山煤电的采掘业和山西焦化的石化塑料业公司作为研究样本。同时，按以下条件对样本做了进一步筛选：

（1）被标以 ST 和*ST 的公司，由于此类公司易受其他异常情况干扰而不具有代表性，因此予以剔除；

（2）在事件窗口期内发生了其他重大事件的公司，或在窗口期内停牌达 5 天以上的上市公司予以剔除，剔除原因同上。

经过筛选，共得到包括事件公司在内的 58 家公司，其中采掘业（B）48 家公司和石化塑料业（C41）10 家上市公司（选样过程见表 2A）。¹² 文中所用财务数据均来自国泰安数据库。

同时，根据事件的发展线索，我们共选取了三个事件窗口，具体分布见表 2B。

¹¹ 山西焦化集团是山西焦煤集团的全资子公司。

¹² 后文多元回归分析影响行业传染效应的因素时，未包括西山煤电和山西焦化，并由于个别公司部分财务数据缺失，导致进行回归的样本观测点少于 58。

表 2A 样本公司选择

剔除项	采掘业 (B)	石化塑料业 (C41)	总计
剔除前	58	15	73
标记 ST/*ST 的公司	8	3	11
因其他重大事件停牌	2	2	2
有效样本观测点总计	48	10	58

表 2B 研究事件汇总

事件	事件日	事件内容
事件 1	2011 年 12 月 14 日	检察机关将两名犯罪嫌疑人执行逮捕，高勤荣在微博上爆料的白培中家中被盗巨额财产的信息开始逐渐得到证实。
事件 2	2011 年 12 月 18 日	山西省第一纸质媒体《山西晚报》报道了山西焦煤集团董事长白培中家中巨额财产遭劫事件。
事件 3	2011 年 12 月 22 日	中共山西省委决定，免去白培中山西焦煤集团有限责任公司董事长、党委书记职务。

2、回归模型与变量定义

虽然 2011 年 11 月 24 日山西前媒体人高勤荣在微博上爆料了白培中家中巨额财产被盗的消息，但此时被盗消息还未经证实，其消息可信度还尚存疑虑。所以，本文分别选择 2011 年 12 月 14 日（事件 1）和 12 月 18 日（事件 2）作为事件日，¹³ 此时盗窃案件的事实已经证实。本文通过统计检验和多元回归分析研究高管腐败是否具有传染效应和传染效应的影响因素。对于传染效应，本文仿照 Weber *et al.* (2008)，使用如下回归模型（模型 1）：

$$CRET = c + \beta_1 EVENT1 \text{ (or } EVENT2 \text{ or } EVENT1\&2) + \beta_2 MRET + \varepsilon \quad (1)$$

因变量 $CRET$ 为 2011 年第四季度样本公司每个交易日的个股回报率的算术平均数。2011 年第四季共有 60 个交易日，所以模型(1)的观测值为 60 个。测试变量 $EVENT1$ （如果时间为 2011 年 12 月 14 日时， $EVENT1$ 取值为 1，否则为 0）、 $EVENT2$ （如果时间为 2011 年 12 月 19 日时， $EVENT2$ 取值为 1，否则为 0）、 $EVENT1\&2$ （如果时间为 2011 年 12 月 14 日和 2011 年 12 月 19 日时， $EVENT1\&2$ 取值为 1，否则为 0）均为哑变量。控制变量 $MRET$ 为 2011 年第四季度各交易日的市场日回报率。

本文使用回归模型（2）分析影响高管腐败传染效应的因素：

¹³ 由于 2011 年 12 月 18 日是星期日，所以，本文以 2011 年 12 月 19 日作为事件 2 窗口期的 0 点计算累计异常收益率。

$$\begin{aligned}
 CAR = & c + \beta_1 GOV + \beta_2 BIG4 + \beta_3 SIZE + \beta_4 LEV + \beta_5 GROW \\
 & + \beta_6 ROA + \beta_7 SHARE1 + \beta_8 DUDONG + \beta_9 DUAL \\
 & + \beta_{10} ACOMITTEE + \beta_{11} TRASHARE + \beta_{12} IND + \varepsilon
 \end{aligned}
 \tag{2}$$

因变量 CAR 为事件日若干窗口期的超额累计收益率。本文采用由 CAPM 推导出的市场模型来估计证券的正常收益、计算出异常收益 (AR) 和累计异常收益 (CAR)。其中, 市场模型法两个参数的估计区间为各事件日前 150 个交易日至公告前 30 个交易日。利用估计出的参数计算各样本公司在各事件日前 3 个交易日至 5 个交易日的异常收益 (AR), 然后计算各事件日若干窗口期的累计异常收益 (CAR)。

测试变量 GOV 是哑变量, 如果公司被政府所控制, 取值为 1, 否则为 0; $BIG4$ 为哑变量, 如果公司由国际四大审计时, 取值为 1, 否则为 0。

结合本文的研究问题, 借鉴传染效应和财务丑闻市场反应的相关文献, 本文选取了如下控制变量: 在公司特征层面包括, 企业资产规模 ($SIZE$, 总资产取自然对数), 大规模公司更受市场和投资者关注, 如果大规模公司出现财务丑闻, 市场给予的折价更多, 预期其系数为负; 资产负债率 (LEV , 总负债/总资产), 杠杆水平越高的公司越有可能进行了表外融资, 降低公司透明度, 预期系数为负; 公司成长性 ($GROW$, 营业收入的增长率), 成长性高的公司可能采取更激进的收入确认程序, 预期系数为负 (Chaney and Philipich, 2002); 总资产收益率 (ROA , 净利润/总资产), 会计业绩越好的公司一旦发生财务丑闻, 市场会怀疑公司的业绩虚假, 认为问题严重, 所以市场负面评价会越严重 (Hung *et al.*, 2013)。在公司治理特征层面, 由于本文关注的是高管腐败, 所以选用了股权结构和董事会特征作为公司治理的代理变量, 包括: 股权制衡度 ($SHARE1$, 第一大股东持股比例除以第 2 至 4 大股东持股比之和); 董事会独立性 ($DUDONG$, 独立董事占董事人数的比例); 董事长总经理是否两职合一 ($DUAL$, 若两职合一取值为 1, 否则为 0); 是否设立审计委员会 ($ACOMITTEE$, 若设立则取值为 1, 否则为 0)。一方面股权制衡度数据越大, 表明第一大股东受其他大股东的制约程度越小, 大小股东间的代理问题越严重, 另一方面, 大股东对公司管理层的监督激励会更大, 所以不对股权制衡度的符号做预期判断。董事会独立性对腐败具有一定的治理作用, 预期 $DUDONG$ 的系数符号为正。董事长总经理两职合一意味着高管权力更集中和更大的高管腐败可能性, 预期 $DUAL$ 系数符号为负。 $ACOMITTEE$ 会对腐败产生治理作用, 预期其系数为正。由于我们关注市场机制是否发挥了投资者保护的作用, 所以还对流通股比例 $TRASHARE$ 加以控制, 预期在本文的研究问题中其系数为负。上述测试变量和控制变量均使用上一年末数据。 IND 为哑变量, 若样本公司属于石化塑料业则取值为 1, 否则为 0; $DEC14$ 为哑变量, 若观测点属于事件日 1 是 2011 年 12 月 14 日, 则取值为 1, 否则为 0。我们对所有连续变量两端按 1% 进行了 winsorize 处理, 以避免极端值的影响。

四、实证结果分析

(一) 描述性统计

从表 3 可以看出, 在事件 1 的各个窗口 (见表 3), 山西焦煤集团控股的 2 家上市公司 (事件公司) 的 *CAR* 均显著为负, 在 $(-1, 1)$ 的窗口里, 累计异常回报是 -6.6% , 在 $(0, 1)$ 的窗口里, 累计异常回报是 -4% 。同时, 与这两家公司同行业的其他公司在这两个事件的各个窗口里, 它们的 *CAR* 也显著为负。在 $(-1, 1)$ 的窗口里, 累计异常回报是 -6.7% , 在 $(0, 1)$ 的窗口里, 累计异常回报是 -4.7% 。事件 2 的各个窗口也基本如此。从图 1 来看, 山西焦煤集团控股的 2 家上市公司 (Company) 与同行业公司 (IND) 的 *CAR* 均呈相同的下滑趋势。这初步表明, 白培中腐败案不仅使山西焦煤集团控股的 2 家上市公司的股价下跌, 也使与这两公司处于同行业的其他公司的股价显著下跌。

进一步, 前面我们预期政府控制公司的传染效应更强烈。如表 4A 所示, 在事件 1 的各个窗口, 政府控制公司的 *CAR* 基本上显著低于非政府控制公司, 在事件 2 的各个窗口, 政府控制公司的 *CAR* 仍均低于非政府控制公司, 但不显著。从图 2 来看, 政府控制公司 (GOV) 的 *CAR* 在两事件期均低于非政府控制公司 (NGOV)。这表明, 相比于非政府控制公司, 政府控制公司可能遭受了更严重的传染效应。

同时, 我们也预期良好的外部治理机制会有助于缓解负面的传染效应。从表 4B 来看, 在事件 1 的各窗口, 聘请国际四大作为审计师的公司的 *CAR* 均显著高于聘请非国际四大作为审计师的公司, 在事件 2 的各窗口, 也基本上是如此。从图 3 来看, 聘请国际四大作为审计师 (BIG4) 的公司的 *CAR* 明显高于聘请非国际四大作为审计师的公司 (NBIG4)。这也初步表明, 良好的外部治理机制会有助于缓解公司所受的传染效应。

表 3 事件公司和同行业公司的市场反应 (*CAR*)¹⁴

窗口	事件公司 (N = 2)		同行业公司 (N = 56)		
	+/-	均值	+/-	均值	中位数
表 3A: 事件 1 — 2011 年 12 月 14 日					
<i>CAR</i> $(-1, 1)$	0/2	-0.066***	11/45	-0.053***	-0.067***
<i>CAR</i> $(0, 1)$	0/2	-0.040*	11/45	-0.039***	-0.047***
表 3B: 事件 2 — 2011 年 12 月 18 日					
<i>CAR</i> $(-1, 1)$	1/1	0.004	26/30	-0.001	-0.001
<i>CAR</i> $(0, 1)$	1/1	-0.002	20/36	-0.006***	-0.007***

注: (1) ***, **, * 分别表示在 1%、5% 和 10% 水平下显著。(2) 由于事件公司的中位数和均值相同, 本表未予报告中位数。(3) “+/-” 表示 *CAR* 为正的观察值个数与为负的观察值个数的对比。

¹⁴ 对于 *CAR*, 本文也分别按事件 1 和事件 2 分析了在窗口 $(-3, 0)$ 、 $(-3, 1)$ 、 $(-3, 3)$ 、 $(-2, 0)$ 、 $(-2, 1)$ 、 $(-2, 2)$ 、 $(-2, 3)$ 、 $(-1, 0)$ 、 $(-1, 2)$ 、 $(-1, 3)$ 的情况, 发现结果与表 3 中的结果一致。

表 4 影响传染效应的因素分析¹⁵

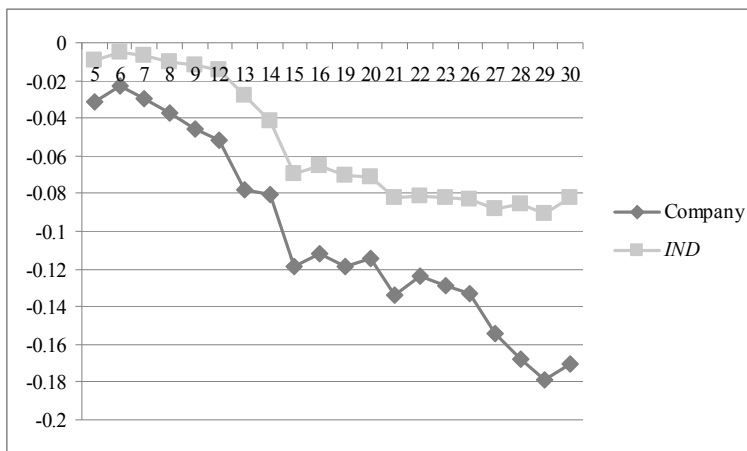
	政府控制公司 (N = 28)			非政府控制公司 (N = 28)			差异检验	
	+/-	均值	中位数	+/-	均值	中位数	均值	中位数
事件 1 — 2011 年 12 月 14 日								
CAR (-1, 1)	3/25	-0.063	-0.075	7/21	-0.047	-0.057	-1.89*	-2.12**
CAR (0, 1)	2/26	-0.045	-0.048	8/20	-0.035	-0.036	-1.85*	-1.09
事件 2 — 2011 年 12 月 18 日								
CAR (-1, 1)	10/18	-0.004	-0.003	10/18	0.001	0.001	-0.81	-0.51
CAR (0, 1)	7/21	-0.007	-0.010	13/15	-0.005	-0.005	-1.10	-0.22

表 4B: 四大审计的影响

	Big 4 审计公司 (N = 10)			非 Big 4 审计公司 (N = 46)			差异检验	
	+/-	均值	中位数	+/-	均值	中位数	均值	中位数
事件 1 — 2011 年 12 月 14 日								
CAR (-1, 1)	5/5	-0.006	-0.001	6/40	-0.064	-0.080	3.76***	3.27***
CAR (0, 1)	4/6	-0.011	-0.008	7/39	-0.045	-0.051	2.86**	2.82**
事件 2 — 2011 年 12 月 18 日								
CAR (-1, 1)	3/7	-0.004	-0.007	25/21	-0.0002	0.003	-0.40	-0.57
CAR (0, 1)	4/6	-0.003	-0.005	16/30	-0.005	-0.009	0.50	0.76

注：(1) **、*、*分别表示在 1%、5%和 10%水平下显著。(2) “+/-”表示 CAR 为正的观察值个数与为负的观察值个数的对比。

图 1 事件公司和同行业公司的 CAR¹⁶



¹⁵ 对于 CAR, 本文也分别按事件 1 和事件 2 分析了在窗口 (-3, 0)、(-3, 1)、(-3, 3)、(-2, 0)、(-2, 1)、(-2, 2)、(-2, 3)、(-1, 0)、(-1, 2)、(-1, 3) 的情况, 发现事件 1 在这些窗口的结果与表 4 中的结果一致, 其中事件 2 在这些时间窗口的结果好于表 4 中的结果。

¹⁶ 图 1、图 2、图 3 中的横轴线是 12 月份的交易日期, 12 月 17 日和 18 日分别是星期六、星期日。纵轴线是 2011 年 12 月 5 日至 12 月 30 日共 20 个交易日逐日递增相加的累计异常回报率 (CAR), 如 12 月 7 日对应的纵轴点 CAR 代表 12 月 5、6、7 日的异常回报率相加, 依此类推。

图 2 不同性质公司的 CAR

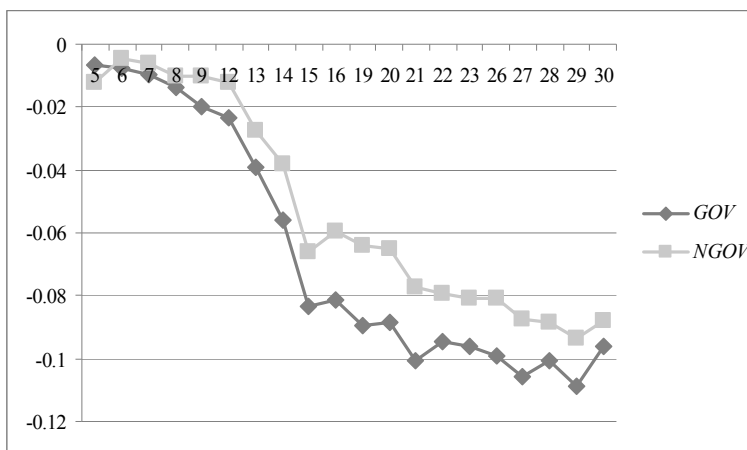
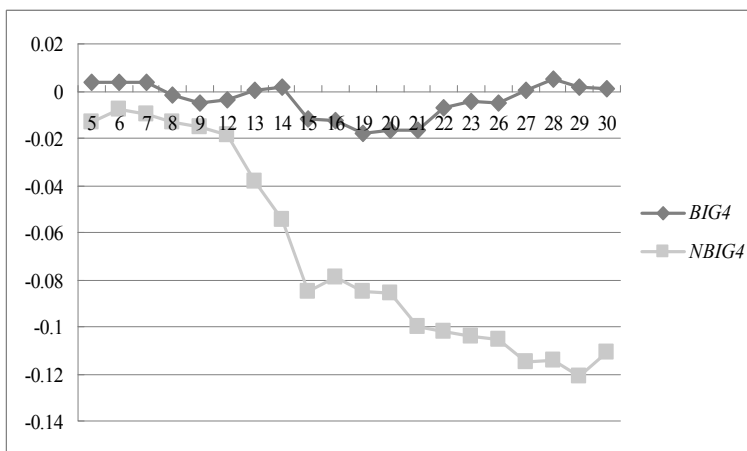


图 3 不同事务所审计公司的 CAR



进一步，我们分析影响传染效应的公司个体特征。如表 5 所示，无论是事件 1、事件 2，还是合并事件 1 和事件 2 以及两事件合一，CAR 在 2 个时间窗口的均值和中位数均为负。同时，同行业公司中，大约有 47.27% 被政府控制，有 18.1% 的公司由国际四大事务所审计。公司规模 (*SIZE*) 的均值是 22.800，中位数是 22.940，公司负债水平 (*LEV*) 为 46% 左右，公司业绩 (*ROA*) 在 10% 以上，公司成长性 (*GROW*) 为 33% 左右，股权制衡度 (*SHARE1*) 的均值是 7.940，中位数是 4.496，独董的比例是 34% 左右，两职合一 (*DUAL*) 的比例是 16.3%，公司设计审计委员会 (*ACOMITTEE*) 的比例是 29.1%，流通股比例 (*TRASHARE*) 的均值是 0.721，中位数是 0.900。

(二) 多元回归分析

表 6 使用模型 (1) 分析白培中腐败案是否在同行业公司中产生传染效应。如表 6 所示，回归模型的调整 R^2 均在 90% 左右，表明模型具有良好的拟合度。*EVENT1* 的系

表 5 描述性统计

表 5A: 事件 1 — 2011 年 12 月 14 日

变量	均值	中位数	P25	P75	标准差
<i>CAR</i> (-1, 1)	-0.053	-0.067	-0.095	-0.021	0.048
<i>CAR</i> (0, 1)	-0.039	-0.047	-0.065	-0.017	0.036
<i>GOV</i>	0.472	0	0	1	0.503
<i>BIG4</i>	0.181	0	0	0	0.389
<i>SIZE</i>	22.800	22.940	21.210	23.800	0.019
<i>LEV</i>	0.460	0.472	0.441	0.480	0.235
<i>ROA</i>	0.107	0.102	0.059	0.142	0.070
<i>GROW</i>	0.337	0.322	0.175	0.340	0.288
<i>SHARE1</i>	7.940	4.496	1.203	14.505	8.569
<i>DUDONG</i>	0.369	0.333	0.333	0.375	0.053
<i>DUAL</i>	0.163	0	0	0	0.371
<i>ACOMITTEE</i>	0.291	0	0	1.000	0.456
<i>TRASHARE</i>	0.721	0.900	0.446	1	0.299
<i>IND</i>	0.181	0	0	0	0.389

表 5B: 事件 2 — 2011 年 12 月 18 日

变量	均值	中位数	P25	P75	标准差
<i>CAR</i> (-1, 1)	-0.001	-0.001	-0.008	0.010	0.026
<i>CAR</i> (0, 1)	-0.006	-0.007	-0.018	0.001	0.016

表 5C: 合并事件 1 和事件 2

变量	均值	中位数	P25	P75	标准差
<i>CAR</i> (-1, 1)	-0.027	-0.011	-0.011	-0.011	0.046
<i>CAR</i> (0, 1)	-0.022	-0.015	-0.055	-0.026	0.032
<i>DECI4</i>	0.500	0.500	0	1	0.500

表 5D: 两事件合一

变量	均值	中位数	P25	P75	标准差
<i>CAR</i> (-1, 4)	-0.066	-0.080	-0.111	-0.044	0.058
<i>CAR</i> (-4, 1)	-0.056	-0.067	-0.095	-0.026	0.051

数显著为负，这表明在事件 1，同行业公司明显遭受了来自白培中事件 1 的传染效应，同行业公司个股日回报率平均下降了 1%。*EVENT2* 的系数为负但不显著，结合前面表 3 和图 1 的结果来看，表明在事件 2 同行业公司较弱地遭受了来自白培中事件的传染效应。由于 *EVENT1&2* 的系数显著为负，同行业公司个股日回报率平均下降了 0.6%。这表明，从总体上看同行业公司在两个时间窗口都遭受了来自白培中事件的负面传染效应影响，支持了本文的假设 1。本文的证据支持了“负面效应”理论，反映了股民

对于腐败的痛恨态度。之所以 *EVENT2* 不显著为负，结合表 3A 的同行业公司数据来看，可能是事件 2（2011 年 12 月 18 日）和事件 1（2011 年 12 月 14 日）的日期相隔太近，投资者对事件 2（2011 年 12 月 18 日）的反应有所降低所致。

表 6 事件日同行业公司的市场反应

因变量	<i>CRET</i>		
<i>C</i>	-0.002* (0.091)	-0.002** (0.032)	-0.002* (0.083)
<i>EVENT1</i>	-0.010*** (0.001)		
<i>EVENT2</i>		-0.001 (0.856)	
<i>EVENT1&2</i>			-0.006** (0.041)
<i>MRET</i>	1.320*** (0.000)	1.373*** (0.000)	1.364*** (0.000)
Obs	60	60	60
Adj.R ²	0.90	0.89	0.89

注：（1）***、**、*分别表示在 1%、5%和 10%水平下显著。（2）括号内为 P 值。

对于传染效应的影响因素分析，本文考虑了三种情况：一是分别就事件 1 和事件 2 进行回归；二是仿照 Chaney and Philipich（2002），我们将事件 1 和事件 2 的数据合并进行回归，并加入哑变量 *DEC14* 以控制两个事件间可能存在的差异，此时回归样本观测值将翻番；三是由于事件 1 和事件 2 的时间相隔较短，我们将两事件合一，以 2011 年 12 月 14 日为事件窗口期 0 点时，取涵盖两事件的 (-1, 4) 的 *CAR* 为因变量，同时，再以事件 2011 年 12 月 19 日为事件窗口期 0 点，取涵盖两事件的 (-4, 1) 的 *CAR* 为因变量，分别进行回归。*CAR* (-1, 4) 的均值是 -0.066，中位数是 -0.080，*CAR* (-4, 1) 的均值是 -0.056，中位数是 -0.067（见表 5D）。

如表 7 所示，在几种情况下，*GOV* 的系数均显著为负，同行业公司的累计异常汇报明显降低。这表明，政府控制公司所遭受的传染效应明显强于非政府控制公司，支持了本文的假设 2。除了在事件 2 的两个窗口，*BIG4* 的系数为负不显著，其余情况下，*BIG4* 的系数均显著为正，表明国际四大审计抑制了同行业公司累计异常回报的下降。这表明，外部治理机制——国际四大审计对公司所遭受的传染效应具有抵减作用，投资者会因公司聘请了国际四大审计师降低对公司的负面预期。这支持了本文的假设 3。¹⁷

¹⁷ 我们也分析了内部控制是否会抑制腐败信息的市场传染作用，使用厦门大学陈汉文教授开发的上市公司内部控制指数衡量内部控制水平，未加入控制变量时，内部控制与 *CAR* 的一元回归呈现显著正相关关系，但控制企业规模后，内部控制与 *CAR* 不存在显著相关关系，表明企业规模对内部控制具有信息的替代作用。鉴于这种情况，后面就没有专门分析内部控制对传染效应的影响了。

在控制变量方面, *SIZE*、*LEV*、*ROA*、*GROW*、*SHARE1*、*DUDONG*、*DUAL*、*ACOMITTEE* 基本上没有产生明显的影响。流通股 (*TRASHARE*) 在事件 1、两事件合一中对公司股价产生了负面影响, 在合并事件 1、2 中也达到边际显著, 这表明在白培中腐败案中, 股民利用股票的流动性充分地“用脚投票”表明了自己对腐败的态度。

表 7 多元回归分析

因变量	事件 1		事件 2		合并事件 1、2		两事件合一	
	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>
	(-1, 1)	(0, 1)	(-1, 1)	(0, 1)	(-1, 1)	(0, 1)	(-1, 4)	(-4, 1)
<i>C</i>	-0.145 (0.217)	-0.063 (0.497)	-0.045 (0.580)	0.033 (0.487)	-0.083 (0.281)	-0.010 (0.855)	-0.202 (0.146)	-0.178 (0.231)
<i>GOV</i>	-0.040*** (0.003)	-0.030*** (0.004)	-0.005 (0.644)	-0.001 (0.890)	-0.024*** (0.009)	-0.016** (0.013)	-0.045*** (0.005)	-0.042** (0.012)
<i>BIG4</i>	0.050** (0.016)	0.035** (0.034)	-0.014 (0.300)	0.002 (0.789)	0.015* (0.094)	0.016* (0.089)	0.036* (0.073)	0.040* (0.074)
<i>SIZE</i>	0.006 (0.241)	0.003 (0.503)	0.003 (0.423)	-0.002 (0.403)	0.005 (0.143)	0.001 (0.720)	0.010 (0.119)	0.010 (0.150)
<i>LEV</i>	0.020 (0.493)	0.011 (0.640)	-0.038* (0.064)	-0.027** (0.029)	-0.010 (0.592)	-0.009 (0.496)	-0.017 (0.623)	-0.048 (0.209)
<i>ROA</i>	-0.103 (0.292)	-0.057 (0.461)	-0.074 (0.277)	-0.073* (0.075)	-0.098 (0.129)	-0.072 (0.118)	-0.152 (0.189)	-0.160 (0.199)
<i>GROW</i>	-0.036 (0.115)	-0.014 (0.446)	0.008 (0.621)	0.002 (0.822)	-0.015 (0.319)	-0.006 (0.553)	-0.028 (0.295)	-0.037 (0.194)
<i>SHARE1</i>	0.000 (0.349)	0.000 (0.340)	-0.000 (0.634)	0.000 (0.276)	0.000 (0.626)	0.000 (0.198)	0.000 (0.694)	0.000 (0.978)
<i>DUDONG</i>	-0.063 (0.588)	-0.074 (0.425)	0.010 (0.903)	0.043 (0.371)	-0.015 (0.847)	-0.006 (0.920)	-0.059 (0.670)	-0.055 (0.709)
<i>DUAL</i>	0.004 (0.815)	-0.001 (0.957)	-0.014 (0.262)	-0.008 (0.285)	-0.005 (0.689)	-0.004 (0.615)	0.001 (0.944)	-0.015 (0.510)
<i>ACOMITTEE</i>	0.020 (0.167)	0.017 (0.137)	-0.003 (0.725)	-0.007 (0.255)	0.007 (0.438)	0.004 (0.519)	0.021 (0.214)	0.015 (0.407)
<i>TRASHARE</i>	-0.052** (0.033)	-0.035* (0.066)	0.009 (0.624)	0.005 (0.664)	-0.026 (0.118)	-0.018 (0.120)	-0.048* (0.093)	-0.042 (0.163)
<i>IND</i>	0.028 (0.126)	0.036** (0.015)	-0.006 (0.647)	-0.009 (0.244)	0.011 (0.354)	0.013 (0.119)	0.023 (0.283)	0.012 (0.613)
<i>DECI4</i>					-0.047*** (0.000)	-0.029*** (0.000)		
Observations	52	52	52	52	104	104	52	52
Adj R ²	0.329	0.218	0.104	0.015	0.345	0.276	0.231	0.227

注: (1) **、* 分别表示在 1%、5% 和 10% 水平下显著。(2) 括号内为 P 值。(3) *DECI4* 哑变量, 如果时间是 12 月 14 日, 取值为 1, 否则为 0。

同时，2011年12月22日（事件3），迫于舆论和市场压力，中共山西省委快速地决定免去白培山西焦煤集团公司董事长和党委书记职务，这表明市场“倒逼机制”产生了一种逼迫管理部门采取措施治腐的决心，对股东而言是一种利好消息。此举预示着公司将进行管理层重组，实施新的发展战略和财务政策，从而对投资者形成一种保护，因此可能会控制事件公司股价的下跌和对同行业公司产生的传染效应。如表8A所示，事件公司在白培中被免职以后的CAR尽管有部分为负，但均不显著。对于同行业公司，白培中被免职以后各窗口CAR为负的公司明显减少，各窗口CAR的均值部分为负而中位数全部为正，且均不显著异于0。进一步，如表8B所示，尽管EVENT1&2&3的系数显著为负，表明三个事件整体上对同行业公司个股日回报率（CRET）产生了负面影响，但是EVENT3的系数显著为正。这些证据表明，对白培中的撤职给市场传递了一个积极信号，控制了给事件公司和同行业公司带来的负面影响和传染效应，支持了本文的假设4。

表 8A 2011 年 12 月 22 日事件公司和同行业公司的市场反应（CAR）

窗口	事件公司		同行业公司		
	+/-	均值	+/-	均值	中位数
CAR (0, 1)	2/0	0.005	33/23	0.002	0.003
CAR (0, 2)	2/0	0.001	32/24	0.003	0.004
CAR (0, 3)	1/1	-0.021	28/28	-0.001	0.001
CAR (0, 4)	1/1	-0.034	30/26	0.000	0.003
CAR (0, 5)	1/1	-0.045	29/27	-0.002	0.005

注：（1）***、**、*分别表示在 1%、5%和 10%水平下显著。（2）“+/-”表示 CAR 为正的观察值个数与为负的观察值个数的对比。

表 8B 事件 3 同行业公司的市场反应

因变量	CRET	
C	-0.001 (0.223)	-0.001 (0.225)
EVENT3	0.010*** (0.001)	
EVENT1&2&3		-0.005** (0.031)
MRET	1.068*** (0.000)	1.358*** (0.000)
Obs	60	60
Adj R ²	0.89	0.89

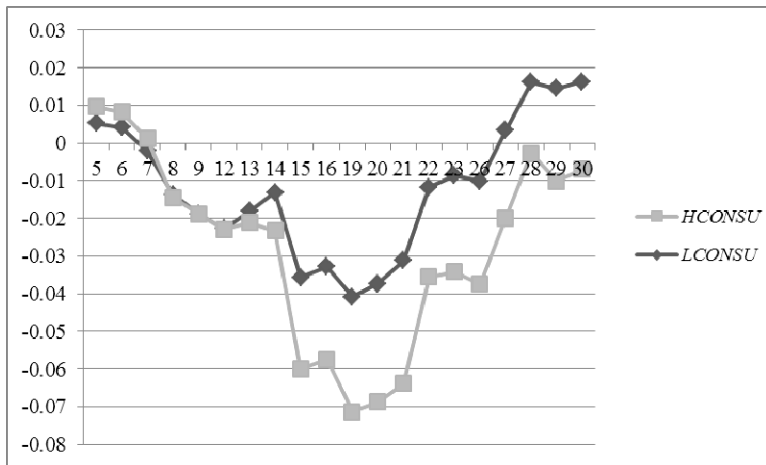
注：（1）***、**、*分别表示在 1%、5%和 10%水平下显著。（2）括号内为 P 值。（3）EVENT3 为哑变量，当交易日为 2011 年 12 月 22 日时，取值 1，否则为 0。EVENT1&2&3 为哑变量，如果交易日为 2011 年 12 月 14 日、12 月 18 日和 2011 年 12 月 22 日时取值为 1，否则为 0。

五、 传染效应的传导机制分析

如前所述，传染效应的基本理论是一家公司的负面事件具有信息传递作用，从而引起投资者基于该信息来判断自己持股公司是否存在类似的风险。那么，这种市场传染效应的传到机制是什么呢？或者说，市场投资者会通过哪些“信号”来判断自己持股公司的高管是否具有与白培中类似的腐败偏好呢？无疑，这种“信号”会影响投资者对公司股价的判断，进而影响传染效应。从近段时间网上引起广泛关注的“学酒哥”高额在职消费事件¹⁸和学术界的关注和研究来看，高管的在职消费和货币性私有收益可能是传递高管个人腐败偏好的“信号”，因为这本身就是对股东财富的一种“变相”侵占。我们预期，信号显示的腐败偏好越强，公司遭受的传染效应越严重，从而这种信号扮演了市场传染效应的传导机制角色。

高管权力假说认为，由于高管权力的存在，董事会可能会被管理层俘获或受其影响 (Bebchuk *et al.*, 2002)。管理层有能力运用权力寻租，权力越大，管理层获取私有收益的能力越强，如高额的在职消费或隐藏的货币性私有收益。¹⁹ 由于高额在职消费等养成的奢侈生活环境，也意味着管理层利用职务腐败获取私利的可能性越高。这就意味着，高管的在职消费或货币性私有收益是显示其腐败偏好的一个“信号”，即在职消费或货币性私有收益越高，高管越有可能腐败，公司遭受的传染效应会越强。对于在职消费，本文采用管理层在职实际消费与由经济因素决定的高管预期正常的在职实际消费之间的差额表示，计算方式与 Luo *et al.* (2011) 相同。图 4 显示，高管的在职消费越高 (HCONSUS)，其 CAR 下降的趋势更明显，这初步表明市场认为高管的在职消费越高的公司，高管越容易腐败，因此，遭受的传染效应越强。

图 4 高管在职消费与 CAR



¹⁸ 据报道，2003年1月4日国企格力集团总裁周少强一顿晚餐的招待费为37,517元，此事经媒体报道引起了社会的广泛关注。消息来源：人民网，2013年02月06日，网址：<http://society.people.com.cn/n/2013/0206/c1008-20445384.html>。

¹⁹ 陈冬华等（2005）发现，高管在职消费成为高管获取私利的一种重要形式。

表 9 在职消费与传染效应

因变量	事件 1		事件 2		合并事件 1、2		两事件合一	
	CAR	CAR	CAR	CAR	CAR	CAR	CAR	CAR
	(-1, 1)	(0, 1)	(-1, 1)	(0, 1)	(-1, 1)	(0, 1)	(-1, 4)	(-4, 1)
<i>C</i>	-0.099 (0.394)	-0.029 (0.756)	-0.056 (0.501)	0.031 (0.534)	-0.070 (0.377)	0.003 (0.962)	-0.165 (0.243)	-0.136 (0.365)
<i>GOV</i>	-0.044*** (0.001)	-0.033*** (0.002)	-0.005 (0.673)	-0.001 (0.902)	-0.025*** (0.007)	-0.017*** (0.010)	-0.048*** (0.003)	-0.045*** (0.007)
<i>BIG4</i>	0.048** (0.019)	0.032** (0.042)	-0.013 (0.338)	0.002 (0.774)	0.014 (0.280)	0.015* (0.099)	0.033 (0.162)	0.037* (0.097)
<i>CONSU</i>	-0.304* (0.086)	-0.227* (0.096)	0.080 (0.511)	0.017 (0.814)	-0.094 (0.420)	-0.089 (0.285)	-0.251* (0.097)	-0.275 (0.223)
<i>SIZE</i>	0.005 (0.351)	0.002 (0.666)	0.003 (0.379)	-0.002 (0.433)	0.005 (0.182)	0.001 (0.840)	0.009 (0.168)	0.009 (0.209)
<i>LEV</i>	0.018 (0.539)	0.009 (0.693)	-0.037* (0.074)	-0.027** (0.033)	-0.011 (0.558)	-0.010 (0.454)	-0.019 (0.580)	-0.050 (0.186)
<i>ROA</i>	-0.116 (0.228)	-0.066 (0.383)	-0.070 (0.305)	-0.072* (0.083)	-0.102 (0.116)	-0.077* (0.100)	-0.163 (0.160)	-0.171 (0.168)
<i>GROW</i>	-0.042* (0.062)	-0.018 (0.300)	0.009 (0.552)	0.002 (0.796)	-0.017 (0.264)	-0.008 (0.444)	-0.033 (0.218)	-0.043 (0.137)
<i>SHARE1</i>	0.000 (0.292)	0.000 (0.289)	-0.000 (0.615)	0.000 (0.287)	0.000 (0.598)	0.000 (0.180)	0.000 (0.646)	0.000 (0.925)
<i>DUDONG</i>	-0.099 (0.392)	-0.101 (0.275)	0.018 (0.824)	0.045 (0.363)	-0.025 (0.748)	-0.015 (0.784)	-0.088 (0.526)	-0.088 (0.556)
<i>DUAL</i>	0.006 (0.722)	0.001 (0.957)	-0.014 (0.250)	-0.008 (0.285)	-0.004 (0.729)	-0.004 (0.664)	0.003 (0.881)	-0.013 (0.561)
<i>ACOMITTEE</i>	0.022 (0.127)	0.018 (0.105)	-0.004 (0.703)	-0.007 (0.256)	0.008 (0.414)	0.005 (0.482)	0.023 (0.186)	0.017 (0.361)
<i>TRASHARE</i>	-0.047** (0.049)	-0.032* (0.093)	0.008 (0.689)	0.005 (0.692)	-0.024 (0.145)	-0.017 (0.156)	-0.044 (0.124)	-0.038 (0.210)
<i>IND</i>	0.029 (0.103)	0.037** (0.012)	-0.006 (0.642)	-0.009 (0.248)	0.011 (0.345)	0.014 (0.112)	0.024 (0.261)	0.013 (0.579)
<i>DECI4</i>					-0.047*** (0.000)	-0.029*** (0.000)		
Observations	52	52	52	52	104	104	52	52
Adj R ²	0.364	0.251	0.121	0.040	0.343	0.278	0.240	0.237

注：(1) **、*、*分别表示在 1%、5%和 10%水平下显著。(2) 括号内为 P 值。(3) *DECI4* 哑变量，如果时间是 12 月 14 日，取值为 1，否则为 0。

表 10 在职消费、政府控制与传染效应

因变量	事件 1		事件 2		合并事件 1、2		两事件合一	
	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 4)	CAR (-4, 1)
<i>C</i>	-0.084 (0.471)	-0.018 (0.848)	-0.047 (0.570)	0.032 (0.532)	-0.058 (0.464)	0.008 (0.889)	-0.145 (0.305)	-0.119 (0.432)
<i>GOV</i>	-0.047*** (0.001)	-0.035*** (0.001)	-0.007 (0.526)	-0.001 (0.884)	-0.028*** (0.003)	-0.018*** (0.007)	-0.052*** (0.002)	-0.049*** (0.005)
<i>BIG4</i>	0.048** (0.018)	0.033** (0.040)	-0.013 (0.339)	0.002 (0.776)	0.015 (0.266)	0.015* (0.099)	0.034 (0.151)	0.038 (0.141)
<i>CONSU</i>	-0.229 (0.221)	-0.173 (0.246)	0.132 (0.299)	0.021 (0.786)	-0.027 (0.824)	-0.061 (0.492)	-0.150 (0.500)	-0.190 (0.431)
<i>GOV*CONSU</i>	-0.469* (0.094)	-0.338* (0.093)	-0.408 (0.203)	-0.030 (0.875)	-0.462* (0.093)	-0.196 (0.347)	-0.631 (0.212)	-0.538* (0.092)
<i>SIZE</i>	0.004 (0.427)	0.001 (0.760)	0.003 (0.432)	-0.002 (0.433)	0.004 (0.236)	0.000 (0.913)	0.008 (0.219)	0.008 (0.259)
<i>LEV</i>	0.015 (0.607)	0.007 (0.762)	-0.035* (0.092)	-0.027** (0.037)	-0.012 (0.552)	-0.010 (0.453)	-0.023 (0.504)	-0.053 (0.161)
<i>ROA</i>	-0.092 (0.347)	-0.049 (0.526)	-0.046 (0.515)	-0.070 (0.108)	-0.077 (0.245)	-0.066 (0.169)	-0.131 (0.265)	-0.144 (0.256)
<i>GROW</i>	-0.044* (0.051)	-0.020 (0.263)	0.007 (0.677)	0.002 (0.817)	-0.019 (0.196)	-0.009 (0.387)	-0.036 (0.180)	-0.046 (0.118)
<i>SHARE1</i>	0.000 (0.287)	0.000 (0.286)	-0.000 (0.541)	0.000 (0.301)	0.000 (0.635)	0.000 (0.191)	0.000 (0.637)	0.000 (0.920)
<i>DUDONG</i>	-0.102 (0.377)	-0.103 (0.266)	0.009 (0.913)	0.044 (0.379)	-0.032 (0.683)	-0.018 (0.746)	-0.092 (0.505)	-0.091 (0.542)
<i>DUAL</i>	0.007 (0.706)	0.001 (0.943)	-0.014 (0.261)	-0.008 (0.294)	-0.004 (0.755)	-0.003 (0.681)	0.004 (0.862)	-0.013 (0.573)
<i>ACOMITTEE</i>	0.021 (0.144)	0.018 (0.119)	-0.005 (0.626)	-0.007 (0.259)	0.007 (0.478)	0.004 (0.526)	0.021 (0.209)	0.015 (0.395)
<i>TRASHARE</i>	-0.046* (0.055)	-0.031 (0.104)	0.009 (0.624)	0.005 (0.688)	-0.023 (0.168)	-0.016 (0.172)	-0.042 (0.139)	-0.036 (0.231)
<i>IND</i>	0.032* (0.074)	0.039*** (0.008)	-0.005 (0.712)	-0.009 (0.261)	0.014 (0.256)	0.015* (0.092)	0.028 (0.189)	0.016 (0.481)
<i>DEC14</i>					-0.048*** (0.000)	-0.029*** (0.000)		
Observations	52	52	52	52	104	104	52	52
Adj R ²	0.368	0.252	0.101	0.067	0.354	0.277	0.252	0.238

注：(1)***、**、*分别表示在 1%、5%和 10%水平下显著。(2)括号内为 P 值。(3)Dec14 哑变量，如果时间是 12 月 14 日，取值为 1，否则为 0。

表 9 的结果显示,公司的在职消费水平 (*CONSU*) 与 *CAR* 显著负相关,表明投资者根据在职消费水平来判断了自己持股公司高管的腐败偏好,加剧了具有潜在腐败倾向高管所在公司的传染效应。进一步,我们分析具有腐败倾向的政府控制公司高管和非政府控制高管对传染效应的影响是否会存在差异。这是由于,非政府控制公司的高管一般是由大股东或大股东的代理人担任,因此,他们腐败的动机和可能性会小于政府控制公司的高管,也就是,政府控制公司高管的在职消费越多,对传染效应的加剧作用会强于民营企业。如表 10 所示,在职消费水平 (*CONSU*) 的系数尽管为负,但均不显著,然而, $GOV \times CONSU$ 的系数则显著为负。这表明,政府控制公司高管的在职消费对传染效应的影响明显大于非政府控制公司。

这些发现表明,公司高管的在职消费水平成了传递公司高管潜在腐败风险的信号,会加剧公司的传染效应,尤其是政府控制公司高管的在职消费。同时,为了增加结论的稳健性,按照在职消费的分析方式,我们也用高管的货币性私有收益(用非正常的高管薪酬来衡量,该指标根据 Firth *et al.* (2006)、Core *et al.* (2008)、权小锋等 (2010) 的方法计算)来分析,发现结果与在职消费的分析结果基本一致(限于篇幅,该结果未报告)。这预示着,在职消费和高管的货币性私有收益成了传染效应的信息传导机制。

六、进一步分析与稳健性测试

(一) 进一步分析

1、盈余信息质量的影响

Fan *et al.* (2014) 发现,与腐败高官具有联系的公司官员在官员腐败期的盈余质量较低。同样,公司腐败高官由于获取了私利,会通过操纵业绩来掩盖获取私利的行为(Leuz *et al.*, 2003)。那么,由此产生的一个问题是,是不是公司的业绩操纵行为影响了投资者对公司的预期?为此,我们在回归中控制了公司 2010 年的可操纵性应计数,如表 11 所示, *GOV* 和 *BIG4* 的结果与表 7 基本完全一致, *DA* 则没有一致性的结果。此外,我们也在模型中放入 *DA* 的绝对值而不是 *DA* 进行回归,发现结果与表 11 的结果一致(限于篇幅未报告)。这表明,传染效应不受公司的盈余操纵行为影响。这也说明,本文发现的传染效应是由于公司高管的腐败改变了投资者的预期而不是公司的盈余质量或信息质量所致。

2、财务重述行为的影响

Gleason *et al.* (2008) 基于美国的市场发现,公司的财务重述行为会引起同行业公司的传染效应。那么,这个结果给本文带来的不确定性是,本文的结果是不是会受到公司的财务重述行为的干扰呢?如果果真如此,那么,2010 年发生财务重述的公司的股价会下跌更为严重或表现出与其他公司不一样的系统差异性。于是,我们在模型中加入哑变量 *FR* (如果公司 2010 年发生财务重述行为取值为 1,否则为 0) 进行回归,如表 12 所示, *GOV* 和 *BIG4* 的结果与表 7 仍基本完全一致,同时, *FR* 的系数为负均

不显著。这表明，本文的发现不受公司财务重述行为的影响。这仍说明，本文发现的传染效应是由于公司高管的腐败改变了投资者的预期而不是公司的财务重述行为所致。

表 11 控制 DA 后的回归

因变量	事件 1		事件 2		合并事件 1、2		两事件合一	
	CAR	CAR	CAR	CAR	CAR	CAR	CAR	CAR
	(-1, 1)	(0, 1)	(-1, 1)	(0, 1)	(-1, 1)	(0, 1)	(-1, 4)	(-4, 1)
<i>C</i>	-0.118 (0.313)	-0.037 (0.681)	-0.002 (0.983)	0.044 (0.375)	-0.049 (0.523)	0.010 (0.856)	-0.138 (0.288)	-0.124 (0.390)
<i>GOV</i>	-0.035** (0.010)	-0.025** (0.017)	0.002 (0.865)	0.001 (0.863)	-0.018** (0.047)	-0.012* (0.065)	-0.035** (0.018)	-0.033** (0.044)
<i>BIG4</i>	0.055*** (0.009)	0.039** (0.016)	-0.009 (0.471)	0.004 (0.657)	0.020 (0.131)	0.019** (0.041)	0.044* (0.054)	0.047* (0.062)
<i>SIZE</i>	0.004 (0.435)	0.001 (0.832)	-0.000 (0.959)	-0.003 (0.270)	0.003 (0.455)	-0.001 (0.850)	0.005 (0.416)	0.006 (0.402)
<i>LEV</i>	0.018 (0.549)	0.008 (0.712)	-0.035* (0.068)	-0.027** (0.033)	-0.010 (0.591)	-0.011 (0.439)	-0.017 (0.604)	-0.049 (0.183)
<i>ROA</i>	-0.143 (0.159)	-0.094 (0.229)	-0.060 (0.360)	-0.075* (0.082)	-0.111* (0.093)	-0.091* (0.054)	-0.181 (0.109)	-0.198 (0.114)
<i>GROW</i>	-0.033 (0.155)	-0.010 (0.552)	0.003 (0.820)	0.002 (0.839)	-0.015 (0.304)	-0.005 (0.656)	-0.030 (0.234)	-0.037 (0.191)
<i>SHARE1</i>	0.001 (0.242)	0.000 (0.205)	0.000 (0.742)	0.000 (0.200)	0.000 (0.287)	0.000 (0.103)	0.001 (0.238)	0.000 (0.564)
<i>DUDONG</i>	-0.056 (0.629)	-0.067 (0.458)	0.015 (0.838)	0.043 (0.372)	-0.008 (0.914)	-0.003 (0.959)	-0.037 (0.771)	-0.038 (0.790)
<i>DUAL</i>	0.004 (0.823)	-0.001 (0.941)	-0.015 (0.188)	-0.008 (0.277)	-0.005 (0.635)	-0.005 (0.585)	-0.000 (0.993)	-0.016 (0.461)
<i>ACOMITTEE</i>	0.020 (0.190)	0.017 (0.153)	-0.011 (0.257)	-0.008 (0.221)	0.004 (0.718)	0.004 (0.580)	0.012 (0.481)	0.009 (0.620)
<i>TRASHARE</i>	-0.036 (0.172)	-0.020 (0.327)	0.032 (0.110)	0.011 (0.398)	-0.007 (0.686)	-0.007 (0.572)	-0.012 (0.690)	-0.012 (0.719)
<i>IND</i>	0.024 (0.207)	0.032** (0.032)	-0.015 (0.219)	-0.011 (0.177)	0.004 (0.713)	0.010 (0.236)	0.009 (0.669)	0.000 (0.987)
<i>DA</i>	0.035 (0.539)	0.034 (0.438)	0.102*** (0.008)	0.019 (0.417)	0.066* (0.075)	0.026 (0.328)	0.149** (0.021)	0.110 (0.118)
<i>DECI4</i>					-0.049*** (0.000)	-0.030*** (0.000)		
Observations	51	51	51	51	102	102	51	51
Adj R ²	0.333	0.235	0.061	0.021	0.374	0.306	0.326	0.267

注：(1) **、*分别表示在 1%、5%和 10%水平下显著。(2) 括号内为 P 值。(3) *DECI4* 哑变量，如果时间是 12 月 14 日，取值为 1，否则为 0。

表 12 控制财务重述后的回归

变量	事件 1		事件 2		合并事件 1、2		两事件合一	
	CAR	CAR	CAR	CAR	CAR	CAR	CAR	CAR
	(-1, 1)	(0, 1)	(-1, 1)	(0, 1)	(-1, 1)	(0, 1)	(-1, 4)	(-4, 1)
<i>C</i>	-0.159 (0.194)	-0.100 (0.284)	-0.030 (0.715)	0.036 (0.470)	-0.084 (0.295)	-0.028 (0.624)	-0.195 (0.177)	-0.189 (0.222)
<i>GOV</i>	-0.040*** (0.003)	-0.031*** (0.003)	-0.004 (0.674)	-0.001 (0.902)	-0.024*** (0.009)	-0.016** (0.011)	-0.045*** (0.005)	-0.042** (0.013)
<i>BIG4</i>	0.048** (0.024)	0.029* (0.076)	-0.012 (0.395)	0.003 (0.756)	0.015 (0.160)	0.013* (0.096)	0.037* (0.094)	0.038* (0.095)
<i>SIZE</i>	0.007 (0.217)	0.005 (0.298)	0.002 (0.537)	-0.002 (0.391)	0.005 (0.154)	0.002 (0.520)	0.010 (0.145)	0.011 (0.146)
<i>LEV</i>	0.022 (0.473)	0.014 (0.532)	-0.039* (0.059)	-0.027** (0.030)	-0.010 (0.596)	-0.008 (0.571)	-0.018 (0.616)	-0.046 (0.226)
<i>ROA</i>	-0.109 (0.273)	-0.074 (0.329)	-0.067 (0.331)	-0.072* (0.088)	-0.098 (0.134)	-0.081* (0.083)	-0.149 (0.208)	-0.165 (0.194)
<i>GROW</i>	-0.034 (0.148)	-0.008 (0.655)	0.006 (0.725)	0.002 (0.863)	-0.015 (0.332)	-0.004 (0.735)	-0.029 (0.292)	-0.035 (0.228)
<i>SHARE1</i>	0.000 (0.359)	0.000 (0.347)	-0.000 (0.645)	0.000 (0.280)	0.000 (0.628)	0.000 (0.206)	0.000 (0.695)	0.000 (0.984)
<i>DUDONG</i>	-0.058 (0.626)	-0.059 (0.516)	0.004 (0.963)	0.042 (0.393)	-0.015 (0.850)	0.002 (0.975)	-0.062 (0.661)	-0.051 (0.736)
<i>DUAL</i>	0.006 (0.746)	0.004 (0.770)	-0.016 (0.218)	-0.008 (0.279)	-0.005 (0.700)	-0.002 (0.820)	0.001 (0.979)	-0.013 (0.565)
<i>ACOMITTEE</i>	0.018 (0.225)	0.012 (0.286)	-0.002 (0.872)	-0.006 (0.303)	0.007 (0.459)	0.002 (0.765)	0.022 (0.215)	0.014 (0.473)
<i>TRASHARE</i>	-0.052** (0.034)	-0.036* (0.053)	0.010 (0.601)	0.005 (0.659)	-0.026 (0.120)	-0.019 (0.107)	-0.048* (0.099)	-0.043 (0.165)
<i>IND</i>	0.026 (0.168)	0.031** (0.037)	-0.004 (0.769)	-0.008 (0.283)	0.011 (0.371)	0.011 (0.212)	0.024 (0.280)	0.010 (0.675)
<i>FR</i>	-0.010 (0.633)	-0.027* (0.094)	0.010 (0.484)	0.002 (0.810)	-0.000 (0.982)	-0.013 (0.189)	0.005 (0.835)	-0.008 (0.754)
<i>DECI4</i>					-0.047*** (0.000)	-0.029*** (0.000)		
Observations	52	52	52	52	104	104	52	52
Adj R ²	0.316	0.255	0.119	0.040	0.338	0.282	0.212	0.209

注：(1) **、*分别表示在 1%、5%和 10%水平下显著。(2) 括号内为 T 值。(3) *DECI4* 哑变量，如果时间是 12 月 14 日，取值为 1，否则为 0。

（二）稳健性测试

本文进行了如下稳健性测试：

第一，使用市场调整法计算 *CAR*，重新按表 7、表 9 至表 12 进行了回归分析，发现结果保持不变。

第二，考虑政府控制的具体方式对传染效应的影响。首先，以政府持股比例替代政府控制哑变量 (*GOV*)，分别重复前面的分析，发现研究结论不变。其次，多元回归分析中加入样本公司金字塔层级数变量 (*STOREY*)，金字塔层级加长了代理链条，使政府控制由直接控制转变为间接控制，可能弱化上层公司高管行为对下层公司的影响。分析发现结果不受影响，金字塔层级本身也不影响市场传染效应。再次，区分地方政府控制和中央政府控制。由于样本中属于中央政府控制的公司仅有 7 家，样本太少，所以我们剔除这 7 家公司，使用地方国有企业和民营企业构成的样本组进行分析，发现研究结论不变。限于篇幅较长，上述结果均未报告。

第三，使用国内 10 大会计师事务所 (*BIG10*) 代替 *BIG4*，发现政府控制 (*GOV*) 仍加剧了市场传染效应，但 *BIG10* 则没有发现具有抑制传染效应的作用。

第四，加入机构投资者持股 (*INSTITUTION*)、样本公司前三年平均股票回报率 (*RETURN*) 作为控制变量，发现文中结果不受影响。

第五，将样本按性质分为政府控制样本组和非政府控制样本组，按外部审计师分为国际四大审计样本组和非国际四大审计样本组，分别按表 7、表 8 和表 9 的方式进行回归，发现结果基本一致；按行业仅用煤碳采选业为样本公司，²⁰ 分别按表 7、表 8 和表 9 的方式进行回归，发现结果会更好。

第六，本文用文中其他窗口的 *CAR* 按表 7、表 9 和表 10 的方式进行回归，发现结果基本一致。

第七，控制中国各地的公共治理环境对传染效应可能产生的影响，利用市场化进程指数 (樊纲等, 2010)，我们分别将市场化进程指数、政府与市场关系指数、法律环境指数作为控制变量放入表 7、表 9 和表 10 中进行回归，发现文中结果不受影响，同时，这些指数本身的结果均不显著。表明各地区的公共治理环境差异对传染效应没有产生明显的影响。

第八，我们对文中所有回归进行了异方差检验，未发现存在异方差。另外，使用调整异方差标准误的方法回归，发现研究结论不受影响。

最后，将样本扩展至能源行业，未发现在全部能源行业存在高管腐败的市场传染效应。

七、结论与局限性

本文以受到媒体广为关注的由小偷引出、公安部门试图封锁、经网络爆料的白培

²⁰ 这是因为石化塑料业的公司观察值太少，无法进行分析。

中腐败案为契机,首次利用事件研究法研究了高官腐败的传染效应及其影响因素。本文主要研究了以下四个问题:一是公司高官腐败是否会对同行业公司产生负面的市场传染效应,二是公司的政府控制性质和外部治理机制是否会影响公司所遭受的传染效应,三是作为另一种投资者保护方式的“倒逼机制”市场治理是否会对投资者形成保护,从而在白培中被宣布撤职后会抑制事件公司和同行业公司的股价下跌,四是高管的在职消费和货币性私有收益是否是传递公司高管腐败风险的“信号”。经研究发现,首先,白培中腐败案不仅使事件公司的股价下跌,而且使同行业公司遭受了负面的传染效应。其次,公司的政府控制性质对公司遭受的传染效应具有杠杆作用,加重了政府控制公司的传染效应。然而,公司聘请的国际四大审计师对传染效应具有一定的抵减作用。再次,迫于各种压力快速形成的“倒逼机制”(白培中撤职事件)减缓了事件公司和同行业公司的股价下跌。最后,本文发现,高管的在职消费和货币性私有收益扮演了公司高管腐败风险的“信号”传递角色,加剧了传染效应。

此外,进一步分析还发现,本文的上述结论不受同行业公司的盈余质量、财务重述行为的影响。这增强了本文结果的可靠性。

本文的启示意义在于:第一,在正式反腐机制效果不佳的情况下,可借助网络媒体曝光相关腐败事件,促使正式反腐机制高效地处理相关腐败案件,以向全体国民显示政府的反腐决心和行动;第二,相比于已有的反腐渠道,网络反腐是一种低成本的反腐参与途径。政府相关部门可利用全体国民广泛参与网络反腐的这种积极性,通过网络对腐败者或潜在腐败者形成“阻吓”作用,达到利用媒体治理腐败的作用,进一步拓展现有的反腐渠道和途径。本文的不足之处在于:由于本文是事件研究,导致本文的样本观察值相对较少。

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Executive Corruption, Contagion Effect, and Investor Protection — Empirical Evidence from the Bai Peizhong Case¹

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Received 24th of June 2013 Accepted 6th of January 2014

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Abstract

By studying a recent executive corruption case in China (the Bai Peizhong case), which was initially exposed by a theft, later blocked by the local security department, and finally spread through the Internet, this paper first examines the contagion effect of executive corruption and its determinants and transmission mechanism. We find that (1) in response to the news, the stock prices of the two listed companies involved declined over the event window and the negative effect spilt over to their peer companies in the same industries; (2) the above contagion effect was more pronounced in the state-owned peers but was attenuated by the employment of an outside Big Four auditor; (3) the stock prices of the two involved companies declined and their peers' behaviour was inhibited by the dismissal of Bai Peizhong; (4) the above market reaction was a result of investors' expectation of the existence of large non-pecuniary compensation in the involved companies and industries; and (5) the contagion effect was not influenced by earnings management or the financial restatement of the peer firms.

Keywords: Executive Corruption, Media, Reputation, Contagion Effect, Non-Pecuniary Compensation, Earnings Management

CLC Codes: F275.5, F239

¹ This paper is jointly supported by the National Natural Science Foundation of China (project numbers: 71172206 and 71102159) and the Overseas, Hong Kong and Macao Scholars Collaborative Research Fund (project number: 71328201). All of the data and information about the case are collated from public media. We thank the executive editor Nancy Su and the anonymous reviewers for their constructive suggestions, as well as all the discussants and participants at the 10th International Symposium on Empirical Accounting Research held in China and the 2012 China Accounting and Finance Review International Symposium. We are grateful for the valuable comments and suggestions from Hong Xie (University of Kentucky), Xihe Gong (The Hong Kong Polytechnic University), Chun Cai (Southwestern University of Finance and Economics), and Juan Zhang (Guanghua School of Management, Peking University). Any errors are ours.

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I. Introduction

In recent years in China, a series of incidents has attracted the public's attention to corruption, including the cases of Zhou Jiugeng, the former head of the Real Estate Management Bureau, Jiangning District, Nanjing, who was sentenced to 11 years' imprisonment for corruption; Yang Dacai, the former head of the Shaanxi Work Safety Management Bureau, who was sentenced to 14 years' imprisonment for accepting bribes and for property crimes of unknown origin; Cai Bin, the former Political Commissar of the Urban Management and Administrative Execution Bureau, Panyu Branch, Guangzhou, who was sentenced to 11 years and 6 months' imprisonment for accepting bribes; and Lei Zhengfu, the former Secretary of Commission, Beipei District, Chongqing, who was sacked for his involvement in an "obscene video" and later sentenced to 13 years' imprisonment for accepting bribes. These cases were all initially exposed through Internet leaks. In a survey conducted by Xinhua Net, 75 per cent of the participants said they would choose Internet exposure as a way to act against corruption, suggesting that the Internet has become the major medium for ordinary people to combat corruption.³ In 2011, China's Corruption Perception Index (CPI) was 3.6, ranking China 75th out of 182 countries. It is estimated that in China, the yearly cost of corruption ranges on average from RMB987.5 billion to RMB1,257 billion, representing 13.2 to 16.8 per cent of national gross domestic product (GDP).⁴ Consequently, corruption has become a serious impediment to economic development and social stability. To shed light on this, the literature has investigated, on the basis of different theories such as the rent seeking theory, the theory of regulation, the agency theory, and the theory of information asymmetry, the causes and consequences of corruption at the country level (Yan, 1999; Sheng, 2000; Zhang and Gu, 2001; Xie and Lu, 2003; Xia and Zhang, 2005; Huang, 2006), specifically its effect on legislation (Gao and Tian, 2005), foreign direct investment (Cuervo-Cazurra, 2006; Dong and Torgler, 2010), firms' growth (Chan, 2009), economic development (Liu and Feng, 2011), and the growth of bad debts in the banking and finance industries (Lu, 2005). Nevertheless, only a few papers have investigated the issue at the firm level (Zhu and Chen, 2007; Fan *et al.*, 2008; Chen *et al.*, 2009; Fan *et al.*, 2014). According to one anti-corruption organisation, corruption involves not only public authorities (public corruption) but also powers in the private sector (private corruption).⁵ Public corruption is defined as the abuse of public authority by elected politicians or appointed civil servants for the purpose of gaining private benefits. Private corruption is the abuse of a delegated authority through heritage, education, marriage, election, appointment, or other means to obtain personal benefits. The above definition applies not only to politicians and civil servants but also to the chief executive

³ Data source: "Network Anti-Corruption: Don't stop at curiosity", *Hubei Daily*, 15 December 2012.

⁴ Data source: Xia and Zhang, 2005.

⁵ The full text is available at <http://www.corruptie.org/en/corruption/what-is-corruption/>

officers (CEOs) and chief financial officers (CFOs) of companies, heads of hospitals, and football coaches. In this paper, the chairman and CEO of government-controlled companies (GCCs) are also regarded as government officials; therefore, executive corruption in GCCs may have the characteristics of both types of corruption, while executive corruption in non-government-controlled companies (non-GCCs) belongs strictly to the private corruption category. A recent corruption case that caused widespread concern, namely the Bai Peizhong case, which was initially exposed by a theft in 2011, provides us with a good opportunity to investigate the market effect of corruption at the firm level. We chose this case because it was a shock to the market and caused widespread concern and was quickly followed by government anti-corruption actions. Hence, most of the relevant information is publicly available, making it easier to identify and control for other confounding factors. Also, the development of the case is quite clear and the two involved companies are listed companies, which further enables us to identify the key events and to obtain the relevant data. Taking this opportunity, we investigated the market reactions to corruption and its contagion effect (if any) on peer firms in the same industries at the firm level. The results of this study may help the public, relevant government departments, academics, and practitioners to have a better understanding of the market's response to corruption.

The contagion effect⁶ refers to the phenomenon that announced crises at big companies also affect the share prices of peer companies negatively. Research on the contagion effect was initiated by bankruptcy events in the banking industry. Aharony and Swary (1983) find that bank insolvency plays an information transfer role, revealing common problems in the industry so that investors lose confidence in the whole industry, resulting in a decline in the share prices of other banks. Hertzal *et al.* (2008) extend previous studies to a supply chain setting by looking at the impact of firms' bankruptcy on their customers and suppliers and find supporting evidence for the contagion effect. The contagion effect theory is based on the notion that bad news plays an information transfer role and firms are engaged in similar transactions in the same industry. Thus investors will punish the other companies in the industry when bad news about one firm is released. As a transitional economy, China is regarded as one of the most corrupt countries (He, 2000). It is argued that its weak investor protection and ineffective public and corporate governance can also breed executive corruption. One corruption case, which was exposed in 2011 by a theft at the home of Bai Peizhong, the chairman of Shanxi Coking Coal Group, has aroused widespread concern in Chinese society. The fact that this corruption case was initially

⁶ The intra-industry effect of corporate fraud has two forms: the contagion effect and competitive effect. The competitive effect is defined as the fact that a big company's fraud benefits its competitors in the same industry and then drives their stock prices up. The corruption case we study in this paper reveals management weakness in the involved companies, making investors have similar expectations for companies in the same industries. Therefore, it is less likely to have a competitive effect on their industry peers. As such, we focus on the contagion effect only.

disclosed through a theft instead of through any government anti-corruption department, then blocked by the local security department,⁷ and eventually exposed by the web media may, to a certain extent, suggest the failure of all of the public and corporate governance mechanisms in China. Moreover, this case triggered investors' deep concern over the implicit rules used by the executives of listed companies in pursuing their private benefits (Chen *et al.*, 2009), such as non-pecuniary compensation, monetary private benefit, and so on.⁸ So the first question we are interested in is does the corruption case also affect the peers of involved companies? Shanxi Coking Coal Group, a state-owned enterprise, controls two listed companies: Xishan Coal and Electricity and Shanxi Coking. One of these listed companies engages in the mining, petroleum, and chemicals industry and the other engages in the rubber and plastics industry (hereinafter collectively referred to as the "petrochemical plastics industry"). There are 73 listed companies in these two industries, 35 controlled by the state and 38 owned by non-government entities. Given the significant differences in external governance mechanisms and the extent and type of internal agency conflicts between the two types of companies, the next question is does the market show different reactions towards these two industries? Fan and Wong (2005) find that external auditors, as one of the external governance mechanisms, can substitute for the weak internal corporate governance mechanisms in East Asian countries. So we further ask whether good corporate governance can alleviate the contagion effect. In China, after more than 10 years of development in the security market, the mass media has gradually become a new external governance mechanism (Fang and Peress, 2009; Chen *et al.*, 2013). Negative media reports induce pressure from the public and the market which can force the regulators to take effective actions (Liu *et al.*, 2013). This governance mechanism is fundamentally different from the one originating from a legal system. So, will the dismissal of Bai Peizhong, which was induced by this new governance mechanism, be perceived as a kind of effective investor protection? Lastly, as we mentioned, the contagion effect is caused by information transmission among peer firms. So, what was the transmission channel in the case of Bai Peizhong? These are the questions we investigate in this study.

By studying a corruption case which raised wide concern in China, we find that (1) in response to the public release of the corruption case, the stock prices of both involved companies and their industry peer firms declined significantly; (2) the above contagion

⁷ After the incident, Dai Laiwei, the vice director of Taiyuan Public Security Bureau, who was in charge of criminal investigation in Taiyuan city, issued an order to police officers involved in the investigation and required them to maintain absolute secrecy.

⁸ Shi Yongyi, the CEO of Beijing Huafeng Meteorological Information Group Ltd. (an enterprise affiliated to China Meteorological Bureau), embezzled a public fund of RMB1,100,000 between September 2007 and December 2010 as she considered her annual salary of RMB140,000 too low. Although all of the staff knew about her embezzlement, no one reported it, and she believed that her act was justified. This shows that misappropriation of public funds has become an accepted implicit rule, at least in this company.

effect was more pronounced among government-controlled peer firms; (3) the negative impact was reduced by the employment of a big international auditor; (4) the stock price decline among the involved companies and their industry peer firms was inhibited by Bai Peizhong's dismissal; and (5) the perceived non-pecuniary compensation in the industry served as the transmission channel in this case. In an additional analysis, we also find that the contagion effect was not affected by peer firms' earnings management or financial restatement.

This paper contributes to the literature in the following ways:

(1) In recent years, some researchers have examined the media's corporate governance role (Dyck *et al.*, 2008; Miller, 2006; Dyck *et al.*, 2010) and the market's reaction to negative media reports (Fang and Peress, 2009; Griffin *et al.*, 2011). This paper examines the contagion effect of corruption reports from an investor's point of view; thus, it expands this research stream.

(2) Regarding the consequences of corruption, there are two views: the revisionist view⁹ and the negative force view. The negative force view is supported by evidence showing the negative effect of corruption on foreign direct investment (Cuervo-Cazurra, 2006), cost of capital (Zhu and Chen, 2007; Fan *et al.*, 2008), and rate of return (Cumming *et al.*, 2010). This paper, for the first time, provides additional evidence on corruption's negative effect on stock prices from the perspective of market participants.

(3) Corruption can be regarded as an extreme form of moral hazard (Chen *et al.*, 2009). Research on corruption mainly focuses on the corruption of government officials, while research, especially empirical studies, on executive corruption is quite limited. This paper studies the contagion effect of corporate executive corruption from the market perspective. It may help to improve our understanding of moral hazard under a principal-agent framework.

(4) As mentioned earlier, previous studies have documented empirical evidence on the contagion effect in bank bankruptcy and earnings announcement settings, but no such evidence has been provided in a corruption setting. This paper may fill this gap.

(5) This paper for the first time discusses a unique governance model in China, which can be considered a kind of investor protection through media reports, and finds that it is very different from those derived from the judicial system.

The rest of the paper proceeds as follows. Section II reviews the literature and develops our main hypotheses. Section III reviews the event and introduces the research design. In Section IV, we provide empirical results on the contagion effect, and in Sections V and VI, we present the information transfer role analysis and robustness tests. In Section VII, we

⁹ Nye (1967) and Leff (1964) are two representatives of this view. They believe that the benefits of corruption (contributes to raising capital, accelerates economic development, and makes politics more humane) outweigh its costs.

draw our conclusions and discuss the limitations of the paper.

II. Literature Review and Hypothesis Development

2.1 Literature on Contagion Effect and Executive Corruption

Owing to the information transfer role played by bad news, negative reports released about one company may cause investors to make a similar judgment on other companies in the same industry, thereby reducing investors' expectation about the future prospects of the industry. This line of research first began with studies on bankruptcies in banking (Aharony and Swary, 1983) and other industries (Lang and Stulz, 1992). Subsequently, researchers extended it to other event settings, such as earnings announcements (Foster, 1981), initial public offerings (Polonchek and Miller, 1999), dividend payments (Firth, 1996; Kohers, 1999; Caton *et al.*, 2003), stock splits and stock buybacks (Tawatnuntachai and Mello, 2002; Massa *et al.*, 2007), financial restatements (Xu *et al.*, 2006; Gleason *et al.*, 2008), and audit failures (Chaney and Philipich, 2002), to provide more extensive documentation and robust evidence on the contagion effect. In a recent study, Hertznel *et al.* (2008) further extended the above contagion effect research to a firm's supply chain by looking at the effect of a firm's bankruptcy on their customers and suppliers. They find that a company's bankruptcy can negatively affect not only other companies in the same industry but also their suppliers and customers. For suppliers, the impact is more significant.

There is less research on firm-level corruption or executive corruption. The researchers mainly focus on two aspects. One aspect is the causes of corruption. Chen *et al.* (2009) find that executive compensation regulation may induce executive corruption, while Houston *et al.* (2011) find an association between corruption in bank loan financing and government control over the banking industry and industry concentration. Khalil *et al.* (2011) find that to some extent corruption is prevented when financial reports require an audit by an external auditor, supporting the anti-corruption role played by independent auditors. The other aspect is the consequences of corruption. Cuervo-Cazurra (2006) finds that corruption can reduce both the level and sources of foreign direct investment (FDI), and Zhu and Chen (2007) find that corruption can influence a firm's choice of financing between equity and loan. Fan *et al.* (2008) also find that corruption affects firms' debt financing and debt maturity period. In addition, earnings quality (Fan *et al.*, 2014) and returns on private equity (Cumming *et al.*, 2010) are also found to be associated with corruption.

As can be seen from the above, although corruption has become an increasingly serious problem, no studies have investigated the market reactions to executive corruption and its industry effect. This is probably due to the difficulties in data collection. To fill this gap, this paper makes use of the Bai Peizhong case to examine the market reaction to executive

corruption and its determinants and information transfer mechanism.

2.2 Hypothesis Development

Corruption is a highly controversial topic. On the one hand, as the representatives of the revisionist view, Nye (1967) and Leff (1964) argue that the benefits of corruption (its contribution to capital accumulation and development and humanising political systems) outweigh its costs. In China, it is also suggested that “moderate corruption” should be allowed. More corruption is observed in transitional economies than in mature ones, but so is faster development. In the revisionist view, corruption is regarded as a “lubricant” that is conducive to economic development (Nye, 1967). This is probably true for the following two reasons. First, in China, executive compensation is highly regulated (Chen *et al.*, 2009), so that executives who expend more effort have an incentive to pay themselves a “rent” to realise their self-value and to signal to the market private information about their efforts. As such, corruption may help to improve companies’ efficiency (Nye, 1967). Examples of this type of executive are Shi Yongyi, who was the CEO of Beijing Huafeng Meteorological Information Group Ltd, and Zhu Shijian, a top manager at Yunnan Hongta Group. Second, in a seller’s market, the buyer may need to offer the executives of the seller a bribe. Therefore, corruption may send the market a positive signal about the seller company’s bright prospects. On the basis of these arguments, the exposure of the Bai Peizhong corruption case can also convey positive information, driving up the stock prices of the involved companies as well as those of their peer companies.

On the other hand, the negative force view sees corruption as a negative factor in economic development, having a negative effect on FDI (Cuervo-Cazurra, 2006), financing (Zhu and Chen, 2007; Fan *et al.*, 2008), and capital gains (Cumming *et al.*, 2010). In China, it is very common for executives to use their authority to pursue private benefits. In China, the coal energy industry, to which Shanxi Coking Coal Group belongs, has experienced rapid expansion in the last decade: On average, the consumption and production of coal has grown at a rate of 9.2 per cent and 9.3 per cent annually. Coal consumption has increased more rapidly than its production, especially in the past three years.¹⁰ This means that in China, the coal market has become a seller’s market; the buyers have to compete for relationships and for channels to buy, thus providing the executives of the sellers with an opportunity to gain private interests, but at the cost of the seller companies. At the same time, China’s current anti-corruption mechanisms cannot effectively deter corruption for the following reasons. First, there is a lack of an external monitoring mechanism, which is fundamentally caused by the information asymmetry between outsiders and insiders. Second, corporate governance is ineffective and is unable to place restrictions and supervision on

¹⁰ Data source: ‘The domestic coal industry long-term development trend forecast’, *China Energy Report*, 12 September 2012.

executives, leaving room for corruption. Third, insufficient incentives, the result of the control of executive compensation in state-owned enterprises (Chen *et al.*, 2009), encourage executives to use various illegal means to seek private gains to alleviate their worries about their post-retirement life, such as the frequently observed “Age 59 Phenomenon” (Wan and Chen, 2012). Against this background, investors will be more concerned about executive corruption. Owing to the homogeneity in the same industry (He and Li, 2004), the exposure of the Bai Peizhong corruption case will raise investors’ concern over other companies in the industry, consequently resulting in stock price decline.

Accordingly, we have the following two competing hypotheses:

H1a: Share prices of the industry peer companies will decline in response to the release of the Bai Peizhong corruption case.

H1b: Share prices of the industry peer companies will rise in response to the release of the Bai Peizhong corruption case.

Listed firms in China are comprised of two types of companies: government controlled and non-government controlled. The two groups of companies are very different in terms of both external supervision and internal corporate governance. First, GCCs are under the supervision of the Anti-Corruption Bureau, the local State-Owned Assets Supervision and Administration Commission (SASAC), and other relevant government agencies, but non-GCCs are monitored by minority shareholders. Due to larger information asymmetry and the agency problem, the SASAC and other government agencies have less incentive to monitor listed companies (Yang, 1997). Second, in terms of administrative levels, GCCs are quite similar to government departments. Employees, for the sake of their own future, do not dare comment on the performance of executives, and the other shareholders show rational “indifference” because their holdings are too small to make a difference. Therefore, inside executives obtain control over the company (Chen *et al.*, 2000; Huang, 2000). In contrast, in non-GCCs, other shareholders generally participate in corporate governance as they hold a large stake in the company, and therefore they should be able to constrain executive misconduct such as corruption. Consequently, our second hypothesis is as follows:

H2: Corruption-induced contagion’s effects on share prices will be more pronounced for government-controlled peer companies than for non-government-controlled peer companies.

Fan and Wong (2005) find that in East Asian countries, external auditors play a corporate governance role, substituting for weak internal corporate governance. Khalil *et al.* (2011) also find that audited financial reports can prevent corruption, indicating that external auditors play a similar role. Since 2006, according to the law, auditors need to bear civil

liability in cases of audit failure in China. The litigation risk of big auditors is higher due to their larger market share and/or the number of clients they have (Chaney and Philipich, 2002; Weber *et al.*, 2008). As such, big auditors should be associated with higher audit quality (De Angelo, 1981) and stronger governance of clients. At the same time, companies with good corporate governance may also need to hire a big auditor to send a signal to the market. Therefore, a big auditor may attenuate the contagion effect of corruption. On the basis of the above reasoning, our third hypothesis is as follows:

H3: The contagion decline in the share prices of peer firms that hire a Big-Four auditor will be smaller than that of peer firms that hire a non-Big-Four auditor.

A new public governance mechanism, which is different from the investor protection provided by a legal system, has been created in China (Liu *et al.*, 2013). The way it works is as follows: The media first reveals various problems such as corruption; then, under pressure from the public and the market, government departments interfere and start an investigation and finally make a punishment decision (Fang and Peress, 2009; Chen *et al.*, 2013). Taking the Bai Peizhong corruption case as an example, although Dai Laiwei, the vice director of Taiyuan Public Security Bureau, attempted to block the case with his order, the case was reported by the *Shanxi Evening News* and other main Internet media. Resoundingly, the stock prices of the two involved listed companies fell. Under pressure from the public, the Shanxi Provincial Committee of the Communist Party of China (CPC) reached a decision within two months: Bai Peizhong was dismissed from his post. This was good news for shareholders as it meant organisational restructuring, the implementation of new strategies and financial policies, and performance improvement (Huson, Parrino, and Starks, 2001; Huson, Malatesta, and Parrino, 2004), thereby increasing shareholders' wealth (Denis and Denis, 1995; Kang and Shivdasani, 1995). Therefore, we expect the corruption-induced stock price decline to be restrained by the dismissal of Bai Peizhong.

H4: Bai Peizhong's dismissal will restrain the decline in stock prices of the companies involved and their peer companies.

III. Event Review and Research Design

3.1 Event Review

Bai Peizhong was the chairman and Party Committee Secretary of Shanxi Coking Coal Group. The company was established in October 2001 and was the result of a merger and restructuring of three large state-owned coal enterprises (Xishan Coal and Electricity, Fenxi Mining, and Huozhou Coal and Electricity) in China's coal industry. The group is currently

the largest coal company in China, producing a full variety of coking coal products. The group adopts a three-level organisation structure, with the subsidiary companies and the production plants at the second and third layers, respectively. The group has 12 subsidiaries: 7 are coal companies, including Xishan Coal and Electricity and Fenxi Mining, and 5 are non-coal and service companies. The group holds two A-share listed companies: Xishan Coal and Electricity Co. Ltd. (000983, SZ) and Shanxi Coking Co. Ltd. (600740, SH) (see Table 1). Xishan Coal and Electricity belongs to the coal mining industry and is directly controlled by Shanxi Coking Coal Group (holding a stake of 54.4 per cent). Shanxi Coking engages in the petrochemical plastics industry and is owned by Shanxi Coking Group (holding a stake of 19.24 per cent), which is wholly owned by Shanxi Coking Coal Group, and Xishan Coal and Electricity (holding a stake of 15.56 per cent). In other words, Shanxi Coking is ultimately controlled by Shanxi Coking Coal Group.

On 13 November 2011, Bai Peizhong's house was burgled. On 24 November 2011, Gao Qinrong, a former journalist in Shanxi province, exposed the burglary in his microblog and disclosed that "a loss of RMB3 million was reported by his [Bai Peizhong's] wife". This was the first time that the Bai Peizhong case had been revealed to the public.¹¹

After the two suspects, who were security guards at the housing estate in which Bai Peizhong lived, confessed to the theft, prosecutors arrested them on 14 December 2011 (Event 1). Thus, Gao Qinrong's report was confirmed. After the suspects were arrested, it was confirmed that property worth nearly RMB50 million had been stolen, including RMB6 million, HK\$1 million, US\$270,000, and 3 million euros in cash; 7 to 8 kilograms of gold bars; and luxury items such as watches, diamond rings, and necklaces.

On 18 December 2011 (Event 2), *Shanxi Evening News* reported the case, stating "While Bai's wife reported a loss of RMB3 million, after the suspects were arrested, it was confirmed that the total value of the stolen property was close to RMB50 million". Shanxi Coking Coal Group, Bai Peizhong, and the Taiyuan police department did not respond to the report, nor did they agree to an interview. The report was then reprinted by many large media sources, including www.people.com.cn.

On 22 December 2011 (Event 3), the Shanxi provincial committee of the CPC decided to dismiss Bai Peizhong from the post of chairman and Party Committee Secretary of Shanxi Coking Coal Group.

By the end of March 2012, the investigation of the Bai Peizhong case was almost closed, but up to the date of this paper, the penalty imposed on Bai Peizhong has remained undisclosed.

¹¹ After the incident, Dai Laiwei, the vice director of Taiyuan Public Security Bureau, who was in charge of criminal investigation in Taiyuan city, issued an order to police officers involved in the investigation and required them to maintain absolute secrecy.

Table 1 Information about the Two Listed Companies Controlled by Shanxi Coking Coal Group

	Xishan Coal and Electricity	Shanxi Coking
Stock Code	000983	600740
Exchange	Shenzhen A Share	Shanghai A Share
Industry	Coal mining and processing	Petrochemical plastics industry
Core business	Coal production, washing and processing, power generation, and sales	Coke and related chemical products processing, production and sale of ammonium sulfate
Largest shareholder	Shanxi Coking Coal Group (54.4%)	Shanxi Coking Coal Group (19.24%) ¹²
Second largest shareholder	Shanghai Baosteel International (1.35%)	Xishan Coal and electricity (15.56%)
Trading status	Normal	Normal

3.2 Research Design

3.2.1 Sample selection and calculation of cumulative abnormal stock returns

In this paper, we examine the contagion effect of the Bai Peizhong corruption case on the involved companies and their industry peers. Therefore, our sample initially includes the two subsidiaries of Shanxi Coking Coal Group, namely Xishan Coal and Electricity (000983) and Shanxi Coking (600740), and all of the companies in the same industries. The following companies are further excluded from the sample:

- (1) Companies labelled as ST or *ST (special treatment) are deleted as they are not representative due to the abnormal conditions under which they are operated and traded.
- (2) Companies that experienced other major events or trading suspensions for more than five days over our event window are also eliminated.

Eventually, we end up with 58 listed companies (including the two involved firms), of which 48 are in the coal mining and processing industry and 10 are petrochemical plastics companies.¹³ The sample selection process is presented in Table 2A, and the three events are listed in Table 2B.

¹² Shanxi Coking Group is a wholly owned subsidiary of Shanxi Coking Coal Group.

¹³ We do not include Xishan Coal and Electricity and Shanxi Coking in the multiple regression analysis, and due to missing variables, less than 58 companies are used in the final regression analysis.

Table 2A Sample Selection

	Coal Mining and Processing (B)	Petrochemical Plastics (C41)	Total
Original sample	58	15	73
Delete:			
ST and *ST companies	8	3	11
Companies with confounding events and trading suspensions	2	2	2
Final sample	48	10	58

Table 2B Event List

	Event Date	Event
<u>Event 1</u>	14 December 2011	The two suspects were arrested by local prosecutors and then the theft disclosed by Gao Qinrong was confirmed.
<u>Event 2</u>	18 December 2011	<i>Shanxi Evening News</i> reported the case.
<u>Event 3</u>	22 December 2011	Shanxi provincial committee of the CPC decided to dismiss Bai Peizhong from the post of chairman and Party Committee Secretary of Shanxi Coking Coal Group.

3.2.2 Regression models and variables

Although Gao Qinrong exposed the theft in his microblog on 14 November 2011, the news was not yet confirmed. So we choose 14 December 2011 (Event 1) and 18 December 2011 (Event 2) as the two event days¹⁴ when the case was eventually confirmed. Using a univariate test and multiple regression analysis, this paper aims to study whether executive corruption has the contagion effect and what the determinants of this effect are. Following Weber *et al.* (2008), we use the following regression model (Model 1):

$$CRET = c + \beta_1 EVENT1 \text{ (or } EVENT2 \text{ or } EVENT1\&2) + \beta_2 MRET + \varepsilon \quad (1)$$

The dependent variable *CRET* is the arithmetical average of the stock returns of the sample firms in the fourth quarter of 2011. As there are 60 trading days in the fourth quarter of 2011, 60 observations are used in Model (1). The test variable *EVENT1* takes the value of

¹⁴ Since 18 December 2011 was a Sunday, we take 19 December 2011 as date 0 to calculate cumulative abnormal returns.

1 if the date is 14 December 2011 and 0 otherwise; *EVENT2* equals 1 if the date is 19 December 2011 and 0 otherwise. *EVENT1&2* is 1 if the date is 14 December 2011 or 19 December 2011 and 0 otherwise. The control variable *MRET* is the market return for the fourth quarter of 2011.

The following regression model (Model 2) is adopted for contagion effect analysis in this paper:

$$\begin{aligned} CAR = c + \beta_1 GOV + \beta_2 BIG4 + \beta_3 SIZE + \beta_4 LEV + \beta_5 GROW \\ + \beta_6 ROA + \beta_7 SHARE1 + \beta_8 DUDONG + \beta_9 DUAL \\ + \beta_{10} ACOMITTEE + \beta_{11} TRASHARE + \beta_{12} IND + \varepsilon \end{aligned} \quad (2)$$

The dependent variable *CAR* is the cumulative abnormal return over the event windows. In this paper, we use the CAPM (capital asset pricing model) market model to estimate the normal returns, abnormal returns (*AR*), and cumulative abnormal returns (*CAR*). The two parameters for the market model are estimated over the 120 trading days one month before the events. Using the estimated parameters, the abnormal returns (*AR*) of the sample firms are then calculated within a nine-day window (day -3 to day +5). The abnormal returns of each event are then accumulated as the cumulative abnormal returns (*CAR*).

GOV is a dummy variable taking the value of 1 if the firm is controlled by the government and 0 otherwise. *BIG4* equals 1 if the firm hires a big international audit firm and 0 otherwise.

Following previous studies, we also include the following variables as controls. *SIZE* is measured as the logarithm of total assets. As big firms in general receive more attention from the public and investors, we predict a negative sign for *SIZE*, meaning a larger negative response. Leverage (*LEV*) is measured as total debts over total assets. A higher level of leverage indicates a higher probability of off-balance sheet financing and lower transparency. As such, a negative sign for *LEV* is predicted. The growth rate is calculated as the annual growth rate of sales (*GROW*). Usually, faster-growing firms are more likely to adopt aggressive accounting, making investors respond more negatively to their bad news (Chaney and Philipich, 2002). More profitable firms will be questioned more by investors when bad news is released (Hung *et al.*, 2013). So we predict a negative sign for profitability (measured as *ROA* or net income over the average total assets). A number of corporate governance variables are also included as controls. As the test variable is executive corruption, we pick ownership structure and variables for the board of directors as controls, including ownership concentration, which is measured as the shares held by the largest shareholder divided by those held by the second largest shareholder (*SHARE1*); the independence of the board of directors, measured as the percentage of independent directors (*DUDONG*); the dual position of the CEO and chairman (*DUAL*); and the existence of an

audit committee (*ACOMITTEE*). On the one hand, the higher *SHARE1* is, the less the largest shareholder is constrained by the second largest shareholder; on the other hand, it also means more incentive for the largest shareholder to monitor management. For this reason, we do not predict any sign for *SHARE1*. Independent directors have a governance effect on corruption, and so a positive coefficient is expected for *DUDONG*. A dual position of chairman and CEO indicates a higher possibility of executive corruption, so the expected coefficient for *DUAL* is negative. An audit committee will constrain corruption, and thus a positive coefficient for *ACOMITTEE* is expected. Because we are also interested in the role played by market mechanisms in investor protection, we include the proportion of tradable shares (*TRASHARE*) as an additional control: a negative coefficient is expected for it. Both the test and control variables are calculated using previous year-end data. *IND* is a dummy variable taking the value of 1 if a firm is in the petrochemical plastics industry and 0 otherwise; *DECI4* is a dummy variable and is 1 if the observation date is 14 December 2011 and 0 otherwise. All continuous variables are winsorised at 1 per cent and 99 per cent to avoid influence from outliers.

IV. Empirical Results

4.1 Descriptive Statistics

As shown in Table 3, the cumulative abnormal returns of the two subsidiary companies of Shanxi Coking Coal Group are significantly negative over all the windows of Event 1. Over the window of (-1, 1), *CAR* is -6.6 per cent, and it is -4 per cent over the window of (0, 1). The *CAR* of the industry peer firms is also significantly negative (-6.7 per cent over (-1, 1); -4.7 per cent over (0, 1)) over all Event 1 windows, as it is over all the windows of Event 2. The *CARs* of the two listed subsidiary companies and their industry peers show the same decline trend after the event in Figure 1. These preliminary results suggest that the Bai Peizhong corruption case not only affected the stock prices of the two listed subsidiaries of the Shanxi Coking Coal Group negatively but also those of their industry peers.

Furthermore, as reported in Table 4A, over each window of Event 1, the *CAR* of government-controlled peer companies is on average significantly lower than that of non-government-controlled peer companies. Over the windows of Event 2, the *CAR* of government-controlled peer companies is still lower than that of non-government-controlled peer companies, but insignificantly. Figure 2 clearly shows that the *CAR* of government-controlled peer companies (*GOV*) is lower than that of non-government-controlled peer companies (*NGOV*). In general, these results are consistent with our expectation that the contagion effect is more pronounced in the group of GCCs.

In addition, we also expect that good corporate governance may help reduce the

negative contagion effect. As shown in Table 4B, the *CAR* over the windows of both Events 1 and 2 of companies that hire a Big-Four international auditor is significantly higher than that of companies that choose non-Big-Four auditors. These results suggest that a good external governance mechanism helps to alleviate the negative contagion effect.

Table 3 Cumulative Abnormal Returns (*CARs*) of Involved Companies and Their Industry Peers¹⁵

Window	Involved companies (N = 2)		Industry peers (N = 56)		
	+/-	Mean	+/-	Mean	Median
Table 3A Event 1 — 14 December 2011					
<i>CAR</i> (-1, 1)	0/2	-0.066***	11/45	-0.053***	-0.067***
<i>CAR</i> (0, 1)	0/2	-0.040*	11/45	-0.039***	-0.047***
Table 3B Event 2 — 18 December 2011					
<i>CAR</i> (-1, 1)	1/1	0.004	26/30	-0.001	-0.001
<i>CAR</i> (0, 1)	1/1	-0.002	20/36	-0.006***	-0.007***

Note: (1) ***, **, and * indicate statistically significant levels of 1%, 5%, and 10%, respectively. (2) As the mean of involved companies' *CAR* equals its median, only the means are reported. (3) "+/-" is the ratio of the number of positive *CARs* to the number of negative *CARs*.

Table 4 Contagion Effect Analysis¹⁶

Table 4A The Effect of Ownership Type

	Government-controlled (N = 28)			Non-government-controlled (N = 28)			T test	
	+/-	Mean	Median	+/-	Mean	Median	Mean	Median
Event 1 — 14 December 2011								
<i>CAR</i> (-1, 1)	3/25	-0.063	-0.075	7/21	-0.047	-0.057	-1.89*	-2.12**
<i>CAR</i> (0, 1)	2/26	-0.045	-0.048	8/20	-0.035	-0.036	-1.85*	-1.09
Event 2 — 18 December 2011								
<i>CAR</i> (-1, 1)	10/18	-0.004	-0.003	10/18	0.001	0.001	-0.81	-0.51
<i>CAR</i> (0, 1)	7/21	-0.007	-0.010	13/15	-0.005	-0.005	-1.10	-0.22

¹⁵ Alternatively, *CARs* are also calculated over the windows of (-3, 0), (-3, 1), (-3, 3), (-2, 0), (-2, 1), (-2, 2), (-2, 3), (-1, 0), (-1, 2), and (-1, 3) for both Events 1 and 2, and the results are found to be consistent with those in Table 3.

¹⁶ Alternatively, *CARs* are also calculated over the windows of (-3, 0), (-3, 1), (-3, 3), (-2, 0), (-2, 1), (-2, 2), (-2, 3), (-1, 0), (-1, 2), and (-1, 3) for both Events 1 and 2. We find the results for Event 1 to be similar to those in Table 4, while the results for Event 2 are more significant than those in Table 4.

Table 4B The Effect of Big 4 Auditors

	BIG4 (N = 10)			Non-BIG4 (N = 46)			T test	
	+/-	Mean	Median	+/-	Mean	Median	Mean	Median
Event 1 — 14 December 2011								
CAR (-1, 1)	5/5	-0.006	-0.001	6/40	-0.064	-0.080	3.76***	3.27***
CAR (0, 1)	4/6	-0.011	-0.008	7/39	-0.045	-0.051	2.86**	2.82**
Event 2 — 18 December 2011								
CAR (-1, 1)	3/7	-0.004	-0.007	25/21	-0.0002	0.003	-0.40	-0.57
CAR (0, 1)	4/6	-0.003	-0.005	16/30	-0.005	-0.009	0.50	0.76

Note: (1) ***, **, and * indicate statistically significant levels of 1%, 5%, and 10%, respectively. (2) “+/- ” is the ratio of the number of positive CARs to the number of negative CARs.

Figure 1 CARs of the Involved Companies and their Industry Peers¹⁷

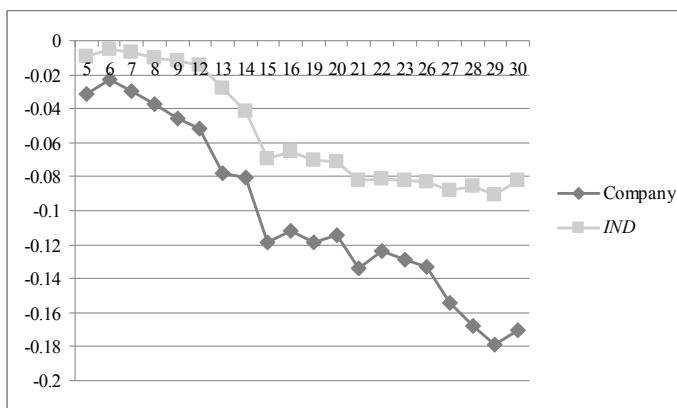
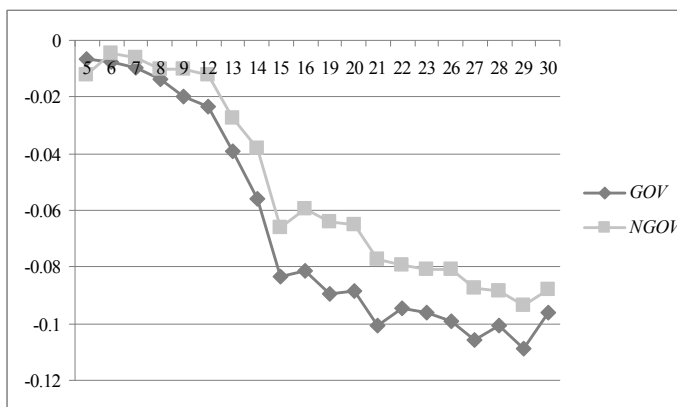
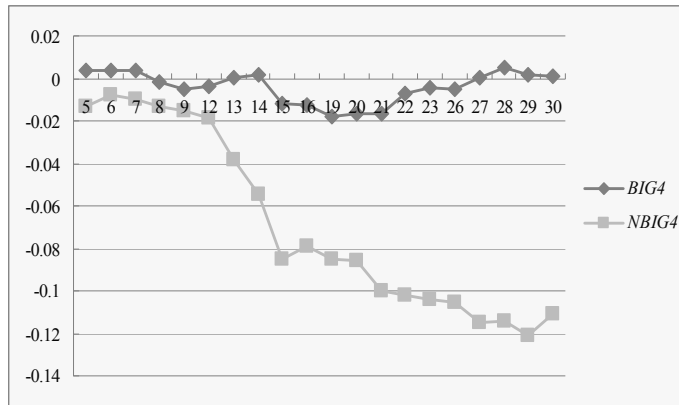


Figure 2 CARs of State-Owned and Non-State-Owned Enterprises



¹⁷ The horizontal axes in Figures 1, 2, and 3 are transaction dates in December 2011; the 17th and 18th of December were a Saturday and a Sunday, respectively. The longitudinal axes are cumulative abnormal returns (CARs) starting from 5 December 2011. For 7 December, the corresponding longitudinal axis point represents the CARs accumulated for three days: 5th, 6th, and 7th of December.

Figure 3 *CARs of Companies that Hire Big-Four and Non-Big-Four Auditors*

We further analyse the effect of firm characteristics. As shown in Table 5, the means and the medians of *CARs* over the windows of Event 1, Event 2, Events 1 and 2, and combined Event 1 and 2 are all negative. About 47.27 per cent of the sample firms are controlled by the government, while 18.1 per cent are audited by an international Big-Four auditor. The mean and median of company size (*SIZE*) are 22.8 and 22.94, respectively. On average, debt level (*LEV*) is about 46 per cent, accounting performance (*ROA*) 10 per cent, growth rate (*GROW*) about 33 per cent, ownership concentration (*SHARE1*) 7.94, and proportion of independent directors about 34 per cent. Position duality (*DUAL*) is found in 16.3 per cent of the sample firms, and 29.1 per cent have established audit committees (*ACOMITTEE*). The mean of proportion of shares in circulation (*TRASHARE*) is 0.721, and the median is 0.9.

4.2 Regression Analysis

We test the contagion effect of the Bai Peizhong corruption case using regression Model (1). The results are presented in Table 6. As shown in Table 6, the adjusted R^2 for all regression models is about 90 per cent, indicating that the model has strong explanatory power. The coefficient for *EVENT1* is significantly negative, suggesting that companies in the same industries suffered the contagion effect, with an average stock price decline of 1 per cent. The coefficient for *EVENT2* is negative but insignificant; combined with previous results in Table 3 and Figure 1, this suggests a weaker contagion effect around Event 2 among the industry peer companies. The coefficient for *EVENT1&2* is -0.6 per cent and significant, meaning that on average the peer companies' stock prices declined by 0.6 per cent in response to the corruption case. Thus, Hypothesis 1 is supported. The reason why Event 2 did not have a significant effect may lie in the fact that this event (18 December 2011) was too close to Event 1 (14 December 2011) to be able to catch much attention from investors.

Table 5 Descriptive Statistics

Table 5A Event 1 — 14 December 2011					
Variables	Mean	Median	25th	75th	SD
<i>CAR</i> (-1, 1)	-0.053	-0.067	-0.095	-0.021	0.048
<i>CAR</i> (0, 1)	-0.039	-0.047	-0.065	-0.017	0.036
<i>GOV</i>	0.472	0	0	1	0.503
<i>BIG4</i>	0.181	0	0	0	0.389
<i>SIZE</i>	22.800	22.940	21.210	23.800	0.019
<i>LEV</i>	0.460	0.472	0.441	0.480	0.235
<i>ROA</i>	0.107	0.102	0.059	0.142	0.070
<i>GROW</i>	0.337	0.322	0.175	0.340	0.288
<i>SHARE1</i>	7.940	4.496	1.203	14.505	8.569
<i>DUDONG</i>	0.369	0.333	0.333	0.375	0.053
<i>DUAL</i>	0.163	0	0	0	0.371
<i>ACOMITTEE</i>	0.291	0	0	1.000	0.456
<i>TRASHARE</i>	0.721	0.900	0.446	1	0.299
<i>IND</i>	0.181	0	0	0	0.389
Table 5B Event 2 — 18 December 2011					
Variables	Mean	Median	25th	75th	SD
<i>CAR</i> (-1, 1)	-0.001	-0.001	-0.008	0.010	0.026
<i>CAR</i> (0, 1)	-0.006	-0.007	-0.018	0.001	0.016
Table 5C Events 1 and 2					
Variables	Mean	Median	25th	75th	SD
<i>CAR</i> (-1, 1)	-0.027	-0.011	-0.011	-0.011	0.046
<i>CAR</i> (0, 1)	-0.022	-0.015	-0.055	-0.026	0.032
<i>DEC14</i>	0.500	0.500	0	1	0.500
Table 5D Combined Event 1 and 2					
Variables	Mean	Median	25th	75th	SD
<i>CAR</i> (-1, 4)	-0.066	-0.080	-0.111	-0.044	0.058
<i>CAR</i> (-4, 1)	-0.056	-0.067	-0.095	-0.026	0.051

Table 6 Market Reaction to the Corruption Case for Industry Peers

Dependent Variable	<i>CRET</i>		
<i>C</i>	-0.002*	-0.002**	-0.002*
	(0.091)	(0.032)	(0.083)
<i>EVENT1</i>	-0.010***		
	(0.001)		
<i>EVENT2</i>		-0.001	
		(0.856)	
<i>EVENT1&2</i>			-0.006**
			(0.041)
<i>MRET</i>	1.320***	1.373***	1.364***
	(0.000)	(0.000)	(0.000)
Obs	60	60	60
Adj.R ²	0.90	0.89	0.89

Note: (1) ***, **, and * indicate statistically significant levels of 1%, 5%, and 10%, respectively. (2) P value is reported in brackets.

In investigating the determinants of the contagion effect, we use three approaches in this paper. The first one is to regress the *CARs* of the industry peer companies on Event 1 and Event 2 separately. Second, following Chaney and Philipich (2002), we pull all the observations around Event 1 and Event 2 together to rerun the above regression and add a dummy variable *DEC14* to control for the differences between the two events. Third, as the two events are very close, we combine them as one (*EVENT1&2*). Therefore, 14 December 2011 is taken as date 0 for *EVENT1&2* and *CAR* calculated over the window of (-1, 4) is used as the dependent variable. Alternatively, we also look at the window of (-4, 1) with 19 December 2011 as date 0. The mean and median of *CAR* (-1, 4) are -0.066 and -0.080, respectively; the mean and median of *CAR* (-4, 1) are -0.056 and -0.067, respectively. The regression results are reported in Table 7.

The coefficient for government control (*GOV*) is significantly negative in six out of eight models in Table 7, suggesting lower cumulative abnormal returns. This is consistent with our Hypothesis 2 that government-controlled peer companies experience a stronger negative contagion effect than non-government-controlled peers. The coefficient for *BIG4* is significantly positive in all the models except for over the window of *EVENT2*. This shows that a good external governance mechanism, such as a big international auditor, does help to alleviate the negative contagion effect.¹⁸

Regarding the control variables, no significant effect is found for *SIZE*, *LEV*, *ROA*, *GROW*, *SHARE1*, *DUDONG*, *DUAL* or *ACOMITTEE*, while the coefficient for the proportion of tradable shares (*TRASHARE*) is significantly negative over the window of Event 1, showing that investors make use of stock liquidity to impose an influence on the stock prices of the companies.

On 22 December 2011 (Event 3), under pressure from the public and the market, the CPC Shanxi Provincial Committee quickly decided to remove Bai Peizhong from his position as chairman and Party Committee Secretary of Shanxi Coking Coal Group. This was perceived as good news for shareholders as it meant that the company would carry out restructuring and implement new development strategies and financial policies, thus providing protection for investors. Therefore, the dismissal of Bai Peizhong may have restrained the stock price decline and the contagion effect. As reported in Table 8A, the *CARs* of the involved companies are negative, but they turned insignificant after the dismissal of Bai Peizhong. For the industry peer companies, the number of negative *CAR* firms is reduced significantly over all windows after Bai Peizhong's dismissal. The mean

¹⁸ We also analyse whether internal control affects the contagion effect. Using an internal control index constructed by Prof Hanwen Chen at Xiamen University to measure the level of internal control, we find a significant and positive association between internal control and the contagion effect without adding other control variables. But the relationship disappears when size is controlled for, suggesting that size may be a substitute for internal control. Consequently, we do not include internal control in the regressions.

and median of the *CARs* indicate mixed results. In addition, although the coefficient for *EVENT1&2&3* is significantly negative, meaning that the three events as a whole affected the stock daily returns (*CRET*) of industry peer companies negatively, *EVENT3* alone has a positive and significant coefficient. These results provide evidence supporting our Hypothesis 4 that Bai Peizhong's dismissal sent a positive signal to the market that restrained the negative effect of the corruption case.

Table 7 Regression Analysis

Dependent Variable	Event 1		Event 2		Events 1 and 2		Combined Event 1&2	
	<i>CAR</i> (-1, 1)	<i>CAR</i> (0, 1)	<i>CAR</i> (-1, 1)	<i>CAR</i> (0, 1)	<i>CAR</i> (-1, 1)	<i>CAR</i> (0, 1)	<i>CAR</i> (-1, 4)	<i>CAR</i> (-4, 1)
<i>C</i>	-0.145 (0.217)	-0.063 (0.497)	-0.045 (0.580)	0.033 (0.487)	-0.083 (0.281)	-0.010 (0.855)	-0.202 (0.146)	-0.178 (0.231)
<i>GOV</i>	-0.040*** (0.003)	-0.030*** (0.004)	-0.005 (0.644)	-0.001 (0.890)	-0.024*** (0.009)	-0.016** (0.013)	-0.045*** (0.005)	-0.042** (0.012)
<i>BIG4</i>	0.050** (0.016)	0.035** (0.034)	-0.014 (0.300)	0.002 (0.789)	0.015* (0.094)	0.016* (0.089)	0.036* (0.073)	0.040* (0.074)
<i>SIZE</i>	0.006 (0.241)	0.003 (0.503)	0.003 (0.423)	-0.002 (0.403)	0.005 (0.143)	0.001 (0.720)	0.010 (0.119)	0.010 (0.150)
<i>LEV</i>	0.020 (0.493)	0.011 (0.640)	-0.038* (0.064)	-0.027** (0.029)	-0.010 (0.592)	-0.009 (0.496)	-0.017 (0.623)	-0.048 (0.209)
<i>ROA</i>	-0.103 (0.292)	-0.057 (0.461)	-0.074 (0.277)	-0.073* (0.075)	-0.098 (0.129)	-0.072 (0.118)	-0.152 (0.189)	-0.160 (0.199)
<i>GROW</i>	-0.036 (0.115)	-0.014 (0.446)	0.008 (0.621)	0.002 (0.822)	-0.015 (0.319)	-0.006 (0.553)	-0.028 (0.295)	-0.037 (0.194)
<i>SHARE1</i>	0.000 (0.349)	0.000 (0.340)	-0.000 (0.634)	0.000 (0.276)	0.000 (0.626)	0.000 (0.198)	0.000 (0.694)	0.000 (0.978)
<i>DUDONG</i>	-0.063 (0.588)	-0.074 (0.425)	0.010 (0.903)	0.043 (0.371)	-0.015 (0.847)	-0.006 (0.920)	-0.059 (0.670)	-0.055 (0.709)
<i>DUAL</i>	0.004 (0.815)	-0.001 (0.957)	-0.014 (0.262)	-0.008 (0.285)	-0.005 (0.689)	-0.004 (0.615)	0.001 (0.944)	-0.015 (0.510)
<i>ACOMITTEE</i>	0.020 (0.167)	0.017 (0.137)	-0.003 (0.725)	-0.007 (0.255)	0.007 (0.438)	0.004 (0.519)	0.021 (0.214)	0.015 (0.407)
<i>TRASHARE</i>	-0.052** (0.033)	-0.035* (0.066)	0.009 (0.624)	0.005 (0.664)	-0.026 (0.118)	-0.018 (0.120)	-0.048* (0.093)	-0.042 (0.163)
<i>IND</i>	0.028 (0.126)	0.036** (0.015)	-0.006 (0.647)	-0.009 (0.244)	0.011 (0.354)	0.013 (0.119)	0.023 (0.283)	0.012 (0.613)
<i>DEC14</i>					-0.047*** (0.000)	-0.029*** (0.000)		
Observations	52	52	52	52	104	104	52	52
Adj R ²	0.329	0.218	0.104	0.015	0.345	0.276	0.231	0.227

Note: (1) ***, **, and * indicate statistically significant levels of 1%, 5%, and 10%, respectively. (2) P value is reported in brackets. (3) *DEC14* is a dummy variable taking the value of 1 if the date is 14 December 2011 and 0 otherwise.

Table 8A CARs of Involved Companies and Their Industry Peers around 22 December 2011

Window	Involved companies		Industry peers		
	+/-	Mean	+/-	Mean	Median
CAR (0, 1)	2/0	0.005	33/23	0.002	0.003
CAR (0, 2)	2/0	0.001	32/24	0.003	0.004
CAR (0, 3)	1/1	-0.021	28/28	-0.001	0.001
CAR (0, 4)	1/1	-0.034	30/26	0.000	0.003
CAR (0, 5)	1/1	-0.045	29/27	-0.002	0.005

Note: (1) ***, **, and * indicate statistically significant levels of 1%, 5%, and 10%, respectively. (2) “+/-” is the ratio of the number of positive CARs to the number of negative CARs.

Table 8B Market Reaction to Event 3 for Industry Peers

Dependent Variable	CRET	
<i>C</i>	-0.001 (0.223)	-0.001 (0.225)
<i>EVENT3</i>	0.010*** (0.001)	
<i>EVENT1&2&3</i>		-0.005** (0.031)
<i>MRET</i>	1.068*** (0.000)	1.358*** (0.000)
Obs	60	60
Adj R ²	0.89	0.89

Note: (1) ***, **, and * indicate statistically significant levels of 1%, 5%, and 10%, respectively. (2) P value is reported in brackets. (3) *EVENT3* is a dummy variable, which equals 1 if the date is 22 December 2011 and 0 otherwise; *EVENT1&2&3* is also a dummy variable taking the value of 1 if the date is 14 December 2011, or 18 December 2011, or 22 December 2011 and 0 otherwise.

V. Analysis of Transmission Mechanisms of the Contagion Effect

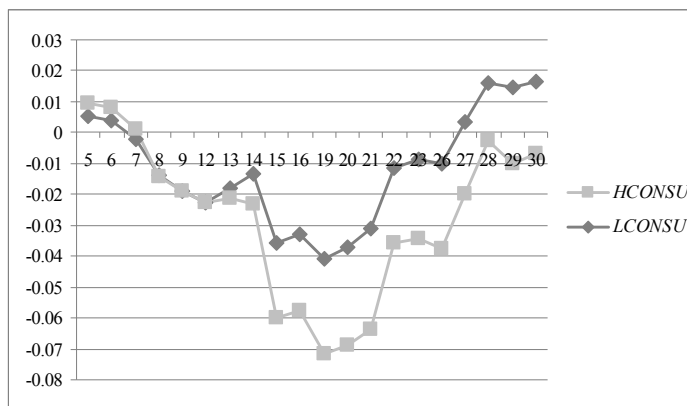
According to the theory of the contagion effect, negative news can play an information transfer role, causing investors to perceive that similar risks may exist in the companies they invested in. But what is the transmission mechanism of the contagion effect? Or, what kind of signals will trigger investors' reaction? The signal will affect investors' estimation of a company's value, thereby resulting in a contagion effect. Building on a recent well-publicised event involving high perks¹⁹ and previous academic research, we propose

¹⁹ According to a news report, the President of Gree Group (a Chinese state-owned enterprise), Zhou Shaoqiang, spent RMB37,517 on a dinner on 4 January 2003. The news aroused widespread concern in society. Source: People.cn, 6 February 2013, available at: <http://society.people.com.cn/n/2013/0206/c1008-20445384.html>.

“non-pecuniary compensation and monetary private benefits” as one such signal since both represent expropriation from shareholders. We expect that the higher preference for corruption is signalled, the stronger the subsequent contagion effect.

The executive power hypothesis suggests that the board of directors may be sidelined or affected by management (Bebchuk *et al.*, 2002). As such, there is room for management to seek rents such as non-pecuniary compensation²⁰ or hidden monetary private benefits through their power. These non-pecuniary compensation and monetary private benefits then lead to luxury lifestyles, meaning a higher likelihood of rent seeking and executive corruption in the future. Thus, non-pecuniary compensation or monetary private benefits could be a signal of a preference for corruption. Following Luo *et al.* (2011), we measure non-pecuniary compensation as the difference between management’s real consumption and their expected consumption, which is estimated on the basis of their income. As Figure 4 shows, *CARs* decrease more significantly in the group with a higher level of non-pecuniary compensation (*HCONSU*), suggesting that non-pecuniary compensation plays an information transmission role.

Figure 4 Non-Pecuniary Compensation and *CARs*



The regression results are reported in Table 9. These results show that *CARs* are negatively associated with the level of non-pecuniary compensation (*CONSU*), suggesting that non-pecuniary compensation exacerbates the contagion effect as it is perceived by investors as an indicator of the potential corruption tendency of executives in their invested companies. We further analyse the effect of non-pecuniary compensation in two subsamples: government-controlled and non-government-controlled companies. In NGCCs, executives are generally the large shareholders or their agents and therefore have less incentive for rent seeking and corruption. So we predict that the influence of non-pecuniary compensation on

²⁰ Chen *et al.* (2005) find that non-pecuniary compensation has become one of the most important ways for executives to obtain private benefits.

Table 9 Non-Pecuniary Compensation and the Contagion Effect

Dependent Variable	Event 1		Event 2		Events 1 and 2		Combined Event 1&2	
	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 4)	CAR (-4, 1)
<i>C</i>	-0.099 (0.394)	-0.029 (0.756)	-0.056 (0.501)	0.031 (0.534)	-0.070 (0.377)	0.003 (0.962)	-0.165 (0.243)	-0.136 (0.365)
<i>GOV</i>	-0.044*** (0.001)	-0.033*** (0.002)	-0.005 (0.673)	-0.001 (0.902)	-0.025*** (0.007)	-0.017*** (0.010)	-0.048*** (0.003)	-0.045*** (0.007)
<i>BIG4</i>	0.048** (0.019)	0.032** (0.042)	-0.013 (0.338)	0.002 (0.774)	0.014 (0.280)	0.015* (0.099)	0.033 (0.162)	0.037* (0.097)
<i>CONSU</i>	-0.304* (0.086)	-0.227* (0.096)	0.080 (0.511)	0.017 (0.814)	-0.094 (0.420)	-0.089 (0.285)	-0.251* (0.097)	-0.275 (0.223)
<i>SIZE</i>	0.005 (0.351)	0.002 (0.666)	0.003 (0.379)	-0.002 (0.433)	0.005 (0.182)	0.001 (0.840)	0.009 (0.168)	0.009 (0.209)
<i>LEV</i>	0.018 (0.539)	0.009 (0.693)	-0.037* (0.074)	-0.027** (0.033)	-0.011 (0.558)	-0.010 (0.454)	-0.019 (0.580)	-0.050 (0.186)
<i>ROA</i>	-0.116 (0.228)	-0.066 (0.383)	-0.070 (0.305)	-0.072* (0.083)	-0.102 (0.116)	-0.077* (0.100)	-0.163 (0.160)	-0.171 (0.168)
<i>GROW</i>	-0.042* (0.062)	-0.018 (0.300)	0.009 (0.552)	0.002 (0.796)	-0.017 (0.264)	-0.008 (0.444)	-0.033 (0.218)	-0.043 (0.137)
<i>SHARE1</i>	0.000 (0.292)	0.000 (0.289)	-0.000 (0.615)	0.000 (0.287)	0.000 (0.598)	0.000 (0.180)	0.000 (0.646)	0.000 (0.925)
<i>DUDONG</i>	-0.099 (0.392)	-0.101 (0.275)	0.018 (0.824)	0.045 (0.363)	-0.025 (0.748)	-0.015 (0.784)	-0.088 (0.526)	-0.088 (0.556)
<i>DUAL</i>	0.006 (0.722)	0.001 (0.957)	-0.014 (0.250)	-0.008 (0.285)	-0.004 (0.729)	-0.004 (0.664)	0.003 (0.881)	-0.013 (0.561)
<i>ACOMITTEE</i>	0.022 (0.127)	0.018 (0.105)	-0.004 (0.703)	-0.007 (0.256)	0.008 (0.414)	0.005 (0.482)	0.023 (0.186)	0.017 (0.361)
<i>TRASHARE</i>	-0.047** (0.049)	-0.032* (0.093)	0.008 (0.689)	0.005 (0.692)	-0.024 (0.145)	-0.017 (0.156)	-0.044 (0.124)	-0.038 (0.210)
<i>IND</i>	0.029 (0.103)	0.037** (0.012)	-0.006 (0.642)	-0.009 (0.248)	0.011 (0.345)	0.014 (0.112)	0.024 (0.261)	0.013 (0.579)
<i>DEC14</i>					-0.047*** (0.000)	-0.029*** (0.000)		
Observations	52	52	52	52	104	104	52	52
Adj R ²	0.364	0.251	0.121	0.040	0.343	0.278	0.240	0.237

Note: (1) ***, **, and * indicate statistically significant levels of 1%, 5%, and 10%, respectively. (2) P value is reported in brackets. (3) *DEC14* is a dummy variable which equals 1 if the date is 14 December 2011 and 0 otherwise.

the contagion effect will be stronger in GCCs than in NGCCs. Consistent with this prediction, as shown in Table 10, the coefficient for non-pecuniary compensation (*CONSU*) is negative but insignificant. However, the coefficient for the product of non-pecuniary compensation and government control (*GOV*×*CONSU*) is negative and significant.

Table 10 Non-Pecuniary Compensation, Government Control, and the Contagion Effect

Dependent Variable	Event 1		Event 2		Events 1 and 2		Combined Event 1&2	
	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 4)	CAR (-4, 1)
<i>C</i>	-0.084 (0.471)	-0.018 (0.848)	-0.047 (0.570)	0.032 (0.532)	-0.058 (0.464)	0.008 (0.889)	-0.145 (0.305)	-0.119 (0.432)
<i>GOV</i>	-0.047*** (0.001)	-0.035*** (0.001)	-0.007 (0.526)	-0.001 (0.884)	-0.028*** (0.003)	-0.018*** (0.007)	-0.052*** (0.002)	-0.049*** (0.005)
<i>BIG4</i>	0.048** (0.018)	0.033** (0.040)	-0.013 (0.339)	0.002 (0.776)	0.015 (0.266)	0.015* (0.099)	0.034 (0.151)	0.038 (0.141)
<i>CONSU</i>	-0.229 (0.221)	-0.173 (0.246)	0.132 (0.299)	0.021 (0.786)	-0.027 (0.824)	-0.061 (0.492)	-0.150 (0.500)	-0.190 (0.431)
<i>GOV*CONSU</i>	-0.469* (0.094)	-0.338* (0.093)	-0.408 (0.203)	-0.030 (0.875)	-0.462* (0.093)	-0.196 (0.347)	-0.631 (0.212)	-0.538* (0.092)
<i>SIZE</i>	0.004 (0.427)	0.001 (0.760)	0.003 (0.432)	-0.002 (0.433)	0.004 (0.236)	0.000 (0.913)	0.008 (0.219)	0.008 (0.259)
<i>LEV</i>	0.015 (0.607)	0.007 (0.762)	-0.035* (0.092)	-0.027** (0.037)	-0.012 (0.552)	-0.010 (0.453)	-0.023 (0.504)	-0.053 (0.161)
<i>ROA</i>	-0.092 (0.347)	-0.049 (0.526)	-0.046 (0.515)	-0.070 (0.108)	-0.077 (0.245)	-0.066 (0.169)	-0.131 (0.265)	-0.144 (0.256)
<i>GROW</i>	-0.044* (0.051)	-0.020 (0.263)	0.007 (0.677)	0.002 (0.817)	-0.019 (0.196)	-0.009 (0.387)	-0.036 (0.180)	-0.046 (0.118)
<i>SHARE1</i>	0.000 (0.287)	0.000 (0.286)	-0.000 (0.541)	0.000 (0.301)	0.000 (0.635)	0.000 (0.191)	0.000 (0.637)	0.000 (0.920)
<i>DUDONG</i>	-0.102 (0.377)	-0.103 (0.266)	0.009 (0.913)	0.044 (0.379)	-0.032 (0.683)	-0.018 (0.746)	-0.092 (0.505)	-0.091 (0.542)
<i>DUAL</i>	0.007 (0.706)	0.001 (0.943)	-0.014 (0.261)	-0.008 (0.294)	-0.004 (0.755)	-0.003 (0.681)	0.004 (0.862)	-0.013 (0.573)
<i>ACOMITTEE</i>	0.021 (0.144)	0.018 (0.119)	-0.005 (0.626)	-0.007 (0.259)	0.007 (0.478)	0.004 (0.526)	0.021 (0.209)	0.015 (0.395)
<i>TRASHARE</i>	-0.046* (0.055)	-0.031 (0.104)	0.009 (0.624)	0.005 (0.688)	-0.023 (0.168)	-0.016 (0.172)	-0.042 (0.139)	-0.036 (0.231)
<i>IND</i>	0.032* (0.074)	0.039*** (0.008)	-0.005 (0.712)	-0.009 (0.261)	0.014 (0.256)	0.015* (0.092)	0.028 (0.189)	0.016 (0.481)
<i>DEC14</i>					-0.048*** (0.000)	-0.029*** (0.000)		
Observations	52	52	52	52	104	104	52	52
Adj R ²	0.368	0.252	0.101	0.067	0.354	0.277	0.252	0.238

Note: (1) ***, **, and * indicate statistically significant levels of 1%, 5%, and 10%, respectively. (2) P value is reported in brackets. (3) *DEC14* is a dummy variable which equals 1 if the date is 14 December 2011 and 0 otherwise.

These findings suggest that non-pecuniary compensation signals the risk of potential

executive corruption, thereby exacerbating negative contagion effects, especially in GCCs. In order to test the robustness of the above results, we also use executives' monetary private benefits to conduct the above tests. Following Firth *et al.* (2006), Core *et al.* (2008), and Quan *et al.* (2010), monetary private benefits are measured as executives' abnormal pay. Similar results are found.

VI. Further Analysis and Robustness Test

6.1 Further Analysis

6.1.1 The effect of earnings quality

Fan *et al.* (2014) find that earnings quality is lower in companies that are connected with corrupt officials. Corrupt officials are consistently found to have an incentive to manipulate earnings to hide the private benefits they have obtained (Leuz *et al.*, 2003). Thus, the question is whether this kind of earnings manipulation alters the expectation of investors regarding firms' prospects. Therefore, in this study, we control for earnings management, which is measured as discretionary accruals. The results are presented in Table 11. In general, similar results are found, although no significant effect from discretionary accruals (*DA*) is found. In addition, we also use the absolute value of *DA* in the regression model and find results (not reported herein) consistent with those in Table 11. This suggests that the contagion effect is not affected by, or formed through, earnings management.

6.1.2 The effect of financial restatement

Using US data, Gleason *et al.* (2008) find that financial restatement will cause a contagion effect on companies in the same industry. Thus, our results may be affected by financial restatements. If this is true, the share prices of the peer companies that restated their financial reports of 2011 are expected to decline more dramatically than those of the non-restating peers. To test this possibility, we add a dummy variable *FR*, which takes the value of 1 if the company restated its financial report in 2011 and 0 otherwise, into the regression model. The results are shown in Table 12. The main results remain the same, and no significant effect of financial restatement is found.

6.2 Robustness Test

The following tests are conducted to prove the robustness of the previous results:

1. We recalculate *CARs* with adjustment for market returns and rerun the regressions. The results remain unchanged.
2. We also consider the influence of the extent as well as the means of government control on the contagion effect. Firstly, the dummy variable government control

Table 11 Regression Analysis with Control for Earnings Quality

Dependent Variable	Event 1		Event 2		Events 1 and 2		Combined Event 1&2	
	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 4)	CAR (-4, 1)
<i>C</i>	-0.118 (0.313)	-0.037 (0.681)	-0.002 (0.983)	0.044 (0.375)	-0.049 (0.523)	0.010 (0.856)	-0.138 (0.288)	-0.124 (0.390)
<i>GOV</i>	-0.035** (0.010)	-0.025** (0.017)	0.002 (0.865)	0.001 (0.863)	-0.018** (0.047)	-0.012* (0.065)	-0.035** (0.018)	-0.033** (0.044)
<i>BIG4</i>	0.055*** (0.009)	0.039** (0.016)	-0.009 (0.471)	0.004 (0.657)	0.020 (0.131)	0.019** (0.041)	0.044* (0.054)	0.047* (0.062)
<i>SIZE</i>	0.004 (0.435)	0.001 (0.832)	-0.000 (0.959)	-0.003 (0.270)	0.003 (0.455)	-0.001 (0.850)	0.005 (0.416)	0.006 (0.402)
<i>LEV</i>	0.018 (0.549)	0.008 (0.712)	-0.035* (0.068)	-0.027** (0.033)	-0.010 (0.591)	-0.011 (0.439)	-0.017 (0.604)	-0.049 (0.183)
<i>ROA</i>	-0.143 (0.159)	-0.094 (0.229)	-0.060 (0.360)	-0.075* (0.082)	-0.111* (0.093)	-0.091* (0.054)	-0.181 (0.109)	-0.198 (0.114)
<i>GROW</i>	-0.033 (0.155)	-0.010 (0.552)	0.003 (0.820)	0.002 (0.839)	-0.015 (0.304)	-0.005 (0.656)	-0.030 (0.234)	-0.037 (0.191)
<i>SHARE1</i>	0.001 (0.242)	0.000 (0.205)	0.000 (0.742)	0.000 (0.200)	0.000 (0.287)	0.000 (0.103)	0.001 (0.238)	0.000 (0.564)
<i>DUDONG</i>	-0.056 (0.629)	-0.067 (0.458)	0.015 (0.838)	0.043 (0.372)	-0.008 (0.914)	-0.003 (0.959)	-0.037 (0.771)	-0.038 (0.790)
<i>DUAL</i>	0.004 (0.823)	-0.001 (0.941)	-0.015 (0.188)	-0.008 (0.277)	-0.005 (0.635)	-0.005 (0.585)	-0.000 (0.993)	-0.016 (0.461)
<i>ACOMITTEE</i>	0.020 (0.190)	0.017 (0.153)	-0.011 (0.257)	-0.008 (0.221)	0.004 (0.718)	0.004 (0.580)	0.012 (0.481)	0.009 (0.620)
<i>TRASHARE</i>	-0.036 (0.172)	-0.020 (0.327)	0.032 (0.110)	0.011 (0.398)	-0.007 (0.686)	-0.007 (0.572)	-0.012 (0.690)	-0.012 (0.719)
<i>IND</i>	0.024 (0.207)	0.032** (0.032)	-0.015 (0.219)	-0.011 (0.177)	0.004 (0.713)	0.010 (0.236)	0.009 (0.669)	0.000 (0.987)
<i>DA</i>	0.035 (0.539)	0.034 (0.438)	0.102*** (0.008)	0.019 (0.417)	0.066* (0.075)	0.026 (0.328)	0.149** (0.021)	0.110 (0.118)
<i>DEC14</i>					-0.049*** (0.000)	-0.030*** (0.000)		
Observations	51	51	51	51	102	102	51	51
Adj R ²	0.333	0.235	0.061	0.021	0.374	0.306	0.326	0.267

Note: (1) ***, **, and * indicate statistically significant levels of 1%, 5%, and 10%, respectively. (2) P value is reported in brackets. (3) *DEC14* is a dummy variable which equals 1 if the date is 14 December 2011 and 0 otherwise.

Table 12 Regression Analysis with Control for Financial Restatement

Dependent Variable	Event 1		Event 2		Events 1 and 2		Combined Event 1&2	
	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 1)	CAR (0, 1)	CAR (-1, 4)	CAR (-4, 1)
<i>C</i>	-0.159 (0.194)	-0.100 (0.284)	-0.030 (0.715)	0.036 (0.470)	-0.084 (0.295)	-0.028 (0.624)	-0.195 (0.177)	-0.189 (0.222)
<i>GOV</i>	-0.040*** (0.003)	-0.031*** (0.003)	-0.004 (0.674)	-0.001 (0.902)	-0.024*** (0.009)	-0.016** (0.011)	-0.045*** (0.005)	-0.042** (0.013)
<i>BIG4</i>	0.048** (0.024)	0.029* (0.076)	-0.012 (0.395)	0.003 (0.756)	0.015 (0.160)	0.013* (0.096)	0.037* (0.094)	0.038* (0.095)
<i>SIZE</i>	0.007 (0.217)	0.005 (0.298)	0.002 (0.537)	-0.002 (0.391)	0.005 (0.154)	0.002 (0.520)	0.010 (0.145)	0.011 (0.146)
<i>LEV</i>	0.022 (0.473)	0.014 (0.532)	-0.039* (0.059)	-0.027** (0.030)	-0.010 (0.596)	-0.008 (0.571)	-0.018 (0.616)	-0.046 (0.226)
<i>ROA</i>	-0.109 (0.273)	-0.074 (0.329)	-0.067 (0.331)	-0.072* (0.088)	-0.098 (0.134)	-0.081* (0.083)	-0.149 (0.208)	-0.165 (0.194)
<i>GROW</i>	-0.034 (0.148)	-0.008 (0.655)	0.006 (0.725)	0.002 (0.863)	-0.015 (0.332)	-0.004 (0.735)	-0.029 (0.292)	-0.035 (0.228)
<i>SHARE1</i>	0.000 (0.359)	0.000 (0.347)	-0.000 (0.645)	0.000 (0.280)	0.000 (0.628)	0.000 (0.206)	0.000 (0.695)	0.000 (0.984)
<i>DUDONG</i>	-0.058 (0.626)	-0.059 (0.516)	0.004 (0.963)	0.042 (0.393)	-0.015 (0.850)	0.002 (0.975)	-0.062 (0.661)	-0.051 (0.736)
<i>DUAL</i>	0.006 (0.746)	0.004 (0.770)	-0.016 (0.218)	-0.008 (0.279)	-0.005 (0.700)	-0.002 (0.820)	0.001 (0.979)	-0.013 (0.565)
<i>ACOMITTEE</i>	0.018 (0.225)	0.012 (0.286)	-0.002 (0.872)	-0.006 (0.303)	0.007 (0.459)	0.002 (0.765)	0.022 (0.215)	0.014 (0.473)
<i>TRASHARE</i>	-0.052** (0.034)	-0.036* (0.053)	0.010 (0.601)	0.005 (0.659)	-0.026 (0.120)	-0.019 (0.107)	-0.048* (0.099)	-0.043 (0.165)
<i>IND</i>	0.026 (0.168)	0.031** (0.037)	-0.004 (0.769)	-0.008 (0.283)	0.011 (0.371)	0.011 (0.212)	0.024 (0.280)	0.010 (0.675)
<i>FR</i>	-0.010 (0.633)	-0.027* (0.094)	0.010 (0.484)	0.002 (0.810)	-0.000 (0.982)	-0.013 (0.189)	0.005 (0.835)	-0.008 (0.754)
<i>DEC14</i>					-0.047*** (0.000)	-0.029*** (0.000)		
Observations	52	52	52	52	104	104	52	52
Adj R ²	0.316	0.255	0.119	0.040	0.338	0.282	0.212	0.209

Note: (1) ***, **, and * indicate statistically significant levels of 1%, 5%, and 10%, respectively. (2) P value is reported in brackets. (3) *DEC14* is a dummy variable which equals 1 if the date is 14 December 2011 and 0 otherwise.

(*GOV*) is replaced by a continuous variable (the percentage of shares held by the government). Similar results are found. Secondly, we add a variable, namely the number of layers in the pyramid hierarchy of companies (*STOREY*), into the multiple regression analysis. As the pyramid hierarchy lengthens the agent chain, transforming government control from direct to indirect control, it may weaken the government's impact on top executives' behaviour. No significant impact from the pyramid is found. In addition, we distinguish controls by a local government from those by the central government. Because there are only seven companies that are controlled by the central government in our sample, we exclude them. The subsample now consists of local government-controlled and non-government-controlled firms only. The results remain unchanged.

3. Using a local Big Ten auditor as an alternative measure for international big auditors, we rerun the above regressions. No significant effect of auditors is found.
4. We include institutional investors (*INSTITUTION*) and the average stock returns for the past three years as additional controls and get indifferent main results.
5. We divide the sample into government-controlled and non-government-controlled firms and international Big-Four auditor and non-Big-Four auditor subsamples. Then we rerun the regressions in Tables 7, 8, and 9; the results in general remain the same. If we restrict the sample to the coal mining industry only,²¹ similar but more significant results are found.
6. We vary the length of the event windows and find that the main results are insensitive to this variation.
7. To test whether the governance environment has an impact on the contagion effect, we include the marketisation index, the government-market relationship index, and the legal environment index (Fang *et al.*, 2010) as control variables in the regressions in Tables 7, 9, and 10, and we find that the main results are unaffected. None of the indexes has a significant influence on the contagion effect.
8. We test all of the regressions in this paper for heteroscedasticity and supporting results are found. But using regressions with adjustment for heteroscedasticity, we find that the main results are indifferent.
9. Lastly, we extend the sample into the whole energy industry: no contagion effect is found.

VII. Conclusions and Limitations

By studying a recent executive corruption case in China (the Bai Peizhong case), which

²¹ This is because the number of company observations in the petrochemical plastics industry is too small to conduct an analysis.

was initially exposed by a theft and later blocked by the local security department but finally became widely known on the Internet, this paper first examines the contagion effect of executive corruption as well as its determinants and transmission mechanism. Specifically, we investigate the following questions in this paper:

(1) Does executive corruption produce a negative contagion effect on industry peer companies?

(2) Can government control and external governance mechanisms moderate the above contagion effect?

(3) Does the market play an effective governance role in this case? If it does, the subsequent dismissal of Bai Peizhong would have restrained the stock price decline in both the involved companies and their industry peers;

(4) Do non-pecuniary compensation and monetary private benefits signal a high risk of executive corruption?

We find that (1) the stock prices of the involved companies and their industry peer companies declined in response to the disclosure of the Bai Peizhong corruption case; (2) government control exacerbates the negative contagion effect, while international Big-Four auditors can attenuate its influence; (3) when the government was forced to dismiss Bai Peizhong from his post, the market reacted positively; and (4) non-pecuniary compensation and monetary private benefits do signal the risk of executive corruption. In addition, we also find that the above results are not subject to earnings management or financial statements.

This study has the following implications for public policy: First, web media exposure can force an inefficient official anti-corruption mechanism to work actively and efficiently, thereby enhancing the public's confidence in the government. Second, compared with the existing anti-corruption mechanisms, the Internet is a low-cost but effective means for combatting corruption. This paper is limited by the small size of the sample.

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