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## 大股东的社会性负担与资金占用

### ——基于国有企业改制上市的经验研究\*

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#### 摘要

基于国有企业改制上市的制度背景, 本文从缓解社会性负担压力的动机角度, 研究了大股东(集团)社会性负担对其占用上市公司资金的影响。经验证据表明, 上市时, 大股东承担的社会性负担越多, 大股东在上市后三年中非经营性占用上市公司资金的概率越高且占用资金规模越大, 而经营性占用资金与大股东集团社会性负担无关。本文首次从社会性负担角度探讨了国有大股东侵占上市公司的动机, 为国有企业整体改制上市提供了新的证据支持。

关键词: 社会性负担、资金占用、国企改制

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## 一、引言

在股权高度集中的中国股票市场中，上市公司不仅面临发达市场中的典型代理问题——经理人员代理问题，而且面临更为严重的大股东<sup>3</sup>代理问题。大股东通过关联交易侵占上市公司是大股东代理问题的最直接表现，其中大股东占用上市公司资金一度成为我国股票市场的普遍现象，严重阻碍了上市公司健康、持续发展，影响了资本市场诚信建设。尽管在监管当局大力治理和严厉监管下，<sup>4</sup>上市公司被占用资金于2007年前后基本得到清理，但大股东通过占用资金或其他更加隐蔽的方式侵占上市公司的现象仍然存在。<sup>5</sup>大股东侵占问题也成为近年来我国公司治理研究的热点之一。例如，李增泉等(2004)是国内较早研究大股东占用上市公司资金问题的文献，发现大股东占用资金与上市公司的股权结构、大股东性质和组织形式有关；唐清泉等(2005)以大股东关联交易、占用资金等行为为对象，研究了股权结构对大股东侵占行为的影响。已有文献大多集中于股权结构等内部治理机制对大股东占用资金的影响，解释的主要是大股东侵占能力问题，而对大股东为什么要侵占上市公司即侵占动机问题则涉及很少。由于侵占是一种违法行为，存在被处罚成本，如果说民营大股东的终极所有者存在强烈的占为“己”有的利益驱动，那么国有大股东的代理人即高管人员<sup>6</sup>这种利益驱动要弱很多，因为国有大股东高管并不能像民营企业所有者那样将侵占所得纳入自己囊中。因此，国有大股东的侵占动机较民营大股东更为复杂。我们认为，除了为侵占而侵占动机，国有大股东侵占上市公司可能只是一种简单的“输血”解困行为。国有上市公司绝大多数是由原国有企业改制而来，由于历史原因，国有企业承担了大量的社会职能，改制上市的任务之一是把原国有企业的社会性负担剥离出来，部分资产(通常是优质资产)注入上市公司，剩余资产(包括非经营性资产)和社会性负担留在作为上市公司控股股东的国有企业(集团)。因此，当国有控股股东自生能力不足时，上市公司向大股东“输血”解困就成为一件自然而然的事情。邓建平等(2007)通过对国有上市公司的改制方式进行分类，发现与完整改造公司相比，非完整改造公司的控股股东(集团)更容易发生占用上市公司资金的问题，且净占用程度更高。该文首次从上市公司的“出身”这一崭新视角解释了大股东占用上市公司资金的动机，不足之处在于作者对“完整”与“非完整”改造的划分存在较大的主观性，况且改造的形式也未必代表国有控股股东社会性负担的轻重。比如，非完整改造的上市公司控股股东未必面临更重的社会性负担和自生能力问题，这取决于改制前原国有企业的初始状态。此外，72%以上的国有控股上市公司是由

<sup>3</sup> 除特别说明，本文“大股东”、“控股股东”均指公司第一大股东；当表述“大股东”掏空(／侵占)上市公司或占用上市公司资金时，若未特别说明，“大股东”是指公司第一大股东及其控制的其他关联企业，即“大股东集团”。

<sup>4</sup> 涉及占用资金清理的规范性文件主要有《关于规范上市公司与关联方资金往来及上市公司对外担保若干问题的通知》(证监发[2003]56号)、《国务院批转证监会关于提高上市公司质量意见的通知》(国发[2005]34号)、《关于进一步做好清理大股东占用上市公司资金工作的通知》(证监发[2006]128号)。

<sup>5</sup> 2008年6月13日证监会对中捷股份、九发股份两家上市公司大股东违法占用资金开出罚单。随后，中国证监会召开证监会系统视频会议，副主席范福春在会上表示，要加大对大股东违法占用、挪用上市公司资金行为的查处，防止反弹，切实保障上市公司和广大投资者合法权益不受侵害。

<sup>6</sup> 从实际控制权角度来看，民营大股东的实际控制人是民营企业家，国有大股东的实际控制人是本级或上级国有企业高管人员。

## 大股东的社会性负担与资金占用

原国有企业分拆而来(刘兴强、段西军, 2006), 即绝大多数公司是经非完整改造上市的, 邓建平等(2007)未能解释该类公司之间存在的大股东占用资金差异。有鉴于此, 本文从大股东(集团)因承担社会性负担而面临经营压力(包括资金短缺)的角度, 解释其占用上市公司资金的行为。

以超额雇员规模作为社会性负担代理变量, 以上市后的三个会计年度(上市后第1年、第2年和第3年, 不包括上市当年)为视窗, 本文研究发现, 国有大股东(集团)面临的社会性负担越重, 大股东非经营性占用上市公司资金问题越严重, 而大股东经营性占用上市公司资金的程度与其社会性负担无关。

本文对现有文献的贡献主要包含三个方面: 首先, 立足国有企业承担社会职能这一特殊制度背景, 从大股东(集团)缓解社会性负担压力的动机角度, 为国有大股东占用特别是非经营性占用上市公司资金提供新的解释; 其次, 已有文献要么不区分大股东占用资金性质—经营性占用还是非经营性占用, 要么直接以会计报表项目“其他应收款”度量大股东的非经营性占用资金, 本文采用公司年报披露的大股东占用资金信息, 将资金占用划分为经营性占用(即正常占用)与非经营性占用(即非正常占用)分别检验, 弥补了已有文献分析方法的不足; 最后, 在样本选择上, 已有文献绝大多数使用多期截面数据, 不同截面样本量不稳定, 且未考虑控制权变更等重大事件的影响, 本文观测窗口统一为上市后的三个会计年度, 且所有样本均要求在上市后的三年内未发生控制权变更, 样本的“干净”使得研究结论更具说服力。

本文后续部分安排如下: 第二部分对相关文献进行综述, 第三部分介绍制度背景并提出研究假说, 第四部分是研究设计, 第五部分进行实证检验, 最后是研究结论。此外, 本文附录了一个大股东占用上市公司资金的案例分析。

## 二、文献综述

“侵占(tunnelling)”一词最早由Johnson *et al.* (2000)提出, 并定义为公司控制者出于私利将公司资产、利润转移出公司的行为。Johnson *et al.* (2000)将侵占行为分为非法侵占和合法侵占两类, 其中非法侵占指直接的偷盗和欺骗行为, 而合法侵占形式多样, 包括控股股东篡夺公司投资机会、制订有利于控股股东的转移价格、以非市场价格转移公司资产、为控股股东贷款提供资产抵押等; 非法侵占行为较多存在于法律环境较差的新兴市场中, 而合法侵占行为即使在投资者法律保护较好的发达市场中也普遍存在。近年来, 小股东利益侵占问题成为公司治理研究的一个热点。LLSV (2000a)发现在中小投资者法律保护弱的成文法国家, 公司Tobin's Q显著低于普通法国家的公司, 印证了在投资者法律保护差的市场中, 大股东侵占小股东利益问题更加严重。以大股东现金流量权与控制权分离程度作为大股东侵占小股东利益代理变量, Claessens, Djankov, Fan, and Lang (2002)发现在东南亚市场中, 公司市净率与控股股东的现金流量权比例显著正相关, 但与大股东的现金流量权与控制权分离程度显著负相关; Joh (2003)也发现韩国企业的盈利能力与大股东现金流量权与控制权分离程度显著负相关。LLSV (2000b)以股利支付作为大股东侵占代理变量, 发现小股东法律保护弱的国家企业支付的现金股利少, 因为投资者没有法律渠道迫使企业支付更高的股利。以上研究都是对大股东侵占小股东利益的间接检验, 而后来的文献开始为大股东侵占行为寻找直接证据。例如, Baek, Kang, and Lee

(2006)发现在韩国集团内部,公司之间私募发行权益性证券被用作大股东侵占其小股东的一种手段,即在集团内部私募发行时,集团发行方会制定一个对其大股东有利的价格。而在智利,董事薪酬被用作集团大股东侵占其他股东的另一种手段,Francisco(2009)发现当实际控制人任职于附属于集团的上市公司董事会时,实际控制人在上市公司的现金流量权越小,董事长和董事会成员的薪酬越高,而他们的薪酬与会计业绩无关。即集团控制人通过董事长和董事薪酬来侵占上市公司。印度的企业集团则通过各种非经常性损益将利润从集团持股现金流量权低的公司转移到集团持股现金流量权高的企业(Bertrand, Mehta, and Mullainathan, 2002)。在香港,大股东与上市公司的掠夺性关联交易(即资产买卖、股权发售、商品交易,资金提供)使上市公司股东财富发生了显著的大幅缩水,且股东财富损失与大股东持股比例正相关,与公司信息披露质量和审计委员会的设立负相关(Cheung, Rau, and Stouraitis, 2006)。这些研究表明在股权集中度高的市场中,大股东侵占小股东现象普遍存在;大股东侵占能力越强、收益越高,侵占问题越严重。

中国证券市场是一个转型经济中的新兴市场,上市公司大多由国有企业改制而来,股权高度集中与国有控股占主体使得其大股东代理问题不仅与股权分散的发达市场不同,而且有别于股权集中、私人控股的其他新兴市场。由于上市公司绝大多数是由原国有企业改制、分立而来,上市公司与大股东在业务、财务和人事上并未真正分开,关联交易现象普遍发生而且交易频度高、规模大。虽然通过关联交易,大股东既可以侵占上市公司,也可以补贴上市公司(Peng, Wei, and Yang, 2006),但总体而言,大股东通过关联交易从中国上市公司侵占的利益要大于其输入的利益(Cheung *et al.*, 2009)。Berkman, Cole, and Fu(2008)以公司关联交易规模作为公司治理质量的反向代理变量,选择中国证监会2000年三项关于规范关联交易的政策出台为观测事件,发现在新政策出台窗口期间,治理差的公司的非正常回报显著高于治理好的公司。该文还发现,与政府关系密切的企业并不能从这三项新政策受益,意味着小股东预期监管者并不能将新政策在大股东政治关系强的企业实施以保护小股东利益。Cheung *et al.*(2005)也发现,中国上市公司的国有股权比例与关联交易公告的非正常回报呈负相关关系,且中小股东在上市公司与国有股东发生关联交易中遭遇的非常损失要显著大于与非国有股东发生的关联交易。他们从Shleifer and Vishny(1994)政府“掠夺之手”理论解释了国有控股股东的这种利益侵占行为。除了一般的关联交易外,现金股利被认为是一种特殊的侵占手段。例如, Lee and Xiao(2004)发现中国国有控股的上市公司更倾向于发放现金股利而放弃配股认购,认为现金股利变成非流通国有股东侵占外部股东的一种手段;马曙光等(2005)也表明现金股利和资金侵占同是大股东实现其股权价值最大化的手段,两者之间存在替代关系。这些研究表明,关联交易归根结底是大股东侵占上市公司利益的一种手段,而且政府作为终极控股人的存在加剧了对小股东利益侵占。因此,后来的研究更多转向试图揭示关联交易的影响因素或规律,如什么样的大股东更可能侵占或怎样侵占上市公司等问题。陈晓、王琨(2005)发现股权制衡型公司关联交易的规模和频率要显著小于“一股独大”公司,即大股东控制能力越强越会与上市公司发生关联交易。唐清泉等(2005)也发现制衡型股权结构能抑制关联交易的发生。

近年来,大股东占用上市公司资金现象严重,且与其他类型的关联交易(如

商品买卖、资产购售、股权转让等)难以直接判断是否侵占中小股东利益的情形不同,大股东占用资金是最明显的侵占上市公司行为,因而资金占用问题被作为关联交易的一个专题,得到深入研究。诸多文献证明大股东占用资金对上市公司产生了显著的负面影响。例如,Jiang, Lee, and Yue (2010)发现,大股东占用资金越严重,上市公司未来的经营业绩越差,被特别处理即ST的概率越大,且公司股票收益率越低;邓建平等(2007)、Cheng and Chen (2006)等研究已发现资金占用对上市公司绩效产生了显著的负面影响。<sup>7</sup> 占用资金是大股东侵占上市公司利益的一种手段,实业界和学术界对此均无异议。因此,研究者更加感兴趣的是什么因素导致了大股东占用资金的发生与否,或者占用程度的大小。现有文献大多从公司治理特别是股权结构的角度探讨了不同公司之间大股东占用资金的差异。李增泉等(2004)较早对我国大股东占用资金问题进行大样本研究,以2000-2003年A股上市公司为对象,研究发现大股东占用上市公司资金与第一大股东持股比例之间存在先上升后下降的非线性关系,而与第二至第五大股东持股比例显著负相关;另外,国有控制公司大股东占用的资金高于非国有控制公司,通过企业集团控制的国有控股公司大股东占用的资金高于其他国有控股公司。王俊秋(2006)以2001-2002年公司为样本,得到与李增泉等(2004)相同的结论。与李增泉等(2004)的结论有所不同,唐清泉等(2005)对2001-2003年上市公司研究发现,无论第一大股东持股比例是否超过50%,第一大股东持股比例与其占用资金都显著正相关;但同样发现第二、三大股东持股比例的提高对大股东占用资金有抑制作用。除了股权结构、大股东组织形式外,一些研究考察了机构投资者、独立董事等其他治理机制对大股东占用资金行为的影响。唐清泉等(2005)发现机构投资者对抑制大股东占用资金有负面影响,即当公司第二大股东为机构投资者时,大股东占用资金显著多于第二大股东为非机构投资者的公司;但王琨、肖星(2005)发现前十大股东中机构投资者的存在及其持股比例的增加,显著降低了上市公司被关联方占用资金的程度。造成结论相反的原因除了样本区间不同,两文占用资金主体的定义也不同,唐清泉等(2005)的资金占用主体仅为大股东,而王琨、肖星(2005)的资金占用主体是所有关联方。结论的矛盾也在一定程度上表明机构投资者在抑制大股东占用资金方面的作用具有不确定性。此外,有研究发现独立董事不能有效抑制大股东占用资金行为(唐清泉等,2005;王俊秋,2006);而上市公司关键管理人员在大股东兼职加重了大股东对上市公司资金的占用程度(王俊秋,2006),这进一步表明大股东对上市公司的控制程度越强,越可能占用上市公司资金。

前述文献均以上市公司年度报告披露的大股东净占用上市公司资金为研究对象,而不少文献采用简化处理,即以上市公司年末“其他应收款”作为大股东占用上市公司资金的代理变量,研究了大股东占用资金问题。部分研究结论与前述文献一致,如黎来芳等(2008)发现集团控制形式加剧了大股东占用资金的程度,制衡型股权结构可以抑制大股东占用资金;Jiang, Lee, and Yue (2010)发现大股东持股比例越

<sup>7</sup> 大股东占用资金不仅影响了上市公司新增投资机会,甚至影响其正常的营运资金需求,对公司经营业绩产生直接负面影响。大股东占用上市公司资金后通常以非现金方式来清偿欠款,并且支付远低于市场利率的资金占用费用,是侵占上市公司中小股东利益的直接表现。如吴惠玉(2007)发现截止2005年9月31日,沪深两市发生了资金占用清欠活动的316家上市公司中,大股东用现金清偿仅占全部清偿金额的41%,并且大股东资金占用资金越多越会用非现金方式清偿其占用上市公司资金。

高，其占用上市公司资金越严重，但政府直接控股可以降低大股东占用资金程度；游家兴、罗胜强(2007)表明大股东代理问题越严重即现金流量权与控股权分离越严重，公司大股东的侵占行为越严重。但部分研究得到与前述文献相反结论，如有研究发现非国有控股公司大股东占用资金显著多于国有控股公司(马曙光等，2005；黎来芳等，2008)；大股东持股比例越高，大股东占用资金规模越小(黎来芳等，2008)。这些结论的矛盾可能与资金占用度量方法的差异有关。不过，本文认为，以“其他应收款”作为大股东占用资金的代理变量的做法存在的噪音不容忽视，王琨、肖星(2005)统计结果显示，大股东以外的其他关联方和非关联方占用的资金构成上市公司被占用资金总额的重要组成部分；此外，简化替代的做法也未考虑上市公司可能占用大股东资金的情况。

在众多研究文献中，邓建平(2007)是少有的一篇跳出传统的内部治理视角，从国有控股上市公司的出身背景入手研究大股东占用资金的论文。该文发现与完整改造公司相比，非完整改造公司的控股股东集团更容易发生净占用上市公司资金的问题，且净占用的程度更高。这表明当上市公司经原国有企业非完整改制而来时，大股东占用资金可能仅仅是用来帮助自生能力不足的原国有企业的未上市实体解决燃眉之急。然而，正如引言指出，由于我国国有控股公司大多是非完整改制而来，邓建平(2007)不能解释该类公司之间的大股东占用资金差异。国有控股上市公司特殊的出身背景，使得其仍然带有国有企业兼具社会职能的烙印。如曾庆生、陈信元(2006)发现，与民营控股上市公司，国有控股上市公司存在超额雇员现象。因此，在探究国有大股东占用上市公司资金动机时，应立足于国有大股东(集团)承担社会性负担这一特殊的制度背景。林毅夫、李志贇(2004)认为，在信息不对称情况下，政策性负担将导致国有企业经理的道德风险，<sup>8</sup>从而导致国有企业的低效率；当市场竞争达到一定程度时，政策性负担必然带来国有企业的预算软约束。<sup>9</sup>林毅夫等(2004)以中国工业企业的统计资料的实证检验支持了政策性负担是企业预算软约束的主要原因。杨洁等(2007)运用我国上市公司2001-2005年的经验数据，以地区政府干预程度和地区财政赤字程度作为政策性负担的代理变量，研究表明，对于政策性负担重的企业，其债务融资与管理费用率之间的正相关性要高于政策性负担轻的企业，即企业的外部政策性负担会通过负债率的影响增加代理成本。而国有企业的社会性负担是否对其控股的上市公司产生负面影响，比如是否会加重对上市公司的资金占用？我们对此尚缺乏基本研究。

### 三、制度背景和研究假说

我国国有控股上市公司绝大多数由国有企业改制而来。由于历史原因，国有企业不仅承担因政府发展战略需要导致的战略性政策负担，而且承担了充分就业政策引起的社会性政策负担(林毅夫等，2004)。经过放权让利的国有企业改革，生产经

<sup>8</sup> 他们认为，中国国有企业的政策性负担主要包括战略性政策负担和社会性政策负担，前者是指在传统的赶超战略的影响下，投资于我国不具备比较优势的资本密集型产业或产业区段所形成的负担；后者则是指由于国有企业承担过多的冗员和工人福利等社会性职能而形成的负担。

<sup>9</sup> “预算软约束”一词最早由Kornai在1986年提出，指社会主义经济中的国有企业一旦发生亏损，政府常常追加投资、增加贷款、减少税收、并提供财政补贴的现象(林毅夫等2004)。

营决策权基本回归国有企业。随着经济发展和综合国力的增强,对大多数国有企业来说,战略性政策负担基本卸除,但计划就业体制遗留下来的冗员负担并未得到彻底释放。近年来,随着国有企业下岗分流、减员增效政策的大力实施,国有企业隐性失业逐步得到释放。但是,国有企业下岗分流规模和速度仍受政府严格控制。效益好的企业即使存在富余人员,也得不到政府的下岗指标,只能通过企业内转岗等手段将富余人员进行分流和消化(陈钊、陆铭,2003)。所以,通常只有等到难以为继的时候,国有企业才能通过出售、破产等这些非常规形式来解除与员工的劳动关系,卸除其社会性负担;而大多数国有企业仍然背负着或轻或重的社会性负担参与市场竞争。冗员一方面直接增加国有企业经济负担,另一方面降低企业劳动生产效率。20世纪90年代国有企业资产利润率持续下降,而冗员是国有企业亏损、低效率的重要因素之一(齐艺莹、王德国,2004)。国有企业的低效率导致国有企业不仅高负债运营,而且资金匮乏。一个企业冗员等社会性负担越重,企业经营效率就越低也越可能亏损,因而对外部融资的需求就越迫切。

中国股票市场的诞生,一方面是为了解决国有企业棘手的资金紧缺困难,另一方面是期望外部投资者的监督以改善国有企业治理机制、提高国有企业运营效率。为了卸除国有企业社会性负担,“纯化”上市公司的经营目标,改制成为国有企业上市的必然选择。改制方式包括分拆上市、捆绑上市和整体上市等,其中分拆上市是国有企业改制上市的主要模式(刘兴强、段西军,2006)。所谓分拆上市是指原国有企业分拆出部分资产(通常是优质资产)和人员组建上市公司,其余资产和人员则保留在构成上市公司控股股东的新国有企业(集团)中。尽管改制后的上市主体资产质量有所提升,社会性负担较改制前减少,但大多数情况下,原国有企业的社会性负担并没有真正甩掉,而仍然大部分保留在作为上市公司控股股东的新国有企业(集团)中。当国有企业获得上市机会时,股权融资为上市主体的发展提供了充裕资金保障,提升整个国有控股企业集团的盈利能力。但是,由于原国有企业的社会性负担大部分遗留在上市公司大股东,正如上文分析,如果改制前原国有企业承担的社会性负担越重,该类上市公司大股东的自生能力越不足,面临经营困难越大,对资金的需求就越迫切。在上市公司股利分配收益有限的情形下,大股东就越有动机利用控制权占用上市公司资金以缓解自身生存、发展的资金压力。本文附录中莲花味精(股票代码600186)案例分析显示,由于莲花味精是由莲花集团公司剥离上市,社会性负担主要保留在集团公司,“在集团公司持续经营能力欠佳的情况下,为了存活和解决上万职工的生活问题”,集团公司“不得不”占用上市公司莲花味精资金。

此外,社会性负担必然引起企业预算软约束问题(林毅夫等,2004)。在中国证券市场发展的前10余年中,国有企业独享了上市融资特权,实质上是政府提供给国有企业的一种特殊补贴。由于国有产权的特殊性加上社会性负担,上市公司向国有大股东“输血”在某种程度上就变成一种特殊的预算软约束问题。由于承受了本应政府承担的社会性负担,即使发生严重占用资金行为,国有控股公司及其大股东的高管人员无需承担个人责任,而且国有企业在发生资金占用后的清欠过程中可能还享有较民营企业更强的讨价还价能力。一个明显的现象是,在政府监管部门主导的高

压“清欠运动”中，清偿最困难或难以按规定期限完成清偿的往往是国有控股上市公司。据此，提出本文的第一个研究假说：

**假说1：大股东集团承担的社会性负担越多，大股东越可能占用上市公司资金，同时占用资金越多。**

上市公司年末应收大股东的款项分为两类：一类是由关联交易引起的经营性应收往来款，正常情况下，上市公司应收大股东的经营性往来款与应收其他客户的经营性往来款的性质相同，均由商业信用引起；另一类是非经营性应收款项，并非由公司与大股东之间的正常销售、采购业务引起。前者通常称为经营性占用资金，后者称为非经营性占用资金。一般而言，经营性占用资金是一种正常的资金占用，而非经营性占用是一种非正常的资金占用，是大股东侵占上市公司中小股东利益的行为。正因为非经营性占用资金是一种赤裸裸的侵占行为，所以它是我国监管当局大力清理和重点监管对象。<sup>10</sup>大股东承担社会性负担越多，越可能通过非经营性占用资金来缓解其社会性负担压力。所以，如果假说1成立，那么可以推测大股东的社会性负担与其占用资金的关系主要体现在非经营性占用资金上。据此，提出假说1的子假说：

**假说1A：较之与大股东经营性占用上市公司资金的正相关关系，大股东社会性负担与其非经营性占用上市公司资金的正相关关系更显著。**

## 四、研究设计

### 4.1 样本选择与数据来源

以上市年度作为大股东集团社会性负担的观测时点，本文选择沪深两市上市公司年度为1996年至2002年的非金融类首次公开发行(IPO)A股公司作为研究对象。<sup>11</sup>在剔除上市当年及其后三年中发生控制权变更或退市的公司、雇员规模低于200人的公司、<sup>12</sup>数据缺失公司后，得到有效研究样本573个。样本上市年度分布如表1所示，1996和1997年所占比例最高，两年合计占样本量的44%；2001和2002年比例最低。表1同时列示了样本期间各年度新上市A股公司总数和入选样本占当年新上市A股公司的比例，可以看出，除了1998和1999年入选样本比例略高外，其他年度入选比例差异不大，较好地保证了各年度样本的代表性。

<sup>10</sup> 《关于进一步做好清理大股东占用上市公司资金工作的通知》(证监发[2006]128号)明确指出“清理大股东非经营性占用上市公司资金，是夯实资本市场基础、提高上市公司质量的一项重要工作”。

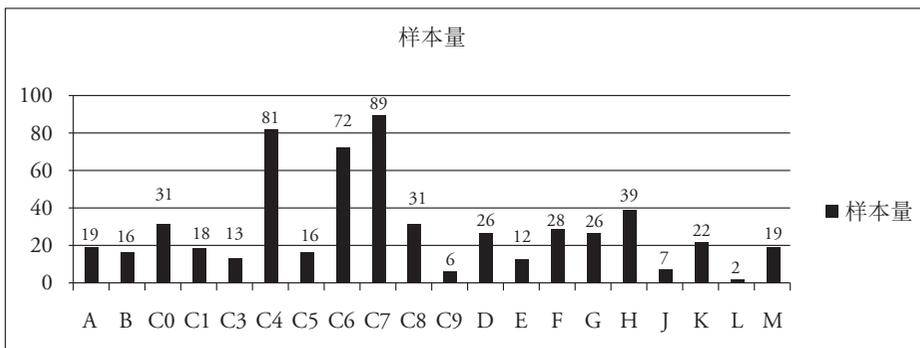
<sup>11</sup> 选择该区间的理由是本文的研究窗口是上市后的三年(不含上市当年，即样本涵盖了1997至2005年共9年数据)，而上市公司年报披露资金占用资料始于1997年，故1996年以前上市公司资金占用数据不可得；不选择2003年及以后样本是因为“大股东占用资金”务必在2006年底前偿还完毕”的强制性清理“运动”破坏了大股东占用资金的原始面目。

<sup>12</sup> 参照曾庆生、陈信元(2006)，取200人作为分界线是为了剔除那些只披露总部员工数的公司，因为从现实来看，一个上市公司一般不太可能低于200人。

表1 研究样本的上市年度分布

上市年度	样本量	年度样本比例	新上市A股公司总数	入选样本占比
1996	124	22%	203	61%
1997	126	22%	206	61%
1998	74	13%	106	70%
1999	67	12%	97	69%
2000	89	16%	136	65%
2001	48	8%	79	61%
2002	45	8%	70	64%
合计	573	100%	897	64%

从行业分布来看，制造业样本比重最大，超过62%；其中机械、设备、仪表行业(C7)，石油、化学、塑胶、塑料行业(C4)样本量较大。样本公司的行业分布与全体上市公司的行业分布基本相同。



注：图中行业代码对应行业：A-农林牧渔业，B-采掘业，C0-食品、饮料，C1-纺织、服装、皮毛，C3-造纸、印刷，C4-石油、化学、塑胶、塑料，C5-电子，C6-金属、非金属，C7-机械、设备、仪表，C8-医药、生物制品，C9-其他制造业，D-电力、煤气及水的生产和供应业，E-建筑业，F-交通运输、仓储业，G-信息技术业，H-批发和零售贸易，J-房地产业，K-社会服务业，L-传播与文化产业，M-综合类。

图1 研究样本的行业分布

除敏感性测试中的大股东数据来自工业企业统计数据库外，本文所用财务数据和非财务数据均来自深圳国泰安公司的CSMAR数据库。

#### 4.2 检验模型及变量说明

本文采用公司上市当年的超额雇员规模作为大股东集团社会性负担的代理变量。理由如下：首先，减少失业、促进就业是各国政府永恒的职责，是关系社会稳定、和谐的头等大事；内部消化冗员是我国国有企业承担政府职能的典型表现，因而超额雇员规模是研究者可获得的衡量国有企业社会性负担的相对理想的代理

变量。其次,限于大股东数据的获取困难,<sup>13</sup>本文采用上市年度上市公司自身的超额雇员规模代替大股东超额雇员规模。在IPO股票发行价格受管制的制度下,为了实现融资规模最大化目标,做大IPO公司盈利指标(如每股收益)是国有企业的最优选择。<sup>14</sup>为此,在国有企业改制过程中,通常选择优质资产注入上市公司,非经营性、非优质资产和冗员等社会性负担保留在上市公司的母体——控股股东(刘兴强、段西军,2006)。换言之,为了最大化融资规模,原国有企业改制时,大股东会在其能力范围内尽可能减少上市公司包括冗员在内的社会性负担(比如,在公司规模等因素相同的情况下,让上市公司雇佣职工人数较大股东低20%-30%)。曾庆生、陈信元(2006)发现与非国有控股公司相比,国有控股公司仍存在超额雇员,这说明尽管改制时大股东有动机减少上市公司的冗员负担,但改制过程中的上市公司与母公司之间的负担平衡问题,使得上市公司仍直接分担了部分原国有企业的冗员。有理由相信,但若改制前原国有企业冗员负担越重,由其改制而来的上市公司自身超额雇员规模越可能大于由冗员负担轻的国有企业改制而来的上市公司。因此,改制上市时,上市公司的超额雇员规模可以衡量整个大股东集团的超额雇员从而社会性负担水平。

参照曾庆生、陈信元(2006),上市公司超额雇员指标(*BURDEN*)采用如下方法估计得到:首先以样本期间所有已上市一年以上的非金融类A股公司为样本,<sup>15</sup>采用模型 $Y = \alpha + \beta * SIZE0 + \theta * CAPITAL + \omega * GROWTH + \sum \gamma * INDU + \sum \lambda * YEAR + \varepsilon$ 估计模型各系数 $\hat{\alpha}$ 、 $\hat{\beta}$ 、 $\hat{\theta}$ 、 $\hat{\omega}$ 、 $\hat{\gamma}$ 、 $\hat{\lambda}$ ;然后,根据模型估计系数和新上市公司上市当年的对应指标,估计出其理论上的正常雇员规模 $\hat{Y} : \hat{Y} = \hat{\alpha} + \hat{\beta} * SIZE0 + \hat{\theta} * CAPITAL + \hat{\omega} * GROWTH + \sum \hat{\gamma} * INDU + \sum \hat{\lambda} * YEAR$ ;最后以新上市公司上市当年的实际雇员规模减去估计的正常雇员规模,得到其超额雇员指标: $BURDEN = Y - \hat{Y}$ 。模型中, $Y$ 是公司每万元营业收入的雇员数;<sup>16</sup> $SIZE0$ 是公司规模,以公司营业收入自然对数表示; $CAPITAL$ 是公司资本密度衡量指标,以固定资产占总资产比例度量; $GROWTH$ 是公司成长性指标,以下一年公司营业收入增长率度量;<sup>17</sup> $INDU$ 、 $YEAR$ 分别是行业哑变量和会计年度哑变量。<sup>18</sup>

<sup>13</sup> 直接用上市公司大股东的超额雇员更能代表大股东面临的社会性负担或经营压力,但遗憾的是,上市公司公开资料并不披露大股东相关信息。为了增强说服力,本文在稳健性检验中,根据大股东名称从工业企业统计数据库配对对国有大股东自身超额雇员数据重新检验,结论不变。遗憾的是,该数据库中只能找到101个上市公司大股东数据,82%的样本被丢失,故只作为补充证据。

<sup>14</sup> 我国股票IPO定价公式为“发行价格=每股收益×市盈率”,其中在很长时期内,市盈率被管制在15倍左右,每股收益几乎是决定融资规模的唯一因素。

<sup>15</sup> 估计样本是样本期间所有已上市一年以上(即不含新上市)且雇员人数不低于200人的非金融A股上市公司(包括因上市后三年内控制权变更而未纳入本文样本的公司),采用上市后(不含新上市)公司作为参照是因为已上市公司各方面指标更加稳定,而估计样本量越大,估计结果应该越可靠。为剔除极端样本影响,对模型连续变量均按1%对极端值进行winsorize处理。

<sup>16</sup> 选择营业收入而非资产规模作为雇员规模的平减指标,是因为IPO巨额融资使资产规模剧增,且不同公司增长速度不同,导致每单位资产雇员规模是有偏的;另,一个企业雇员多少主要取决于其营业收入规模,因为人工成本是由营业收入而非变卖资产来支付。

<sup>17</sup> 企业通常需根据下一年规模扩张计划储备人力资源,所以理论上用下一年营业收入增长率度量成长性对公司当年末雇员规模的影响更加合理。经测试,以公司当年营业收入增长率替换,不影响本文检验结论。

<sup>18</sup> 之所以采用这个估计模型,是因为公司规模、资本密集度、公司成长性、行业特征是决定雇员规模最基本和最主要的因素,控制上市年度变量是因为笔者发现随着国企减员增效改革推进,上市越晚的公司雇员规模越小。

在估计出超额雇员变量后，参考李增泉等(2004)、邓建平等(2007)研究模型，本文构建如下模型检验本文假说1和假说1A：

$$\ln \frac{p}{1-p} = \alpha + \beta_1 * BURDEN + \beta_2 * DIVID + \beta_3 * GOVMT + \beta_4 * LSHR1 + \beta_5 * USHR1 + \beta_6 * LEV + \beta_7 * SIZE + \text{行业、上市年度控制变量} + \varepsilon \quad (1)$$

$$TUNNELING = \alpha + \beta_1 * BURDEN + \beta_2 * DIVID + \beta_3 * GOVMT + \beta_4 * LSHR1 + \beta_5 * USHR1 + \beta_6 * LEV + \beta_7 * SIZE + \text{行业、上市年度控制变量} + \varepsilon \quad (2)$$

模型1是logistic回归模型，模型2是多元回归模型，分别检验超额雇员对大股东占用资金的发生概率和占用资金规模的影响。<sup>19</sup>在模型1中，因变量p是公司上市后三年(不含上市当年)中大股东是否发生占用上市公司资金的哑变量，包括三个变量：*DUMY\_TUN*、*DUMY\_TUNABN*和*DUMY\_TUNNM*，依次表示大股东是否占用(包括经营性和非经营性占用)资金、是否非经营性占用资金以及是否经营性占用资金，定义见表2。模型2中因变量*TUNNELING*为大股东占用资金规模变量，包括*TUN*、*TUN\_ABN*和*TUN\_NM*三个变量，依次表示大股东总占用资金规模、非经营性占用资金规模和经营性占用资金规模，定义见表2。根据研究假说1和假说1A，预测考察变量超额雇员*BURDEN*与所有因变量正相关，但与非经营性占用资金因变量(*DUMY\_ABN*、*TUN\_ABN*)的关系更显著。

两模型均控制了公司现金股利规模(*DIVID*)、大股东组织形式(*GOVMT*)、大股东控股程度(*LSHR1*、*USHR1*)、公司资产负债率(*LEV*)、公司规模(*SIZE*)以及公司行业(行业分类如图1)和上市年度，各变量定义见表2。马曙光等(2005)发现大股东占用资金程度与公司现金股利规模显著负相关，认为现金股利和资金占用是大股东实现其股权价值最大化的共同手段，因而预测现金股利规模(*DIVID*)与因变量负相关。有研究表明，当大股东为国有控股集团时，其占用上市公司资金程度较其他形式的大股东严重(李增泉等，2004；王俊秋，2006)，所以本文将国有大股东分为两类——政府直接控股和政府间接控股，并预测政府直接控股哑变量(*GOVMT*)与因变量负相关。<sup>20</sup>参照李增泉等(2004)、唐清泉等(2005)，采用变量*LSHR1*、*USHR1*分别反映大股东持股比例的壕沟防御效应(tunnelling)和利益协同效应。当大股东未绝对控股时，持股比例的增加，其侵占上市公司的能力越强；当大股东绝对控股时，持股比例的增加，大股东与上市公司之间利益越协同，侵占动机越弱。故预测*LSHR1*与因变量显著正相关，*USHR1*与因变量显著负相关。资产负债率(*LEV*)与公司规模(*SIZE*)是反映公司财务状况的两个最基本指标，故予以控制，但其对大股东占用上市的影响难以预测。

<sup>19</sup> 若模型1和模型2的检验结论不一致时，我们认为检验模型2的结论应更具说服力。因为是模型1仅是以大股东净占用资金是否大于0判断做定性判断，不区别占用资金的程度，比如将占用资金相对资产规模为万分之一的情形与占用资金相对资产规模为十分之一的情形一视同仁，显然，这两种情形下的占用资金问题是有本质区别的。

<sup>20</sup> 一方面，作为政府直接控股股东的政府或准政府机构的侵占能力弱于作为直接控股股东的国有企业(集团)；另一方面，政府直接控股公司大多属整体或准整体上市公司，原国有企业社会性负担可能部分保留在上市公司，部分剥离至政府相关职能部门，因而其大股东掏空动机相对较弱。

表2 研究变量的定义

变量名	定义
<i>BURDEN</i>	大股东社会性负担代理变量，指公司上市当年每万元营业收入超额雇员数，根据研究设计中的模型估计得到。
<i>TUN</i>	大股东总占用资金规模变量，指上市后三年控股股东净占用上市公司资金与公司总资产之比的均值。净占用资金 = 上市公司应收大股东及其控股企业的应收账款、应收票据、预付帐款和其他应收款之和 - 上市公司应付大股东及其控股企业的应付帐款、应付票据、预收账款和其他应付款之和。
<i>TUN_ABN</i>	大股东非经营性占用资金规模变量，指上市后三年控股股东占用上市公司非经营性资金净额与公司总资产之比的均值。非经营性占用资金净额 = 上市公司应收大股东及其控股企业的其他应收款 - 上市公司应付大股东及其控股企业的其他应付款。
<i>TUN_NM</i>	大股东经营性占用资金规模变量，指上市后三年控股股东占用上市公司经营性资金净额与公司总资产之比的均值，等于 <i>TUN</i> 减去 <i>TUN_ABN</i> 。
<i>DUMMY_TUN</i>	大股东占用资金哑变量：当 $TUN > 0$ 时， $DUMMY\_TUN = 1$ ；否则 $DUMMY\_TUN = 0$ 。
<i>DUMMY_TUNABN</i>	大股东非经营性占用资金哑变量：当 $TUN\_ABN > 0$ 时， $DUMMY\_TUNABN = 1$ ；否则 $DUMMY\_TUNABN = 0$ 。
<i>DUMMY_TUNNM</i>	大股东经营性占用资金哑变量：当 $TUN\_NM > 0$ 时， $DUMMY\_TUNNM = 1$ ；否则 $DUMMY\_TUNNM = 0$ 。
<i>GOVMT</i>	政府直接控股哑变量：当控股股东为政府机构（如国资监管部门、财政厅/局）、国有资产经营（/投资）公司时取1，否则取0。
<i>DIVID</i>	上市后的三年中，上市公司发放的现金股利与公司总资产比值的平均数。
<i>LSHRI</i>	当公司上市当年第一大股东持股比例低于0.5时等于第一大股东持股比例，否则等于0.5。
<i>USHRI</i>	当公司上市当年第一大股东持股比例大于0.5时，等于第一大股东持股比例与0.5的差，否则等于0。
<i>LEV</i>	公司上市当年的资产负债率。
<i>SIZE</i>	公司上市当年的资产规模，等于公司总资产的自然对数。

## 五、实证检验

### 5.1 描述性统计

在进行回归检验前，表3先对研究变量进行了描述性统计。可见，本文样本公司平均每万元营业收入超额雇员为 -0.0047人，从标准误差可知，相对超额雇员估计模型中的已上市一年以上公司整体而言，样本公司没有显著超额雇员；<sup>21</sup>但25%的公

<sup>21</sup> 超额雇员均值不等于0，是因为估计超额雇员的模型所采用的估计样本不同于本文研究样本量，研究设计中已注明。需指出的是，本文目的不是验证超额雇员是否存在，而是估计出不同公司间的相对超额雇员规模大小。

## 大股东的社会性负担与资金占用

司每亿元营业收入超额雇员114人。在上市后的三年中，大股东占用资金与上市公司总资产之比的均值为0.0184，其中非经营性占用为0.0100，经营性占用为0.0084，非经营性占用规模比经营性占用约大20%；从是否占用资金来看，在上市后三年中，出现大股东占用资金的公司占样本的0.5777（即57.77%），出现大股东非经营性和经营性占用资金的样本比例分布为46.95%、43.8%，可见不少公司同时出现经营性和非经营性占用资金现象。近15%的样本公司是通过政府或准政府机构直接控股。此外，公司现金股利分配的均值略低于大股东占用资金的均值，但前者方差小于后者，说明不同公司间大股东占用资金的程度差异比不同公司间现金股利分配率的差异更大。其他变量如表3示，不赘述。

表3 研究变量的描述性统计

变量	均值	标准差	下四分位数	中位数	上四分位数
<i>BURDEN</i>	-0.0047	0.0487	-0.0333	-0.0133	0.0114
<i>TUN</i>	0.0184	0.0570	0	0.0017	0.0264
<i>TUN_ABN</i>	0.0100	0.0338	-0.0001	0	0.0103
<i>TUN_NM</i>	0.0084	0.0417	0	0	0.0075
<i>DUMY_TUN</i>	0.5777	0.4944	0	1	1
<i>DUMY_TUNABN</i>	0.4695	0.4995	0	0	1
<i>DUMY_TUNNM</i>	0.4380	0.4966	0	0	1
<i>DIVID</i>	0.0173	0.0165	0.0045	0.0123	0.0257
<i>GOVMT</i>	0.1449	0.3523	0	0	0
<i>LSHRI</i>	0.4427	0.0920	0.4053	0.5000	0.5000
<i>USHRI</i>	0.0899	0.0948	0	0.0694	0.1667
<i>LEV</i>	0.3646	0.1371	0.2639	0.3667	0.4552
<i>SIZE</i>	20.6290	0.8354	20.0755	20.5509	21.0391

表4对主要研究变量之间的相关性进行了Pearson检验。可见，代表大股东（集团）社会性负担的*BURDEN*变量与大股东总占用资金规模（*TUN*）和大股东非经营性占用资金规模（*TUN\_ABN*）分别在5%和1%水平显著正相关，但与大股东经营性占用资金规模（*TUN\_NM*）关系不显著。即大股东占用资金的动机与大股东集团面临的社会性负担有关，并且当大股东承担社会性负担时，主要是通过非经营性占用资金来缓解其社会性负担压力，初步验证了研究假说1和1A。现金股利规模（*DIVID*）与大股东总占用资金规模（*TUN*）和非经营性占用资金规模（*TUN\_ABN*）均显著负相关；但与大股东经营性占用资金规模（*TUN\_NM*）关系不显著。这与马曙光等（2005）的结论一致，即公司现金股利与大股东非经营性占用资金之间存在替代关系。而现金股利与社会性负担的关系为负，但尚未达到统计上的显著。表4还显示，部分因素（如大股东持股变量*USHRI*、公司规模*SIZE*）同时对因变量和考察变量产生显著影响，因此，须将这些影响因素同时纳入多元回归模型予以控制。

表4 主要变量的Pearson相关系数

	<i>TUN</i>	<i>TUN_ABN</i>	<i>TUN_NM</i>	<i>DIVID</i>	<i>GOVMT</i>	<i>LSHRI</i>	<i>USHRI</i>	<i>LEV</i>	<i>SIZE</i>
<i>BURDEN</i>	0.098 **	0.121 ***	0.037	-0.053	0.086 **	0.104 **	0.128 ***	0.181 ***	0.150 ***
<i>TUN</i>	1.000	0.688 ***	0.808 ***	-0.098 **	-0.051	0.040	-0.002	0.004	-0.079 *
<i>TUN_ABN</i>		1.000	0.129 ***	-0.170 ***	-0.006	-0.006	-0.072 *	0.039	-0.081 *
<i>TUN_NM</i>			1.000	0.004	-0.065	0.059	0.056	-0.026	-0.042
<i>DIVID</i>				1.000	-0.151 ***	0.144 ***	0.240 ***	-0.331 ***	0.181 ***
<i>GOVMT</i>					1.000	-0.287 ***	-0.214 ***	0.185 ***	-0.222 ***
<i>LSHRI</i>						1.000	0.591 ***	0.028	0.200 ***
<i>USHRI</i>							1.000	0.023 0.576	0.290 ***
<i>LEV</i>								1.000	0.231 ***

注：\*\*\*，\*\*，\*分别表示相关系数的Pearson检验在1%，5%和10%水平上显著。

## 5.2 假说检验

首先，表5采用logistic回归模型，依次按照占用资金性质(分为总占用资金、非经营性占用资金和经营性占用资金)检验了上市时的大股东集团社会性负担对上市后三年中大股东占用上市公司资金的发生概率的影响。可见，大股东社会性负担变量*BURDEN*与大股东总占用资金哑变量*DUMY\_TUN*和非经营性占用哑变量*DUMY\_TUNABN*均在5%水平上显著正相关，而与经营性占用资金哑变量*DUMY\_TUNNM*关系不显著。这表明，总体而言，大股东社会性负担越多越可能占用上市公司资金；但社会性负担与占用资金概率的关系主要由非经营性占用资金引起的，是否发生经营性占用资金与大股东社会性负担的无显著关系。据此推测，大股东通过非经营性占用资金这种赤裸裸的方式侵占上市公司利益，其动机之一是缓解其社会性负担压力。因此，就大股东占用资金概率而言，假说1和1A得到验证。

表5 社会性负担与大股东是否占用上市公司资金的logistic回归

	总占用资金 (因变量= <i>DUMY_TUN</i> )		非经营性占用资金 (因变量= <i>DUMY_TUNABN</i> )		经营性占用资金 (因变量= <i>DUMY_TUNNM</i> )	
	系数	P值	系数	P值	系数	P值
<i>BURDEN</i>	5.326**	0.02	4.394**	0.04	2.397	0.23
<i>DIVID</i>	-6.458	0.31	-5.438	0.39	-4.310	0.50
<i>GOVMT</i>	-1.777***	0.00	-1.704***	0.00	-1.433***	0.00
<i>LSHRI</i>	3.573***	0.01	1.707	0.19	2.911**	0.04
<i>USHRI</i>	-1.998	0.13	-1.614	0.20	0.210	0.87
<i>LEV</i>	0.068	0.94	0.967	0.24	-0.568	0.50
<i>SIZE</i>	-0.373***	0.01	-0.180	0.21	-0.149	0.30
截距	7.140**	0.03	3.381	0.29	1.395	0.65
上市年度	控制		控制		控制	
行业	控制		控制		控制	
Pseudo R <sup>2</sup>	0.1184		0.0909		0.1068	
样本量	537		537		537	

注：\*\*\*，\*\*，\*分别表示在1%，5%和10%水平上显著(双尾检验)，表6、7、8对应符合含义与此相同。表中P值是调整了异方差影响后的值。

表5还显示，公司现金股利规模(*DIVID*)与大股东是否发生占用(包括经营性占用和非经营性占用)资金关系不显著。上市后三年是否发生占用资金与国有控股形式有关，当直接控股股东为政府或准政府机构时，大股东发生经营性占用和非经营性占用上市公司资金的概率在1%水平上显著低于直接控股股东为非政府机构即国有企业(集团)的情形。其原因可能是该类公司在改制上市时除部分社会性负担剥离至对口的政府职能部门外，其余社会性负担可能带入上市公司，且作为直接控股股东的政府或准政府机构(如财政局、国资局/委、国资经营/投资公司)通常不承担解决社会性负担职能也没有相应的经济压力，因而侵占动机相对较弱；其二，相对于作为控股股东的企业集团而言，作为控股股东的政府或准政府机构对上市公司控制能力较弱，侵占上市公司的能力相对差。此外，大股东持股比例*LSHRI*与因变量总占用资金和经营性占用资金均显著正相关，但与非经营性占用资金关系不显著，即当大股东持股比例未达到绝对控股前，随着持股比例的增加，大股东发生经营性占用资金的概率增加。可能的解释是，随着持股比例增加，大股东对上市公司控制能力增强，与之发生日常性产品购销类关联交易增多，从而发生经营性占用上市公司资金的概率增加。代表利益协同效应的大股东持股比例*USHRI*与是否发生大股东占用(包括非经营性和非经营性占用)资金关系不显著，即从大股东占用资金的发生概率角度看，持股比例可能不存利益协同效应。此外，表5还显示公司规模(*SIZE*)对大股东总占用资金的发生有明显的抑制作用，但分类检验结果不显著。

表6检验了上市时的大股东集团社会性负担对上市后三年中大股东平均占用上市公司资金规模的影响。可见，以大股东总占用资金规模(*TUN*)为因变量的回归结果显示，社会性负担(*BURDEN*)与因变量在5%水平上显著正相关。分类检验发现，

大股东社会性负担与其非经营性占用资金规模 ( $TUN\_ABN$ ) 在 5% 水平上显著正相关, 而与其经营性占用资金规模 ( $TUN\_NM$ ) 关系不显著。这一结果与表 5 一致, 即上市时大股东集团的社会性负担越多, 上市后三年中大股东平均非经营性占用资金的规模越大; 但社会性负担多少与大股东经营性占用资金规模关系不显著。因此, 就大股东占用资金规模而言, 假说 1 和 1A 得到验证。

**表 6** 社会性负担与大股东占用上市公司资金规模的多元回归

	总占用资金 (因变量= $TUN$ )		非经营性占用资金 (因变量= $TUN\_ABN$ )		经营性占用资金 (因变量= $TUN\_NM$ )	
	系数	T 值	系数	T 值	系数	T 值
<i>BURDEN</i>	0.115**	1.98	0.078**	2.06	0.037	1.19
<i>DIVID</i>	-0.278*	-1.78	-0.276***	-3.10	-0.003	-0.02
<i>GOVMT</i>	-0.012*	-1.65	-0.005	-1.01	-0.007*	-1.74
<i>LSHRI</i>	0.019	0.60	0.017	0.84	0.002	0.11
<i>USHRI</i>	-0.019	-0.49	-0.036*	-1.94	0.017	0.54
<i>LEV</i>	-0.028	-1.58	-0.008	-0.73	-0.021	-1.53
<i>SIZE</i>	-0.0001	-0.02	-0.0005	-0.21	0.0004	0.11
截距	0.004	0.04	0.005	0.10	-0.001	-0.01
上市年度	控制		控制		控制	
行业	控制		控制		控制	
Adj R <sup>2</sup>	0.0412		0.0565		0.0040	
样本量	537		537		537	

注：表中 T 值是经过异方差调整后的值。

表 6 还显示, 与单变量检验结果相同, 公司现金股利规模 ( $DIVID$ ) 与大股东总占用资金规模 ( $TUN\_TT$ ) 和非经营性占用资金规模 ( $TUN\_ABN$ ) 显著负相关, 而与经营性占用规模 ( $TUN\_NM$ ) 关系不显著。这说明当大股东要非经营性占用上市公司资金时, 它会减少股利发放以减少其他股东对上市公司资金的分享。这印证了马曙光等 (2005) 的结论——大股东占用资金与现金股利存在替代关系。政府直接控股变量 ( $GOVMT$ ) 与大股东总占用资金规模和经营性占用资金规模在 10% 水平上负相关, 但与大股东非经营性占用资金规模关系不显著。这表明, 在上市后的三年中, 政府直接控公司大股东经营性占用资金的平均规模小于国有企业 (集团) 直接控股公司, 但两类公司的非经营性占用资金规模无显著差异。政府直接控股公司绝大多数是整体上市或准整体上市公司, 即邓建平等 (2007) 所称的完整改制公司, 以上结果支持邓建平等 (2007) 的结论——完整改制公司上市后三年平均占用资金规模少于非完整改制公司。<sup>22</sup> 此外, 股权结构对大股东占用资金规模的影响与其对大股东占用资金的概率影响 (见表 5) 不同, 当大股东绝对控股后, 大股东持股比例  $USHRI$  与非经营性占用资金规模显著负相关, 而与经营性占用资金规模关系不显著; 当大股东未达到

<sup>22</sup> 该文大股东占用资金指总占用资金, 未区分经营性占用还是非经营性占用。

绝对控股时，大股东持股比例 *LSHRI* 与非经营性和经营性占用资金规模的关系均不显著。这表明，从上市后三年的平均占用资金规模来看，绝对控股前，大股东持股比例未呈现壕沟防御效应；而绝对控股后，大股东持股比例的增加可能会抑制大股东非经营性占用资金规模，表现出利益协同效应。需指出的是，与李增泉等（2004）等研究结论不同，表5和表6中股权结构与大股东占用资金的关系不显著或不稳定，可能与因变量采用的是上市后的三年平均数而自变量均为上市当年数据有关。<sup>23</sup>

### 5.3 敏感性测试

#### 5.3.1 直接采用上市公司大股东超额雇员度量大股东集团社会性负担

为了增强研究结论的稳健性，本文根据CCER经济金融数据库的年度行业调查数据查找上市年度大股东雇员及相关数据，直接采用上市公司大股东的超额雇员度量大股东集团社会性负担，重复检验本文以上假设。CCER经济金融数据库的年度行业调查数据包含国家统计局每年调查工业行业的财务和经营相关信息。<sup>24</sup>本文以上述537个样本公司的大股东名称为关键字段，与该行业调查数据的企业名称进行配对，在剔除相关数据缺失公司后，成功配对到101家公司（上市年度涵盖1998至2002年）。然后，根据这101家公司所处行业（以该数据库中行业代码的前两位划分），在剔除销售收入和总资产小于1000万元、雇员数量小于200人的小规模企业后，分行业采用研究设计中的超额雇员估计模型估计101家样本公司的超额雇员规模。<sup>25</sup>这101家样本公司大股东在其子公司上市年度的超额雇员规模（以 *BURDEN\_BLOCK* 表示，单位：每万元销售收入超额雇员人数）分布为：均值0.00115，标准差0.0012，下四分位数0.0005，中位数0.0009，上四分位数0.0014。经检验，大股东超额雇员变量与上市公司本身的超额雇员变量的Pearson相关系数为0.36658，且在1%水平（*P*值为0.0002）上显著，这印证了笔者提出的假设——上市公司在上市年度的超额雇员程度在一定程度上代表了大股东集团总体的超额雇员水平。101家样本公司主要分布在C4（石油、化学、塑胶、塑料）、C6（金属、非金属）、C7（机械、设备、仪表）三个行业，样本数为19、25、27个，其他行业均低于7个，甚至1个。

表7是直接以大股东超额雇员规模（*BURDEN\_BLOCK*）度量大股东集团社会性负担，与大股东占用上市公司资金规模的回归检验结果。其中，样本1是对101个样本的检验结果，可见，上市时大股东超额雇员规模（*BURDEN\_BLOCK*）与上市后三年大股东平均非经营性占用上市公司资金规模在10%水平上显著正相关，即大股东社会性负担越重，其非经营性占用上市公司资金可能越多。由于70%的样本公司来自上述三个行业（行业代码：C4、C6、C7），样本1中的行业哑变量之间存在严重共线性（方差膨胀因子最高达25），为避免共线性对研究结论的影响，样本2仅以此三行业公司为样本重复检验一次。结果如表7所示，与样本1的结果相比，样本2中的

<sup>23</sup> 本文各指标的时间跨度为1997至2005年，上市公司资金被占用程度总体水平在各年不一致，采用三年平均数指标未能控制年度差异。

<sup>24</sup> 该数据包括了中国大陆地区制造业中国有企业和民营企业中的大型企业（年销售收入超过500万元人民币）自1998年以来的年度数据，每年数据自16万至27万不等。该数据库的准确性和代表性被以往研究所证实（如Chuang and Hsu, 2004）。

<sup>25</sup> 估计数据中含183,713个企业年度数据，各行业企业数从213个到19686不等，大样本量使得分行业估计结果更可靠。为保证研究结论不受极端值影响，对估计数据中的连续变量的上下1%绝对值进行修饰（winsorize）。

大股东超额雇员变量与大股东非经营性占用资金规模的正相关关系更加显著(显著性水平达到5%)，且模型拟合度更好。表7中以大股东超额雇员度量的社会性负担(*BURDEN\_BLOCK*)对非经营性占用资金规模的回归系数和模型拟合度(adj  $R^2$ )，分别大于表6中以上市公司超额雇员度量的社会性负担(*BURDEN*)对非经营性占用资金规模的回归系数和模型拟合度，这说明大股东超额雇员规模对其非经营性占用上市公司资金规模的解释力可能要强于上市公司本身的超额雇员规模。

但是，无论在样本1还是样本2中，大股东超额雇员变量与其经营性占用上市公司资金规模的关系均不显著，且模型没有解释力(样本1和2的模型F检验的P值分别为0.9698、0.6164)。此外，表7显示，在共线性严重的样本1中，公司股利规模变量(*DIVID*)与大股东非经营性占用资金规模负相关，但不够显著；但在共线性不明显的样本2中，两者在5%水平上显著负相关，进一步验证非经营性占用资金规模与现金股利规模之间具有替代性。

### 5.3.2 采用年度数据检验研究假设

表8是以表6中537个IPO公司为样本，采用年度数据检验上市时公司的超额雇员规模对上市后各年末大股东占用资金规模影响的结果。可见，以上市公司超额雇员度量的大股东社会性负担变量(*BURDEN*)对大股东各年末的非经营性占用上市公司资金规模产生显著正影响，显著性水平为5%；而社会性负担对大股东各年末的经营性占用资金规模仍没有显著影响，进一步验证本文的研究假设。

年度数据的结果还显示，与表6和表7结果一致，公司各年现金股利规模(*DIVID*)仍与大股东各年末非经营性占用资金规模在10%水平上显著负相关，而与大股东各年末经营性占用资金规模关系不显著。政府直接控股公司大股东占用(包括经营性占用和非经营性占用)资金规模均显著少于国有企业(集团)直接控股公司，这与前人研究(如李增泉等(2004))结果一致。与表6结果一致，大股东持股*USHRI*越大，其非经营性占用上市公司的资金规模越小，即大股东绝对控股后持股比例呈现出利益协同效应；但绝对控股前，持股比例*LSHRI*增加未出现壕沟防御效应。在上市后三年中，离上市年度时间越长(*LISTAGE*)，大股东非经营性占用上市公司资金规模可能越大；上市公司年末资产负债率(*LEV*)越高，大股东当年末的非经营性占用资金规模可能越多；公司年末规模(*SIZE*)越大，大股东年度非经营性占用资金规模越小。

表7 以大股东超额雇员度量的社会性负担与大股东占用资金规模的多元回归

	样本1				样本2			
	非经营性占用资金		经营性占用资金		非经营性占用资金		经营性占用资金	
	系数	T值	系数	T值	系数	T值	系数	T值
<i>BURDEN_BLOCK</i>	2.99*	1.71	3.708	1.17	4.28**	2.05	2.470	0.61
<i>DIVID</i>	-0.273	-1.40	-0.481	-0.88	-0.447**	-2.05	-0.933	-1.09
<i>LSHRI</i>	-0.096**	-2.35	-0.028	-0.33	-0.127***	-2.99	-0.049	-0.54
<i>USHRI</i>	-0.014	-0.43	0.064	0.41	-0.017	-0.54	0.129	0.76
<i>LEV</i>	-0.014	-0.63	-0.093	-1.47	-0.048**	-1.97	-0.222**	-2.34

	样本1				样本2			
	非经营性占用资金		经营性占用资金		非经营性占用资金		经营性占用资金	
	系数	T值	系数	T值	系数	T值	系数	T值
SIZE	-0.002	-0.58	0.016	0.68	0.006*	1.75	0.029	0.97
截距	0.104	1.32	-0.307	-0.66	-0.036	-0.50	-0.473	-0.79
上市年度	控制		控制		控制		控制	
行业	控制		控制		控制		控制	
Adj R <sup>2</sup>	0.1990		-0.1267		0.4257		0.0048	
样本量	101		101		71		71	

注：*BURDEN\_BLOCK*为上市年度的大股东超额雇员规模变量，其他变量含义与表6同。本检验中不包含政府机构直接控股公司，故未出现表6中的哑变量*GOVMT*。表中T值是经过异方差调整后的值。

### 5.3.3 控制地区差异影响

中国各地区发展很不平衡，不同地区的劳动生产率水平和劳动力成本存在一定差异，本文的社会性负担代理变量—超额雇员规模可能受地区劳动生产率水平和劳动力成本差异影响，因此，在敏感性测试中对地区差异进行控制。首先，在原估计超额雇员模型中，增加对地区发展水平的控制变量，估计模型为  $Y = \alpha + \beta * SIZE_0 + \theta * CAPITAL + \omega * GROWTH + \sum AREA + \sum \gamma * INDU + \sum \lambda * YEAR + \varepsilon$ 。其中*AREA*是地区发展水平哑变量，本文采用厉以宁(2000)分类标准，将全国各省、直辖市分为经济发达地区、经济较发达地区、经济欠发达地区和经济落后地区共四个层次。<sup>26</sup>以控制地区哑变量后估计的超额雇员规模重复表5和表6的检验，研究结论不变。然后，为了进一步控制各地区发展差异可能对大股东占用资金行为的影响，在以控制地区变量后估计的超额雇员规模重复表5和表6的检验时，模型中增加对地区发展差异的哑变量，研究结论仍然不变。考虑篇幅，未列示该部分检验结果。

表8 社会性负担与年度大股东占用资金规模的多元回归(年度数据)

	非经营性占用资金		经营性占用资金	
	系数	T值	系数	T值
<i>BURDEN</i>	0.054**	2.10	0.011	0.52
<i>DIVID</i>	-0.080*	-1.88	-0.024	-0.46
<i>GOVMT</i>	-0.010***	-3.75	-0.008***	-2.99
<i>LSHRI</i>	0.007	0.60	0.005	0.35
<i>USHRI</i>	-0.025**	-1.98	0.020	0.94

<sup>26</sup> 经济发达地区包括上海、北京、天津(共3个直辖市)，经济较发达地区包括广东、江苏、浙江、辽宁、福建、山东(共6个省)，经济欠发达地区包括海南、山西、吉林、黑龙江、河北、广西、湖北、安徽、湖南、江西、河南、四川(共12个省)，经济落后地区包括新疆、西藏、内蒙古、青海、贵州、甘肃、陕西、宁夏、云南(共9个省)。厉以宁(2000)分类中未包含重庆市，本文将之归入与四川省相同的经济欠发达地区。笔者查阅了关于地区经济发达程度区域划分的最新文献，其分类结果与厉以宁(2000)基本相同。

	非经营性占用资金		经营性占用资金	
	系数	T值	系数	T值
<i>LISTAGE</i>	0.002*	1.75	0.002	1.40
<i>LEV</i>	0.012*	1.69	-0.002	-0.26
<i>SIZE</i>	-0.005***	-3.23	-0.001	-0.47
截距	0.114***	3.47	0.030	0.70
会计年度	控制		控制	
行业	控制		控制	
Adj R <sup>2</sup>	0.0426		0.0317	
样本量	1719		1719	

注：*LISTAGE*为已上市年数(上市后次年为第1年取1，依次类推)，除自变量*BURDEN*变量外，其他均为年度数据。表中T值是经过异方差调整后的值。

## 六、研究结论与局限

基于我国国有企业改制上市这一特殊的制度背景，本文以公司上市时的超额雇员规模作为大股东(集团)社会性负担的代理变量，考察社会性负担对上市后的三年中大股东集团占用上市公司资金行为的影响，期望从大股东集团的社会性负担角度，解释国有大股东侵占上市公司利益的动机。实证结果表明，改制上市时，大股东承担的社会性负担对其非经营性占用上市公司资金行为产生了显著影响，即大股东集团社会性负担越重，其非经营性占用上市公司资金的发生概率越高、占用资金规模越大；而大股东经营性占用上市公司资金的概率和规模与改制上市时大股东集团承担的社会性负担关系不显著。因此，本文从缓解社会性负担压力的动机角度为不同国有控股公司之间大股东侵占上市公司利益的差异提供新的解释，弥补了已有文献大多局限于公司内部治理即侵占能力视角解释大股东侵占现象的不足。

本文的研究启示是，在国有控股公司中，如果国有大股东未能彻底改制而仍承担部分社会职能，由于类似预算软约束问题的存在，国有大股东向上市公司转嫁社会性负担压力的行为难以避免，上市公司本身的改制并不能使其真正成为以全体股东价值最大化为目标的现代企业。因此，通过整体上市，借助外部投资者更加直接的监督，迫使大股东集团真正市场化改制，是减少国有控股公司被大股东侵占的有效途径。

本文研究主要局限在于，受限于数据的取得，对大多数样本未能直接采用大股东自身的超额雇员数据来度量其社会性负担，间接的度量方法可能对本文研究结论的说服力产生一定负面影响。其次，由于信息披露少，企业社会性负担本身难以准确度量，以超额雇员规模度量企业社会性负担也存在一定局限。最后，因其他关联交易行为是否构成对上市公司利益侵占需要先行判断，本文未将大股东集团社会性负担对其他关联交易行为的可能影响纳入研究范围。

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## 附录：莲花味精(股票代码：600186)大股东占用资金案例分析

莲花味精(全称“河南莲花味精股份有限公司”，股票代码600186)是经河南省人民政府批准，由河南省莲花味精集团有限公司(以下简称莲花集团)独家发起并向社会公开募集股份设立，于1998年8月在上海证券交易所挂牌上市的公司。莲花味精是国务院确定的520家重点企业之一、全国第一批农业产业化龙头企业，已成为我国最大的味精和谷朊粉生产与出口基地，是世界上唯一用小麦做原料的味精生产企业。之所以选择莲花味精作为案例分析对象，原因有二：第一，曾经具有很高知名度和美誉度的莲花味精2005年末大股东非经营性占用资金规模排在上海证券交易所的前三甲，公开报道资料多，而且其母公司莲花集团的部分数据在我国工业企业统计数据库可以取得；第二，莲花味精是典型的国有企业改制上市公司，莲花味精及其母公司在地区经济发展中扮演举足轻重的角色。

莲花集团前身河南省周口地区味精厂，创建于1983年，1996年味精厂整体改制为国有独资企业—莲花集团，现隶属于河南省项城市人民政府。<sup>27</sup>1998年莲花集团以其所属的全部与味精生产有关的经营性净资产注入上市主体，通过首次公开发行(IPO)股票募集资金6.8亿元。IPO后莲花集团持有莲花味精66.7%的股权，除了莲花味精外，该集团还有纸箱、包装和装潢等三家子公司。上市后的四年中，莲花味精经营业绩良好，并于2001年成功增资扩股，实际募集资金7.3亿元。2002年业绩大幅下滑，濒临亏损，2003年发生巨亏，净资产收益率(ROE)为-7.23%，2004年后ROE一直徘徊在1%左右，见表A1。

表A1 莲花味精盈利状况

年度	EPS (元)	CFOPS (元)	ROE (%)	销售毛利率 (%)	营业收入 (百万元)
1998	0.48	-0.29	16.25	15.68	2,479
1999	0.37	0.27	13.22	20.69	2,051
2000	0.29	0.15	12.62	27.96	2,215
2001	0.22	0.05	6.81	23.93	1,876
2002	0.02	0.1	0.93	19.92	1,338
2003	-0.17	-0.29	-7.23	12.51	952
2004	0.01	-0.26	0.24	16.93	1,174
2005	0.01	0.09	0.5	12.96	1,220
2006	0.01	0.01	1.11	11.67	1,388
2007	0.03	0.02	1.74	15.27	1,310
2008	0.01	0	0.78	15.79	1,243
2009	0.02	0.06	1.07	11.95	1,221

注：EPS是每股收益，CFOPS是每股经营活动现金流量，ROE是净资产收益率。

<sup>27</sup> 项城市是一个县级市，现隶属河南省周口市。

莲花味精的亏损与其巨额资金被大股东占用有直接关系。表A2列示了莲花集团上市至2005年末非经营性占用莲花味精资金情况。可见，从2002年至2005年，短短三年间，大股东非经营性占用资金规模从近3亿激增到10亿多，从占用资金与公司总资产和营业收入的比例/率来看，大股东占用资金程度相当严重，造成上市公司流动资金紧张，更影响了新增投资、扩大产能的能力。尽管2001年莲花味精从股票市场获得增发资金7.3亿元，但这笔融资尚不足填补以大股东占用资金之大窟窿，导致公司业绩进入拐点，并一直在亏损边缘挣扎，迄今不得翻身。

**表A2** 大股东非经营性占用上市公司资金规模

日期	净占用资金规模 (百万元)	占用资金 占总资产比例	占用资金 占营业收入比例
1998/12/31	-74.9	-4%	-6%
1999/12/31	78.3	3%	6%
2000/12/31	130.6	4%	10%
2001/12/31	192.7	4%	14%
2002/12/31	293.3	6%	22%
2003/8/31	858.4	18%	90%
2003/12/31	688.5	15%	59%
2004/12/31	1073.0	24%	129%
2005/12/31	1057.2	25%	87%

注：1998至2002年末的数据取自上市公司年报；2002年8月31日及以后资金占用数据取自2006年7月13日的“河南莲花味精股份有限公司关于控股股东河南省莲花味精集团有限公司以资抵债的报告书”，该占用资金规模为本金，不含利息。计算2001年末占用资金净额时未扣除2002年4月宣告(预案)应付大股东股利1.2亿元。

由于莲花味精董事长由大股东莲花集团董事长兼任，并且与大股东在经营、人事和资金管理方面并没有真正分开，莲花味精几乎被大股东少数高管控制，公司治理存在明显缺陷。莲花味精2003年10月因“2003年3月至6月间向其控股股东河南省莲花味精集团有限公司签发承兑汇票43650万元，该事项未经公司董事会、股东大会讨论通过，公司也未及时予以披露”而被上海证券交易所公开谴责；2004年10月又因“自2004年1月至6月间向控股股东河南省莲花味精集团有限公司及其子公司累计提供资金1,393,335,579.85元，对上述重大关联交易，该公司既未履行相应的审议批准程序，也未及时履行临时公告的信息披露义务”再次受到上海证券交易所的公开谴责。

在市场监管部门紧锣密鼓的占用资金清理“运动”中，大股东莲花集团于2006年8月和10月分两步清偿占用资金。首先是莲花集团以其拥有的土地资产、固定资产、长期投资作价共计5.876亿元抵偿莲花集团占用的部分非经营性资金。其次，莲花集团以转增权抵债及以股抵债抵偿债务4.622亿元。作价2.41亿元用于抵债的土地

## 大股东的社会性负担与资金占用

本身就是上市公司目前正在使用的土地，并没有带来新的价值，<sup>28</sup>而作价0.63亿多元固定资产和作价2.83亿元长期投资的作价是否公允、盈利能力如何，不得而知。<sup>29</sup>不得不提的是，由于莲花集团持有莲花味精的股权绝大部分被质押或司法冻结，几乎没有股权可以直接用于抵债，于是创造性地想出“以转增权抵债”新招，即通过每10股转增5股的办法获得50%新增股权，以此用于抵偿其占用上市公司资金。以股抵债后，莲花集团的持股比例从54.9%下降到41.68%，但是仍然牢牢掌握了莲花味精的控制权。就这样莲花集团没有流出一分钱现金就清偿了占用上市公司10亿余元真金白银的债务。<sup>30</sup>

莲花味精公告显示，莲花集团在清偿占用上市公司资金债务时，计算资金占用费采用的是同期一年期存款利率—2004年10月以前按一年期存款利率1.98%计算，2004年10月以后按一年期存款利率2.25%计算，而同期的一年期借款利率分别为5.31%和5.58%。根据亚太(集团)会计师事务所有限公司的测算，如果以同期借款利率计算，截至2005年12月底，莲花集团需要多承担7878万元利息费用。反观莲花味精自身有息负债，2005年底短期借款11.3亿元(其中6.5亿元逾期)，长期借款4.3万元(其中逾期1.3万元)。莲花味精一边以市场利率背负沉重的债务，一边巨额资金被大股东侵占，却只收取一半不到的占用费。可见，大股东占用资金构成对上市公司赤裸裸的利益侵占。另外，表A1显示，2002年后莲花味精的急剧下降，而其销售毛利率下降相对较为缓和，正如媒体报道，大股东巨额的资金占用严重影响了莲花味精的正常运行，更无暇顾及市场开拓。<sup>31</sup>

大股东侵占上市公司有很多途径，比如通过关联交易转移上市公司财富，但是关联交易相对监管较严，而且不是所有大股东有资源或条件可以跟上市公司发生交易。表A3列示了莲花味精上市至2006年的与大股东集团的关联交易情况。可见，2003年及以前，莲花味精与集团公司的关联交易全部是商品交易，但是交易的相对和绝对规模都不算大，这与改制上市时莲花集团将与味精有关的经营性资产全部注入上市主体，其余实体不从事味精生产经营有关。换言之，莲花集团不具备与上市公司莲花味精进行大规模日常性关联交易的“天然”条件。在日常性关联交易无法满足大股东利益特别是对资金的需求的情况下，大股东只能通过赤裸裸的非经营性资金占用来解决其对资金的燃眉之急。这就不难理解，那么多上市公司大股东需要通过占用资金，而或不不仅仅通过更加隐蔽的日常性关联交易来达到侵占外部股东利益的目的。

<sup>28</sup> 在以资抵债前，上市公司一直使用该抵债土地，但是年报中并未披露任何关于上市公司支付大股东土地使用费用的信息。

<sup>29</sup> 据上海证券报记者报道(“莲花味精近10亿占款是如何形成的”2004年7月29日A6版)，莲花集团“对外投资的效率却十分低下，目前除了个别企业，如彩印厂等能够盈利之外，其他新生的企业又成为了亏损的包袱”。作价6.080万元用于抵债的“河南莲花生物工程有限公司”曾经是莲花味精控股95%的子公司，2002年末该95%的股权加上另一全资子公司5%的股权出售给莲花集团，合计售价仅1,565万元；出售前莲花味精以河南莲花生物工程有限公司尚处试生产阶段未纳入合并报表范畴。

<sup>30</sup> 以资抵债和以股抵债后，2006年末莲花集团仍占用莲花味精5,567万元资金。

<sup>31</sup> 据悉，由于资金严重不足，目前莲花味精原有的两条生产线只开工了一条，二期生产线的建设工作更被一度停止。公司生产味精单位固定成本急速上升，吨味精完全成本比国内同行业平均水平高出1,400元。公司一度陷入停产的危机。(童颖、何军，“莲花味精近10亿占款是如何形成的”，上海证券报2004年7月29日A6版)。

表A3 莲花味精与大股东及其子公司的关联交易规模

年度	关联交易			占营业收入 比例
	交易额 (百万元)	其中： 卖出交易占比	其中： 商品交易占比	
1998	291	25%	100%	12%
1999	61	49%	100%	3%
2000	176	64%	100%	8%
2001	345	70%	100%	18%
2002	336	50%	100%	25%
2003	238	69%	100%	25%
2004	155	79%	76%	13%
2005	545	100%	6%	45%
2006	20	100%	10%	1%

那么，作为河南省项城市政府全资控股的国有企业，莲花集团为什么在2002至2005年间非经营性占用上市公司资金问题愈演愈烈？与民营控股的大股东不同，莲花集团的高管层不持有企业股份，无法像民营企业所有者那样从占用上市公司资金中获得巨大私利。关于占用资金的原因，莲花味精在其2003年报中的“公司2004年度的经营计划”这样解释：“由于上市公司是由莲花集团公司剥离上市，两个公司之间存在许多关联交易，特别是在集团公司持续经营能力欠佳的情况下，集团公司为了存活和解决上万职工的生活问题，占用上市公司的资金现象比较严重”。而表A3已表明，日常性关联交易规模并不是很大，而且莲花集团的资金占用几乎全部是非经营性占用。换言之，在剥离上市过程中，原国有企业的社会性负担保留在莲花集团，在资金困难的情况下，集团公司不得不通过上市公司输血来维持存活，包括解决职工的生活问题。

表A4根据CCER经济金融数据库的年度行业调查数据，整理了莲花集团与同行业的营业规模和雇员规模数据。<sup>32</sup>可见，莲花集团的营业收入规模和绝对雇员规模基本上是行业（不含莲花集团）的10倍左右。从雇员相对数（每万元营业收入雇员数）来看，除上市当年1998年低于全行业的加权平均数外，1999至2003年莲花集团的相对雇员规模均超过行业水平，并且在2002和2003年超过50%以上。如果考虑雇员的规模经济效应—相对雇员规模与公司规模显著负相关（曾庆生、陈信元，2006），莲花集团的实际超额雇员规模远大于表A4的统计结果。需要说明的是，表A4显示，1998年雇员数仅为10369人，而1999年升至17260人，剧增近900人，增幅达66%，而同期的营业收入增幅不足13%。之后，雇员数稳定在1.6至1.7万人之间。因此笔者怀疑1998年数据可能有误。即使假设数据无误，按照大股东自身超额雇员规模由低到高排序，在稳健性检验1的101个样本中，莲花集团上市年1998年经模型估计出的超额雇员规模排名第77位，仍属于超额雇员较严重的大股东。

<sup>32</sup> 行业样本是指莲花集团年度四位数行业代码相同的企业，并且为了减少小规模企业的噪音影响，只选择同行业中的大规模企业作为对比样本。由于莲花集团是行业中最大规模企业，故行业样本中未纳入莲花集团。由于2004年后该数据库中缺失莲花集团数据，故未能提供。

表 A4 莲花集团的雇员规模

年度	莲花集团			样本量	行业			与行业对比
	营业收入	雇员规模 绝对数 相对数			营业收入	雇员规模 绝对数 相对数		
1998	208,740	10,369	0.0497	18	24,031	1,437	0.060	-17%
1999	235,293	17,260	0.0734	17	24,952	1,383	0.055	32%
2000	262,813	16,438	0.0625	16	24,562	1,415	0.058	9%
2001	234,550	16,603	0.0708	19	21,231	1,237	0.058	22%
2002	203,930	16,752	0.0821	18	29,797	1,355	0.045	81%
2003	258,909	16,827	0.0650	25	20,215	868	0.043	51%

注：①行业样本不包括莲花味精集团；②营业收入的单位为万元，雇员绝对数单位为人，雇员相对数是每万元营业收入雇员人数，其中行业中的雇员相对数是全行业的加强平均数；③与行业对比指莲花味精集团相对雇员规模与行业相对雇员规模的差额百分比。

作为河南省最大的农产品加工企业、全国最大的味精生产和出口基地，莲花集团不仅一度支撑着河南省项城市一半以上的财政收入，而且在整个河南省的经济发展中扮演重要角色。据报道，莲花集团在发展壮大的20年中，累计实现税收17亿元、发放员工工资14亿元、解决就业人员近2万名。为重整莲花集团并解决其占用上市公司资金问题，2004年4月上旬以河南省国资委常务副主任郭宏昌为组长、省国资委省管企业监事会主席菅明军和省财政厅的官员等组成的莲花味精托管改制小组于入住莲花集团现场办公，同年7月中旬，河南省省长李成玉、副省长史济春到莲花集团现场指导。作为大型国有企业，莲花集团不停地在搞所谓的“多元化”投资，但这些对外投资的效率低，除了个别企业能够盈利之外，其他新生的企业又成为了亏损的包袱。<sup>33</sup>笔者猜测，莲花集团这些低效率投资可能承载著某些政府职能。正因为莲花集团担负了解决地方就业等社会性负担，莲花集团才肆无忌惮地占用上市公司资金，形成新的预算软约束问题。

<sup>33</sup> 童颖、何军，“莲花味精近10亿占款是如何形成的”，上海证券报2004年7月29日A6版。

## The Social Burdens of Blockholders and Fund Embezzlement: An Empirical Study of SOEs' Restructuring and Listing<sup>♦</sup>

Qingsheng Zeng<sup>1</sup> and Xinyuan Chen<sup>2</sup>

### Abstract

Based on the institutional background of the restructuring and listing of China SOEs, this paper examines the effects of blockholders' (or the groups') social burdens on their fund embezzlement in listed companies from the perspective of the motivation of easing pressure from social burdens. Empirical evidence shows that the heavier the social burdens that blockholders assume when listing, the higher is the probability of fund embezzlement, and the more funds are transferred by blockholders through non-operational receivables during the three years after listing, while blockholders' social burdens have no impact on their fund embezzlement through operational receivables. This paper provides new evidence for the restructuring and listing of SOEs as a whole by adopting the perspective of social burdens to explore the motivation of state-owned blockholders to tunnel in listed companies.

**Keywords:** Social Burden, Fund Embezzlement, Restructuring of State-Owned Enterprises

**CLC codes:** F271, F275.5, F276.6

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## I. Introduction

In Chinese stock markets, where ownership is highly concentrated, listed companies face not only the agency problem of managers typically found in developed markets, but also the more serious agency problem of blockholders.<sup>3</sup> Blockholders tunnelling listed companies through related-party transactions is the most direct manifestation of this agency problem. Being a common phenomenon, fund embezzlement of blockholders has seriously hindered Chinese capital markets' healthy, sustainable development and integrity building. Although the fund embezzlement issue in listed companies was almost resolved around the year 2007 through strong governance and stringent supervision by the regulatory authorities,<sup>4</sup> tunnelling by blockholders in listed companies through fund embezzlement or other more subtle ways still exists.<sup>5</sup> Recently, fund embezzlement by blockholders has already become a hot topic in the research on corporate governance in China. For example, Li *et al.* (2004) are among the first to study blockholders' transfer of funds from listed companies, and find the result that fund embezzlement by blockholders is related to listed companies' ownership structure, and the nature and form of blockholders' organisation. Focusing on the related transactions, including fund embezzlement, Tang *et al.* (2005) study the equity structure's influences on large shareholders' tunnelling behaviour. Most studies focus on the impact of internal governance mechanisms like ownership structure on blockholders' fund embezzlement, which mainly explains the tunnelling capabilities of blockholders, but few discuss their motivation. If private stockholders have strong tunnelling motivation driven by benefits for themselves, then the senior executives,<sup>6</sup> who are the agents of state-owned blockholders, will be less benefit-driven since fund embezzlement is illegal, and they cannot claim the tunnelled benefits as their own. Therefore, they have a more complicated motivation for tunnelling than do private enterprises. With respect to that, state-owned blockholders may just tunnel listed companies simply to deal with predicaments – an action like blood transfusion, apart from the motivation of purely

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<sup>3</sup> The blockholder and the controlling shareholder in this study refer to the largest corporate shareholder unless specified otherwise. When expressions herein refer to the tunnelling or fund embezzlement of blockholders, blockholders refer to the largest shareholder and its related enterprises, namely the blockholder group, unless specified otherwise.

<sup>4</sup> The regulatory documents involving the cleaning-up of fund embezzlement include the *Notice on Regulating Financial Transactions of Listed Companies with Related Parties and Several Issues on External Guarantees of Listed Companies* (SRC Issue No. [2003]56), the *Notice on the Securities Regulatory Commission's Opinions on Improving the Quality of Listed Companies as Approved and Announced by the State Council* (SC Issue No. [2005]34), and the *Notice on Further Cleaning-up of Fund Embezzlement by Blockholders in Listed Companies* (SRC Issue No. [2006]128).

<sup>5</sup> On 13 June 2008, the China Securities Regulatory Commission (CSRC) fined the blockholders in the two listed companies, McNair and Jiufa, for fund embezzlement. Subsequently, the CSRC held a video conference for the securities regulatory industry, in which the Vice-Chairman Fuchun Fan indicated that the CSRC would strengthen the investigation and punishment of illegal embezzlement and misappropriation of funds by blockholders from listed companies, in order to effectively protect the legitimate equity of listed companies and the investors at large.

<sup>6</sup> From the perspective of actual control, the actual controllers of the private blockholders are private entrepreneurs, and the actual controllers of the state-owned blockholders are senior executives at the corresponding or higher level in state-owned enterprises.

intensive embezzlement. Most state-owned listed companies are restructured from former state-owned enterprises, which have to shoulder a lot of social functions due to historical reasons. One task of their restructuring and listing is to get rid of the original social burdens and inject partial assets (usually the high-quality assets) into the listed companies, leaving the remaining assets, including non-operational assets, and social burdens in the state-owned enterprises (or groups), which become the blockholders. Therefore, it is natural that listed companies would transfer “blood” to state-owned controlling shareholders when they are lacking survival capabilities. Through classifying the restructuring types of state-controlled listed companies, Deng *et al.* (2007) find that both the frequency and the degree of net fund embezzlement in non-completely-restructured companies are much higher than those in completely restructured companies. They first analysed the motivation of blockholders to tunnel listed companies from a new perspective of companies’ pattern of restructuring. However, the classification of complete and non-complete restructuring is comparatively subjective, and the types of restructuring cannot represent the severity of their social burdens. For instance, the blockholder of a non-completely-restructured company may not face heavier social burdens and lower survival capabilities, which should depend on the company’s original status before its restructuring. In addition, more than 72 per cent of state-controlled listed companies are partially restructured according to Liu and Duan (2006), and Deng *et al.* (2007) have not explained the differences in blockholders’ tunnelling between these companies. In view of this, this paper explains blockholders’ fund embezzlement from the perspective of operational pressure (including shortage of funds) brought by social burdens.

This study uses the scale of excessive employees as the proxy variable of social burdens and the first three fiscal years after listing (not including the listing year) as the event window, and finds that the heavier the social burdens assumed by the state-owned blockholders (groups), the more serious is the problem of fund embezzlement through non-operational receivables, while blockholders’ social burdens have no impact on their fund embezzlement through operational receivables.

This paper contributes to the literature in terms of the following three aspects. First, in view of the special institutional background of state-owned blockholders’ responsibilities of social functions, this paper provides a new explanation of state-owned blockholders’ tunnelling in listed companies, especially through non-operational receivables, by considering the motivation of easing pressure from social burdens. Second, considering that the current literature either does not identify the nature of fund embezzlement (whether it is operational tunnelling or non-operational tunnelling), or directly uses the item of other receivables in the accounting statement as the proxy for blockholders’ non-operational tunnelling, this paper make up this deficiency in analysis methods by taking separate tests through classifying embezzled funds into operational and non-operational types with fund embezzlement data disclosed in annual reports.

Third, most related studies use time-series and cross-sectional pooling data on sample selection, but the sample size is unstable with different sections, and influences caused by important events like the change in controlling rights have not been considered. We, however, carry out a unified study that takes into account the first three fiscal years after listing, with the requirement that no control right has been changed in all samples, making the research findings more convincing.

The paper is organised as follows. Section II reports the literature review. Section III discusses the institutional background and then develops the hypotheses. Section IV describes the research design. Section V reports the empirical results. Section VI summarises and concludes the paper. The appendix presents a case study of tunnelling by the blockholder of a listed company in China.

## II. Literature Review

The term “tunnelling” was originally proposed by Johnson *et al.* (2000) to refer to the transfer of assets and profits out of firms for the benefit of those who control them. According to Johnson *et al.* (2000), it can be divided into illegal tunnelling, which mainly exists in the emerging markets with generally poor law enforcement, and legal tunnelling, which commonly exists even in advanced economies with sound legal protection for investors. The former takes the form of direct theft or fraud, while the latter takes various forms, including expropriation of investment opportunities from a firm by its controlling shareholders, transfer pricing favouring the controlling shareholder, transfer of assets from a firm to its controlling shareholder at non-market prices, loan guarantees using the firm’s assets as collateral, and so forth. Recently, expropriation of minority shareholders has become a hot topic in research on corporate governance. La Porta *et al.* (2000a) declare that companies in countries with civil law legal systems, which provide poor legal protection for minority shareholders, are traded at lower Tobin’s Q ratios compared with those in common law countries. This has proved that the tunnelling issue in markets with weak legal protection for investors is much more serious. Through analysing a South East Asian sample, Claessens, Djankov, Fan, and Lang (2002) conclude that market-to-book ratios are positively related to the cash-flow rights held by the blockholder, while they are negatively related to the divergence between cash-flow rights and control rights. Joh (2003) also finds that Korean firms’ profitability is inversely related to the divergence between cash-flow rights and control rights. Using dividend payouts as a proxy for expropriation, La Porta *et al.* (2000b) show that firms make lower dividend payouts in countries with poor legal protection for minority shareholders, and that investors lack legal avenues to force higher payouts from firms. However, these studies only provide indirect evidence that blockholders tunnel minority shareholders. Many later studies have begun to find direct evidence of blockholders’ expropriation actions. For example, Beak, Kang, and Lee (2006) find that Korean chaebols benefit their controllers in related private security offerings through setting a price favourable

for them to enhance their value, while in Chile, chair and board compensation is used to tunnel company resources. According to Francisco (2009), as cash-flow rights decrease, group controllers tend to increase their pay as chairmen and board members, which means that their pay is unrelated to the corporate accounting performance. Bertrand, Mehta, and Mullainathan (2002) examine tunnelling activities within Indian business groups, showing that the propagation of earnings transfer from group firms where the controlling shareholders have low cash-flow rights to firms where they have high cash-flow rights takes place through non-operational items. Applying this to a sample of Hong Kong companies, Cheung *et al.* (2006) find that predatory-related transactions (such as asset acquisition, equity sales, goods trades, and cash offerings) between blockholders and listed companies, *a priori*, might be most likely to result in the expropriation of minority shareholders. Meanwhile, ownership of the blockholders appears to be positively related to expropriation, whereas the qualities of information disclosure and audit committees on the board appear to have a small mitigating impact. These studies demonstrate that minority shareholders experience more tunnelling activities in highly concentrated equity markets. The stronger the blockholders' expropriation ability, the higher is their income, and the more serious is the problem.

As an emerging market in a transitional economy, the Chinese stock market is highly conducive to tunnelling behaviour. Because of highly concentrated ownership and state controlling, its agency problem of blockholders is different from that of advanced markets with diversified ownership, or that with concentrated ownership but controlled by private shareholders. Since most listed companies are restructured from state-owned enterprises, they have not completely separated from the controlling shareholders in terms of business, finance, and human resources, thus related transactions are more frequent and often on a larger scale. Peng, Wei, and Yang (2006) regard that although blockholders can tunnel a listed company, they can also prop it up. Setting the scale of related transactions as the negative proxy variable for corporate governance quality, and observing the introduction of three policies from the China Securities Regulatory Commission (CSRC) on regulating related transactions in 2000, Berkman, Cole, and Fu (2008) find that companies with poor governance receive significantly higher returns than those with good governance during the introduction period. They also find that companies with close relationships with the government cannot benefit from the three new policies, which means that minority shareholder regulators cannot carry out the policies of protecting the interests of minority shareholders in a company that is closely related to the government. Cheung, Jing, Rau, and Stouraitis (2005) also find that the ratio of state-owned shares in Chinese-listed companies is negatively related to the abnormal returns of related transactions, and the minority shareholders suffer more significantly in related transactions between the listed companies and state-owned shareholders than in those between the listed companies and the non-state-owned shareholders. Shleifer and Vishny (1994) explain the tunnelling of state-owned controlling shareholders from

the perspective of government's grabbing hand. Apart from related transactions, the cash dividend is also considered a special kind of tunnelling means. For example, Lee and Xiao (2004) find that Chinese state-controlled listed companies tend to give cash dividends instead of placing subscribed shares, and consider that cash dividends become a means for state-owned controlling shareholders to tunnel company resources. Ma *et al.* (2005) also find that cash dividend tunnelling and capital tunnelling are two alternative means to maximise main shareholders' equity values. These studies indicate that related transactions are basically a means by which blockholders can tunnel the listed companies, and the government, as the ultimate controlling part, has exacerbated the tunnelling situation. Therefore, later research has turned to reveal the influential factors and rules of related transactions, such as issues about the kinds of blockholders that are more inclined to tunnel and the methods of tunnelling. Chen and Wang (2005) find that the scale and frequency of related transactions in companies with balanced equity control are significantly smaller than those with one dominant shareholder; in other words, the stronger the blockholder, the higher probability of occurrence related transactions have. Tang *et al.* (2005) also find that companies with balanced equity control can inhibit the occurrence of related transactions.

Recently, the phenomenon of blockholder tunnelling in listed companies has become much more serious. Different from other kinds of related transactions, such as trading relationships, asset purchases or sales, and ownership transfers, for which it is hard to directly judge whether the minority shareholders' benefits have been tunnelled, the fund embezzlement of blockholders is the most obvious way of tunnelling in listed companies. Therefore, fund embezzlement is a specific issue that is profoundly studied in related transactions. Meanwhile, a great deal of literature has shown that blockholders' fund embezzlement has significantly negative influences on listed companies. For example, Jiang, Lee, and Yue (2010) find that the more funds are tunnelled by the blockholder, the worse is the listed company's operational performance, the higher is the probability of being specially treated (ST), and the lower the stock return will be. Deng *et al.* (2007), Cheng and Chen (2006), and others have already found that the performance of listed companies will be negatively impacted by fund embezzlement.<sup>7</sup> We can see that fund embezzlement is a means of tunnelling in listed companies by blockholders, about which both industrial and academic circles hold the same view. Then, we are more interested in which factors have led to the occurrence of fund embezzlement and to what degree the embezzlement has been reached. Most related literature has explained the differences

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<sup>7</sup> The fund embezzlement by blockholders not only decreases new investment opportunities for listed companies, but also affects the normal supply of working capital, producing direct negative effects on the companies' operational performance. The blockholders tend to use non-cash payments to cover debts for their fund embezzlement, and the embezzlement fees are usually calculated by rates far lower than the market interest rates for borrowing, which is a direct manifestation of exploiting the benefits of minority shareholders in listed companies. For example, Wu (2007) finds that up to 31 September 2005, among the 316 listed companies that initiated the activities of cleaning-up fund embezzlement in the Shanghai and Shenzhen stock markets, only 41 per cent of the total settlement amount was paid by cash, and the more funds the blockholders embezzled, the more non-cash payments were used.

in blockholders' fund embezzlement between various companies from the dimension of corporate governance, especially the structure of equity rights. Using a sample of listed A-share companies from 2000 to 2003, Li *et al.* (2004) conduct an empirical study on China blockholders' fund embezzlement, and conclude that there is a non-linear relationship that goes upwards first and downwards later between the blockholder's fund embezzlement and its proportion of shares in the listed company. Also, the fund embezzlement has a significantly negative relationship with the proportion of shares held by the second to the fifth largest shareholders. In addition, funds tunneled by state-owned blockholders are larger, especially in companies controlled by state-owned groups. Using the listed companies for 2001 and 2002, Wang (2006) draws the same conclusion. However, using the sample for 2001 to 2003, Tang *et al.* (2005) find that regardless of whether the proportion of shares held by the largest shareholder has exceeded 50 per cent, the proportion will be significantly and positively related to the fund embezzled, and an inhibition effect will be produced by increasing the share proportion of the second and third largest shareholders. Apart from the ownership structure and the organisational form of the blockholders, some papers also study the influences on blockholders' fund embezzlement brought by other corporate governance mechanisms, such as institutional investors and independent directors. Tang *et al.* (2005) find that institutional investors post a negative influence on the inhibition effect of fund embezzlement, which means that the fund embezzled by the blockholder when the second largest shareholder is an institutional investor will be much more than when it is not. However, Wang and Xiao (2005) find that the presence of an institutional investor among the top 10 shareholders and the increase in its share proportion have significantly reduced the level of fund embezzlement by related parties. The reason for their contradictory conclusions can be explained by two points. First, their sample intervals are different. Second, their definitions of the fund embezzler are not the same: only the blockholder is considered by Tang *et al.* (2005), while all related parties are considered by Xiao and Wang (2005). To some degree, this contradiction shows the uncertainty in institutional investors' function of inhibiting fund embezzlement by the blockholder. In addition, some studies find that independent directors cannot effectively inhibit the tunnelling behaviour of blockholders (Tang *et al.*, 2005; Wang, 2006), and the corporate key executives' getting a position in the blockholder increases the degree of fund embezzlement (Wang, 2006), which further indicates that the stronger is the degree of control by the blockholder, the higher is the probability of fund embezzlement by it.

The above-mentioned studies all measure the level of net fund embezzled by blockholders with the related data disclosed in the corporate annual reports. However, a few researchers simplify the measurement of fund embezzlement by setting the "other receivables" in the annual balance sheet as the proxy variable for the fund embezzled by blockholders. Some of these studies reach the same conclusions as the studies discussed above. For instance, Li *et al.* (2008) find that the form of group control intensifies the

degree of fund embezzlement and that the equilibrium ownership structure can inhibit such a situation. Jiang, Lee, and Yue (2010) find that the higher is the share proportion of the blockholder, the more serious is the fund embezzlement, but the government's direct control can reduce the extent of tunnelling funds. You and Luo (2007) show that the more serious is the agency problem of the blockholder, meaning the higher is the degree of divergence between cash-flow rights and controlling rights, the more serious is the tunnelling behaviour. However, some studies obtain contradictory results. For example, the funds embezzled by blockholders in non-state-controlled companies are much greater than those in state-controlled ones (Ma *et al.*, 2005; Li *et al.*, 2008); the higher is the share proportion of the blockholder, the smaller is the scale of funds tunnelled by the blockholder (Li, 2008). All these differences may be induced by the differences in measuring the funds being tunnelled. However, this paper argues that the noise brought by taking other receivables as the proxy variable of fund embezzlement cannot be neglected. The statistical results of Wang and Xiao (2005) show that funds embezzled by other related parties, except the biggest shareholder, and those by non-related parties account for a significant percent of corporate total embezzled funds. In addition, the simplified method of proxy also neglects the possibility of embezzlement of blockholders' funds by listed companies.

Regarding the literature, the study of Deng *et al.* (2007) is a rare one that explores the issue of fund embezzlement from the formation backgrounds of the listed companies, instead of the traditional perspective of internal corporate governance. They find that the probability of occurrence of fund embezzlement and the scale of funds embezzled in non-completely restructured listed companies are higher than those in completely restructured companies. This has shown that when listed companies are partially restructured from state-owned enterprises, blockholders may tunnel listed companies only to help the non-listed part in state-owned companies, which lacks survival capabilities, to get rid of great difficulties. However, as most Chinese state-controlled companies are partially restructured from the state-owned enterprises (SOEs), as mentioned in this introduction, Deng *et al.* (2007) cannot explain the differences in fund embezzlement between these firms. Zeng and Chen (2006) find that state-controlled listed companies employ more staff than privately controlled companies. Therefore, when exploring the motivation of blockholders' tunnelling funds from listed companies, the studies should be based on the specific institutional background that state-owned blockholders (or groups) assume social burdens. Lin and Li (2004) assert that in the case of asymmetric information, political burdens<sup>8</sup> will lead to moral hazards of the managers in state-owned enterprises thus causing low efficiencies in firms; and when the market competition reaches a certain

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<sup>8</sup> They consider that political burdens of Chinese state-owned enterprises include strategic political burdens and social political burdens. The former refers to burdens brought by investments in capital-intensive industries without comparative advantages in China under the influences of traditional catch-up strategies; the latter refers to burdens of taking on too much responsibility for heavy social functions like redundancy and social welfare.

level, the political burdens will surely bring up soft budget constraints<sup>9</sup> for the firms. Lin *et al.* (2004) empirically support the conclusion that political burdens are the main reason for firms' soft budget constraints with the statistical database of Chinese industrial enterprises. Using a sample of Chinese listed companies from 2001 to 2005, and setting the intervention degree of local governments and the fiscal deficit level of regional areas as the proxy variables for political burdens, Yang *et al.* (2007) show that the positive relationship between debt financing and the ratio of management expenditure is stronger for companies with heavy political burdens than it is for those with lower political burdens, meaning that corporate external political burdens will increase agency costs by way of the influence of the debt rate. However, as for whether the social burdens of state-owned enterprises will have a negative influence on listed companies under their control, such as whether fund embezzlement in listed companies will be aggregated, basic research on this issue is still needed.

### III. Institutional Background and Research Hypotheses

Most Chinese state-controlled listed companies are restructured from the SOEs. Owing to historical reasons, the SOEs not only have to assume the strategic political burdens caused by the government's development needs, but also have to take the responsibility for social burdens induced by the policy of encouraging full employment (Lin *et al.*, 2004). Through the reform of decentralisation, the decision-making rights in production and management have been returned to the SOEs. As the economy develops and the overall national strength improves, the strategic political burdens have been removed for most SOEs, but the problem of excess employees caused by the planned employment system has not been completely solved. Recently, with the vigorous implementation of the policy of reducing employees and improving efficiency, the problem of hidden unemployment in SOEs has been gradually eased. However, the scale and speed of layoff have been strictly controlled by the government. In an enterprise with a good financial condition, even if redundancy exists, the redundant employees cannot be laid off without the layoff quota from the government, and the enterprise can only distribute and digest surplus staff by position transferring within the enterprise (Chen and Lu, 2003). Therefore, usually it is only when the enterprises can no longer survive that they can relieve the labour relations with employees through non-normal forms like selling the enterprise and bankruptcy to get rid of social burdens, but most SOEs still have to compete in the markets with heavy or light social burdens. On the one hand, redundant personnel increases the economic burdens of SOEs; on the other hand, it reduces their productive efficiency. In the 1990s, the rate of return on assets in SOEs kept declining, and according to Qi and Wang (2004), redundant personnel is one

<sup>9</sup> Soft budget constraints were first proposed by Kornai in 1986 to refer to the phenomenon in a socialist economy that when state-owned enterprises suffer a loss, the government usually tends to increase investments, add loans, reduce taxes, and provide fiscal subsidies to them (Lin *et al.*, 2004).

of the main elements causing loss and low efficiency. Then the SOEs' low productivity leads to their operating with heavy debts and a lack of capital. The heavier is the social burden, such as redundant personnel assumed by an enterprise, the lower will be the efficiency, the more likely the enterprise will be to experience a loss, and the greater will the urgency be for external financing.

The Chinese stock markets were created on the one hand to solve the difficult problem of capital shortage in SOEs, and on the other to improve the corporate governance mechanisms and operational efficiency through supervision by external investors. To remove the social burdens of SOEs and to clarify the operating objectives of listed companies, restructuring becomes a necessary choice for SOEs when they are listed. Restructuring methods include spin-offs, bundled listing, and whole group listing. Spinning off is the main mode of SOEs' restructuring and listing (Liu and Duan, 2006), and describe a situation where part of original assets (usually high-quality assets) and human resources are separated and set up as a new listed company, while the remaining assets and staff are retained in the new SOE (or group), which is the controlling shareholder of the newly established listed company. After restructuring, the quality of the main assets in the listed company is improved, and its social burdens are eased to some degree. However, in most cases, the whole group's social burdens are not really removed, because most of these burdens are still left with the new SOE (or group). When the SOE has the opportunity to be listed, equity financing can provide ample financial security for the development of the listed company, thus enhancing the whole group's profitability. However, most of the social burdens remain to be borne by the blockholders of the listed companies; as we have discussed earlier, the heavier are the social burdens assumed by the original SOEs before restructuring, the lower is the survival capability of the blockholders of the corresponding listed companies and the more arduous are the operational difficulties. Under such circumstances, there will be a more urgent need for capital. When the revenue from dividends distributed by listed companies is limited, the blockholders are highly motivated to tunnel funds of listed companies by using the controlling rights to ease their capital pressure for their own survival and development. In the appendix, we will analyse the case of Lotus MSG (stock code 600186), which is a spin-off from Lotus Group, which has retained heavy social burdens. When Lotus Group's operational capabilities kept declining, the Group had to tunnel funds from the listed company, Lotus MSG, to survive and maintain the livelihood of thousands of employees.

In addition, social burdens will inevitably lead to soft budget constraints for firms (Lin *et al.*, 2004). During the first 10 years or so of the development of the Chinese stock markets, the SOEs enjoyed the privilege of public financing in the stock markets, which in essence is a special allowance provided by the government. Because of the specificity of state ownership and the social burdens, the listed companies' "blood transfusion" action towards the state-owned blockholders became, to a certain degree, a

special problem of soft budget constraints. Because of the social burdens, which should be assumed by the government, the state-controlled companies and their executives do not need to take personal responsibility even if serious fund embezzlement occurs, and they enjoy stronger bargaining power compared with private enterprises in the debt cleaning-up campaign after fund embezzlement. It is clear that during the cleaning-up campaign dominated by regulatory authorities, the state-controlled companies tend to be in the greatest difficulty when cleaning up debts or when completing debt payoffs before the deadline. Accordingly, we formulate the first hypothesis:

**Hypothesis 1: The heavier are the social burdens assumed by the shareholder (or shareholding group), the higher is the probability of fund embezzlement by the blockholder and the larger are the funds being tunnelled.**

The corporate receivables from blockholders at the end of the year can be divided into two categories: first, the operational receivables resulted from related transactions; in general, the operational receivables from the blockholders and the other clients are of the same nature, that is, both are caused by commercial credit; second, the non-operational receivables, which are not brought by trade relationships between the listed companies and their blockholders. The former is called operational fund embezzlement and the latter non-operational fund embezzlement. Generally, the former is considered normal, but the latter is a tunnelling act by blockholders to expropriate the interests of minority shareholders. Because the non-operational fund embezzlement is purely a tunnelling act, it has become the key target to be supervised and cleared up by the regulatory authorities.<sup>10</sup> The heavier are the social burdens of the blockholders, the more likely it is that they will ease the pressure by way of non-operational fund embezzlement. Therefore, if Hypothesis 1 is correct, we can conjecture that the relationship between the social burdens of the blockholders and their fund embezzlement is mainly reflected in non-operational items. Thus, we propose a sub-hypothesis of Hypothesis 1:

**Hypothesis 1A: The positive relationship between the blockholders' social burdens and their non-operational fund embezzlement is much stronger than that between the blockholders' social burdens and their operational fund embezzlement.**

## IV. Research Design

### 4.1 Sample Selection and Data Resources

Taking the listed year as the observation point of the social burdens assumed by

<sup>10</sup> It is definitely stated in the *Notice on Further Cleaning-up of Fund Embezzlement by Blockholders in Listed Companies* (SRC Issue No. [2006]128) that it is important to clean up the non-operational fund embezzlement by blockholders in listed companies in order to consolidate the basis of the capital market and enhance the quality of listed companies.

the blockholder group, this paper selects the non-financial A-share companies launching initial public offerings (IPOs) in Shanghai and Shenzhen stock markets between 1996 and 2002 as the object of study.<sup>11</sup> After removing companies that change the controlling right or delist in the listing year and in the three years after listing, companies with less than 200 employees,<sup>12</sup> and companies lacking the relevant data, we obtain a sample of 573 IPO companies. Table 1 shows the distribution of the year when the sample companies get listed, the highest proportions in which are in 1996 and 1997, which together account for 44 per cent of the total sample; 2001 and 2002 enjoy the lowest proportions. Table 1 also represents the total number of new A-share listed companies and the proportion of all the A-share listed companies in the current year of listing that are the selected observations. We can see that comparatively high percentages of selected observations are found in 1998 and 1999, while there is little difference in the percentages between other years, thus ensuring the representativeness of each year's observations.

**Table 1** Listing Year Distribution of Observations

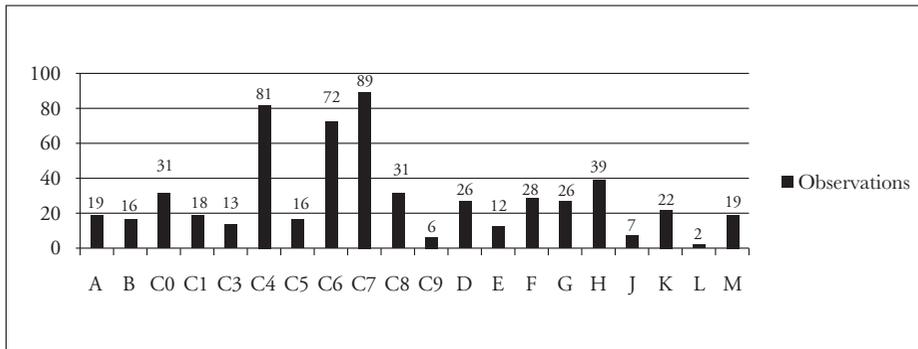
Listing year	No. of observations	% of year observations	No. of newly listed A-share companies	Proportion of newly listed A-share companies that are selected observations
1996	124	22%	203	61%
1997	126	22%	206	61%
1998	74	13%	106	70%
1999	67	12%	97	69%
2000	89	16%	136	65%
2001	48	8%	79	61%
2002	45	8%	70	64%
Total	573	100%	897	64%

The sample's distribution of industry shows that manufacturing takes up the largest proportion, surpassing 62 per cent. Of this proportion, machinery, equipment, and instrumentation (C7) and petroleum, chemicals, and plastics (C4) have the largest sample

<sup>11</sup> The selection of this interval is based on the observed window of this study, which is three years after listing (not including the listing year; that is, the sample includes data for the nine years between 1997 and 2005), and the disclosure of fund embezzlement in the annual reports of listed companies was started in 1997, so data before 1996 are not available. Because the mandatory clean-up movement required that funds embezzled by blockholders should be completely returned before the end of 2006, the original state of fund embezzlement has been destroyed. Therefore, we do not choose the samples in 2003 and the year after.

<sup>12</sup> Referring to Zeng and Chen (2006), 200 persons are taken as the dividing line to remove the companies that only disclose the number of employees at the headquarters, because actually a listed company usually has more than 200 employees.

sizes. The industry distribution of the sample companies is almost the same as that of all listed companies.



Note: The industry codes in Figure 1 correspond to the following industries: A – agriculture, forestry, animal husbandry, and fishery; B – mining and quarrying; C0 – food and beverages; C1 – textiles, clothing, and fur; C3 – paper and printing; C4 – petroleum, chemicals, and plastics; C5 – electronics; C6 – metals and non-metals; C7 – machinery, equipment, and instrumentation; C8 – pharmaceuticals and biological products; C9 – other manufacturing sectors; D – electricity, gas, and water production and supply; E – construction; F – transportation and warehousing; G – information technology; H – wholesale and retail trade; J – real estate; K – social services; L – communication and culture; M – miscellaneous.

**Figure 1 Industry Distribution of the Sample**

Except for the data on blockholders in the robustness test, which are taken from statistical databases of industrial enterprises, all the financial and non-financial data used in this paper are sourced from the CSMAR database of Shenzhen GTA Corporation.

## 4.2 Testing Models and Variables

This paper takes the scale of redundant employees in the listing year as the proxy variable for social burdens of the blockholder group. The reasons for this are as follows. First, reducing unemployment and promoting employment is always the duty of a government, and is a top priority related to social stability and harmony. The internal digestion of redundancy is a typical way for SOEs to assume a governmental function, so the scale of redundant employees is an ideal proxy variable for researchers to evaluate the social burdens of the SOE. Second, given the difficulty in getting access to data on the blockholders,<sup>13</sup> this study uses the scale of redundancy in listed companies to replace that in the controlling shareholders. Under a system that the IPO prices would

<sup>13</sup> It is more representative to directly use the number of excess employees in the blockholders of listed companies to proxy for the social burdens or operational pressures faced by the blockholders, but unfortunately, the relevant information on blockholders is not disclosed in public documents from listed companies. To increase robustness, in the robustness test we repeat our tests with the blockholders' own data on redundant employees, which are taken from the China Industrial Enterprise Statistical Database, by matching the blockholder's name with the firm name in that database, and we obtain the same results. However, only data on 101 sample companies can be found in that database, and 82 per cent of samples are lost; therefore, it is used as additional evidence.

be regulated, to maximise the financing scale, the optimal choice for SOEs is to increase profit indicators (such as earnings per share) of the IPO companies.<sup>14</sup> In this way, in the process of the restructuring of SOEs, high-quality assets are usually injected into listed companies, while such social burdens as the non-operational and low-quality assets, and redundancy, remain in the controlling shareholders of listed companies (Liu and Duan, 2006). In other words, in order to maximise the scale of financing, the blockholders will do their best to reduce the social burdens of listed companies, including redundancy, when the SOEs are to be restructured (for instance, when other factors, such as company scale, are kept the same, the number of employees in the listed company tends to be 20 to 30 per cent less than that in its blockholder). Zeng and Chen (2006) find that compared with non-state-controlled companies, there are still excess employees in the SOEs, indicating that despite the blockholders' incentive to reduce listed companies' social burdens, the problem of balance in the process of restructuring between the listed companies and their parent companies still makes the listed companies have to directly share part of the redundancy in the original SOEs. We believe that the scale of employees in the listed companies restructured from SOEs with heavy redundancy pressure is more likely to be larger than that transformed from SOEs with lighter redundancy pressure. Therefore, when the SOE is restructured and listed, the scale of redundancy in the listed company can be used to measure redundancy in the blockholder (or group), and thus measure its level of social burden.

Following Zeng and Chen (2006), the indicator of redundancy in listed companies (*BURDEN*) will be estimated by the following method: first, take all the non-financial A-share companies that have been listed for more than one year in the sample interval as samples,<sup>15</sup> use the model  $Y = \alpha + \beta * SIZE0 + \theta * CAPITAL + \omega * GROWTH + \sum \gamma * INDU + \sum \lambda * YEAR + \varepsilon$  to estimate the coefficients, such as  $\hat{\alpha}$ ,  $\hat{\beta}$ ,  $\hat{\theta}$ ,  $\hat{\omega}$ ,  $\hat{\gamma}$ , and  $\hat{\lambda}$ , then estimate the theoretical normal scale of their employees  $\hat{Y}$ :

$\hat{Y} = \hat{\alpha} + \hat{\beta} * SIZE0 + \hat{\theta} * CAPITAL + \hat{\omega} * GROWTH + \sum \hat{\gamma} * INDU + \sum \hat{\lambda} * YEAR$ , based on the estimated coefficients and the corresponding indicators of the newly listed companies in the current year of listing. Finally, use the scale of the actual employees of the newly listed companies in the current year of listing to subtract the estimated normal scale of employees to obtain the indicator for excess employees:  $BURDEN = Y - \hat{Y}$ . In

<sup>14</sup> In China, the pricing formula for IPOs is: Issuing price = Earnings per share  $\times$  PE. During a very long period of time, the price-earnings ratio (PE) is locked at 15 times, so earnings per share almost becomes the determinant factor for the scale of financing.

<sup>15</sup> The estimation sample includes all non-financial listed companies that have been listed for more than one year (not including the listing year) and with an employee scale of no less than 200 persons in the sample interval, including companies that are not included in the sample of this study because of a change in the controlling shareholding right during the three years after listing. The companies after listing (not including the newly listed companies) are taken as the reference because various indicators of these companies are more stable, and the larger the estimation sample is, the more reliable the estimation results should be. To remove influences from extreme samples, all constant variables in the model are winsorised by 1 per cent.

this model,  $Y$  represents the number of employees per 10,000 renminbi of operational revenue.<sup>16</sup>  $SIZE0$  shows the scale of the company, indicated by the natural logarithm of corporate operational revenue.  $CAPITAL$  indicates corporate capital intensity, measured by the proportion of fixed assets to total assets.  $GROWTH$  indicates corporate growth, measured by the growth ratio of corporate operational revenue for the following year.<sup>17</sup>  $INDU$  and  $YEAR$  represent the industry dummy variable and the accounting year dummy variable, respectively.<sup>18</sup>

After obtaining the estimated variable for redundancy, we establish the following models to test Hypotheses 1 and 1A by referring to the research models of Li *et al.* (2004) and Deng *et al.* (2007).

$$\ln \frac{p}{1-p} = \alpha + \beta_1 * BURDEN + \beta_2 * DIVID + \beta_3 * GOVMT + \beta_4 * LSHR1 + \beta_5 * USHR1 + \beta_6 * LEV + \beta_7 * SIZE + \sum_{n=8}^{26} \beta_n * INDU_n = \sum_{t=27}^{32} \beta_t * YEAR_t + \varepsilon \quad (1)$$

$$TUNNELING = \alpha + \beta_1 * BURDEN + \beta_2 * DIVID + \beta_3 * GOVMT + \beta_4 * LSHR1 + \beta_5 * USHR1 + \beta_6 * LEV + \beta_7 * SIZE + \sum_{n=8}^{26} \beta_n * INDU_n = \sum_{t=27}^{32} \beta_t * YEAR_t + \varepsilon \quad (2)$$

Model 1 is a logistic regression model, while Model 2 is a multivariate regression model. They are respectively used to test the influences of excess employees on the probability of fund embezzlement by blockholders and the scale of funds being tunnelled.<sup>19</sup> In Model 1, the dependent variable  $p$  is a dummy variable of whether the blockholders have embezzled funds in listed companies during the three years after listing (not including the listing year), and includes three variables  $DUMY\_TUN$ ,  $DUMY\_TUNABN$ , and  $DUMY\_TUNNM$ , which indicate whether the blockholders have tunnelled the funds (including operational and non-operational fund embezzlement), whether it is non-operational fund embezzlement, and whether it is operational fund embezzlement,

<sup>16</sup> Operational revenue but not assets is selected as the deflator index, because the huge IPO financing increases the scale of assets, and the scale of employees per unit of assets will be biased due to different growth speeds in different companies. In addition, the number of employees in a company is mainly determined by its scale of operational revenue, because labour costs are paid by operational revenue but not through the sales of assets.

<sup>17</sup> A firm usually expands its human resource reserves according to the estimated firm scale of the forthcoming year, so theoretically it is more reasonable to use the following year's sales growth to measure the influences of growth on the employee scale at the end of current year. After testing, replacing it with the current year's sales growth does not affect the test results.

<sup>18</sup> This model is used because the corporate size, capital intensity, firm growth, and industry characteristics are the most basic and major factors that determine the scale of employees. We control for the variable of listing year, because we find that with the reform of reducing employees and improving efficiencies in SOEs, the later the company gets listed, the smaller the employee scale will be.

<sup>19</sup> If the results of Models 1 and 2 are not consistent, we consider that the results of Model 2 should be more convincing, because Model 1 only makes a qualitative judgment through deciding whether the net funds tunnelled are greater than 0 without distinguishing the scale of funds embezzled. For example, the same treatment will be made whether the relative scale of funds embezzled is 0.0001 or 0.1, which actually are two essentially different cases.

respectively. The detailed definitions are found in Table 2. In Model 2, the dependent variable *TUNNELING* is the variable for the scale of funds embezzled by the blockholder, and includes three variables *TUN*, *TUN\_ABN*, and *TUN\_NM*, which represent the scale of total fund embezzlement, the scale of non-operational fund embezzlement, and the scale of operational fund embezzlement, respectively. The detailed definitions are found in Table 2. Based on Hypotheses 1 and 1A, this study predicts that the tested variable *BURDEN* is positively related to all dependent variables, but its positive relationship with dependent variables of non-operational fund embezzlement (such as *DUMMY\_ABN* and *TUN\_ABN*) is more significant.

The two models both consider the size of corporate cash dividends (*DIVID*), the form of blockholder organisation (*GOVMT*), the controlling power of blockholders (*LSHRI*, *USHRI*), the company asset-liability ratio (*LEV*), the firm size (*SIZE*), the company industry (see Figure 1), and the listing year; definitions are described in Table 2. Ma *et al.* (2005) find that the level of fund embezzlement by blockholders is significantly and negatively related to the size of the company's cash dividends (*DIVID*). Considering that cash dividends and fund embezzlement are the common means used by blockholders to maximise their ownership value, we predict that *DIVID* is negatively related to the dependable variables. Studies show that when the blockholder is a state-owned group, its fund embezzlement tends to be more serious (Li *et al.*, 2004; Wang, 2006). Therefore, we divide the state-owned blockholders into two categories – those directly controlled by the government and those indirectly controlled by the government – and predict that the dummy variable for blockholders directly controlled by the government (*GOVMT*) is negatively related to the dependent variables.<sup>20</sup> Referring to Li *et al.* (2004) and Tang *et al.* (2005), we use variables *LSHRI* and *USHRI* to represent respectively the tunnelling effect and the synergistic effect of the blockholder's share proportion. When the blockholder does not have the absolute controlling right, an increase in its share proportion will lead to a stronger capability of fund embezzlement in the listed company, but when the blockholder is absolutely controlling the company, an increase in its share proportion and an improvement in the synergistic effect between the blockholder and the listed company will lead to weaker tunnelling motivation. Therefore, we predict that *LSHRI* has a significantly positive correlation with the dependent variables, and *USHRI* is significantly and negatively related to them. The company's asset-liability ratio (*LEV*) and the company size (*SIZE*) are two basic indicators reflecting corporate financial positions; these are controlled for, but their influences on the tunnelling of blockholders are difficult to predict.

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<sup>20</sup> On the one hand, when the direct controlling shareholder is the government or quasi-governmental agency, its ability to tunnel is weaker than that of a firm whose direct controlling shareholder is an SOE. On the other hand, most companies directly controlled by the government are completely or quasi-completely restructured from state-owned firms, sharing partial social burdens of the original SOEs, and partial burdens are transferred to the government's relevant functional departments. Therefore, the tunnelling motivation of the blockholders is comparatively weak.

**Table 2** Definitions of Variables

Name	Definitions
<i>BURDEN</i>	The proxy variable for social burdens shouldered by the blockholder, referring to the number of excess employees per 10,000 renminbi of operational revenue in the listing year, estimated from the model in the research design.
<i>TUN</i>	The variable for the scale of total funds embezzled by the blockholder, referring to the mean of ratio of net funds embezzled by the controlling shareholder divided by corporate total assets in the three years after listing. Net funds embezzled = the sum of corporate accounts receivable, notes receivable, prepayments, and other receivables from the blockholder and its controlling enterprises – the sum of corporate accounts payable, notes payable, receipts in advance, and other payables to the blockholder and its controlling enterprises.
<i>TUN_ABN</i>	The variable for the scale of non-operational fund embezzlement, referring to the mean of ratio of net non-operational fund embezzled by the blockholder divided by the total assets during the three years after listing. Net non-operational fund embezzled = corporate other receivables from the blockholder and its controlling enterprises – corporate other payables to the blockholders and its controlling enterprises.
<i>TUN_NM</i>	The variable for the scale of operational fund embezzlement, referring to the mean of ratio of net operational fund embezzled by the blockholder divided by corporate total assets during the three years after listing, $TUN\_NM = TUN - TUN\_ABN$ .
<i>DUMMY_TUN</i>	The dummy variable for fund embezzlement by the blockholder: when $TUN > 0$ , $DUMMY\_TUN = 1$ , otherwise $DUMMY\_TUN = 0$ .
<i>DUMMY_TUNABN</i>	The dummy variable for non-operational fund embezzlement by the blockholder: when $TUN\_ABN > 0$ , $DUMMY\_TUNABN = 1$ , otherwise $DUMMY\_TUNABN = 0$ .
<i>DUMMY_TUNNM</i>	The dummy variable for operational fund embezzlement by the blockholder: when $TUN\_NM > 0$ , $DUMMY\_TUNNM = 1$ , otherwise $DUMMY\_TUNNM = 0$ .
<i>GOVMT</i>	The dummy variable for the companies directly controlled by the government: when the controlling shareholders are government agencies (such as the Supervision Department of National Assets or Provincial Financial Bureau) or state-owned asset management/investment companies, $GOVMT = 1$ , otherwise $GOVMT = 0$ .
<i>DIVID</i>	The mean of the ratio of cash dividends distributed by the listed companies to its total asset during the three years after listing.
<i>LSHRI</i>	If the share proportion of the largest shareholder is lower than 0.5 in the listing year, then $LSHRI =$ the share proportion of the largest shareholder, otherwise $LSHRI = 0.5$ .
<i>USHRI</i>	If the share proportion of the largest shareholder is higher than 0.5 in the listing year, then $USHRI =$ the share proportion of the largest shareholder – 0.5, otherwise $USHRI = 0$ .
<i>LEV</i>	The asset-liability ratio in the listing year.
<i>SIZE</i>	The corporate size in the listing year, which is equal to the natural logarithm of corporate total assets.
<i>INDU<sub>n</sub></i>	Dummy variables for industries described in Figure 1.
<i>YEAR<sub>t</sub></i>	Dummy variables for years when the companies are listed.

## V. Empirical Test

### 5.1 Descriptive Statistics

Before conducting the regression, we describe the statistics of the models' variables in Table 3. As shown in the table, the average scale of redundancy per 10,000 renminbi of operational revenue is -0.0047 persons. Analysing with the standard deviation, we find that there is no significant redundancy in sample companies,<sup>21</sup> compared with the overall companies after listing for more than one year in the estimation model of redundancy; however, if calculating the scale of redundancy per one billion renminbi of operational income, 25 per cent of companies have a redundancy of 114 persons. During the three years after listing, the mean of the ratios of funds embezzled by the controlling shareholder to corporate total assets is 0.0184; the mean of the ratios of non-operational fund embezzlement is 0.0100 and that of the operational fund embezzlement is 0.0084. So the scale of non-operational fund embezzlement is larger than that of operational fund embezzlement by almost 20 per cent. Regarding whether fund embezzlement occurs during the three years after listing, the occurrence ratio of fund embezzlement in the sample is 57.77 per cent, and the occurrence ratios of non-operational and operational fund embezzlement are 46.95 per cent and 43.8 per cent, respectively, indicating that both non-operational and operational fund embezzlement behaviour occur in a lot of companies. Almost 15 per cent of the sample companies are directly controlled by the government or the quasi-governmental agencies. In addition, the mean of the cash dividend ratios is slightly lower than that of fund embezzlement by blockholders, but the variance of the former is lower than that of the latter, suggesting that the difference in degree of fund embezzlement between different companies is larger than that in cash dividend ratio. As for other variables, please refer to Table 3.

**Table 3** Descriptive Statistics of Variables

<i>Variable</i>	Mean	Std Dev	25%	50%	75%
<i>BURDEN</i>	-0.0047	0.0487	-0.0333	-0.0133	0.0114
<i>TUN</i>	0.0184	0.0570	0	0.0017	0.0264
<i>TUN_ABN</i>	0.0100	0.0338	-0.0001	0	0.0103
<i>TUN_NM</i>	0.0084	0.0417	0	0	0.0075
<i>DUMY_TUN</i>	0.5777	0.4944	0	1	1
<i>DUMY_TUNABN</i>	0.4695	0.4995	0	0	1
<i>DUMY_TUNNM</i>	0.4380	0.4966	0	0	1
<i>DIVID</i>	0.0173	0.0165	0.0045	0.0123	0.0257
<i>GOVMT</i>	0.1449	0.3523	0	0	0
<i>LSHRI</i>	0.4427	0.0920	0.4053	0.5000	0.5000
<i>USHRI</i>	0.0899	0.0948	0	0.0694	0.1667
<i>LEV</i>	0.3646	0.1371	0.2639	0.3667	0.4552
<i>SIZE</i>	20.6290	0.8354	20.0755	20.5509	21.0391

<sup>21</sup> The average scale of excess employees is not equal to 0, because the sample size used in the estimation model is different from that in this study, as explained in the research design. It should be noted that the aim of this study is not to test whether redundancy exists, but to estimate the scale of relative redundancy between different companies.

Table 4 reports the Pearson tests on the correlation between the main variables. As shown in Table 4, the variable *BURDEN* representing the social burdens of blockholders (or groups) has significantly positive relationships with the scale of total funds embezzled by blockholders (*TUN*) and the scale of non-operational funds embezzled by blockholders (*TUN\_ABN*) at the levels of 5 per cent and 1 per cent, respectively, but its relationship with the scale of operational funds tunnelled by blockholders (*TUN\_NM*) is not significant. This indicates that the incentive of fund embezzlement is connected with the social burdens of the blockholders, and when blockholders assume social burdens, they mainly use non-operational funds to ease the pressure brought by social burdens, which initially verifies Hypotheses 1 and 1A. The scale of cash dividends (*DIVID*) is significantly and negatively related to both the scale of total funds embezzled by blockholders (*TUN*) and the scale of non-operational funds embezzled (*TUN\_ABN*), but its relationship with the scale of operational funds embezzled by blockholders (*TUN\_NM*) is not significant. This conclusion is the same as that of Ma *et al.* (2005), indicating that there is an alternative relationship between corporate cash dividends and non-operational fund embezzlement, while the relationship between cash dividends and social burdens is negative, but not statistically significant. Table 4 also shows that some factors (such as *USHRI* and *SIZE*) can have significant influences on both the dependent variables and the variable *BURDEN* simultaneously; therefore, these factors should be controlled for in the multivariate regression models.

**Table 4** Pearson Correlations of the Variables

	<i>TUN</i>	<i>TUN_ABN</i>	<i>TUN_NM</i>	<i>DIVID</i>	<i>GOVMT</i>	<i>LSHRI</i>	<i>USHRI</i>	<i>LEV</i>	<i>SIZE</i>
<i>BURDEN</i>	0.098 **	0.121 ***	0.037	-0.053	0.086 **	0.104 **	0.128 ***	0.181 ***	0.150 ***
<i>TUN</i>	1.000	0.688 ***	0.808 ***	-0.098 **	-0.051	0.040	-0.002	0.004	-0.079 *
<i>TUN_ABN</i>		1.000	0.129 ***	-0.170 ***	-0.006	-0.006	-0.072 *	0.039	-0.081 *
<i>TUN_NM</i>			1.000	0.004	-0.065	0.059	0.056	-0.026	-0.042
<i>DIVID</i>				1.000	-0.151 ***	0.144 ***	0.240 ***	-0.331 ***	0.181 ***
<i>GOVMT</i>					1.000	-0.287 ***	-0.214 ***	0.185 ***	-0.222 ***
<i>LSHRI</i>						1.000	0.591 ***	0.028	0.200 ***
<i>USHRI</i>							1.000	0.023 0.576	0.290 ***
<i>LEV</i>								1.000	0.231 ***

Note: \*\*\*, \*\*, and \* represent the significant Pearson test of correlated coefficients at the levels of 1%, 5%, and 10%, respectively.

## 5.2 Hypothesis Testing

Table 5 shows the logistic regression results for the influences of blockholders' social burdens when the company is listed on the probability of fund embezzlement by blockholders during the three years after listing, according to the nature of the fund embezzled by blockholders (including the total fund embezzlement, and non-operational and operational fund embezzlement). The results indicate that the proxy variable for social burdens assumed by blockholders, *BURDEN*, is significantly and positively related to both the dummy variable for the total fund embezzlement by blockholders (*DUMMY\_TUN*) and the dummy variable for non-operational fund embezzlement by blockholders (*DUMMY\_TUNABN*) at the level of 5 per cent, but its relationship with the dummy variable for operational fund embezzlement by blockholders (*DUMMY\_TUNNM*) is not significant. This indicates that, in general, the heavier are the social burdens that blockholders assume, the more likely it is that they tunnel funds in listed companies; however, the correlation between the social burdens and the probability of fund embezzlement is mainly induced by non-operational fund embezzlement, and the blockholders' social burdens have no influence on whether operational fund embezzlement occurs. So we conjecture that one of the tunnelling motivations of blockholders, who transfer the benefits of listed companies through non-operational fund embezzlement, is to ease their pressure from social burdens. Therefore, Hypotheses 1 and 1A have been verified in respect to the probability of fund embezzlement by blockholders.

**Table 5** Logistic Regression Results for Social Burdens and Probabilities of Fund Embezzlement

Independent variables	Total fund embezzlement		Non-operational fund embezzlement		Operational fund embezzlement	
	$\beta$	P value	$\beta$	P value	$\beta$	P value
<i>BURDEN</i>	5.326**	0.02	4.394**	0.04	2.397	0.23
<i>DIVID</i>	-6.458	0.31	-5.438	0.39	-4.310	0.50
<i>GOVMT</i>	-1.777***	0.00	-1.704***	0.00	-1.433***	0.00
<i>LSHRI</i>	3.573***	0.01	1.707	0.19	2.911**	0.04
<i>USHRI</i>	-1.998	0.13	-1.614	0.20	0.210	0.87
<i>LEV</i>	0.068	0.94	0.967	0.24	-0.568	0.50
<i>SIZE</i>	-0.373***	0.01	-0.180	0.21	-0.149	0.30
Intercept	7.140**	0.03	3.381	0.29	1.395	0.65
Listing year	Controlled		Controlled		Controlled	
Industry	Controlled		Controlled		Controlled	
Pseudo R <sup>2</sup>	0.1184		0.0909		0.1068	
N	537		537		537	

Note: \*\*\*, \*\*, and \* represent significance at the levels of 1 per cent, 5 per cent, and 10 per cent, respectively (two-tailed test). The corresponding symbols in Tables 6, 7, and 8 have the same meanings. P represents the value after the influence of heteroscedasticity is adjusted for. N is the number of observations.

Table 5 also shows that there is no significant relationship between the scale of cash dividends (*DIVID*) and the occurrence of fund embezzlement whether it is operational or non-operational. The occurrence of fund embezzlement during the three years after listing is connected with the form of state control; that is, when the direct controlling shareholder is the government or quasi-governmental agency, the probability of operational and non-operational fund embezzlement is significantly lower than the probability when the SOEs directly control the company at the level of 1 per cent. The reasons for this may be as follows. First, partial social burdens are transferred to the corresponding government departments when SOEs are restructured, while other social burdens may be brought to the listed company and the direct controlling shareholder, which is the government or quasi-governmental agency. These agencies usually do not assume social burdens and have no corresponding economic pressures; therefore, their tunnelling motivation is comparatively weaker. Second, compared to the corporation groups, the government or quasi-governmental agencies acting as the controlling shareholders have weaker capabilities of control over the listed companies, so their tunnelling abilities are also weaker. In addition, the share proportion of the blockholder *LSHRI* is significantly and positively related to the two dependent variables, which are the total fund embezzlement and the operational fund embezzlement, but its relationship with the non-operational fund embezzlement is not significant. This means that before the share proportions of blockholders reach the absolutely controlling degree, an increase in their share proportions will lead to an increase in the probability of operational fund embezzlement. A possible explanation for this is that, with an increase in share proportions, blockholders develop stronger controlling abilities, so related transactions of products increase and more operational fund embezzlement occurs. *USHRI*, representing the synergistic effect of interests, is not significantly related to the occurrence of fund embezzlement (including both the operational and non-operational fund embezzlement); that is, there may be no synergistic effect of interests in share proportions in view of the occurrence probability of fund embezzlement. Moreover, Table 5 also shows that there is an obvious inhibition effect from company size (*SIZE*) on the occurrence of total fund embezzlement, but the classified testing results are not significant.

Table 6 examines the influences of the blockholders' social burdens when listing in terms of the average scale of funds embezzled by blockholders during the three years after listing. The regression result shows that blockholders' social burdens (*BURDEN*) have a significantly positive relationship with the scale of total funds embezzled by blockholders at the level of 5 per cent. The classified testings find that the social burdens of blockholders are significantly and positively related to the scale of non-operational fund embezzlement (*TUN\_ABN*) at the 5 per cent level, but their relationship with the scale of operational fund embezzlement (*TUN\_NM*) is not significant. This result is consistent with Table 5. It means that the heavier are the social burdens of blockholders when listing, the larger is the average scale of non-operational fund embezzled by blockholders during the three years after listing, while *BURDEN* is not significantly related to the scale of

operational fund embezzlement. Therefore, Hypotheses 1 and 1A have been verified in respect to the scale of fund embezzlement by blockholders.

**Table 6** Multivariate Regression Results of Social Burdens and Scale of Fund Embezzlement

Independent variables	Total fund embezzlement		Non-operational fund embezzlement		Operational fund embezzlement	
	$\beta$	P value	$\beta$	P value	$\beta$	P value
<i>BURDEN</i>	0.115**	1.98	0.078**	2.06	0.037	1.19
<i>DIVID</i>	-0.278*	-1.78	-0.276***	-3.10	-0.003	-0.02
<i>GOVMT</i>	-0.012*	-1.65	-0.005	-1.01	-0.007*	-1.74
<i>LSHRI</i>	0.019	0.60	0.017	0.84	0.002	0.11
<i>USHRI</i>	-0.019	-0.49	-0.036*	-1.94	0.017	0.54
<i>LEV</i>	-0.028	-1.58	-0.008	-0.73	-0.021	-1.53
<i>SIZE</i>	-0.0001	-0.02	-0.0005	-0.21	0.0004	0.11
Intercept	0.004	0.04	0.005	0.10	-0.001	-0.01
Listing year	Controlled		Controlled		Controlled	
Industry	Controlled		Controlled		Controlled	
Adj R <sup>2</sup>	0.0412		0.0565		0.0040	
N	537		537		537	

Note: The T value is adjusted for heteroscedasticity. N is the number of observations.

Table 6 also shows that, consistent with the univariate testing result, the ratio of cash dividends (*DIVID*) is significantly and negatively related to the scale of total funds tunnelled by blockholders (*TUN\_TT*) and the scale of non-operational fund embezzlement (*TUN\_ABN*), but its relationship with the scale of operational fund embezzlement (*TUN\_NM*) is not significant. This indicates that when non-operational fund embezzlement occurs, the blockholders tend to reduce the dividends so as to reduce the share of other shareholders in the funds of the listed companies. This confirms the conclusion of Ma *et al.* (2005), which states that there is a substitution relationship between fund embezzlement and cash dividends.

The dummy variable for blockholders directly controlled by the government (*GOVMT*) is negatively related to *TUN* and *TUN\_NM* at the level of 10 per cent, but its relationship with *TUN\_ABN* is not significant. This indicates that during the three years after listing, the average scale of operational fund embezzlement in companies directly controlled by the government is smaller than that of companies directly controlled by SOEs, while little difference exists in non-operational fund embezzlement between the two kinds of companies. Most companies directly controlled by the government are listed as a whole or nearly as a whole; that is, they are completely restructured, as claimed by Deng *et al.* (2007). The above result shown by Table 6 supports the conclusion of

Deng *et al.* (2007), which suggests that the average scale of fund embezzlement by the completely restructured companies during the three years after listing is smaller than that by the non-completely restructured companies.<sup>22</sup> In addition, the influences of ownership structure on fund embezzlement are different from those on the probability of fund embezzlement (see Table 5), indicating that when the blockholders have absolute control over the companies, the share proportion of the blockholders (*USHRI*) is significantly and negatively related to the scale of non-operational fund embezzlement (*TUN\_ABN*), but has no significant relationship with the scale of operational fund embezzlement (*TUN\_NM*). When the blockholders have no absolute control over the companies, *USHRI* is not significantly related to either *TUN\_ABN* or *TUN\_NM*. This also shows that, given the average scale of fund embezzlement by blockholders during the three years after listing, no effect of tunnelling is found from the blockholders' share proportion before absolute control exists, while an increase in the blockholders' share proportion may lead to inhibition of the scale of non-operational fund embezzlement after absolute control exists, showing the synergistic effect of interests. It should be noted that, different from the conclusion of Li *et al.* (2004), the relationship between ownership structure and fund embezzlement shown in Tables 5 and 6 is not significant or stable, suggesting that some influences may be caused by the data of averages during the three years after listing being taken as dependent variables, with the data in the listing year being taken as independent variables.<sup>23</sup>

### 5.3 Robustness Test

#### 5.3.1 Directly using the blockholder's scale of redundancy to measure its social burdens

To enhance the robustness of our results, we repeat tests of the hypotheses by directly using the corporate blockholder's scale of redundancy to measure its social burdens. The employment and other relative data of the blockholders of listed companies are retrieved from a database of annual surveys of industrial enterprises in the China Center for Economic Research (CCER) economic and financial database. The annual surveys, conducted by the National Bureau of Statistics, include some financial and operational information on the industrial sectors.<sup>24</sup> We first set the names of blockholders of the 537 sample companies as keywords, and then match them with the names of the enterprises from the database of the annual industry surveys. After removing enterprises with

<sup>22</sup> In that paper, funds embezzled by the blockholders refers to the total funds embezzled, making no distinction between operational and non-operational fund embezzlement.

<sup>23</sup> The time span of each indicator in this study is from 1997 to 2005, during which the overall levels of fund embezzlement in list companies are different for each year. The year difference cannot be controlled for using the three-year average.

<sup>24</sup> The database includes annual data of large state-owned or private enterprises in the manufacturing industry with annual sales over 5 million renminbi since 1998, and the annual data range from 160,000 to 270,000. The accuracy and representativeness of this database have been confirmed in former studies (e.g., Chuang and Hsu, 2004).

incomplete data, we successfully obtain 101 qualified blockholders of listed companies (the listing year ranges from 1998 to 2002). Then, for each industry that the selected 101 blockholders belong to (classified according to the first two digits of the industry code in the database),<sup>25</sup> we use the model for estimating the redundant employees as described in the research design to estimate the scale of redundancy of the 101 blockholders, excluding enterprises with sales or total assets less than 10 million renminbi and with less than 200 employees. The distribution of the scale of redundancy in the 101 blockholders of listed companies in the listing year is as follows (represented by *BURDEN\_BLOCK*, the number of redundant employees per 10,000 renminbi of sales): the mean is 0.00115, the standard deviation is 0.0012, the lower is quartile 0.0005, the median is 0.0009, and the upper quartile is 0.0014. We find that the Pearson correlation coefficient between the variable for blockholders' redundancy (*BURDEN\_BLOCK*) and that for their corresponding listed companies (*BURDEN*) is 0.36658, which is significant at the level of 1 per cent ( $P = 0.0002$ ). This confirms the assumption put forward in this paper that, to a certain degree, the redundancy level of a listed company in the listing year can represent the overall redundancy level of the blockholder group. The 101 sample companies are mainly distributed in three industries, which are C4 (petroleum, chemicals, and plastics), C6 (metals and non-metals), and C7 (machinery, equipment, and instrumentation), and the sample numbers are 19, 25, and 27, respectively. The sample number is less than 7 in other industries, and only one company is found in some industries.

Table 7 shows the regression test results for the influences of blockholders' social burdens, directly measured with the scale of redundancy in the blockholders (*BURDEN\_BLOCK*), on the scale of funds embezzled by the blockholders. Sample 1 reports the test results for the 101 sample companies, which indicate that the scale of redundancy in the blockholders (*BURDEN\_BLOCK*) is significantly and positively related to the average scale of non-operational fund embezzled by blockholders during the three years after listing at the level of 10 per cent; in other words, the heavier are the social burdens the blockholders assume, the more do they embezzle the corporate non-operational funds. Because 70 per cent of the sample companies belong to the above three industries (industry codes: C4, C6, and C7), a serious collinearity (with the highest variance inflation factor being equal to 25) between the industry dummy variables in sample 1 exists. To avoid influences of collinearity, we repeat the test in sample 2, taking companies from only these three industries as the sample. As shown in Table 7, compared with the results in sample 1, sample 2 shows that the positive relationship between *BURDEN\_BLOCK* and the scale of non-operational fund embezzlement by blockholders is more significant (the significance level reaches 5 per cent) and has a higher degree of model fit. In Table 7, the regression coefficients between social burdens directly measured by the scale of

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<sup>25</sup> There are a total of 183,713 annual observations in the estimation sample, and the number of enterprises in various industries ranges from 213 to 19,686. A large sample size makes the estimation result by industry more reliable. To ensure that the research conclusions are not influenced by extreme values, all continuous variables in the estimation data are winsorised by 1 per cent.

redundancy in the blockholders (*BURDEN\_BLOCK*) and the scale of non-operational funds tunnelled are bigger than those between social burdens measured by the scale of redundancy in the listed companies (*BURDEN*) and the scale of non-operational funds tunnelled in Table 6. And the degree of model fit (adj  $R^2$ ) in Table 7 is also higher than that in Table 6. This suggests that using the scale of redundancy in the blockholders to explain the scale of non-operational fund embezzlement may be more convincing than using the scale of redundancy in the listed companies.

However, no matter whether it is in sample 1 or sample 2, no significant relationship between the scale of redundancy in the blockholders and the scale of operational fund embezzlement exists, and no explanatory power is shown in the models (the P values of the model's F test in samples 1 and 2 are 0.9698 and 0.6164, respectively). In addition, Table 7 shows that in sample 1 with serious collinearity, the variable for the scale of company dividends (*DIVID*) is negatively but not significantly related to the non-operational fund embezzlement by blockholders; whereas in sample 2 with no significant collinearity, the two have a negative and significant relationship at the level of 5 per cent, which further confirms that there is an alternative relationship between the scale of non-operational fund embezzlement and the scale of cash dividends.

**Table 7** Multivariate Regression Results of Social Burdens Measured by the Scale of Redundancy in Blockholders and the Scale of Fund Embezzlement

Independent variables	Sample 1				Sample 2			
	Non-operational fund embezzlement		Operational fund embezzlement		Non-operational fund embezzlement		Operational fund embezzlement	
	$\beta$	T value	$\beta$	T value	$\beta$	T value	$\beta$	T value
<i>BURDEN_BLOCK</i>	2.99*	1.71	3.708	1.17	4.28**	2.05	2.470	0.61
<i>DIVID</i>	-0.273	-1.40	-0.481	-0.88	-0.447**	-2.05	-0.933	-1.09
<i>LSHRI</i>	-0.096**	-2.35	-0.028	-0.33	-0.127***	-2.99	-0.049	-0.54
<i>USHRI</i>	-0.014	-0.43	0.064	0.41	-0.017	-0.54	0.129	0.76
<i>LEV</i>	-0.014	-0.63	-0.093	-1.47	-0.048**	-1.97	-0.222**	-2.34
<i>SIZE</i>	-0.002	-0.58	0.016	0.68	0.006*	1.75	0.029	0.97
intercept	0.104	1.32	-0.307	-0.66	-0.036	-0.50	-0.473	-0.79
Listing year	Controlled		Controlled		Controlled		Controlled	
Industry	Controlled		Controlled		Controlled		Controlled	
Adj $R^2$	0.1990		-0.1267		0.4257		0.0048	
N	101		101		71		71	

Note: *BURDEN\_BLOCK* represents the scale of redundancy in the blockholders in the listing year, while other variables have the same meanings as those in Table 6. No companies directly controlled by the government are included in this test, so the dummy variable *GOVMT* in Table 6 is not included in this table. The T value is adjusted for heteroscedasticity, and N is the number of observations.

### 5.3.2 Robustness test with annual data on fund embezzlement

We test how the scale of redundancy in listed companies when they are listed affects the annual scale of fund embezzlement by blockholders at the end of three years after listing, using the same sample of 537 companies referred to in Table 6. The results are shown in Table 8. The variable for social burdens (*BURDEN*) can have positive influences on the scale of non-operational funds embezzled by blockholders at the end of each year at a significance level of 5 per cent, while there is still no significant relationship shown between social burdens and the annual scale of operational funds embezzled by blockholders at the end of each year, which further confirms our hypotheses.

**Table 8** Multivariate Regression Results for Social Burdens and the Annual Scale of Fund Embezzlement (Annual Data)

Independent variables	Non-operational fund embezzlement		Operational fund embezzlement	
	$\beta$	T value	$\beta$	T value
<i>BURDEN</i>	0.054**	2.10	0.011	0.52
<i>DIVID</i>	-0.080*	-1.88	-0.024	-0.46
<i>GOVMT</i>	-0.010***	-3.75	-0.008***	-2.99
<i>LSHRI</i>	0.007	0.60	0.005	0.35
<i>USHRI</i>	-0.025**	-1.98	0.020	0.94
<i>LISTAGE</i>	0.002*	1.75	0.002	1.40
<i>LEV</i>	0.012*	1.69	-0.002	-0.26
<i>SIZE</i>	-0.005***	-3.23	-0.001	-0.47
Intercept	0.114***	3.47	0.030	0.70
Fiscal year	Controlled		Controlled	
Industry	Controlled		Controlled	
Adj R <sup>2</sup>	0.0426		0.0317	
N	1719		1719	

Note: *LISTAGE* represents the number of years after listing (the following year after listing is the first year, *LISTAGE* = 1, and so on); the other variables are all annual data except the dependent variable *BURDEN*. The T value is adjusted for heteroscedasticity.

The annual data result also reveals that, consistent with the results shown in Tables 6 and 7, the annual scale of cash dividends (*DIVID*) still has a significantly negative relationship with the scale of non-operational funds embezzled by blockholders at the end of each year at a significance level of 10 per cent, but has no significant relationship with the annual scale of operational funds embezzled by blockholders. The scale of fund embezzlement (both operational and non-operational) by blockholders in companies that are directly controlled by the government is smaller than that directly controlled by the SOEs, which is consistent with previous research results, such as those of Li *et al.* (2004).

Consistent with the results shown in Table 6, the higher is the variable of *USHRI*, the smaller is the scale of non-operational fund embezzlement; that is, a synergistic effect of interests is shown in the share proportion of the blockholders after they achieve absolute controlling rights, but no trench defence effect is shown in the increase of the variable for the blockholders' share proportion before achieving the absolute control rights (*LSHRI*). During the three years after listing, the longer is the time period from the listing year (*LISTAGE*), the larger the scale of non-operational fund embezzlement may be; the higher is the asset-liability ratio (*LEV*) in the listed companies at the end of the year, the larger the scale of non-operational fund embezzlement may be at the end of that year; and the larger is the company size at the end of the year, the smaller the scale of non-operational fund embezzlement of that year may be.

### 5.3.3 The test after controlling for the influences of corporate regional differences

The development of various regions in China is uneven, and different places have different levels of labour productivity and labour costs. In this study, the proxy variable for social burdens (the scale of redundancy) can be influenced by the regional differences in labour productivity and labour costs; therefore, regional differences are controlled for in the robustness test. First, in the original model for estimating the scale of redundancy, the controlling variable for regional development is added, and then the estimation model becomes  $Y = \alpha + \beta * SIZE0 + \theta * CAPITAL + \omega * GROWTH + \sum AREA + \sum \gamma * INDU + \sum \lambda * YEAR + \varepsilon$ , where *AREA* is the dummy variable for the regional development level. According to the classifying standards of Li (2000), the provinces and municipalities in the whole country are divided into four levels: developed areas, comparatively developed areas, underdeveloped areas, and backward areas.<sup>26</sup> We repeat the tests referred to in Tables 5 and 6 using the scale of redundancy estimated after controlling for regional differences, and the results lead to the same conclusions. Then, to further control for the influences of differences in regional development on the behaviour of fund embezzlement by blockholders, we repeat the tests referred to in Tables 5 and 6 using the scale of redundancy estimated after controlling for regional differences, and add the dummy variable for the regional development level in the models. The results remain the same. For simplicity, the test results are not listed.

<sup>26</sup> Developed areas include Shanghai, Beijing, and Tianjin (3 municipalities); comparatively developed areas include Guangdong, Jiangsu, Zhejiang, Liaoning, Fujian, and Shandong (6 provinces); underdeveloped areas include Hainan, Shanxi, Jilin, Heilongjiang, Hebei, Guangxi, Hubei, Anhui, Hunan, Jiangxi, Henan, and Sichuan (12 provinces); and backward areas include Xinjiang, Tibet, Inner Mongolia, Qinghai, Guizhou, Gansu, Shaanxi, Ningxia, and Yunnan (9 provinces). Chongqin municipality is not included in the classification of Li (2000), and we consider it an underdeveloped area, the same as Sichuan province. We checked the latest literature on area classification according to the economic development level and got the same results as Li (2000).

## VI. Conclusions and Limitations

Based on the institutional background of the restructuring and listing of SOEs, this paper sets the scale of redundancy in listed companies as the proxy variable for social burdens assumed by the blockholders (or blockholding groups), and studies the influences of social burdens on fund embezzlement behaviour in listed companies by the blockholders during the three years after listing. The purpose is to explain the tunnelling motivation from the perspective of the blockholders' social burdens. The empirical results show that when a company is restructured and listed, the social burdens assumed by the blockholders have great influences on non-operational fund embezzlement, indicating that the heavier are the social burdens of the blockholders, the higher is the probability of non-operational fund embezzlement, and the higher is the scale of funds being embezzled, while the relationship between social burdens and the probability and scale of operational fund embezzlement is not significant. Therefore, this paper provides new explanations for tunnelling by the blockholders among different state-controlling corporations from the perspective of blockholders' motivation of easing pressure from social burdens, and removes the deficiency in the current literature in explaining blockholders' tunnelling behaviour, which is often discussed from the perspective of internal corporate governance, that is, tunnelling capability.

The contributions of this study are as follows. In SOEs, if the state-owned blockholders cannot be completely restructured and also assume social burdens for the government, it is hard for them to avoid transferring the pressure of social burdens to their controlled companies, because of the existence of problems such as soft budget constraints, and the restructuring of the listed companies cannot make themselves become real modern enterprises that aim at maximising the benefits of all shareholders. Therefore, an effective method to reduce the probability of tunnelling by blockholders in the state-controlled companies is to enforce the real market-based restructuring of the blockholder group through listing the company as a whole, so as to put the company under the direct and strict supervision of external investors.

The key limitations of this study are as follows. First, limited by the access to data, the data on excess employees in the blockholders cannot be directly used to estimate their social burdens for most samples, and this indirect measurement and estimation may have some negative influences on the plausibility of our conclusions. Second, it is hard to precisely estimate the enterprises' social burdens because of limited information disclosure, and limitations also exist in using the scale of redundancy to estimate the social burdens of companies. Finally, because it should be determined first whether other kinds of related transactions contribute to the tunnelling in listed companies, this study does not test the possible influences of blockholders' social burdens on other kinds of related transactions.

## References

Please refer to pp. 142-143.

## Appendix: The Case of Fund Embezzlement in Lotus MSG

Lotus MSG (Full name: Henan Lotus MSG Co. Ltd., stock code: 600186), which was established by the sponsor Henan Lotus Group Co. Ltd. (hereinafter referred to as the Lotus Group) through IPOs approved by the government of Henan Province, was listed in the Shanghai Stock Exchange in August 1998. As one of the 520 key enterprises defined by the State Council and a leading enterprise in the first batch of enterprises in agricultural industrialisation, Lotus MSG has become the largest production and export base of monosodium glutamate (MSG) and gluten in China, and is the only MSG production enterprise using wheat as raw material in the world. We choose Lotus MSG as the object of the case study for the following two reasons. First, as a company that once had a high profile and reputation, Lotus MSG's scale of non-operational fund embezzlement by its blockholder ranked among the top three in the Shanghai Stock Exchange at the end of the year 2005, and much information has been disclosed. In addition, part of the data of its parent company, the Lotus Group, can be obtained from the National Statistical Database of Industrial Enterprises. Second, as a typical listed company restructured from an SOE, Lotus MSG and its parent company, the Lotus Group, play an important role in regional economic development.

**Table A1** Earnings of Lotus MSG

Year	EPS (RMB)	CFOPS (RMB)	ROE (%)	Gross margin (%) (million RMB)	Sales
1998	0.48	-0.29	16.25	15.68	2,479
1999	0.37	0.27	13.22	20.69	2,051
2000	0.29	0.15	12.62	27.96	2,215
2001	0.22	0.05	6.81	23.93	1,876
2002	0.02	0.1	0.93	19.92	1,338
2003	-0.17	-0.29	-7.23	12.51	952
2004	0.01	-0.26	0.24	16.93	1,174
2005	0.01	0.09	0.5	12.96	1,220
2006	0.01	0.01	1.11	11.67	1,388
2007	0.03	0.02	1.74	15.27	1,310
2008	0.01	0	0.78	15.79	1,243
2009	0.02	0.06	1.07	11.95	1,221

Note: EPS is earnings per share; CFOPS represents cash flow from operations per share; ROE is net return on equity.

The Lotus Group was previously an MSG factory in the Zhoukou area of Henan Province established in 1983, and was completely restructured into an SOE in 1996. It is now under the government of Xiangcheng City in Henan Province.<sup>27</sup> In 1998, the Lotus

<sup>27</sup> Xiangcheng City is a county-level city, now part of Zhoukou City, Henan Province.

Group put all its subordinate net operational assets related with MSG production into the listed subject and successfully raised funds of 680 million renminbi through an IPO. After the IPO, the Lotus Group held 66.7 per cent of equities in Lotus MSG, and has three other subsidiaries running cartons, packaging, and decoration businesses. During the four years after listing, Lotus MSG performed well, and in 2001, it successfully raised net funds of 730 million renminbi through seasoned equity offerings. But in 2002, it had a sharp drop in performance and was on the verge of posting a loss. And then in 2003 a huge loss occurred, where the net return on equity (ROE) was -7.23 per cent. After 2004, the ROE kept hovering at about 1 per cent. (See Table A1.)

**Table A2** The Scale of Non-operational Fund Embezzlement

Date	Scale of net funds embezzled (million RMB)	Ratio of net funds embezzled to total assets	Ratio of net funds embezzled to sales
31 Dec 1998	-74.9	-4%	-6%
31 Dec 1999	78.3	3%	6%
31 Dec 2000	130.6	4%	10%
31 Dec 2001	192.7	4%	14%
31 Dec 2002	293.3	6%	22%
31 Aug 2003	858.4	18%	90%
31 Dec 2003	688.5	15%	59%
31 Dec 2004	1073.0	24%	129%
31 Dec 2005	1057.2	25%	87%

Note: Data from 1998 to the end of 2002 are obtained from the annual reports of listed companies; the data on fund embezzlement on and after 31 August 2002 are taken from *The Report of Lotus MSG about the Controlling Shareholder Lotus Group Using Assets to Settle Debts* published on 13 July 2006, in which the scale of fund embezzlement is the principal without interest. The net fund embezzled at the end of 2001 did not have deducted the dividend of 120 million renminbi payable to the blockholder declared in the plan of April 2002.

The loss of Lotus MSG is directly connected with the huge amount of funds embezzled by the blockholder. Table A2 shows the non-operational fund embezzlement from Lotus MSG by the Lotus Group from the listing year to the end of the year 2005. As shown by the results, from 2002 to 2005, the scale of non-operational funds embezzled by the blockholder increased from almost 300 million renminbi to more than 1 billion renminbi in only three years. Based on the ratio of funds embezzled to total assets and sales, the degree of fund embezzlement is quite serious, resulting in a tight liquidity of the listed companies and bringing in more influences on the capability of new investment and production expansion. Although in 2001, Lotus MSG successfully raised net funds of 730 million renminbi, this was still insufficient to fill the big hole induced by the fund embezzlement. It made Lotus MSG's performance reach the point of inflection and it keep struggling on the edge of a loss. The situation has not improved so far.

As the chairman of Lotus MSG is concurrently the chairman of the Lotus Group and it has not really separated from its blockholder in respect of operations, human resources, and capital management, Lotus MSG is almost controlled by a small number of senior executives in the blockholder, and there are significant deficiencies in corporate governance. In October 2003, Lotus MSG was publicly reprimanded by the Shanghai Stock Exchange because it issued trade acceptances of 436.5 million renminbi to the Lotus Group between March and June 2003, without any discussion and approval by the Board of Directors and the general meeting of shareholders, and this event was not disclosed in a timely fashion. In October 2004, Lotus MSG suffered a second public reprimand from the Shanghai Stock Exchange because it neither fulfilled the corresponding approval process, nor disclosed in a timely fashion a total sum of 1.393 billion renminbi of fund provision to the Lotus Group and its subsidiaries from January to June 2004.

During the intense clean-up movement of fund embezzlement dominated by the market regulators, the Lotus Group took two separate steps to pay off the embezzled funds in August and October 2006. First, the Lotus Group used its land assets, fixed assets, and long-term investments that were valued at a total of 587.6 million renminbi to cover part of its non-operational funds embezzled in Lotus MSG. Second, the Lotus Group let Lotus MSG's retained earnings transfer to the paid-in capital and then used its additional shares corresponding to this transferred capital in Lotus MSG to cover the debt of 462.2 million renminbi owed to Lotus MSG. The land used to cover debt with a value of 241 million renminbi is the land being used currently by the listed company; thus, it does not bring any new value to Lotus MSG.<sup>28</sup> It was unknown whether the fixed assets' appraisal value of 63 million renminbi and the long-term investments' appraisal price of 283 million renminbi were fair, nor was their profitability known.<sup>29</sup> It should be noted that, as most equities of Lotus MSG held by the Lotus Group were pledged or judicially frozen so that almost no equity could be directly used to pay off debts, the new tactics of transferring to the paid-in capital to gain 50 per cent of new equities through increasing 5 shares for every 10 shares were creatively adopted to compensate for the funds the group tunnelled from the listed company. After using shares to pay the debt, the share proportion of the Lotus Group declined from 54.9 per cent to 41.68 per cent, but the group still has the firm controlling right of Lotus MSG. In this way, the Lotus Group paid off its debts of more than 1 billion renminbi without using a penny of cash.<sup>30</sup>

<sup>28</sup> Before the settlement of debts, the land has been used by the listed company, but no information about the payment of land using fees by the listed company has been disclosed in the annual report.

<sup>29</sup> According to the report of *Shanghai Security News* ("How Almost One Billion Funds Are Tunnelled from Lotus MSG", 29 July 2004, A6), the efficiencies of the Lotus Group's external investments are very low so only a very few businesses, such as the colour printing factory, could be profitable, while other new businesses were burdens of loss. Henan Lotus Biological Engineering Co. Ltd. (LBE) with a price of 60.8 million renminbi used for settlement of debt was once a subsidiary with 95 per cent of shares controlled by Lotus MSG. At the end of 2002, the 95 per cent equity of this company and the other 5 per cent equity from another wholly owned subsidiary were sold to the Lotus Group at a total value of only 15.65 million renminbi, and before the sales, Lotus MSG did not include LBE into the consolidated statement by claiming that the latter was still in the pre-production stage.

<sup>30</sup> The Lotus Group still embezzled funds of 55.67 million renminbi from Lotus MSG after the settlement by assets and transferred shares at the end of 2006.

The announcement of Lotus MSG shows that when the Lotus Group settled their debts due to fund embezzlement, the one-year deposit interest rate over the same period was used for calculating the funds tunnelled, which was 1.98 per cent before October 2004 and 2.25 per cent after October 2004, while the one-year lending rates over the same period were 5.31 per cent and 5.58 per cent, respectively. According to the estimation of Asia-Pacific (Group) Certified Public Accountants Co. Ltd., if calculated by the lending rate over the same period, the Lotus Group would have to pay interest of more than 78.78 million renminbi till the end of December 2005. On the other hand, Lotus MSG had interest-bearing liabilities at the end of 2005, including a short-term loan of 1.13 billion renminbi (of which 6.5 billion was overdue) and a long-term loan of 43,000 renminbi (of which 13,000 renminbi was overdue). Lotus MSG not only bore heavy debt calculated by market rates, but also experienced huge expropriation by its blockholder with interests charged at a rate of less than half of the market rate, indicating that the fund embezzlement by the blockholder is absolute tunnelling in the listed company. In addition, Table A1 shows that the decline of Lotus MSG after 2002 was sharp, but with a comparatively moderate decline in the sales margin, which indicates that, as the media reported, the huge fund embezzlement by the blockholder seriously impacted the normal operation of the listed company, and the company could not spare time to explore the market.<sup>31</sup>

There are various ways for blockholders to tunnel the listed companies, such as transferring the wealth of the listed companies through related transactions. However, the supervision of related-party transactions is stringent, and not all blockholders have resources or opportunities to trade with the listed companies. Table A3 shows the related transactions between Lotus MSG and its blockholder the Lotus Group from the listing year to 2006. As shown in the table, the related transactions between them were all goods trading at small relative and absolute scales before 2003. This was because the Lotus Group put all operational assets connected with MSG production into the listed company when restructuring and listing. In other words, the Lotus Group naturally lacked the conditions for large-scale daily related trading with Lotus MSG. Under these particular circumstance in which daily related tradings could not meet the blockholder's interests, especially the demand for cash, the blockholder had to turn to satisfy its urgent needs through non-operational fund embezzlement. Thus, it is not difficult to understand why so many blockholders need to embezzle funds in the listed companies, but do not use or do not just use the more obscurer means of daily related transactions to rob the external investors.

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<sup>31</sup> It was reported that due to a serious shortage of funds, only one of the existing two production lines in Lotus MSG was working; the production lines in the second stage were even stopped. The unit of fixed costs in producing MSG increased rapidly, and the total costs per ton of MSG were 1400 renminbi higher than the domestic average level in the same industry. The company was in crisis and was close to stopping production ("How Almost One Billion Funds Are Tunnelled from Lotus MSG", Shanghai Security News, 29 July 2004, A6).

**Table A3** Scale of Related Transactions between Lotus MSG, and the Lotus Group and Its Subsidiaries

Year	Related transactions			Ratio of total related transactions to sales
	Trade amount (million RMB)	Including: % of selling	Including: % of goods traded	
1998	291	25%	100%	12%
1999	61	49%	100%	3%
2000	176	64%	100%	8%
2001	345	70%	100%	18%
2002	336	50%	100%	25%
2003	238	69%	100%	25%
2004	155	79%	76%	13%
2005	545	100%	6%	45%
2006	20	100%	10%	1%

As an SOE wholly controlled by the government of Xiangcheng, Henan Province, why did the issue of non-operational fund embezzlement in the Lotus Group become increasingly serious from 2002 to 2005? Unlike in privately controlled companies, the senior managers of the Lotus Group do not hold the shares of the company and cannot obtain huge private interests from the fund embezzlement. As for the reasons for fund embezzlement, Lotus MSG explained in the company's operational plan of 2004 published in its 2003 annual report that because the listed company was spun off from the Lotus Group, a lot of related transactions existed between the two companies, especially when the Lotus Group was struggling to keep operating. The fund embezzlement problem became more serious because the Lotus Group had to survive and solve the livelihood problems of thousands of employees. However, Table A3 has already shown that the scale of daily related transactions was not large, and almost all funds embezzled by the Lotus Group were non-operational items. In other words, in the process of spinning off and listing, the original social burdens in the SOE remained in the Lotus Group; when short of capital, the Lotus Group had to get "blood" transferred from the listed company to maintain survival, including to maintain the livelihood of employees.

Table A4 reports the data on the operational scale and the employee scale of the Lotus Group and other companies in the same industry, according to the data from the annual industry survey in the CCER economic and financial database.<sup>32</sup> As seen from the table, the scale of the operational revenue and the absolute number of employees in the Lotus Group are basically about 10 times those of the same industry (excluding the

<sup>32</sup> The industry sample refers to the enterprises with the same four-digit industry code as the Lotus Group. To reduce the noise impact caused by small-scaled enterprises, only the large-scaled enterprises in the same industry are selected as the comparison sample. The Lotus Group is not included because it is the largest in the industry and the data of the Lotus Group after 2004 are not available.

Lotus Group). In view of the relative number of employees (number of employees per 10,000 renminbi sales), the Lotus Group enjoys a higher level than that of the whole industry from 1999 to 2003, and is over 50 per cent higher in 2002 and 2003, except in the listing year of 1998 when the level is lower than the weighted average of the whole industry. Given that economic effects of the size of employees, which is the relative scale of employees, are significantly and negatively related to the corporate size (Zeng and Chen, 2006), the actual scale of redundancy of the Lotus Group would be much larger than the statistical results shown in Table A4. It should be noted that Table A4 shows that the number of employees in 1998 is only 10,369, but it soars up to 17,260 in 1999, with a huge increase of 66 per cent, or nearly 900 people, while the growth rate of the operational revenue over the same period is less than 13 per cent. After 1998, the number of employees stabilises at around 16,000 to 17,000. Therefore, we guess that there is a mistake in the data for 1998. Even assuming that the data are correct, according to the rank of blockholders' relative scale of redundancy in ascending order, the scale of redundancy in the Lotus Group estimated by the model ranks 77th in the listing year of 1998 among the 101 samples in the robustness test, showing that the redundancy problem in the Lotus Group is serious.

**Table A4** Scale of Redundancy in the Lotus Group Compared to that of the Industry

Year	Lotus Group			Scale of redundancy in the corresponding industry				Compared with the industry
	Employee scale			Average Sample size	Employee scale			
	Operational revenue	Absolute scale	Relative scale		operational revenue	Absolute scale		
1998	208,740	10,369	0.0497	18	24,031	1,437	0.060	-17%
1999	235,293	17,260	0.0734	17	24,952	1,383	0.055	32%
2000	262,813	16,438	0.0625	16	24,562	1,415	0.058	9%
2001	234,550	16,603	0.0708	19	21,231	1,237	0.058	22%
2002	203,930	16,752	0.0821	18	29,797	1,355	0.045	81%
2003	258,909	16,827	0.0650	25	20,215	868	0.043	51%

Note: i) The industry sample does not include the Lotus Group; ii) The unit of the operational revenue is 10,000 renminbi; the unit of the absolute scale of employees is persons; the unit of the relative scale of employees is the number of employees per 10,000 renminbi operational revenue, of which the relative scale of employees in the industry is the weighted average of the whole industry; iii) "Compared with the industry" refers to the percentage difference of the Lotus Group's relative scale of employees to that of the whole industry.

As the largest agricultural processing enterprise in Henan Province and the largest MSG production and export base, the Lotus Group has not only been supporting more than half of the fiscal revenue of the Xiangcheng City, but it also plays an important role in the economic development of Henan Province as a whole. It has been reported that during the Lotus Group's 20 years of development, it has paid accumulated tax of

1.7 billion renminbi, it has paid accumulated wages and salaries of 1.4 billion renminbi, and it has provided employment for nearly 20,000 people. To rejuvenate the Lotus Group and address the issue of fund embezzlement, the Lotus MSG Restructuring Management Team was established, led by Hongchang Guo, SASAC Deputy Director of Henan Province. Other members included Mingjun Jian, Chairman of Provincial Enterprise Board of Supervisors under the Provincial SASAC, and officials from the Provincial Financial Department. The Team was resident on-site at the office of the Lotus Group in early April 2004. In mid-July of the same year, the Governor Chengyu Li and the Vice Governor Jichun Shi provided field guidance to the Lotus Group. As a large SOE, the Lotus Group was constantly engaged in so-called diversified investments, but the efficiency of these investments is low, resulting in only a few businesses being able to produce earnings; the other new ones made losses.<sup>33</sup> We suspect that these inefficient investments in the Lotus Group may have to bear some governmental functions. And because the Lotus Group takes on some of the responsibility of solving social burdens, such as the regional employment problem, it dares tunnel funds from the listed company, thus forming a new problem of soft budget constraints.

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<sup>33</sup> "How Almost One Billion Funds Are Tunnelled from Lotus MSG", *Shanghai Security News*, 29 July 2004, A6.