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上市公司在操纵经营性现金流吗？
—基于季度报告的实证分析[1]

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摘要

在财务操纵方面，目前尽管存在大量的盈余管理研究，但鲜有文献涉及现金流量的操纵问题。本文利用中国A股上市公司2003年至2004年的季度财务数据对后一问题进行了实证检验。我们的研究发现，第三季度末经营活动现金流量净额低于净利润的公司，在第四季度存在调增现金流量的行为。我国的融资监管政策对现金流量的操纵行为也产生了潜在影响，这主要表现在当公司截止第三季度经营活动所产生的现金流量净额为负时，希望进行再融资的公司为了避免传递关于公司财务风险的不利信号，同样有动机在第四季度显著调增经营性现金流量水平。

关键词：经营性现金流量、财务操纵、季度报告

由会计的权责发生制所决定，会计盈余主要由“应计利润”和“经营活动产生的现金流量净额”构成，但在国内外的会计学文献特别是对盈余管理的研究中，研究者往往用应计利润来衡量利润的操纵程度，其隐含的基本假定是，

[1] 本文是国家自然科学基金资助项目《经济周期与亏损公司定价：理论与实证研究》（批准号70602030）和教育部人文社科重点研究基地重大研究项目公司治理、关联交易与公司价值（批准号05JJD630001）研究成果的一部分。本研究还受到上海市曙光课题《公司财务操纵的全新视角：上市公司现金流量操纵研究》、国家自然科学基金重大课题《产权保护导向的会计研究》的资助。感谢两位匿名审稿人对于本文提出的宝贵意见，本文的一切疏漏和可能的错误均由作者负责。

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会计盈余的质量主要受到会计选择行为对应计利润的不利影响。然而，盈余管理手段并不只限于会计方法。据《证券时报》和联合证券公司（1999）所作的一项调查显示，上市公司进行盈余管理的手段中，进行关联交易的占 55.56%，巧用会计政策的占 44.44%。与纯粹的会计选择行为不同，经济交易手段在影响应计利润的同时，也改变了企业现金流量及其时间的分布，从而降低了会计报告使用者利用现金流量信息“对企业过去、现在或者未来的情况作出评价或者预测”的价值。在极端的财务舞弊情形下，如蓝田股份、银广夏、草原兴发等案件所显示的，企业为了掩饰经济交易的虚假实质，往往也伴随着现金流量的肆意操纵。[3]显然，对于企业盈利质量的评价，仅仅着眼于应计利润是不够的，对于现金流量尤其是经营性现金流量也必须给予密切的关注。然而，在目前的学术研究及财务分析实践中，后者依然被广泛视为评价盈利质量的一种**可靠**的基准。现金流量是否真如我们假定的那样具有不可操纵性呢？本文基于中国A股上市公司财务季报数据的实证研究将试图回答上述问题。

在位于定期财务报告开头显著位置的“主要会计数据与财务指标”部分，经营活动产生的现金流量作为对比标准与净利润指标一同列示。如果现金流量与净利润匹配程度太差，特别是净利润（或营业利润）高于经营活动产生的现金流量时，报表使用者会对利润的真实性和可持续性产生疑虑。这种情况下，管理层就有动机对现金流量进行操纵。因此我们预期在前三季度中经营活动现金流量净额与净利润匹配性越差的公司，越有可能在第四季度操纵经营现金流量。本文实证结果表明，在国内的上市公司中，如果到第三季度为止经营活动现金流量净额低于净利润，在第四季度存在明显的现金流量操纵的痕迹。同时，中国证监会在再融资监管政策上对现金流量的要求，也一定程度上影响了上市公司的现金流量操纵行为，上市公司为了顺利通过发行新股的审核，当净利润低于经营活动产生的现金流量，特别是经营活动现金流量为负时，操纵的动机会更大。

尽管对盈余管理或利润操纵的研究可谓汗牛充栋，但对现金流量操纵行为的研究却是凤毛麟角。因此本研究首先弥补了相关研究领域的空白，将我们对公司财务操纵行为了解的视野从会计盈余拓展到现金流量。其次，我们的研究结果对会计信息使用者解读财务报表，尤其是现金流量表有很大帮助。现金流

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[3] 这些舞弊公司通常的现金流操纵模式是：在通过虚拟应收账款虚增收入的同时，为避免长期挂账的应收账款以及日益增长的应收账款规模引起投资者和审计师的怀疑，便进一步通过银行存款与流动资产、非流动资产之间的转换隐藏虚拟交易产生的应收账款。比如，当需要将日益增多的应收账款伪造成有现金流的交易时，以虚拟交易的客户名义收款进账；在需要冲销虚拟资金时则以借出款或购货款名义入帐，从而使原来虚拟交易产生的应收账款转化为会计报表上的其他应收款。在蓝田股份、草原兴发的例子中，公司则更为巧妙地将虚拟现金流转化为不易进行价值评估的固定资产、无形资产。

量并非我们一贯认为的那样是不可操纵的。最后，与被管理的盈余一样，受到操纵的现金流也会在以后的会计期间转回，因此我们在利用当期现金流量对未来现金流进行预测或评价利润的含金量时，必须作出相应的调整。

本文结构如下：第一部分是制度背景与现金流量操纵动机的分析。第二部分为样本选择与研究设计，第三部分是实证检验结果。最后给出了本文的结论。

一、制度背景与现金流量操纵动机分析

同盈余管理一样，现金流量操纵构成了公司财务操纵的一部分，鉴于现金流量操纵文献极其有限，对于现金流量操纵的分析可以以盈余管理的动机为起点。中国及西方大量文献对于盈余管理动机的考察集中在以下三个方面：（1）资本市场动机；（2）基于会计盈余数据的契约动机；（3）迎合或规避政府监管的动机。第一种动机主要表现在上市公司通过盈余管理影响公司股价、迎合分析师或管理者自己的预测；第二种动机一般集中在管理者的薪酬契约和债务契约两个方面，即管理者通过盈余管理来增加自己的报酬或降低债务违约的可能性；第三种动机主要表现为回避行业监管和反托拉斯监管，或迎合某些监管的要求。对中国资本市场的实证研究表明，尽管前两种动机并非没有存在的可能，但第三种动机有着更为突出的体现，比如中国上市公司普遍存在着为满足上市或再融资的法规要求而进行的盈余管理行为（蔡祥，张为国，李志文，2003）。

在财务操纵的实证研究中，盈余之所以受到如此众多的关注，主要有以下原因：（1）在传统的评价标准和监管体系中，盈利能力一直是最为重要的指标。Ball and Brown（1968）就已经清楚地表明，与现金流量相比，公司的股票价格与盈余有着更为密切的关系。在管理者的薪酬契约中，管理层的薪酬计划与盈利指标挂钩也是一个普遍的事实（Healy, 1985）。（2）盈余以权责发生制作为确认和计量的基础，这一方法对会计人员主观判断的内在要求，使得通过会计方法的选择来操纵盈余在实践上具有较大的可行性，相对而言，基于现金收付基础的现金流量在会计方法上几乎没有操纵的可能。（3）以利润表为载体的盈余信息历来就是财务报告的核心，而重视和要求披露比较详细的现金流量信息，只是最近一二十年的事情。

然而，随着实践与研究的发展，人们对现金流量的关注日益增多。在实践方面，财务分析师往往把经营净现金流量与净利润的背离看成影响公司盈余质量一个重要的“红旗”信号，经营活动产生的现金流量常常被用来评价上市公司利润的“含金量”。就中国来说，在1998年企业会计准则要求提供现金流量表后，中国证监会在发布的披露规范中，就要求上市公司在定期报告的“主要会计数据和财务指标”中，在每股收益和每股净资产的下方，增加披露“每股

经营活动产生的现金流量”信息，这反映了监管部门对于现金流量数据在投资分析中所扮演的重要角色的一种认知。

在学术研究方面，这种关注首先表现在人们对于现金流量相对于盈余是否提供了增量信息的检验上。从西方的研究来看，尽管存在部分相反的证据（Bernard and Stober, 1989），但大部分文献还是表明，现金流量可以提供一定的增量信息（Wilson, 1987; Cheng, Liu, and Schaefer, 1996）。近年来，我国学者也在这方面进行了一些研究，孙铮，李增泉（2001）的研究结果表明，除沪市外，当前经营活动的现金流量总体上具有一定的信息增量。但陆静，孟卫东和廖刚（2002）的研究则显示，上市公司的现金流量在股票定价中基本上不具备信息增量。上述研究结果的差异一方面反映了其研究区间的不一致，另一方面也反映了在早期现金流量信息提供不充分、不完善的情况下，投资者在会计信息利用上的不成熟。此外，一个更重要的原因是在应计利润不受影响的情况下，对经营现金流量的操纵直接对利润产生影响，利润的信息含量已经涵盖了这部分现金流量的信息含量。对于现金流量作用的另一方面检验集中在财务困境预测方面，与前一点相互矛盾的研究结论不同，该方向的研究结果一致性地表明，现金流量在预测财务困境过程中具有明显的信息增量（Charitou, Neophytou, and Charalambous, 2004；章之旺，2004等）。上述两方面的研究暗示着，如果上市公司希望通过盈余管理影响股价，现金流量的操纵同样有助于达到特定的目的。这一论断在Burgstahler and Dechev（1997）的研究中得到了初步的支持。他们发现，相对于微亏的公司，微盈的公司来自于经营活动的现金流量水平明显较高。

以上研究关注的是现金流量操纵对盈余质量或者盈余水平的影响，在此意义上，我们可以把其看成是盈余管理研究的一种拓展。然而，现金流量操纵还可能存在其自身的目的，这一点在中国特殊的证券管制环境下体现得尤为明显。

在2000年之前，我国证券监管部门基本上将净资产收益率作为股权再融资的唯一硬性约束指标。在逐渐意识到这一指标的局限性后，从2001年起，开始在强制性信息披露和合规性审核中考虑现金流量和经营活动现金流量等因素。比如在当年颁布的《上市公司新股发行管理办法》以及《中国证监会股票发行审核委员会关于上市公司新股发行审核工作的指导意见》等规定中，就明确提出了上述内容，并要求担任新股发行主承销商的证券公司重点关注并说明公司是否存在“公司现金流量净增加额为负，且经营活动所产生的现金流量净额为负、可能出现支付困难”的情况。现金流指标首次被明确写入新股发行[4]的规章制度中，尽管其地位不及ROE指标那样，用量化的限制条件来影响新股发行资

[4] 其中第二条规定“……本办法所称上市公司向社会公开发行新股，是指向原股东配售股票（以下简称“配股”）和向全体社会公众发售股票（以下简称“增发”）”。

格的审核，但不可否认的是，现金流指标，特别是经营活动产生的现金流量净额指标，已经引起了监管方的重视，在新股发行资格审核中占据了一席之地，成为新股发行契约中的隐性条款。

上述分析表明，无论是出于资本市场的原因，还是为了满足监管的要求，上市公司都有可能进行现金流量操纵（陈小伟，王啸，2004）。问题是，这一动机是否能够实现。正如盈余管理分析所揭示的，除了会计方法的选择之外，关联购销、资产重组等交易手段在中国上市公司的财务操纵方式中占据着更为主导性的地位。现金流量操纵在前一方面虽然难有作用（当然，公司也可以利用现金流量表准则所提供的判断空间和选择余地进行一些操纵，比如将实质上属于投资、筹资活动的现金流量纳入经营活动现金流量），但在后一方面，却面临着几乎同样多的机会。李常青，余玮（2003），吴丽珍（2004）等列举了操纵经营活动现金流量的潜在途径，比如通过关联交易粉饰”销售商品提供劳务收到的现金”，或通过截流应付款项来减少”购买商品接受劳务支付的现金”，或虚构经济业务直接造假，这些手段都是典型地以交易方式来实现操纵的目的。

尽管现金流量的操纵在实践中是很可能存在的，但这种操纵行为是否具有普遍性，具体的操纵动机如何，相关的研究依然很少。Burgstahler and Dechev（1997）的潜在假定是，企业可以通过操纵经营活动现金流量影响盈余管理水平，但他们并未提供直接的证据表明管理层操纵的最终目的是现金流量还是净利润。Dechow, Ge, Larson, and Sloan（2007）对出现会计差错并被美国证监会处罚的公司进行了研究，发现样本公司在出现差错的年度，现金销售明显高于非差错年度，而现金销售收入（cash sales）减去售货成本（cost of goods sold）后的现金利润率（cash margin）却显著下降，结合美国证监会的处罚报告，他们的解释是这些公司在季度末提前安排交易的结果。尽管在该文中作者没有提及现金流量操纵的问题，但这无疑是现金流量操纵的一个证据。陈小伟，王啸（2004）、陈理（2006）通过考察上市公司在再融资前后经营现金流量指标的年度变化，对现金流量操纵行为进行了比较初步的实证研究，其研究结论证实了经营性现金流操纵在我国A股上市公司进行再融资过程中的普遍性。他们研究与本文至少存在两点重要差异：一是样本集中在再融资公司，这使得其研究结论无法推广到一般性公司。二是样本集中在年度数据，无法体现公司现金流操纵的季度性特征。

Givoly and Ronen（1981）发现，如果公司在前3个季度的盈余水平偏离“正常”水平越大，在第四个季度越可能进行盈余管理。Das and Shroff（2002）的研究则表明，公司第四季度业绩与前三个季度会计业绩相比，会出现明显反转，即前三个季度业绩非常好的公司在第四季度有隐藏利润的倾向；相反，前3个季度业绩糟糕的公司在第四季度会进行增加盈余的粉饰行为以达到期望的利润水平。Comprix, Mills, and Schmidt（2005）的实证结果显示，当管理层的薪酬计划

中奖金或期权的比例较高时，在第四季度倾向于调高利润。现金流量的操纵无疑与盈余管理行为有相似之处。

在考察公司盈利质量时，常用的指标是年度经营活动产生的现金流量与净利润的比率。一般认为，二者越是匹配，则盈余的质量越高。在前三个季度，虽然在季报和中报中也要将盈利指标和现金流量指标进行对比，但无论是监管方还是投资者都更重视年报的盈利水平和盈利质量。

因此，本文的分析将以季度数据为基础，通过考察经营性现金流量季度之间的变化，来对我国上市公司现金流操纵动机进行检验：一般而言，上市公司为了使经营活动现金流量指标和净利润指标相匹配协调，以免净利润的质量遭到投资者质疑，会对经营活动现金净流量进行操纵，具体而言，如果公司前三个季度经营性现金高于净利润，公司可能在第四季度采取减少经营性现金流量的行为，从而为修饰未来的财务报表提供储备，反之，则可能调增经营活动现金流量；[5]当公司有股权再融资（配股或增发）的可能或现实需求时，为了当前或以后更顺利地通过监管方的审核，对现金流量表进行粉饰的动机会更强烈，因此，我们预期，与一般性公司相比，正在进行或有可能进行再融资的公司，尤其是盈利指标处于临界值附近的（比如净资产收益率水平稍大于6%）的公司，当其前三个季度的经营性现金流量低于净利润，特别是经营性现金流量为负时，其在第四季度进行经营性现金流操纵的行为特征将更为明显。

根据以上分析，我们提出如下两个假说：

假说1（匹配动机假说）：前三个季度经营性现金净流量与净利润（或营业利润）偏离程度越大的公司，越有可能在第四季度进行反向的经营性现金流操纵，使之与净利润（或营业利润）指标相匹配；

假说2（政策驱动假说）：与一般公司相比，具有再融资动机特别是处于再融资资格临界值附近的公司，如在前三个季度经营性现金流量低于净利润或经营性现金流量为负数的公司，在第四季度现金流量操纵效应更明显。

二、研究设计与样本选择

1、研究设计

（1）如何衡量现金流量操纵

对现金流量操纵动机进行检验，首先需要确定现金流量中的操纵性成分，这是我们要解决的第一个问题。在剔除行业因素的基础上，公司各个季度的经

[5] 公司也可能操纵前三季度的现金流量，但我们这里假定，基于成本效益的考虑，公司在第四季度的现金流量行为将最为明显，这是因为，其在第四季度操纵现金流量的潜在收益最大，因为投资者对年度盈余质量最为关注，而成本相对最低，现金流量的操纵可以马上在下一个季度（即下一年度）转回。

营性现金流量应表现出两个特点：（1）正常情况下，公司四个季度经营性现金净流量应该分布均匀，或者是基本相等。如果不符合这样的特点，原因可能是公司业务季节性特点（行业特点）引起的，或者存在现金流量的操纵行为。（2）如果在短期内，公司的确有高于或低于行业水平的业务波动的话，四个季度的经营活动产生的现金流入和流出应该匹配，随着业务的发展而同增同减，或者在可接受的波动范围内基本一致。即，各个季度“经营活动收到的现金”占全年“经营活动收到的现金”的比重，约等于各个季度“经营活动支出现金”占全年“经营活动支出现金”的比重。如果不符合上述特点的话，表现出的异常现象就很有可能是操控行为引起的结果。

通过以上的特点（1）来观察样本各个季度经营性现金净流量的特征存在计量上难以克服的弱点：全年经营活动产生的现金净流量可能表现为正值，也可能表现为负值，想观察四个季度对全年的贡献（即四个季度经营性现金净流量占全年的比重）的话，不同样本的分母正负号有别，从而导致计量指标在不同样本之间不可比，[6]去掉现金流为负的样本显然也不是最佳选择。

因此，本文根据特点（2）来对操控性经营性现金净流量进行计量，即通过观察各个季度经营性现金流入比和流出比是否同增同减，来判断操控性行为的存在。计量指标及具体计算公式如下：

$$
\begin{aligned}
DIF(i) &= \text{现金流入比率} - \text{现金流出比率} \\
&= (i\text{季度经营性现金流入占全年比重} - \text{该比重的行业中值}) \\
&\quad -(i\text{季度经营性现金流出占全年比重} - \text{该比重的行业中值}) \qquad (1)
\end{aligned}
$$

其中，i表示各个财务季度。上述指标设计回避了指标分母可能为负的情况，性质上类似于盈余管理研究中的操控性应计利润。在不考虑公司特有的业务波动的情况下，等式右边括号中的两项都应该趋近于0，使等式左边的操控性指标趋于0；在考虑公司特有的业务波动的情况下，等式右边的两项都不趋于0，但两项趋近相等，$DIF(i)$依然趋于0。

存在操纵行为时，$DIF(i)$将偏离0。当$DIF(i)$大于0时，表明在该季度经营性现金流入对全年的超额贡献偏大，或经营性现金流出对全年的超额贡献偏小，这种情况很可能是在该季度进行了增加流入、限制流出的操控；当$DIF(i)$小于0时，表明在该季度经营性现金流入对全年的超额贡献偏小，或经营性现金流出对全年的超额贡献偏大，这种情况很可能是在该季度进行了限制流入、增加流出的操控。$DIF(i)$大小一定程度上反映了操纵程度的大小。

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[6] 比如，某一季度*CFO*为20,全年*CFO*是–100。计算该季度经营现金流量占全年比重为–0.2。当某一季度*CFO*为–20，全年*CFO*是100时，计算该季度经营现金流量占全年比重也为–0.2。虽然计算的比相同，但两种情况下该季度*CFO*对全年*CFO*的贡献程度完全不同。

（2）经营活动现金流量与净利润偏离程度的计量

研究设计的第二个问题是需要确定经营性现金净流量与净利润的偏离程度，我们用变量*DEV*来衡量：

$$DEV(i) = (CFO_i - NI_i)/SALES_i \tag{2a}$$

其中，*i*表示各个财务季度，CFO_i表示截止第*i*季度经营活动产生的现金净流量；NI_i表示截止第*i*季度的净利润；$SALES_i$表示截止第*i*季度的主营业务收入，用来调整规模因素。

上述指标假定会计信息使用者更关注经营性现金流量与净利润的直观比较，而不太注重两者内涵的差异。鉴于净利润在财务分析中的突出地位，这一假定应具有一定的合理性。*CFO*对应的概念其实应当是“营业利润”，与“净利润”相比，二者之间包括了投资收益等所谓的“线下项目”，当公司管理者更关注的是*CFO*与“营业利润”的对比时，利用*DEV*指标将不利于发现企业的经营性现金流量操纵行为，因为当第三季度*CFO*与净利润偏离程度太高时，企业既可能操纵*CFO*，也可以进行“线下项目”的交易。为了检验计量的偏差，在后面的分析中，我们将同时采用另一个替代性的变量*DEV_O*，[7]指标计算方法如下：

$$DEV\_O(i) = (CFO_i - OI_i - INTEREST_i + TAX_i)/SALES_i \tag{2b}$$

其中，OI_i表示截止第*i*季度的经营利润；$INTEREST_i$、TAX_i分别表示截止第*i*季度的财务费用及所得税费用，其目的是用来调整营业利润项目，使得其与*CFO*的涵义更为一致。

（3）现金流量操纵动机检验的模型设计

根据第一节对假说的分析，我们设计如下两个模型来检验现金流量操纵的匹配动机（假说1）：

$$DIF(4) = \beta_0 + \beta_1 DEV(3) + \beta_2 D + \beta_3 D^* DEV(3) + \beta_4 SIZE + \varepsilon \tag{3a}$$

$$DIF(4) = \beta_0 + \beta_1 DEV\_O(3) + \beta_2 D + \beta_3 D^* DEV\_O(3) + \beta_4 SIZE + \varepsilon \tag{3b}$$

模型中*DIF*(*4*)、*DEV*(*3*)和*DEV_O*(*3*)如上面所定义，分别表示第四季度的操纵性现金流量和前3季度经营现金净流量与净利润、营业利润的偏差程度。假说1的检验将首先通过*DEV*系数的显著性及符号来体现。当前三个季度经营性现金净流量低于相对应的利润指标时，公司将很可能在第四季度进行正向的经营性

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[7] 感谢匿名审稿人的意见。由于营业利润是税前的，*CFO*是税后的，所以要调整所得税。同时，利润表中的营业利润是扣除了利息费用后的利润，而*CFO*中不包括利息费用，所以也要做相应调整。

现金流的操纵（表现出较大的*DIF*(*4*)），使之与利润指标相匹配。反之，管理层则有动机在第四季度进行负向的操纵，为未来保留较大的空间，因此β_1的符号预期为负。

*D*为哑变量，当*DEV*(*3*)或*DEV_O*(*3*)小于0时为1，否则为0。在模型中加入该变量及其与*DEV*的交互项，是为了进一步检验现金流动操纵匹配动机的非对称性。一般而言，经营现金流小于净利润或经营利润会被认为是利润质量比较低的一个明显信号，公司管理层为了避免投资者或监管者的不利评价，在*DEV*(*3*)或*DEV_O*(*3*)小于0时，有着更强的动机调增现金流量，因此β_2的系数预计为正。我们用*D*与*DEV*(*3*)或*DEV_O*(*3*)的交叉项来考察，在前三季度经营活动现金流量大于利润指标与小于利润指标两种不同情况下，*DEV*(*3*)或*DEV_O*(*3*)的系数是否有所差别。对于*DEV*(*3*)或*DEV_O*(*3*)大于0的公司来说，其值越大，意味着公司的现金流量越充足，调减现金流量的可能性越大；当*DEV*(*3*)或*DEV_O*(*3*)小于0时，情况则要复杂得多。首先，经营现金流小于利润指标的特征反映了公司较低的盈余质量，因此其值越小的公司调增现金流量的可能幅度越大，这时β_3的系数符号预期为负。然而上述推断的前提是，公司存在足够的操控现金流量的能力。*DEV*(*3*)或*DEV_O*(*3*）小于0意味着公司的应计利润为正，本身可能就是盈余管理的结果。从盈余管理的研究角度来说，应计利润越大，公司的利润操纵幅度越大。如果公司首要的财务操纵对象是盈余，*DEV*(*3*)等负的程度越大，更可能反映了公司盈余管理的程度越大，在这种情况下，公司是否还存在足够的经营现金操控能力显然是值得怀疑的。相反，其值微弱于0的公司更有可能实现操纵的目的。因此，当盈余管理占据主导地位时，β_3的符号预期为正。[8]当现金流量操纵占主导地位时，β_3的符号预期为负。

因此，在模型（3a）、（3b）中，当*DEV*(*3*)大于0时，其对*DIF*(*4*)的影响程度是β_1。当*DEV*(*3*)小于0时，其对*DIF*(*4*)的影响则为$\beta_1+\beta_3$。

*SIZE*为主营业务收入的自然对数，用来控制规模的潜在影响。

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[8] 这里我们假定现金流操纵的主要动机在于粉饰公司的盈余质量。但正如Burgstahler and Dechev（1997）的研究所暗示的那样，公司也可能通过现金流操纵来提升盈余水平，这时在应计额已经比较大的情况下（因而不可能再利用应计额），企业如果还存在进一步操纵会计利润的需要，则不得不努力提升经营性现金流，从而将导致交叉项的系数符号为负。然而这一推断的合理性是值得怀疑的。如Dechow *et al.*（2007）发现在被处罚的公司中，在问题年度，公司的现金销售明显增加，但销售利润却显著下降，现金流量的增加显然是为了增加现金流量的目的而不是提高利润率。另外，应计利润之所以被认为是公司操纵盈余的一种重要手段，就在于它缺乏现金流量支撑，对于一个严重依赖于应计利润的公司来说，其利用现金销售增加来提高利润率的能力应该是非常有限的。尽管如此，我们并不能排除个别公司可能依靠操纵现金流量来达到盈余管理的目的的情况，这在一定程度上会削弱β_3对现金流量操纵的代表性。

2、样本选择

我国上市公司从2002年开始公布季报，但2002年季报中现金流量表不在强制披露之列。2003年第一季度的季报中才开始披露现金流量表。因此，我们选取2003年和2004年深沪两市A股上市公司作为研究样本。数据主要来源于CSMAR数据库。

为了获取符合研究目的的样本，我们剔除如下样本：金融业的上市公司；季度数据不全的样本；行业内只有一家公司的样本，其中行业的分类标准采用中国证监会颁布的《上市公司行业分类指引》大类标准，即单字母加两位数字编码。对于第四季度操纵性现金流量的初步统计分析显示，可能存在一定的异常值，因此我们进一步剔除了将*DIF*(*4*)按大小排序后居于前1%及后1%的公司。经过上述筛选后，最后获得1938个企业-年观察值，其中2003年有889家样本公司，2004年有1049家样本公司。

三、实证检验

1、描述性统计结果

我们首先按照前三个季度经营性现金流量和净利润匹配程度的差异，把样本*DEV*（*3*）从小到大进行排序，等分为6组，然后比较各个组别的操控性经营现金流量的大小。在以上的分组中，前3组平均*DEV*(*3*)小于0，即操纵前的经营性现金流低于净利润；后3组平均*DEV*(*3*)大于0，即操纵前的经营性现金流高于净利润，我们关心的是前3组在第四季度是否有提高经营性现金净流量的现象，后3组是否有压低现金流的现象。

表1列示了6组样本的*DIF*(*4*)对比情况，无论是从均值结果还是中位数结果来看，*DEV*(*3*)小于0的组表现出更多的现金流量调增，而大于0的组，则呈现相反的趋势，从而与我们的预计基本相符，且*DEV*(*3*)越小（大）的组，*DIF*(*4*)越大（小）。统计检验结果表明，无论是*DEV*(*3*)最高与最低的一组之间，还是六个组别之间，操控性现金流量的平均水平都呈现出显著的差异，从而初步验证了我们的假说。

从表中我们还可以观察到如下一个明显的现象：第3、第4两组是现金流和净利润匹配程度最好的两组，它们在第四季度的*DIF*(*4*)绝对值，不论从均值还是中值来看，基本上都是6个组别中最小的两组；其他匹配程度较差的组别，在第四季度*DIF*(*4*)偏离0的程度较大，呈现出更高的操纵水平。这意味着操控性现金流量的幅度大小与经营活动现金流量相对于净利润的偏离程度，呈现一定的正相关关系。图1列示了按*DEV_O*(*3*)分组后*DIF*(*4*)在各组之间的差异，其结果无论是数值的大小还是方向上与按*DEV*(*3*)分组基本上一致。

表1 按*DEV*(*3*)大小分组的各个组别的操控性经营现金流量比较

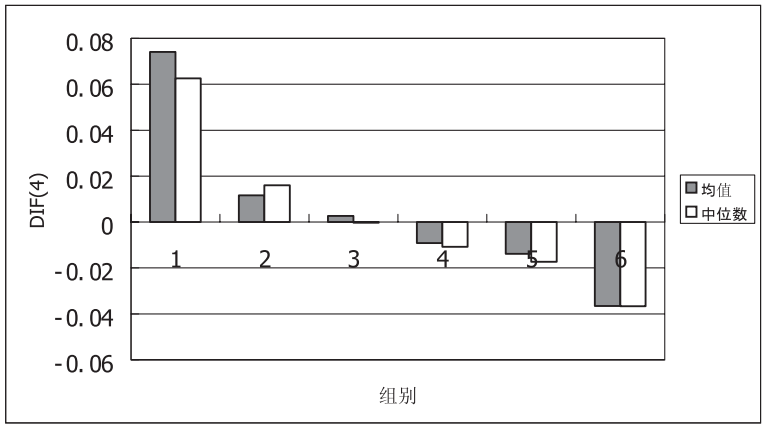
DEV(*3*)		*DIF*(*4*)	
分组	均值	均值	中位数
1	–0.5196	0.0712	0.0607
2	–0.0988	0.0149	0.0132
3	–0.0280	–0.0002	0.0000
4	0.0191	–0.0053	–0.0088
5	0.0808	–0.0206	–0.0254
6	0.3495	–0.0312	–0.0301
1、6组之间的差异检验		0.0000*	0.0000#
各组之间差异检验		0.0000**	0.0000##

DEV（3）=（$CFO_3 - NI_3$）/$SALES_3$

CFO_3是截至第3季度的经营现金流量；NI_3和$SALES_3$分别是截至第3季度的净利润和销售收入净额。*DIF*（*i*）=现金流入比率 – 现金流出比率 =（*i*季度经营性现金流入占全年比重 – 该比重的行业中值）–（*i*季度经营性现金流出占全年比重 – 该比重的行业中值），*DIF*(*4*)即第4季度的现金流入比率与现金流出比率的差额。

每组样本数为323。* 表示两组样本之间进行均值t检验的双边显著性水平；** 表示多组样本之间进行均值F检验的显著性水平；# 表示两组样本之间进行中位数Wilcoxon检验的双边显著性水平；## 表示多组样本之间进行中位数Kruskal-Wallis检验的显著性水平。

图1 按*DEV_O*（*3*）各个组别第四季度操控性经营现金流



$DEV\_O(3) = (CFO_3 - OI_3 - INTEREST_3 + TAX_3)/SALES_3$

CFO_3是截至第3季度的经营活动现金流量；OI_3、$INTEREST_3$、TAX_3 和$SALES_3$分别是截至第3季度的营业利润、利息费用、所得税和销售净收入。

DIF(*i*) = 现金流入比率 – 现金流出比率 =（*i*季度经营性现金流入占全年比重 – 该比重的行业中值） –（*i*季度经营性现金流出占全年比重 – 该比重的行业中值），*DIF*(*4*)即第4季度的现金流入比率与现金流出比率的差额。

2、匹配性动机假说的多元回归分析

模型（3a）、（3b）的回归结果见表2。β_1表示的是*DEV*大于0时，*DEV*对*DIF*的影响。β_1在两个模型中的符号相反，但均不显著，即缺乏系统性的证据表明那些前三季度现金流量比较高的公司会在第四季度调低现金流量。哑变量*D*的系数β_2表示的是*DEV*大于0组和小于0组在*DIF*上的区别。其符号显著为正，意味着前三季度现金流量低于净利润的公司，总体上存在更强的调增现金流量的行为，与预期一致。交叉项的系数β_3在所有的样本回归结果中达到了至少2%的显著性水平，符号为负。这意味着在第三季度末经营现金流量越是低于净利润，在第四季度操纵利润的幅度越大。对于现金流低于净利润的公司，*DEV*的总影响应为$\beta_1+\beta_3$，为 –0.0629。

从模型（3a）、（3b）的对比来看，前者无论是在系数的显著性还是模型的拟合度上都要高于后者，显然，用经营性现金流量与净利润的偏离程度可能更能刻画管理者的现金流量操纵动机。或者说，管理者操纵利润的目标更倾向于净利润而不是营业利润。

表2的结果显示公司规模在现金流操纵上缺乏明显的影响。另外，为了创造良好的公司业绩与财务状况表象，快速成长（如采取比较激进的赊销策略）的公司以及财务风险比较高的公司也可能进行现金流量操纵。以第四季度的销售收入增长率〔（t + 1年第4季度销售收入 – t年第4季度销售收入）/t年第4季度销售收入〕、资产负债率（总负债/总资产）为控制变量，我们检验了公司成长性、资本结构对因变量的潜在影响。实证结果发现这些控制变量都不显著。这意味着公司的上述基本面特征对于现金流操纵行为影响并不太大。

3、操纵性经营现金流量衡量的改进

上述模型的一个内在缺陷在于，*DEV*一方面衡量的是净利润与经营现金流量的偏差，另一方面也反映了公司应计利润的多少。正常情况下，当公司上一期应计利润比较高时，比如应收帐款比较多，随着应收帐款在下一期的收回，自然地会带来现金流量的上升，在相反的情形下，比如公司上期的应付帐款比较高，则伴随着现金流量的降低，这同样可以用来解释表2的结果。为了对这一可能的解释进行控制，我们进一步改进了操纵性现金流量的衡量方法。具体过程如下：

我们首先通过估计如下模型来控制正常的应计反转对*DIF*(*4*)影响：

$$DIF(4)=\gamma_0+\gamma_1 CUASSET(3)+\gamma_2 CULIABILITY(3)+\varepsilon \quad (4)$$

在模型（4）中，*CUASSET*(*3*)为第三季度末扣除了货币资产、短期投资及待处理流动资产等项目后的流动资产余额，*CULIABILITY*(*3*)为第三季度末扣除了银行借款后的流动负债余额。为了控制规模的影响，在计算时，我们对这两个变量分别除以期初的总资产。从上面的分析可以知道，第一个变量的系数

表2 匹配性动机的多元回归分析

样本	样本数	β_0	β_1 (–)	β_2 (+)	β_3 (?)	β_4	调整后 R^2	Pr > F
模型(3a)：$DIF(4)=\beta_0+\beta_1 DEV(3)+\beta_2 D+\beta_3 D^* DEV(3)+\beta_4 SIZE+\varepsilon$								
全样本	1938	–0.0037	0.0025	**0.0360**	**–0.0654**	–0.0007	0.1028	0.0000
		(0.9372)	(0.6949)	(0.0000)	(0.0000)	(0.7513)		
2003	889	0.0380	0.0013	**0.0404**	**–0.0729**	–0.0029	0.1349	0.0000
		(0.5977)	(0.8876)	(0.0000)	(0.0000)	(0.3953)		
2004	1049	–0.0317	0.0034	**0.0321**	**–0.0586**	0.0008	0.0762	0.0000
		(0.6173)	(0.7029)	(0.0000)	(0.0000)	(0.7932)		
模型(3b)：$DIF(4)=\beta_0+\beta_1 DEV\_O(3)+\beta_2 D+\beta_3 D^* DEV\_O(3)+\beta_4 SIZE+\varepsilon$								
全样本	1938	0.0015	–0.0096	**0.0346**	**–0.0471**	–0.0009	0.0948	0.0000
		(0.9743)	(0.3143)	(0.0000)	(0.0000)	(0.6724)		
2003	889	0.0451	–0.0145	**0.0381**	**–0.0553**	–0.0032	0.1344	0.0000
		(0.5318)	(0.2903)	(0.0000)	(0.0012)	(0.3465)		
2004	1049	–0.0274	–0.0054	**0.0316**	**–0.0394**	0.0006	0.0639	0.0000
		(0.6686)	(0.6890)	(0.0000)	(0.0185)	(0.8481)		

$DIF(i)$ = 现金流入比率 – 现金流出比率

=（i季度经营性现金流入占全年比重 – 该比重的行业中值））–（i季度经营性现金流出占全年比重 – 该比重的行业中值），$DIF(4)$即第4季度的现金流入比率与现金流出比率的差额。

$DEV(3)=(CFO_3-NI_3)/SALES_3$

CFO_3是截至第3季度的经营现金流量；NI_3和 $SALES_3$ 分别是截至第3季度的净利润和销售收入净额。$DEV\_O(3)=(CFO_3-OI_3-INTEREST_3+TAX_3)/SALES_3$

CFO_3是截至第3季度的经营活动现金流量；OI_3、$INTEREST_3$ 、TAX_3和$SALES_3$分别是截至第3季度的营业利润、利息费用、所得税和销售净收入。

D为哑变量，$DEV(3)$或$DEV_O(3)$为负数时为1，否则为0。$SIZE$为销售收入的自然对数。括号中的数值为对回归系数进行t检验的双边显著性水平。

预计为正，而第二个变量的系数将预计为负。在估计模型（4）时，我们以一个行业的全部公司为样本（行业的划分标准与第2节一致）进行回归。为了得到有效的回归结果，行业内公司数少于15家的样本被进一步剔除，最终得到1516企业－年观察值，其中2003年678家样本公司，2003年838家样本公司。从最终的分年度分行业的回归结果来看，超过75%的组别$CUASSET(3)$的系数为正，其系数的平均值为0.0929，将近85%的组别$CULIABILITY(3)$的系数为负，系数的平均值为–0.1336。对系数进行均值t检验的结果显示，两者均在1%的水平上显著。

在估计出上述的模型后，模型的残差就可以用来衡量控制了应计转回后的操纵性现金流量。设定变量名为*R*(*4*)，改进后的匹配动机检验模型如下：

$$R(4)=\beta_0+\beta_1 DEV(3)+\beta_2 D+\beta_3 D^{*}DEV(3)+\beta_4 SIZE+\varepsilon \quad (5a)$$

$$R(4)=\beta_0+\beta_1 DEV\_O(3)+\beta_2 D+\beta_3 D^{*}DEV\_O(3)+\beta_4 SIZE+\varepsilon \quad (5b)$$

表3列示了模型（5a）、（5b）的回归结果。与表2相比较可以发现，在用*DEV*(*3*)来衡量操纵动机时，除显著性水平及解释力有所下降外，两者的结果基本一致，即前三季度现金流量低于净利润的公司，不仅总体上存在调增现金流量的行为，且偏离程度越大，调增的幅度也就越大。模型（5b）的回归结果则再一次显示，经营性现金流量与营业利润的对比无法更好地衡量管理者的现金流量操纵动机。为了突出结果，在后面的分析中，我们将仅列示基于*DEV*(*3*)的结果。

表3 匹配性动机的改进多元回归分析

样本	样本数	β_0	β_1 （–）	β_2 （+）	β_3 （?）	β_4	调整后 R^2	Pr > F
模型(5a)：$R(4)=\beta_0+\beta_1 DEV(3)+\beta_2 D+\beta_3 D^{*}DEV(3)+\beta_4 SIZE+\varepsilon$								
全样本	1516	0.0542	–0.0078	**0.0256**	**–0.0387**	–0.0033	0.0699	0.0000
		(0.2917)	(0.3068)	(0.0000)	(0.0004)	(0.1693)		
2003	678	0.0756	–0.0166	**0.0295**	**–0.0291**	–0.0044	0.0914	0.0000
		(0.3309)	(0.1347)	(0.0000)	(0.0595)	(0.2285)		
2004	838	0.0385	–0.0008	**0.0223**	**–0.0466**	–0.0025	0.0522	0.0000
		(0.5769)	(0.9372)	(0.0009)	(0.0030)	(0.4358)		
模型(5b)：$R(4)=\beta_0+\beta_1 DEV\_O(3)+\beta_2 D+\beta_3 D^{*}DEV\_O(3)+\beta_4 SIZE+\varepsilon$								
全样本	1516	0.0542	–0.0139	**0.0272**	**–0.0246**	–0.0034	0.0677	0.0000
		(0.2911)	(0.1705)	(0.0000)	(0.0492)	(0.1602)		
2003	678	0.0798	–0.0237	**0.0291**	–0.0224	–0.0046	0.0948	0.0000
		(0.3017)	(0.1031)	(0.0000)	(0.2104)	(0.1997)		
2004	838	0.0372	–0.0058	**0.0257**	–0.0264	–0.0025	0.0463	0.0000
		(0.5901)	(0.6834)	(0.0001)	(0.1304)	(0.4341)		

R(*4*)是$DIF(4)=\gamma_0+\gamma_1 CUASSET(3)+\gamma_2 CULIABILITY(3)$的残差。

CUASSET(*3*)为第三季度末扣除了货币资产、短期投资及待处理流动资产等项目后的流动资产余额，*CULIABILITY*(*3*)为第三季度末扣除了银行借款后的流动负债余额。为了控制规模的影响，对这两个变量分别除以期初的总资产。所有其他变量的定义同表2。括号中的数值为对回归系数进行t检验的双边显著性水平。

4、盈利质量管理抑或季节性现象？

关于上述结果一个直接疑问是：上述规律仅仅存在于第四季度吗？如果在其他季度存在同样的现象，甚至同样明显，那么我们的结果就很难说操纵性现金流量的变动是为了匹配动机，因为这一动机在其他季度相对较弱。

为了回答上面的疑问，我们运用下面的两个模型来比较季度之间的可能差异：

$$DIF(i)=\beta_0+\beta_1 DEV(i-1)+\beta_2 D(i-1)+\beta_3 D(i-1)*DEV(i-1)+\beta_4 D1 +\beta_5 D1*DEV(i-1)+\beta_6 D1*\mathrm{D}(i-1)+\beta_7 D1*D(i-1)*DEV(i-1)+\varepsilon \quad (6)$$

$$R(i)=\beta_0+\beta_1 DEV(i-1)+\beta_2 D(i-1)+\beta_3 D(i-1)*DEV(i-1)+\beta_4 D1 +\beta_5 D1*DEV(i-1)+\beta_6 D1*\mathrm{D}(i-1)+\beta_7 D1*D(i-1)*DEV(i-1)+\varepsilon \quad (7)$$

在上述模型中，i表示第2、3、4季度，$i-1$表示与i对应的上一季度，$D(i-1)$为哑变量，当$DEV(i-1)$小于0时为1，否则为0。$D1$为季度哑变量，当i等于4时为1，否则为0。DIF、DEV和R的定义如前。显然，如果前面的匹配性动机检验结果仅仅是一种正常的季节性现象，则系数β_5、β_6、β_7应不具有显著性。由于在上述模型中，我们采用企业-季度作为回归中的观察值，因此样本总量与表2、表3有所不同。其中，模型（6）的总体样本量为5814个。模型（7）进一步剔除了行业内公司数少于15家的样本，总体样本量为4548个。

表4列示了模型（6）、（7）的检验结果。$D(i-1)$的系数为正，说明当上一季度的经营性现金流量低于净利润指标时，下一个季度的操纵性现金水平总体上会显著上升。$D1*D(i-1)$的系数也为正，意味着第四季度的上升效应更为明显。$D(i-1)*DEV(i-1)$的系数在全样本及2004年度的样本的检验中显著为负，即当前一季度经营性现金流量相对于净利润指标越低时，操纵性现金水平越高，这表明前面发现的反转现象的确反映了一定的季节性因素，但其结果并不能否定第四季度匹配性动机的存在。首先，变量$DEV(i-1)$及$D1*DEV(i-1)$不具有任何的显著性，意味着反转主要发生在盈余质量相对较低的公司；其次，在所有的回归中，$D1*D(i-1)*DEV(i-1)$的系数在超过1%的水平上显著为负，即这种反转效应在第四季度更为强烈，同时比较系数β_3、β_6可以清楚地看到，其他季度的反转效应仅仅相当于第四季度的5%左右，因此很难用正常的季节性规律来完全解释我们的结果。

5、再融资政策的影响（政策驱动假说）的检验

正如在本文第二部分中所分析的，由于监管的要求，再融资公司可能具有更强烈的动机进行现金流量操纵。

为了对再融资动机进行进一步的检验，我们在表5A中首先根据公司净资产收益率（ROE）的大小进行分组，然后以模型（5a）、（5b）为基础检验了可

表4 配性动机的季节性检验

	模型（6）			模型（7）		
	全样本 (5814*)	2003 (2667)	2004 (3147)	全样本 (4548)	2003 (2034)	2004 (2514)
截距	**–0.0125**	**–0.0103**	**–0.0141**	**–0.0101**	**–0.0106**	**–0.0113**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0004)	(0.0000)
DEV(i – 1)	–0.0002	–0.0003	–0.0001	–0.0002	–0.0002	–0.0002
	(0.2460)	(0.3400)	(0.4360)	(0.2411)	(0.5149)	(0.3285)
D(i – 1)	**0.0221**	**0.0176**	**0.0257**	**0.0179**	**0.0178**	**0.0222**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
*D(i – 1)*DEV(i – 1)*	**–0.0024**	–0.0022	**–0.0023**	**–0.0024**	–0.0020	**–0.0022**
	(0.0067)	(0.2834)	(0.0132)	(0.0015)	(0.3094)	(0.0020)
D1	**–0.0061**	**–0.0123**	–0.0010	–0.0053	–0.0073	–0.0038
	(0.0612)	(0.0103)	(0.8253)	(0.1152)	(0.1515)	(0.3990)
*D1*DEV(i – 1)*	0.0029	0.0024	0.0034	–0.0064	–0.0146	0.0001
	(0.6080)	(0.7696)	(0.6644)	(0.3282)	(0.1405)	(0.9887)
*D1*D(i – 1)*	**0.0140**	**0.0238**	0.0058	0.0076	**0.0135**	0.0027
	(0.0030)	(0.0006)	(0.3656)	(0.1208)	(0.0675)	(0.6797)
*D1*D(i – 1)*DEV(i – 1)*	**–0.0634**	**–0.0716**	**–0.0560**	**–0.0377**	**–0.0290**	**–0.0452**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0379)	(0.0006)
调整后的R^2	0.0620	0.0703	0.0554	0.0463	0.0488	0.0429
Pr > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

$$DIF(i)=\beta_0+\beta_1 DEV(i-1)+\beta_2 D(i-1)+\beta_3 D(i-1)^*DEV(i-1)+\beta_4 D1+\beta_5 D1^*DEV(i-1)+\beta_6 D1^*\mathrm{D}(i-1)+\beta_7 D1^*D(i-1)^*DEV(i-1)+\varepsilon \quad (6)$$

$$R(i)=\beta_0+\beta_1 DEV(i-1)+\beta_2 D(i-1)+\beta_3 D(i-1)^*DEV(i-1)+\beta_4 D1+\beta_5 D1^*DEV(i-1)+\beta_6 D1^*\mathrm{D}(i-1)+\beta_7 D1^*D(i-1)^*DEV(i-1)+\varepsilon \quad (7)$$

*i*表示第2、3、4季度，*i – 1*表示与*i*对应的上一季度，*D(i – 1)*为哑变量，当*DEV(i – 1)*小于0时为1，否则为0。*D1*为季度哑变量，当*i*等于4时为1，否则为0。*DIF(i)*、*DEV(i – 1)*和*R*（i） 定义同表2和表3。* 表示样本数。括号中的数值为对回归系数进行t检验的双边显著性水平。

能或有潜力进行再融资的公司在现金操纵上是否体现出更强的动机。2001年3月证监会颁布实施的《上市公司新股发行管理办法》规定上市公司申请配股或增发新股，公司最近3年加权平均净资产收益率不得低于6%。因此我们按（–∞, 0]、（0, 6%]、（6%, 8%]、（8%, +∞]的区间将样本分为四组。（6%, 8%]区间的公司为临界公司。鉴于目前学术界及实务界对上市公司盈余管理行为的广泛认知，处在这一区间的公司净利润质量无疑将受到监管者的密切关注，尤其是在

经营现金净流量低于净利润的情况下，更有动机调增现金流量，以提升公司的盈余质量形象。表5A列示了模型（5a）、（5b）在不同区间的回归结果。在全样本的回归结果中，上述论断一定程度上得到了支持。当经营现金净流量低于净利润时，处于（6%, 8%]组别的公司整体上操纵性经营现金流水平比较高，*D*的系数为0.0512，远高于其他组别。*D*DEV*（*3*）系数为负，说明前三季度净利润低于现金流量越多，第四季度操纵现金流量的幅度越大。表5a值得关注的另外一个结果是，对于那些*ROE*大于8%的潜在再融资公司来说，同样存在进行现金流量与净利润匹配的动机，但效应主要存在于经营现金净流量高于净利润的公司，这可能反映了经营性现金流量操纵成本的影响，对于那些盈利指标比较高，且经营现金流比较充足的公司，适当地调低现金流量，既容易实现，也可以为未来提供适当的准备。对于当年亏损的公司，我们没有发现任何显著的结果，这也许是因为这类公司一方面来自于现金流操纵的潜在收益比较少，另一方面本身也缺乏足够的能力进行现金流操纵。

分年度的回归结果中，2003年的结果与全样本结果大体一致，2004年结果基本上不显著。

表5A说明，当公司*ROE*处于（6%, 8%]区间时，其现金操纵水平在整体上与其他公司有所不同。在表5B的回归分析中，我们加进了三个基于哑变量*DROE*（当样本公司的年度*ROE*处于临界区间为1，否则为0）的交叉项，以检验这种差别的显著性。表5B的回归结果显示，潜在再融资公司在前三季度经营现金流低于净利润的情况下，第四季度操纵性经营现金流水平整体上的确显著高于其他类型公司（*DROE*D*系数为正且显著），但这种操纵水平是否与经营现金净流量偏离净利润的程度具有更强的相关性，则缺乏显著性的证据（*DROE*D*DEV*(*3*)系数不显著）。

可以说，表5的结果只是为假说2提供了部分的证据，即潜在的再融资公司如果前三个季度净利润低于现金流量，在第四季度会存在明显的调增经营现金流量现象。[9]

[9] 这里实证结果并不强烈的一个原因可能在于，我们以公司所处的*ROE*区间来刻画再融资的现金流量操纵动机存在偏差。假说2的基础是监管机构或承销商会关注将发行新股企业的现金流量情况，而*ROE*分布于6%至8%的企业并不一定计划发行新股，因而并没有必要关心监管机构或承销商对现金流量的关注。事实上，相当多*ROE*处于6%至8%的企业，他们可能计划在将来发行新股，如果在t年就进行了现金流的操纵，那么可能在t+1年需要发行新股时，反而在现金流上有不利的表现。匿名审稿人认为对此假说的检验采用有实际融资计划的企业更合适。根据该建议，我们采用与表5B类似的模型，比较了该类公司（在当年或未来一年公司董事会提出了或股东大会通过了再融资的预案，或未来一年公司实施了再融资）与其他公司的现金流操纵水平，但并没有发现任何显著的结果。导致这一结果的原因可能在于相当一部分准备进行再融资的企业由于良好的业绩（净利润有足够的经营性现金流做支撑）并不需要进行现金流量操纵，而只有那些业绩指标处于敏感区域的公司才有必要如此。

表5A 基于模型（5a）的潜在再融资公司现金流量操纵动机的多元回归分析：分组分析

样本	*ROE*分布	样本数	截距	*DEV(3)*	*D*	*D*DEV(3)*	*SIZE*	调整后R^2	Pr>F
全样本	(–∞, 0)	144	0.0581	0.0174	0.0313	–0.0265	–0.0041	0.0054	0.3166
			(0.7950)	(0.3659)	(0.1034)	(0.3835)	(0.7003)		
	[0, 6%)	645	0.0960	**–0.0210**	**0.0189**	**–0.0601**	–0.0053	0.0928	0.0000
			(0.2712)	(0.0468)	(0.0120)	(0.0018)	(0.2031)		
	[6%, 8%)	228	–0.0280	0.0174	**0.0512**	**–0.0560**	0.0001	0.1108	0.0000
			(0.8669)	(0.3750)	(0.0002)	(0.0205)	(0.9878)		
	[8%, +∞)	499	0.0764	**–0.0696**	0.0079	0.0158	–0.0037	0.0588	0.0000
			(0.2702)	(0.0200)	(0.3336)	(0.6453)	(0.2474)		
2003	(–∞, 0)	56	–0.1867	–0.0904	–0.0014	0.0600	0.0081	–0.0116	0.5051
			(0.5293)	(0.2471)	(0.9675)	(0.5349)	(0.5638)		
	[0, 6%)	289	**0.2722**	**–0.0378**	0.0070	**–0.1391**	**–0.0136**	0.2281	0.0000
			(0.0584)	(0.0193)	(0.5400)	(0.0000)	(0.0463)		
	[6%, 8%)	117	0.0027	0.0210	**0.0719**	–0.0289	–0.0018	0.1436	0.0003
			(0.9902)	(0.2444)	(0.0000)	(0.2075)	(0.8599)		
	[8%, +∞)	216	0.0470	**–0.0907**	0.0062	0.0685	–0.0022	0.0398	0.0135
			(0.6145)	(0.0319)	(0.5714)	(0.1630)	(0.6192)		
2004	(–∞, 0)	88	0.5033	0.0178	0.0368	–0.0178	–0.0248	0.0286	0.1718
			(0.1328)	(0.3947)	(0.1470)	(0.5992)	(0.1174)		
	[0, 6%)	356	–0.0238	–0.0091	**0.0250**	–0.0039	0.0004	0.0257	0.0106
			(0.8213)	(0.4981)	(0.0093)	(0.8724)	(0.9394)		
	[6%, 8%)	111	–0.0330	–0.0691	0.0067	–0.0833	0.0013	0.1964	0.0000
			(0.8883)	(0.6161)	(0.7763)	(0.5555)	(0.9094)		
	[8%, +∞)	283	0.0904	–0.0584	0.0098	–0.0097	–0.0045	0.0629	0.0002
			(0.3605)	(0.1585)	(0.4039)	(0.8376)	(0.3272)		

表5B 基于模型（5a）的潜在再融资公司现金流量操纵动机的多元回归分析：交叉项分析

	全样本 (1516)	2003 (678)	2004 (838)
截距	0.0557	0.0799	0.0436
	(0.2788)	(0.2963)	(0.5235)
DEV(3)	–0.0139	**–0.0424**	–0.0002
	(0.1018)	(0.0028)	(0.9834)
D	**0.0204**	0.0084	**0.0251**
	(0.0001)	(0.2903)	(0.0005)
*D*DEV(3)*	**–0.0362**	**–0.0660**	–0.0245
	(0.0070)	(0.0038)	(0.1381)
DROE	–0.0113	**–0.0254**	0.0091
	(0.1910)	(0.0278)	(0.5798)
DROE DEV(3)*	0.0305	**0.0627**	–0.0673
	(0.1137)	(0.0042)	(0.5768)
*DROE*D*	**0.0296**	**0.0625**	–0.0195
	(0.0214)	(0.0003)	(0.3664)
*DROE*D*DEV(3)*	–0.0192	0.0376	–0.0609
	(0.4443)	(0.2282)	(0.6244)
SIZE	–0.0033	–0.0043	–0.0028
	(0.1727)	(0.2329)	(0.3851)
调整后R^2	0.0718	0.1273	0.0709
Pr > F	0.0000	0.0000	0.0000

表5A中，所有变量定义与表3相同。因变量为*R*（*4*）。表5B中，加入了哑变量*DROE*和它的交叉项。*DROE*为哑变量，当样本公司的年度*ROE*处于（6%,8%]区间时为1，否则为0。括号中的数值为对回归系数进行t检验的双边显著性水平。

鉴于中国证监会的相关制度中直接用“现金流量净增加额”、“经营活动所产生的现金流量净额”是否为负来考察公司的风险（其目的可能并不在于关注公司的盈余质量），为了直接检验再融资政策的影响，我们建立新的分析模型如下：

$$DIF(i)=\beta_0+\beta_1 NETCASH(i-1)+\beta_2 NETCFO(i-1)+\beta_3 D+\beta_4 D*NETCASH(i-1)+\beta_5 D*NETCFO(i-1)+\varepsilon \quad (8)$$

$$R(i)=\beta_0+\beta_1 NETCASH(i-1)+\beta_2 NETCFO(i-1)+\beta_3 D+\beta_4 D*NETCASH(i-1)+\beta_5 D*NETCFO(i-1)+\varepsilon \quad (9)$$

在上述模型中，我们比照模型（6）、（7）采用企业-季度作为回归中的观察值，其中*i*表示第2、3、4季度，*i – 1*表示与*i*对应的上一季度。*NETCASH*(*i – 1*)、*NETCFO*(*i – 1*)均为哑变量，当截止*i – 1*季度末现金流量净增加额为负、经营活动所产生的现金流量净额为负时，分别为1，否则为0。这里*D*为季度哑变量（与模型3中的定义不同），当*i*等于4时为1，否则为0。*DIF*、*R*的定义如前。显然，如果公司在进行现金流量的操纵考虑到再融资的规定，且操纵行为主要发生在第四季度，则系数β_4、β_5应该显著为正。

表6列示了全样本及分年度的检验结果。从表中可以看出，两个模型的结果基本一致。β_1、β_2为正，说明当截止上季度末现金流量净增加额为负或经营活动所产生的现金流量净额为负时，公司操纵性经营现金流量水平在当期将会显著增加，假定操纵性行为主要发生在最后一个季度，该现象可能反映了现金流量

表6 基于现金流量变动及经营活动所产生的现金流量净额的回归分析

	模型（8）			模型（9）		
	全样本 (5814)	2003 (2667)	2004 (3147)	全样本 (4548)	2003 (2034)	2004 (2514)
截距	**–0.0142**	**–0.0148**	**–0.0138**	**–0.0118**	**–0.0134**	**–0.0106**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0003)
NETCASH(*i – 1*)	**0.0110**	**0.0131**	**0.0093**	**0.0095**	**0.0116**	**0.0078**
	(0.0000)	(0.0010)	(0.0122)	(0.0006)	(0.0055)	(0.0364)
NETCFO(*i – 1*)	**0.0185**	**0.0151**	**0.0213**	**0.0146**	**0.0150**	**0.0142**
	(0.0000)	(0.0010)	(0.0000)	(0.0000)	(0.0003)	(0.0001)
D	**–0.0068**	**–0.0121**	–0.0025	**–0.0087**	–0.0075	**–0.0096**
	(0.0533)	(0.0200)	(0.6088)	(0.0172)	(0.1711)	(0.0496)
*D*NETCASH*(*i – 1*)	0.0041	0.0046	0.0039	0.0029	–0.0013	0.0061
	(0.3742)	(0.4952)	(0.5310)	(0.5462)	(0.8547)	(0.3345)
*D*NETCFO*(*i – 1*)	**0.0359**	**0.0506**	**0.0235**	**0.0273**	**0.0312**	**0.0241**
	(0.0000)	(0.0000)	(0.0003)	(0.0000)	(0.0000)	(0.0003)
调整后的R^2	0.0539	0.0685	0.0431	0.0399	0.0449	0.0344
Pr > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

模型（8）和（9）的因变量分别为*DIF*（*i*）和*R*（*i*），其定义分别同表2和表3。*i*表示第2、3、4季度，*i – 1*表示与*i*对应的上一季度。*NETCASH*(*i – 1*)、*NETCFO*(*i – 1*)均为哑变量，当截止*i – 1*季度末现金流量净增加额为负、经营活动所产生的现金流量净额为负时，分别为1，否则为0。这里*D*为季度哑变量（与模型3中的定义不同），当*i*等于4时为1，否则为0。括号中的数值为对回归系数进行t检验的双边显著性水平。

的季度性变动特征。对第四季度，*NETCASH*(*i* – *1*)、*NETCFO*(*i* – *1*)的总影响分别为（$\beta_1 + \beta_4$）和（$\beta_2 + \beta_5$）。系数β_4、β_5及其显著性显示，如果截止第三季度经营活动所产生的现金流量净额为负，其对第四季度尤其可能产生显著正的效应，但现金流量净增加额的效应则不明显。

结合中国证监会在净资产收益率上的规定，我们可以预测，第四季度的调增效应在处于临界区间的公司可能会更为明显。通过在模型（8）、（9）的基础上分别加进两个基于哑变量*DROE*（当样本公司的年度*ROE*处于临界区间为1，否则为0）的交叉项，表7的回归分析试图检验这一预测是否成立。

从表7可以看出，在全样本及2004年的模型回归结果中，*DROE*D* NETCASH*(*i* – *1*)的系数显著为正，这一结果表明处于临界区间的公司，如果截止第三季度末现金流量净增加额为负，其在第四季度的操纵性现金流量将显著较高。*DROE*NETCASH*(*i* – *1*)的系数为负且基本上显著，意味着在前两个季度不存在类似的现象。至于经营活动所产生的现金流量净额指标在现金流操纵上的效应，表7缺乏任何关于临界公司的显著证据。

上述结果表明，由于特殊的监管政策，经营性现金流量的操纵一方面可能来自于匹配动机，同时，为了减少现金流量变动及经营活动所产生的现金流量净额所传递的关于公司风险的不利信号，如果到第三季度末现金流量净增加额为负或者经营活动现金流量为负，在第四季度会调高经营现金流量。特别是那些处于再融资资格边缘的公司，在第四季度显著调增经营性现金流量水平至显著高于其他公司。

综上所述，对于一般性公司，尽管匹配动机假说没有得到完全的验证，即没有证据表明前三个季度经营现金流量大于净利润的公司在第四季度存在显著向下操纵现金流量的行为。但前三个季度经营现金流小于净利润的公司的确在第四季度存在显著地调增经营性现金流的操纵行为，这意味着现金流的操纵的动机在于粉饰公司的盈余质量，在此意义上，我们可以把现金流操纵的检验与分析看成盈余管理的一种延伸。政策驱动假说也得到了较好的验证，操纵现金流的目的并不仅仅在于实现利润与现金流量的匹配，在特殊的管制政策下，现金流的操纵也可能是为了迎合管制的需要。这一点在对于潜在再融资公司的检验中得到了一定的证实。由于现金净额的不利变动及经营活动所产生的现金流量净额为负，将向监管者传递关于公司财务风险的不利信号，公司，尤其是存在再融资可能的处于临界区间的公司，同样有动机在第四季度显著调增经营性现金流量水平。

6、经营性现金流量操纵对持续性的影响

如果第四季度的经营性现金流量受到了很严重的操纵，那么这些操纵性行为在下一期的转回，必然将降低当期现金流量的持续性，未来的现金流量也可

表7 基于现金流量变动及经营活动所产生的现金流量净额的回归分析：再融资效应检验

	被解释变量：*DIF*（*i*）			被解释变量：*R*（*i*）		
	全样本 (5814)	2003 (2667)	2004 (3147)	全样本 (4548)	2003 (2034)	2004 (2514)
截距	**–0.0144**	**–0.0144**	**–0.0145**	**–0.0117**	**–0.0128**	**–0.0108**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0002)	(0.0003)
NETCASH(*i* – *1*)	**0.0136**	**0.0145**	**0.0128**	**0.0116**	**0.0132**	**0.0104**
	(0.0000)	(0.0007)	(0.0012)	(0.0000)	(0.0036)	(0.0089)
NETCFO(*i* – *1*)	**0.0171**	**0.0142**	**0.0196**	**0.0128**	**0.0139**	**0.0120**
	(0.0000)	(0.0009)	(0.0000)	(0.0000)	(0.0021)	(0.0026)
D	**–0.0070**	**–0.0121**	–0.0028	**–0.0088**	–0.0075	**–0.0098**
	(0.0492)	(0.00204)	(0.5563)	(0.0161)	(0.1728)	(0.04440)
*D*NETCASH*(*i* – *1*)	–0.0010	0.0018	–0.0029	–0.0006	–0.0036	0.0018
	(0.8427)	(0.8033)	(0.6628)	(0.9035)	(0.6322)	(0.7892)
*D*NETCFO*(*i* – *1*)	**0.0348**	**0.0492**	**0.0233**	**0.0253**	**0.0282**	**0.0231**
	(0.0000)	(0.0000)	(0.0008)	(0.0000)	(0.0004)	(0.0010)
DROE	0.0016	–0.0020	0.0063	–0.0002	–0.0031	0.0029
	(0.7307)	(0.7599)	(0.3544)	(0.9597)	(0.6580)	(0.6854)
*DROE*NETCASH*(*i* – *1*)	**–0.0158**	–0.0085	**–0.0238**	**–0.0138**	–0.0091	**–0.0186**
	(0.0208)	(0.3810)	(0.0138)	(0.0569)	(0.3801)	(0.0670)
*DROE*NETCFO*(*i* – *1*)	0.0079	0.0052	0.0107	0.0114	0.0063	0.0160
	(0.2701)	(0.6098)	(0.2945)	(0.1361)	(0.5647)	(0.1351)
*DROE*D*NETCASH*(*i* – *1*)	**0.0306**	0.0163	**0.0427**	**0.0223**	0.0128	**0.0307**
	(0.0012)	(0.2342)	(0.0011)	(0.0260)	(0.3886)	(0.0245)
*DROE*D*NETCFO*(*i* – *1*)	0.0119	0.0074	0.0171	0.0176	0.0179	0.0206
	(0.3521)	(0.6767)	(0.3540)	(0.1914)	(0.3484)	(0.2858)
调整后的R^2	0.0570	0.0681	0.0490	0.0430	0.0451	0.0392
Pr > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DIF（*i*）和*R*（*i*），其定义分别同表2和表3。*DROE*为哑变量，当样本公司的年度*ROE*处于（6%, 8%]区间时为1，否则为0。括号中的数值为对回归系数进行t检验的双边显著性水平，*i*表示第2、3、4季度，*i* – *1*表示与*i*对应的上一季度。*NETCASH*(*i* – *1*)、*NETCFO*(*i* – *1*)均为哑变量，当截止*i* – *1*季度末现金流量净增加额为负、经营活动所产生的现金流量净额为负时，分别为1，否则为0。这里*D*为季度哑变量，当*i*等于4时为1，否则为0。括号中的数值为对回归系数进行t检验的双边显著性水平。

能和当期现金流量负相关。下面我们借鉴Sloan（1996）的模型比较第二、三季度现金流量和第四季度现金流量的持续性的差异，[10]具体模型设定如下：

$$CFO(i)=\beta_0+\beta_1 CFO(i-1)+\beta_2 D-\beta_3 D^{*}CFO(i-1)+\varepsilon \quad (10)$$

在模型（10）中，i分别表示t年的第三、四季度及$t+1$年的第一季度，$i-1$表示与i对应的上一季度。*CFO*为公司来自经营活动净现金流量除以公司期初总资产后的比值，为了消除季节性的影响，从中还扣除了公司所在行业的中位数值。*D*为季度哑变量，当i为$t+1$年第一季度时为1，否则为0。由于*CFO*往往具有一定的持续性，因此系数β_1预期为正。如果由于第四季度的经营性现金流量操纵而导致现金流量的持续性降低，则系数β_3预期为负。

表8的A部分给出了基于所有样本的经营性现金流量持续性的检验结果，其

表8 经营性现金流量的持续性检验

	样本数	截距	$CFO(i-1)$	D	$D^{*}CFO(i-1)$	调整后的R^2	Pr > F
A、基于所有样本的回归分析							
全样本	5814	**–0.0168**	**0.0532**	**0.0142**	**–0.0973**	0.0160	0.0000
		(0.0000)	(0.0039)	(0.0000)	(0.0001)		
2003	2667	**–0.0169**	**–0.0582**	**0.0148**	0.0366	0.0124	0.0000
		(0.0000)	(0.0319)	(0.0000)	(0.3259)		
2004	3147	**–0.0163**	**0.1831**	**0.0132**	**–0.2530**	0.0351	0.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)		
B、基于*ROE*处于[6%, 8%)区间的样本的回归分析							
全样本	1232	**–0.0086**	**0.2060**	–0.0004	**–0.3143**	0.0261	0.0000
		(0.0000)	(0.0000)	(0.9171)	(0.0000)		
2003	624	**–0.0107**	**0.1606**	0.0001	**–0.3257**	0.0212	0.0010
		(0.0002)	(0.0028)	(0.9829)	(0.0000)		
2004	608	**–0.0064**	**0.2731**	–0.0015	**–0.3195**	0.0356	0.0000
		(0.0000)	(0.0000)	(0.7617)	(0.0000)		

$CFO(i)=\beta_0+\beta_1 CFO(i-1)+\beta_2 D-\beta_3 D^{*}CFO(i-1)+\varepsilon$。$i$分别表示$t$年的第3、4季度及$t+1$年的第1季度，$i-1$表示与$i$对应的上一季度。*CFO*为公司来自经营活动净现金流量除以公司期初总资产后的比值，为了消除季节性的影响，从中还扣除了公司所在行业的中位数值。*D*为季度哑变量，当i为$t+1$年第一季度时为1，否则为0。括号中的数值为对回归系数进行t检验的双边显著性水平。

[10] 这里我们重点在于比较操纵前后现金流量持续性的变化，由于第四季度的操纵可能使得下年第一季度的现金流量同样受到影响，因此，我们在模型中剔除了当年第一季度的数据。

中全样本及2004年度的回归结果和前面的预计完全相符，从中可以看出，第二、三季度的*CFO*具有显著正的持续性，全样本中，持续性为0.0532。第四季度的*CFO*则呈现出明显的反转效应。第四季度现金流持续性为 −0.0441(−0.0973 + 0.0531)。显而易见的是，第四季度经营性现金流量可能的操纵程度越大，则其反转效应也将越大，这一推断从表8的B部分得到了进一步验证。该部分对*ROE*处于（6%, 8%]区间的样本进行了回归分析。从前面的结果可以看出，这一类公司具有潜在的强烈动机进行现金流操纵，因此其系数β_3不仅预期为负，而且程度应该大得多。表8B的结果清楚地显示了这一点，从而为前面的实证分析提供了进一步的支持。[11]

四、结论

作为资本市场上最重要的信息来源之一，会计信息，尤其是盈利信息，受到了不同使用者的密切关注。然而，现有的研究却不断证实，为了满足资本市场、契约以及监管等的要求，管理层对公司盈余进行了广泛操纵。盈余管理行为的普遍性，使得信息使用者对利润指标越来越缺乏信心，因此他们不仅关心利润的高低，更关心利润的质量。假定报表编制者了解报表使用者关注焦点的转移，他们会不会象操纵利润一样来操纵利润的质量呢？

相对于净利润指标，现金流量确认与计量过程中的主观判断要少得多，因此在评判利润质量时，一般认为利润如果有足够经营活动产生的现金流作保证，说明利润就不是“纸上富贵”，利润质量相对比较高。然而，现金流量又并非完全不可操纵，公司通过推迟应付帐款等交易方式同样可以实现操纵的目的，因此，管理层如果想要改善利润质量的形象，操纵经营活动现金流量将是一条重要的途径。

本文利用2003年至2004年季度财务数据基本验证了上述推测。我们发现，在整个会计年度中，如果到第三季度末，经营活动现金流量净额低于净利润，公司在第四季度将会进行普遍的调增现金流量的行为。与其他样本相比，净资产收益率处于配股或增发要求临界状态的公司，如果前三季度净利润低于经营活动现金流量或者在截止第三季度来自经营活动的现金流量为负，在第四季度调增现金流量的行为更为明显。这一点显然是受到中国证监会再融资政策影响的结果，即反映了我国特殊融资监管政策对会计信息的潜在影响。无论是出于匹配动机还是再融资目的，公司在第四季度操纵现金流量的行为都使得第四季度经营活动现金流量的持续性下降，会在下一年度第一季度出现明显的反转。

本文的发现和结论对我们正确解读和使用财务报表有重要的现实意义。以

[11] 对于临界公司来说，第四季度经营性现金流的反转程度远远高于一般的公司。采用类似于表5B的交叉项分析，我们发现这种差异在1%的水平上显著。

往我们一般认为现金流量是不能操纵的。然而，本文的实证分析结果却反映了在净利润或营业利润低于经营性现金流量的情况下，现金流量操纵具有一定的普遍性。因此，在监管者审核上市公司的再融资申请，或者投资者通过预计未来的现金流量来对公司的股票进行估值时，应该关注目标公司现金流量季度性的异常变化。

我们的研究对于财务操纵领域研究的拓展也具有一定的意义。本文的重心在于检验现金流操纵的动机，然而与之相关的一系列问题依然有待回答。比如，相对于丰富多彩的盈余管理动机，现金流量操纵动机似乎比较单纯，是否还存在其他突出的动机？现金流主要的操纵方式如何？现金流操纵对盈余与股票价值之间的相关性的影响如何？这些问题都构成了我们进一步研究的方向。

作为一篇对现金流操纵进行初探性实证检验的论文，本文的局限性也是显而易见的。相对于盈余管理，现金流的操纵更为隐蔽，模式也有根本的不同，因此本文在测度方法上进行了一定的创新。然而这一测度模型的有效性事实上基于一个重要的假设，即通过行业中位数的调整，可以完全调整季节对企业现金流的影响。如果季节性的影响在同一个行业内的不同企业之间仍有不同的表现，那么文章的结果很可能还会受到季节性影响。一个潜在的替代方法是，采用时间序列模型分别就各个企业的参数进行估计，然而由于我国季度数据的披露历史太短，这一改进将有待于未来研究者的努力。为了弥补上述模型的潜在局限性，论文附录提供了一个上市公司的案例分析，希望能够提供关于现金流量操纵的更为直观的证据。

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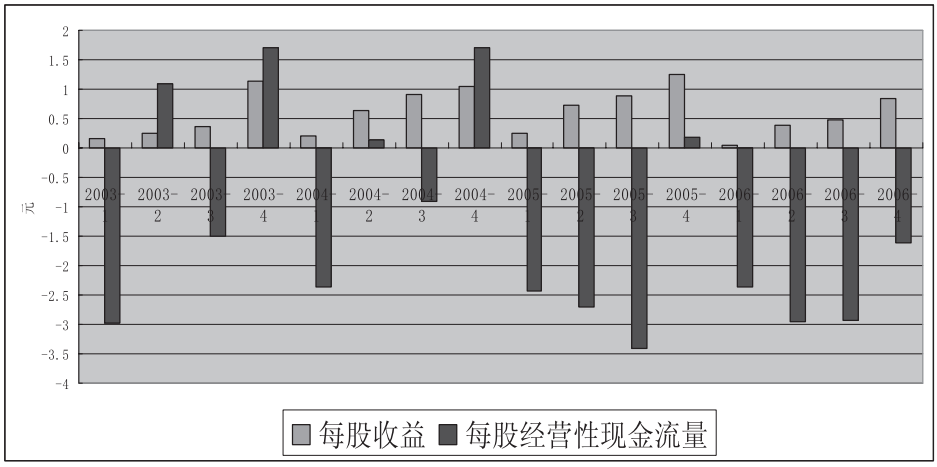
附录：基于中兴通讯（股票代码：000063）经营活动现金流量的案例分析

中兴通讯是中国电信市场的主要通信设备供应商之一，公司各系列电信产品都处于国内市场领先地位。选择该公司进行案例分析的原因主要有两点：一是公司自上市以来，无论是以每股收益还是以净资产收益率来衡量，公司财务业绩均处于整个资本市场的平均水平以上，关注这类帐面收益表现优异的公司，从投资的角度来讲更具有实践意义；二是公司的现金流状况近年来构成了分析师与投资者广泛关注的一个风险因素，为减少外部投资者的疑虑，在前三季度现金流量状况堪忧的情况下，管理者很可能会在第四季度现金流量有意正向操纵现金流量。下面我们结合正文的理论分析来对中兴通讯经营活动现金流量（*CFO*）的潜在操纵问题进行比较深入地讨论。

图A1列示了中兴通讯2003年至2006年每股收益与每股经营性现金流量的年度变化情况，从中可以清楚地看出，公司经营性现金流量近两年呈现出逐渐恶化的趋势。2003、2004年公司现金流量的季度变化特征显示，其主要的现金流入发生在第二季度与第四季度。从整个年度来看，经营活动产生的现金流量净额不仅为正，且高于净利润，显示了公司良好的盈利质量。然而，从2005年开始，公司现金流量的季度特征发生了明显的变化，其现金流入开始集中于第四季度。公司在2005年的经营活动现金流量净额虽然依然为正，但已远远低于净利润。这一趋势进一步恶化的结果是，其在2006年的经营现金流量产生了巨额的净流出，尽管公司的净收益依然为正。在下面的分析中，为了简单起见，我们的关注点将集中于公司2005年第四季度的现金流量。事实上，公司在2004年和2006年同样存在现金流操纵行为（见表A1的超额贡献率一列）。本案例中，

图A1 中兴通讯2003–2006年每股收益与经营性现金流量年度变化图



表A1 经营活动现金流入与流出的季节分布

季度	*CFO*流入（百万）	*CFO*流出（百万）	当季流入/全年流入（%）	当季流出/全年流出（%）	超额贡献率*（%）
2004–1	3789	5364	16.0	24.3	–8.3
2004–2	7635	5947	32.1	26.9	5.2
2004–3	4238	5081	17.8	23.0	–5.1
2004–4	8092	5718	**34.1**	**25.9**	**8.2**
2005–1	2765	5101	12.6	23.5	–10.9
2005–2	6063	6314	27.7	29.1	–1.4
2005–3	4414	5092	20.2	23.5	–3.3
2005–4	8651	5208	**39.5**	**24.0**	**15.5**
2006–1	3897	6169	16.8	25.0	–8.1
2006–2	5607	6171	24.2	25.0	–0.8
2006–3	4989	4967	21.6	20.1	1.4
2006–4	**8643**	7385	**37.4**	**29.9**	**7.4**

* 超额贡献率 = 当季流入/全年流入 – 当季流出/全年流出。

我们将2004年和2006年作为比较的基准，实际上提高了比较的“门槛”，如果2004年和2006年第四季度的现金流量没有经过操纵，结果只会更加显著。

由于前几年良好的现金流量表现，2005年，公司在当年商业环境发生不利变化的情况下，仍将尽力去维护这种形象的持续性，从而产生了潜在的调高经营活动现金流量的操纵动机。

基于以上的推测，我们可以把2004年现金流量的季度分布视为正常状况，从而与2005年进行比较。2006年同样可以作为相对可靠的比较基准，但其受到2005年操纵性现金流量反转的影响。表A1列示了2004年至2006年公司经营活动现金流入与流出的季节分布。结合正文的研究设计，在表的最后3列分别计算了各个季度现金流入（流出）占全年流入（流出）的比重，二者之差我们称为现金流的超额贡献率（类似于变量*DIF*）。从表中可以看出，2004年、2006年第四季度的超额贡献率比较接近，而其值仅仅相当于2005年第四季度超额贡献率15.5%的二分之一。对比三年期间现金流入与流出在第四季度的比重，显然两者都构成了2005年第四季度经营现金流量比重大幅度提升的重要因素。

上述提升是否为公司经营活动的一种正常表现呢？这就需要我们进一步了解现金流量的具体构成及资产负债表应计项目的变化。表A2列示了2004年至2006年公司各季度经营活动现金流量的主要构成及其相对于主营业务收入的比重。与前后年度的第四季度相比，公司2005年同期主要现金收入项目占主营业务收入的比重最高，而各支出项目的比重则最低。在后者之中，尤为值得关注

表A2　各季度经营活动现金流量的主要构成及其相对于主营业务收入的比重

季度	主营业务收入（百万）（a）	销售商品提供劳务收到的现金（百万）（b）	(c)=(b)/(a)（%）	购买商品接受劳务支付现金（百万）（d）	(e)=(d)/(a)（%）	支付给职工以及为职工支付现金（百万）（f）	(g)=(f)/(a)（%）	支付其他与经营活动有关现金（百万）（h）	(i)=(h)/(a)（%）
2004–1	3789	3721	98.2	3962	104.6	415	11.0	795	21.0
2004–2	7986	7511	94.1	3764	47.1	895	11.2	828	10.4
2004–3	4559	4042	88.7	4108	90.1	445	9.8	248	5.4
2004–4	6365	**7926**	**124.5**	**3726**	**58.5**	**524**	**8.2**	**909**	**14.3**
2005–1	4291	2582	60.2	3594	83.8	603	14.1	613	14.3
2005–2	6012	5963	99.2	3551	59.1	1186	19.7	1137	18.9
2005–3	4728	4322	91.4	3263	69.0	612	12.9	983	20.8
2005–4	6545	**8448**	**129.1**	**3508**	**53.6**	**392**	**6.0**	**593**	**9.1**
2006–1	4590	3815	83.1	4339	94.5%	724	15.8	933	20.3
2006–2	5901	5140	87.1	3896	66.0%	1357	23.0	527	8.9
2006–3	5431	4552	83.8	3920	72.2%	670	12.3	61	1.1
2006–4	7110	**8094**	**113.8**	**5530**	**77.8%**	**763**	**10.7**	**704**	**9.9**

表A3 应计项目变化与经营活动产生的现金流量净额 单位：百万

季度	存货的变化	经营性应收项目的变化	经营性应付项目的变化	三项应计项目变化之总影响	经营活动产生现金流量净额
2004–1	974	809	–210	1992	–1575
2004–2	–644	–48	–846	155	1689
2004–3	1689	1871	2209	1352	–844
2004–4	**–1599**	**–3321**	**–2636**	**–2285**	**2375**
2005–1	795	1530	–794	3119	–2336
2005–2	–774	1126	–444	796	–252
2005–3	9	–110	–1078	977	–678
2005–4	**837**	**–531**	**2878**	**–2573**	**3444**
2006–1	195	1489	–670	2353	–2271
2006–2	–78	856	–444	1222	–564
2006–3	–503	1688	713	471	22
2006–4	**767**	**–420**	**1080**	**–732**	**1258**

的是薪金性支出的比重，其最容易为公司所控制。同时由于工资的刚性，对其操纵的反转效应也应最为明显。这一点在表A2中得到了鲜明地体现。公司在2005年第四季度的工资性支出无论是绝对数还是相对数，都大大低于前后年度。假定公司该季度的工资性支出比重与2004年相同，则该年度的经营活动产生的现金流量净额将降低80%。而从2006年第一、二季度的工资性支出来看，其比重要明显高于前两年，反映了公司推迟支付2005年度职工薪金的滞后效应。

表A3从应计项目的角度分析了公司现金流量季度变化的潜在原因。第2到第4列分别是存货的变化、经营性应收项目和应付项目的变化。各年的第四季度应计项目总影响数（存货变化+应收项目变化－应付项目变化）都为负数，这意味着公司第四季度经营活动现金流量的增加一定程度上反映了公司前期应计项目反转的影响。但这没有消除2005年度第四季度现金流量操纵的嫌疑。首先从应计项目总额来看，其反转幅度最大，这意味着其中部分反转是操纵的结果。其次从具体应计项目来看，2005年的反转主要来自于经营性应付项目的增加（2004年的反转主要来源于存货与经营性应收项目的降低），与推迟进货、催收账款等操纵现金流量的手段相比，延迟支付无疑是相对更为容易的一种手段。

上述应计项目在第四季度的反转是否为盈余管理的结果呢？现有实证研究发现，盈余管理主要发生在第4季度（见正文文献回顾）。本案例中，如果公司在第四季度存在盈余管理的动机，则应该是调高而不是调低利润，即第4季度的

应计项目的变化应为正。而表A3显示，2005年度第四季度应计项目为负且金额很大，因此没有证据表明公司在第四季度进行了盈余管理。那么是否因为公司在前三季度通过应计项目进行了盈余管理，而导致第四季度的应计项目为负呢？在本案例中，这种推测并不可信，一是因为在前三季度进行盈余管理缺乏理论和实证的支持。我们在分析了公司投资和筹资情况后，也未发现公司有在前三季度进行盈余管理的明显动机。第二，即使假定所有的反转都来源于前三季度盈余管理的作用，2005年度第四季度经营活动现金净额中来源于非应计项目的部分也远远高于其前后年度的同期数。

以上基于中兴通讯经营活动现金流量的分析显示了其进行现金流量操纵的潜在可能性。而我们在案例开始所提到的公司现金流的不利分析与评论，恐怕就构成了其进行现金流量操纵的潜在动因。

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ARE CASH FLOWS MANAGED?—EMPIRICAL EVIDENCE FROM QUARTERLY FINANCIAL STATEMENTS OF CHINESE LISTED FIRMS[1]

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ABSTRACT

Many studies have investigated earnings management, but few can be found on cash flow management. We take quarterly accounting data of Chinese A-share stocks as our sample to study cash flow management. We find that when companies' cash flows from operations (CFOs) are less than earnings by the end of the third quarter, their managers will manipulate CFOs upwards in the fourth quarter to make the annual CFOs match annual earnings. The government's policy on seasoned equity offerings (SEOs) is another potential factor leading to CFO-manipulation behaviour. Negative CFOs are usually regarded as a signal of higher financial risks. When CFOs are negative by the end of the third quarter, the potential for SEOs, especially those threshold applicants (with an ROE slightly over 6 per cent), tend to manipulate earnings upwards in the fourth quarter.

Key words: Cash Flows from Operations (CFOs), CFO Manipulation, Quarterly Financial Statements

Under the accrual basis of accounting, earnings are mainly composed of accruals and cash flows from operations (CFOs). As shown in the literature, especially in

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studies of earnings management, discretionary accruals are always used to detect the degree of earnings management. The implicit assumption is that earnings quality is affected by discretionary accruals resulting from accounting choices. But accounting choice is not the only way to manipulate earnings. According to an investigation made in 1999 by *Securities Times,* a major Chinese newspaper, and United Securities Co. Ltd. into firms which had manipulated earnings, 55.55 per cent of these firms increased earnings by means of transaction arrangements and 44.44 per cent by managing accounting choices. The consequences of these two methods are different because economic transactions affect not only accruals but also the amounts and distribution of CFOs. This decreases the usefulness of CFOs in evaluating and forecasting firm performance. In extreme cases, such as in the cases of Lantian, Guangxia (Yinchuan), and Grassland Star Food,[3] the managers fabricated some transactions. In order to make the transactions believable, they manipulated the CFOs severely. Obviously, to evaluate a firm's earnings quality, we should take not only the accruals into consideration but also cash flows, especially cash flows from operations. However, academic researchers and financial analysts tend to consider CFOs to be reliable and not manipulable. Is this the reality or just an untested perception? We try to answer this question in this empirical research on the basis of quarterly financial statements of Chinese A-share listed firms.

In China, listed firms are required to present earnings per share and CFOs per share under the title "Important Accounting Data and Ratios" in their financial reports. CFOs are regarded as an important benchmark by which earnings quality is evaluated. If CFOs are not matchable with earnings, especially when earnings (or operating income) are much higher than CFOs, users of financial statements will suspect the reliability and persistence of earnings. Under this pressure, managers have incentives to manage CFOs. We expect that a larger difference between earnings and CFOs by the third quarter will lead to a higher probability and magnitude of CFO manipulation in the fourth quarter of the same year. Our empirical results support this conjecture when earnings are higher than CFOs. The SEO policy of the China Securities Regulatory Commission (CSRC) also has a significant influence on CFO-manipulation behaviour. To obtain approval from the CSRC, SEO candidates will manipulate CFOs upwards in the fourth quarter when their CFOs are lower than earnings or negative by the end of the third quarter.

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[3] In order to avoid the doubts of investors and analysts about the increased amount of receivables that cannot be followed back for a long period of time, managers will manipulate CFOs. The way in which these firms manipulate CFOs is to make transformations between receivables and bank deposits, current assets other than cash, or non-current assets. For example, a firm can fake a cash payment from a fictitious client to decrease the receivables. To offset this fake cash inflow, the firm must continue to trump up another transaction, such as lending cash or making a payment to a third party. In this way, the account receivable from a faked transaction is transformed into another account receivable on the balance sheet. For the Lantian case and the Grassland Star Food case, the two companies went further than this by transforming non-existent CFOs into fixed assets and intangible assets that were difficult to evaluate.

Although there is a great deal of literature on earnings management, few studies have been undertaken on cash flow management. Our study represents an initial attempt to fill this gap by making the following distinctive contributions. First, it extends our perspective of financial manipulations from earnings management to cash flow manipulation. Second, our study renews the common perceptions on cash flows by showing that cash flow manipulation is not rare. This will help users of financial statements to understand and unscramble the accounting information. Finally, as the manipulated cash flows may be reversed, it is imperative to take this into consideration when predicting future cash flows on the basis of current or past cash flows.

The paper proceeds as follows: Section I introduces the institutional background and analyses the incentives to manage cash flows. Section II describes our sample and research design. Section III presents the empirical results. Section IV concludes the paper.

I. INSTITUTIONAL BACKGROUND AND MOTIVATIONS FOR CASH FLOW MANAGEMENT

Both earnings management and cash flow manipulation are accounting manipulation. Since cash flow manipulation has been little studied, it may be helpful to draw analogies from the motivations for earnings management that are identified in literature. The extant literature identifies three types of motivation for earnings management: (i) capital market motivation; (ii) contractual motivations, such as compensation or debt contracts; and (iii) meeting regulatory requirements or regulation avoidance. The first type of motivation involves a desire to influence stock prices or to meet the predictions of analysts or managers. The second aims to maximise earnings-based bonuses or to avoid contract violation. The third type aims to avoid anti-trust regulation, industry supervision, or any other kind of government monitoring. According to literature on the Chinese market, this kind of motivation is widespread, since the government has imposed many regulations on the securities market, especially regulations on initial public offerings and SEOs (Cai, Zhang, and Li, 2003).

A number of reasons can be suggested for the fact that research on accounting manipulation mainly focuses on earnings management. First, earnings are the core of the traditional performance evaluation and supervision system. Ball and Brown (1968) find that earnings are a more important factor affecting the stock price than CFOs. Earnings also play an important role in managers' compensation contracts (Healy, 1985). Second, the accrual-based measurement of earnings requires considerable estimation by accountants. This gives accountants opportunities to manage earnings through accounting policy choice and other accounting arrangements. In contrast, cash flows are the outcome of the cash basis of accounting, which is considered to be difficult, if not impossible, to manipulate. Lastly, the income statement has long been regarded as the core financial statement, while the importance of cash flow information has drawn the attention of accounting information users only for a few decades.

Nowadays, cash flows have increasingly attracted attention from investors, analysts, and supervisors. In practice, analysts usually take a large deviation of cash flows from earnings as a "red flag" of earnings quality. CFOs have become the most important benchmark employed to evaluate earnings quality. In China, listed firms have been required to disclose cash flow statements since 1998. Firms are required to disclose their CFOs per share in their periodical financial report separately from their earnings per share. CFOs (or CFOs per share) are regarded as a key input for making investment decisions.

Do cash flows add incremental power to explain stock prices? Although there is some negative evidence (e.g. Bernard and Stober, 1989), most studies support the notion that cash flows have incremental information content (Wilson 1987; Cheng, Liu, and Schaefer, 1996). In China, Sun and Li (2001) find that cash flows have additional explanatory power with stock prices on the Shenzhen Stock Exchange. But Lu, Meng, and Liao (2002) find that cash flows have no information content in pricing. The inconsistent results may be due to the different samples in different years. Before 1998, there were no cash flow statements at all. Additionally, investors in the Chinese market are not sophisticated enough to understand CFOs, especially when the CFO information is incomplete. On the other hand, given a certain level of accruals, manipulating CFOs will equally change earnings, and thus the information content of CFOs has already been included in earnings. Unlike their explanatory power in pricing, the forecasting ability of cash flows in financial distress has attained consistent empirical support from different sources (Charitou, Neophytou, and Charalambous, 2004; Zhang, 2004). The above literature implies that firms can influence stock prices by manipulating CFOs since CFO manipulation has an obvious effect on earnings. Burgstahler and Dechev (1997) offer some direct support of CFO management. They find that marginal-profit firms have much higher CFOs than marginal-loss firms do.

The CFO manipulation affects both earnings quality and earnings level. In this sense, we can regard it as an extension of earnings management. Is there any additional motivation for CFO manipulation? At least against the Chinese institutional background, we can find some special motivations for CFO manipulation other than earnings management.

Before 2000, ROE was the only explicit requirement taken into consideration by the CSRC when assessing the SEO applications of listed firms. Since most firms would manipulate their earnings to satisfy this ROE benchmark, the CSRC made the notification of net cash flows and net cash flows from operations additional requirements in 2001. For example, both the "Regulation on Equity Issuance by Listed Firms in China"[4] and "Directive Suggestions by the Equity Issuance Approval

[4] The second article of this Regulation provides the explanation of "equity issuance", by which new equity issuance refers to rights offerings and general public offerings. Therefore, according to the Regulation, equity issuance here means SEOs and does not include IPOs.

Commission on Procedures of Reviewing Equity Issuance of Public Firms" promulgated by the CSRC in 2001 attach prominent importance to CFOs. The underwriters of equity issuers are required to pay sufficient attention to cash flows, and to state whether the issuers' changes in cash flows are negative and whether cash flows from operations are negative, which, if the case, would probably result in an inability to repay their debts. This was the first time that the CSRC included cash flows in regulations of equity issuance. Although cash flows are still not considered to be as important as ROE, which is used by regulators to set specific benchmarks for reviewing equity issuance, cash flows have gained increasing importance in evaluating earnings quality and financial strength ever since.

To sum up, firms can manage CFOs to influence the stock price or to meet regulatory requirements (Chen and Wang, 2004). Our question is whether firms act on these motivations. It is widely known that both accounting choice and transaction arrangements (such as related-party transactions and assets restructuring) are commonly used by Chinese firms to manage earnings. Although it is difficult to manage CFOs by accounting choice (of course, firms can also take advantage of accounting choice given by accounting standards on cash flow statements to manipulate CFOs, such as misclassifying cash flows from investment or financing into cash flows from operations), firms have almost the same opportunities to manage CFOs as to manage earnings through transaction arrangements. Both Li and Yu (2003) and Wu (2004) list the ways in which cash flows can be managed, such as arranging related-party transactions to increase cash receipts from the sale of goods and the rendering of services, cutting payments to creditors to decrease cash payments for goods acquired and services received, or even faking transactions.

In practice, CFO management is only found in individual cases. It is not known whether it is a pervasive phenomenon or simply exceptional. What are the exact incentives for CFO management? As we have mentioned above, there are only one or two direct studies on this question. Burgstahler and Dechev (1997) make an implicit assumption that some firms manage earnings by manipulating CFOs, but give no direct evidence as to whether CFO management is targeted at earnings or CFOs. Dechow, Ge, Larson, and Sloan (2007) find that the change in cash sales for misstating firms is about twice as large as for non-misstating firms in the misstating year. They argue that this is because misstating firms have front-loading sales. For these firms, the change in cash margins (equals to cash sales minus cost of goods sold) and the change in earnings are both significantly lower. They do not mention in their paper if this fact is due to CFO management, but obviously it is. Chen and Wang (2004) and Chen (2006) find that firms manage CFOs in the year before SEOs. Our study differs from both papers in two principal regards. First, their samples are SEO firms, and their results cannot be generalised to other firms. In addition, they use yearly data and do not consider quarterly characteristics.

Givoly and Ronen (1981) find that the manifestations of year-end actions by managers are consistent with the possible attempt to alter reported results of the fourth quarter in order to offset extreme deviations of the first three quarters' reported numbers from the normal trend. Das and Shroff (2002) show that the

reversal of earnings changes in the fourth quarter is a common phenomenon, and its occurrence is greater than would be expected as a result of chance. In other words, firms with higher performance in the first three quarters tend to make a cookie jar in the fourth quarter. In contrast, firms with bad performance in the first three quarters will be aggressive in recognising earnings in the fourth quarter. Comprix, Mills, and Schmidt (2005) reveal that when firms offer a high proportion of share options in the compensation contracts, the managers tend to increase earnings in the fourth quarter. We expect a similar trend in CFO manipulation.

To evaluate earnings quality, one of the commonly used ratios is CFOs divided by earnings. An accepted principle is that the more comparable CFOs are to earnings, the higher the earnings quality is. Although both investors and regulators use this comparability as an indicator of earnings quality in the quarterly financial statements, they attach much more importance to the annual accounting data.

In this paper, we use quarterly data and analyse the reversal of cash flows from operations in the fourth quarter to detect CFO management and its incentives. In order to mitigate the doubt of investors and make CFOs matchable with earnings, managers will manipulate CFOs when CFOs deviate from earnings to a large extent. First, we expect that when CFOs are higher than earnings by the end of the third quarter, managers tend to lower CFOs to make a reserve of CFOs for future financial statements. When CFOs are less than earnings, managers will increase CFOs to make them more comparable to earnings.[5] Second, if firms have an urgent demand for financing, the motivations for CFO manipulation will be stronger. We therefore expect that when compared with other firms, the potential applicants for SEOs, especially those threshold applicants (with an average ROE of just over 6 per cent) will have stronger incentives to manage CFOs when CFOs are lower than earnings or CFOs are negative by the end of the third quarter. The above reasoning leads us to formulate the following hypotheses:

H1 (Matching hypothesis): A larger deviation of CFOs from earnings (or operating income) by the end of the third quarter in a fiscal year will lead to a greater extent of CFO manipulation in the fourth quarter to make CFOs better match earnings.

H2 (Policy-driven hypothesis): Compared with other firms, potential applicants for SEOs, especially the threshold ones, will have stronger incentives to manipulate CFOs if their CFOs are lower than earnings (operating income) or CFOs are negative by the end of the third quarter.

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[5] Although firms can also manage CFOs in the first three quarters, we expect that CFO management will be stronger in the fourth quarter because firms have to consider the benefit and cost of CFO manipulation. The potential benefit is larger in the fourth quarter since both investors and supervisors pay more attention to annual data. The cost of management is lower since the managed cash flows can be reversed in the first quarter of the following year.

II. RESEARCH DESIGN AND SAMPLE SELECTION

(i) Research Design

How to Measure Cash Flow Management?

Before investigating the incentives for CFO management, we have to compute the discretionary and non-discretionary components of CFOs. Controlling for the industry factor, a firm's CFOs should have two characteristics: (a) under normal circumstances, net CFOs should be distributed almost equally across the four quarters. If they do not, this may be caused by seasonal transactions or by CFO management; (b) even if a firm's volatility of economic transactions is larger than the industry level, the firm's quarterly cash inflows and cash outflows should match. In other words, the ratio of cash inflows from operations for a certain quarter to cash inflows from operations for the whole fiscal year is similar to the ratio of cash outflows from operations for the same quarter to cash outflows from operations for the whole fiscal year. If the inflow ratio is significantly different from the outflow ratio, this should be the result of CFO management.

From characteristic (a), it is difficult to measure the relative distribution of CFOs on a net cash flow basis because the net CFOs may be positive or negative. The ratios of CFOs for a certain quarter cannot be compared between different samples when the denominator signs are different.[6] It is obviously not a good idea to delete the firms whose net CFOs are negative.

From characteristic (b), we know that the cash inflows of a normal firm should match its cash outflows; that is to say, cash inflows and outflows should move in the same direction, and their ratios to revenue should be similar. As a whole, the ratio of quarterly cash inflows to yearly cash inflows should be close to the ratio of quarterly cash outflows to yearly cash outflows. When we decompose CFOs into cash inflows and cash outflows, the measurement problem relating to characteristic (a) above is avoided.

To measure the cash flow distribution, we use the following equation:

$$\begin{aligned} DIF_i &= INFLOWATIO_i - OUTFLOWRATIO_i \\ &= \left(\frac{InCFO_i}{InCFO} - \text{industry median of } \frac{InCFO_i}{InCFO} \right) \\ &\quad - \left(\frac{OutCFO_i}{OutCFO} - \text{industry median of } \frac{OutCFO_i}{OutCFO} \right) \end{aligned} \tag{1}$$

In the above equation, i (1, 2, 3, or 4) is the subscript representing each quarter. The variables without subscripts stand for annual data. *InCFO* is cash inflows from

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[6] For example, when the yearly net CFOs are negative (e.g. –100) and CFOs for a certain quarter are positive (e.g. 20), the ratio of quarterly CFOs to yearly CFOs will be negative (–20%). However, the same ratio could result from a situation where the yearly CFOs are positive (e.g. 100) while the quarterly CFOs are negative (e.g. –20). But the nature of the two ratios is totally different.

operations and *OutCFO* is cash outflows from operations. The industry median of $\frac{InCFO_i}{InCFO}$ and industry median of $\frac{OutCFO_i}{OutCFO}$ are industry medians of the cash inflow ratio and cash outflow ratio for quarter *i*, respectively. Hence, *INFLOWRATIO* and *OUTFLOWRATIO* are industry-adjusted quarterly cash inflow ratio and outflow ratio, respectively. This measure avoids the situation of negative denominator which will cause the aforementioned confusion. *DIF* represents the discretionary net CFOs necessary to capture the degree of manipulation. When there is no seasonal firm-specific volatility, both *INFLOWRATIO* and *OUTFLOWRATIO* should approach zero, resulting in *DIF* approaching zero. When there is a firm-specific cycle, neither *INFLOWRATIO* nor *OUTFLOWRATIO* is zero, but *INFLOWRATIO* should match *OUTFLOWRATIO*, and so *DIF* should still be close to zero.

When CFOs are managed, *DIF* will deviate from zero. A positive DIF_i indicates that there is a positive abnormal contribution of cash inflows or a negative abnormal contribution of cash outflows in quarter *i*. This may be the result of increasing cash inflows and reducing cash outflows in that quarter. A negative DIF_i means an opposite manipulation direction. The amount of DIF_i measures the degree or magnitude of manipulation.

The CFO Deviation from Earnings

The second problem is how to measure the deviation between CFOs and earnings. To estimate the deviation of CFOs from earnings, we use the following equation:

$$DEV(i) = (CFO_i - NI_i)/SALES_i \tag{2a}$$

i is the subscript representing each quarter. CFO_i represents net CFOs by the end of the i^{th} quarter. NI_i and $SALES_i$ indicate earnings and sales by the end of the i^{th} quarter, respectively. $SALES_i$ is used to control the size effect. *DEV*(*i*) is the deviation of net CFOs from earnings in the i^{th} quarter.

When we use *DEV*(*i*) as the proxy of deviation, an implicit assumption is that users of accounting data care about the difference between net income and CFOs. But the scope covered by net income and CFOs usually differs. To a certain extent, this assumption is reasonable due to the prominence of net income in accounting. Accurately, the concept of CFOs should be matched with "operating income". Compared with "net income" or earnings, operating income does not include non-operating items or below-the-line items such as gains from investment. If managers manipulate CFOs to match operating income but not net income, *DEV*(*i*) may be biased. Since we do not know what the target of CFO management is, we design another variable *DEV_O*(*i*)[7] as the proxy for CFO management. It is computed from the following equation:

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[7] We would like to thank the anonymous referees for their suggestions. Operating income is before taxes and CFOs are after taxes. Operating income is after interest expenses and CFOs do not cover interest. So both income taxes and interest expenses should be adjusted to make CFOs and operating income comparable.

$$DEV\_O(i) = (CFO_i - OI_i - INTEREST_i + TAX_i) / SALES_i \quad (2b)$$

OI_i is the operating income by the end of the i^{th} quarter. $INTEREST_i$ and TAX_i are interest expenses and income taxes by the end of the i^{th} quarter, respectively. They are used to adjust for the transactions covered by CFOs so that CFOs are comparable to operating income.

The Model to Test the Matching Hypothesis of CFO Management

We design two basic models to investigate the matching hypothesis of CFO management:

$$DIF(4) = \beta_0 + \beta_1 DEV(3) + \beta_2 D + \beta_3 D^* DEV(3) + \beta_4 SIZE + \varepsilon \quad (3a)$$

$$DIF(4) = \beta_0 + \beta_1 DEV\_O(3) + \beta_2 D + \beta_3 D^* DEV\_O(3) + \beta_4 SIZE + \varepsilon \quad (3b)$$

In the above models, *DIF*(*4*) is used to measure the discretionary CFOs for the fourth quarter. *DEV*(*3*) and *DEV_O*(*3*) are the proxies for the deviation of CFOs from net income or operating income by the end of the third quarter, respectively. To test Hypothesis 1, the sign and significance of the coefficient of *DEV*(*3*) are taken into account. CFOs lower than net income or operating income in the first three quarters lead to a larger probability and magnitude of increase in CFOs in the fourth quarter (a bigger *DIF*(*4*)) to make CFOs comparable with earnings. On the other hand, if CFOs are larger than net income or operating income, managers have incentives to decrease CFOs to make a reserve of CFOs for future use. Therefore, the expected sign of β_1 is negative.

D is a dummy variable, which takes the value of 1 if *DEV*(*3*) or *DEV_O*(*3*) is negative, and 0 otherwise. The interaction term (*D*DEV*(*3*) *or D*DEV_O*(*3*)) is used to capture the asymmetrical effect of CFO management. Lower CFOs than net income or operating income are usually regarded as a signal of lower earnings quality. To avoid a lower evaluation from investors or supervisors, managers have stronger incentives to manage CFOs in this situation. So the coefficient of *D* (β_2) is expected to be positive. The interaction term shows whether there is any difference between β_3s when *DEV*(*3*) or *DEV_O*(*3*) is positive and negative. For a firm whose CFOs are greater than earnings (*D*DEV*(*3*) *or D*DEV_O*(*3*) is positive), CFOs are ample, and it is easy to delay some cash flows to the following year. In this sense, the expected sign of β_3 is negative. For a firm whose CFOs are lower than earnings, the story is more complicated. On the one hand, lower CFOs can be regarded as a signal of lower earnings quality. Therefore, lower CFOs than net income or operating income lead to a higher probability and magnitude of CFO manipulation. The expected sign of β_3 is negative. But the pre-condition of this expectation is that the firm has enough ability to manipulate CFOs. A negative *DEV*(*3*) or *DEV_O*(*3*) means positive accruals which may be the result of earnings management. If earnings management is the first target of the firm, managers may not have sufficient capability to manage CFOs simultaneously. In this situation, only those firms with a small negative *DEV*(*3*) or *DEV_O*(*3*) have the ability to manipulate CFOs. When earnings management dominates, we expect a

positive sign of β_3;[8] otherwise, when CFO management dominates, β_3 should be negative.

To sum up, in Models (3a) and (3b), when *DEV*(*3*) is positive, its influence on *DIF*(*4*) is β_1. When *DEV*(*3*) is negative, its influence on *DIF*(*4*) is $\beta_1 + \beta_3$.

SIZE is the logarithm of sales and is used to control size effect.

(ii) Sample Selection

Chinese listed firms have been required to disclose quarterly financial statements from 2002 onwards, but a cash flow statement is required in the quarterly financial statements only from 2003 onwards. Hence, we use the data of A-share firms from 2003 to 2004 to test our hypothesis. All the data are taken from the CSMAR database.

To obtain the sample needed, we delete (a) firms in the financial industry; (b) firms whose quarterly financial statements are missing; and (c) samples with only one firm in the industry. We take the three-digit code (one character plus two numerals) industry standard according to the "Guide of Industry Classification for Listed Firms" set by the CSRC. After deleting the outliers of the highest and lowest 1 per cent of *DIF*(*4*), we finally get 1938 samples, with 889 firms for 2003 and 1049 firms for 2004.

III. EMPIRICAL RESULTS

(i) Descriptive Analysis

We divide the sample into six groups equally based on *DEV*(*3*) to compare the discretionary CFOs among these groups. Group 1 includes the firms with the smallest values of *DEV*(*3*) and Group 6 with the largest values of *DEV*(*3*). In the first three groups, the CFOs are lower than earnings and in the last three groups, the CFOs are higher than earnings by the end of the third quarter. If the managers tend to match CFOs to earnings, then we expect a positive *DIF*(*4*) for the first three groups and a negative *DIF*(*4*) for the last three groups.

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[8] Our argument is that the main motivation for CFO manipulation is to dress up earnings quality. As Burgstahler and Dechev (1997) imply, there is a possibility that firms manage earnings by manipulating CFOs. For example, a firm has to increase CFOs to increase earnings when it has used up all its accruals to manage earnings. This can also lead to a negative β_3. But this explanation is impractical. Dechow *et al*. (2007) find that the misstating firms increase cash sales in the misstating year, but the sales margin is decreased. It is difficult to argue that firms' aim of increasing CFOs is only to increase the return ratio. Moreover, since accruals have no CFO support, abnormal accruals are regarded as the main way to manage earnings. A firm depending heavily on accruals should have only a very limited ability to increase earnings by increasing cash sales. Even with the above argument, we cannot rule out the probability that some firms manage earnings by manipulating CFOs. This will weaken the support of β_3 for our hypothesis to some extent.

Table 1 *DIF*(*4*) in Different *DEV*(*3*) Groups

DEV(3)		*DIF(4)*	
Group	Mean	Mean	Median
1	–0.5196	0.0712	0.0607
2	–0.0988	0.0149	0.0132
3	–0.0280	–0.0002	0.0000
4	0.0191	–0.0053	–0.0088
5	0.0808	–0.0206	–0.0254
6	0.3495	–0.0312	–0.0301
Difference between groups 1 and 6		0.0000*	0.0000#
Difference among all 6 groups		0.0000**	0.0000##

$DEV(3) = (CFO_3 - NI_3) / SALES_3$

CFO_3 is CFOs by the end of the third quarter; NI_3 is earnings by the end of the third quarter; $SALES_3$ is net sales by the end of the third quarter.

$$DIF(4) = INFLOWRATIO_4 - OUTFLOWRATIO_4 = \left(\frac{InCFO_4}{InCFO} - \text{industry median of } \frac{InCFO_4}{InCFO} \right) - \left(\frac{OutCFO_4}{OutCFO} - \text{industry median of } \frac{OutCFO_4}{OutCFO} \right)$$

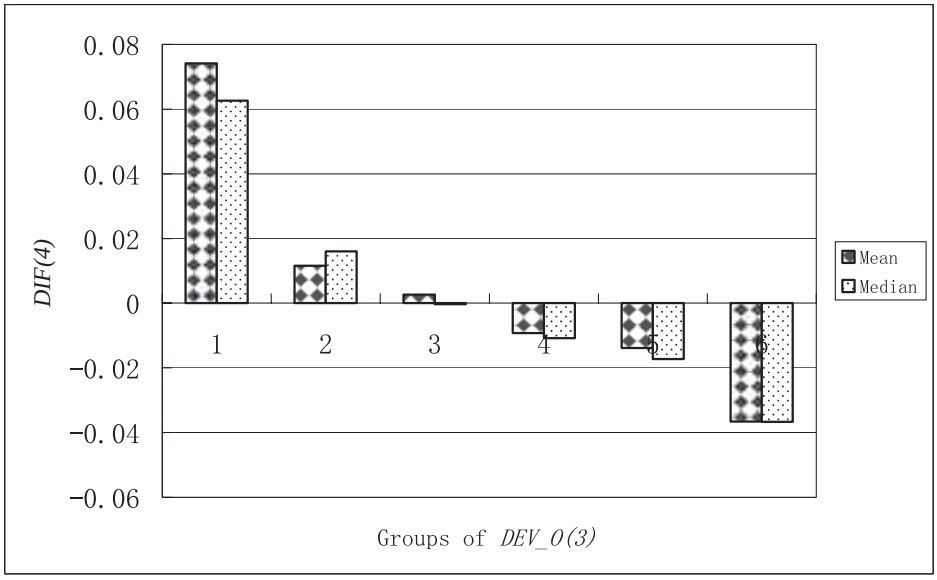
InCFO is yearly cash inflows from operations, and *OutCFO* is yearly cash outflows from operations. *Industry median of* $\frac{InCFO_4}{InCFO}$ and *industry median of* $\frac{InCFO_4}{InCFO}$ are the industry medians of the cash inflow ratio and cash outflow ratio in the fourth quarter, respectively.

There are 323 firms in each group. To test the difference in means between the two samples, a two-tailed *t* test is used. For a multi-sample test, an F test is used. To test the difference in medians between the two samples, the Wilcoxon test is used, and among samples, the Kruskal-Wallis test is used. All tests are significant at the 1 per cent level.

The discretionary CFOs in the fourth quarter for each group are shown in Table 1. From either the mean or median of *DIF*(*4*) we can see that the groups with negative *DEV*(*3*) increase CFOs in the fourth quarter and the groups with positive *DEV*(*3*) will decrease CFOs. This trend is consistent with our expectation. The results of Table 1 also show that a smaller (larger) *DEV*(*3*) leads to a larger (smaller) *DIF*(*4*). Both differences between Groups 1 and 6 and among all six groups are statistically significant. Our first hypothesis is thus roughly supported.

In Table 1, we can see that Groups 3 and 4 are two groups whose CFOs are more matchable with their earnings. The absolute value of either the mean or the median of the discretionary CFOs in the fourth quarter is the smallest in these two groups. For the other four groups, the CFOs of which do not closely match their earnings, the absolute value of the deviation in the first three quarters is positively correlated with the magnitude of CFO manipulation in the fourth quarter. Figure 1 shows the *DIF*(*4*) distribution among the six groups based on *DEV_O*(*3*). The result is very similar to the groups of *DEV*(*3*) shown in Table 1.

Figure 1 *DIF*(*4*) in different *DEV_O*(*3*) groups



$DEV\_O(3) = (CFO_3 - OI_3 - INTEREST_3 + TAX_3) / SALES_3$

CFO_3 is CFOs by the end of the third quarter; OI_3 is the operating income by the end of the third quarter; $INTEREST_3$, TAX_3, and $SALES_3$ are interest expenses, income taxes, and sales by the end of the third quarter, respectively.

$$DIF(4) = INFLOWRATIO_4 - OUTFLOWRATIO_4 = \left(\frac{InCFO_4}{InCFO} - \text{industry median of } \frac{InCFO_4}{InCFO}\right) - \left(\frac{OutCFO_4}{OutCFO} - \text{industry median of } \frac{OutCFO_4}{OutCFO}\right)$$

InCFO is yearly cash inflows from operations, and *OutCFO* is yearly cash outflows from operations. *Industry median of* $\frac{InCFO_4}{InCFO}$ and *industry median of* $\frac{OutCFO_4}{OutCFO}$ are the industry medians of the cash inflow ratio and cash outflow ratio in the fourth quarter, respectively.

(ii) Regression Analysis of Matching Motivation

The regression results of Models (3a) and (3b) are listed in Table 2. β_1 presents the influence of *DEV*(*3*) (or *DEV_O*(*3*)) on *DIF*(*4*) when *DEV* is positive. The sign of β_1 is negative in Model (1) and positive in Model (2), and both are insignificant. So there is no systemic evidence that the firms with higher CFOs than earnings by the end of the third quarter will significantly manage CFOs downwards in the fourth quarter. The coefficient of dummy *D* shows the difference in *DIF* between the positive *DEV* group and negative *DEV* group. It is positive, as we expected, which means that the firms with lower CFOs at the end of the third quarter increase their CFOs more significantly in the fourth quarter. The coefficient of the interaction

Table 2 Regression Results for the Matching Motivation

Sample	No. of samples	β_0	β_1 (−)	β_2 (+)	β_3 (?)	β_4	Adj. R^2	Pr > F
Model (3a): $DIF(4) = \beta_0 + \beta_1 DEV(3) + \beta_2 D + \beta_3 D^* DEV(3) + \beta_4 SIZE + \varepsilon$								
Total	1938	−0.0037	0.0025	**0.0360**	**−0.0654**	−0.0007	0.1028	0.0000
		(0.9372)	(0.6949)	(0.0000)	(0.0000)	(0.7513)		
2003	889	0.0380	0.0013	**0.0404**	**−0.0729**	−0.0029	0.1349	0.0000
		(0.5977)	(0.8876)	(0.0000)	(0.0000)	(0.3953)		
2004	1049	−0.0317	0.0034	**0.0321**	**−0.0586**	0.0008	0.0762	0.0000
		(0.6173)	(0.7029)	(0.0000)	(0.0000)	(0.7932)		
Model (3b): $DIF(4) = \beta_0 + \beta_1 DEV\_O(3) + \beta_2 D + \beta_3 D^* DEV\_O(3) + \beta_4 SIZE + \varepsilon$								
Total	1938	0.0015	−0.0096	**0.0346**	**−0.0471**	−0.0009	0.0948	0.0000
		(0.9743)	(0.3143)	(0.0000)	(0.0000)	(0.6724)		
2003	889	0.0451	−0.0145	**0.0381**	**−0.0553**	−0.0032	0.1344	0.0000
		(0.5318)	(0.2903)	(0.0000)	(0.0012)	(0.3465)		
2004	1049	−0.0274	−0.0054	**0.0316**	**−0.0394**	0.0006	0.0639	0.0000
		(0.6686)	(0.6890)	(0.0000)	(0.0185)	(0.8481)		

$$DIF(4) = INFLOWRATIO_4 - OUTFLOWRATIO_4 = \left(\frac{InCFO_4}{InCFO} - \text{industry median of } \frac{InCFO_4}{InCFO}\right) - \left(\frac{OutCFO_4}{OutCFO} - \text{industry median of } \frac{OutCFO_4}{OutCFO}\right)$$

InCFO is yearly cash inflows from operations, and *OutCFO* is yearly cash outflows from operations. *Industry median of* $\frac{InCFO_4}{InCFO}$ and *industry median of* $\frac{InCFO_4}{InCFO}$ are the industry medians of cash inflow ratio and cash outflow ratio in the fourth quarter, respectively.

$DEV(3) = (CFO_3 - NI_3) / SALES_3$

CFO_3 is CFOs by the end of the third quarter; NI_3 is earnings by the end of the third quarter; $SALES_3$ is net sales by the end of the third quarter.

$DEV\_O(3) = (CFO_3 - OI_3 - INTEREST_3 + TAX_3) / SALES_3$

CFO_3 is CFOs by the end of the third quarter; OI_3 is the operating income by the end of the third quarter; $INTEREST_3$, TAX_3, and $SALES_3$ are interest expenses, income taxes, and sales by the end of the third quarter, respectively.

D is a dummy variable, which takes the value of 1 if *DEV*(3) or *DEV_O*(3) is negative, and 0 otherwise; *SIZE* is the logarithm of sales. The significance level of the two-tailed *t* test is placed in brackets.

term is significantly negative at least at the 2 per cent level both in the total sample and in the sub-samples. This implies that the firms with lower CFOs than earnings by the third quarter have stronger incentives and are more aggressive in increasing CFOs in the fourth quarter to show a higher earnings quality. For the firms whose CFOs are lower than earnings, the total effect of *DEV* is $\beta_1 + \beta_3$, that is, −0.0629.

Comparing the results in the two panels of Table 2, both the significance of the coefficients and adjusted R-square in Model (3a) are better than those in Model (3b). Obviously, the deviation of CFOs from earnings or net income is of more concern to managers; that is to say, the target of CFO management tends to be to reduce the gap between CFOs and net income and not the gap between CFOs and operating income.

The results in Table 2 show no significance for *SIZE*. We also try to control for other firm-specific characteristics, such as growth and capital structure. To show their good performance and healthy financial status, growth firms may adopt the aggressive sales policy and both growth firms and high-financial-risk firms might tend to manipulate cash flows. We take the sales growth rate (= (sales in time $t + 1$ − sales in time t) / sales in time t) and debt ratio (= total liability / total assets) as additional control variables in Models (3a) and (3b). But none of them is statistically significant. We fail to find any fundamental characteristic which has an important influence on CFO management.

(iii) Improving the Method of Measuring Discretionary CFOs

It may be argued that *DEV* is not only the deviation of CFOs from earnings but also from accruals. If a firm has higher accruals at time $t - 1$, such as higher receivables, then CFOs would be expected to increase when the receivables are reversed at time t. In contrast, if a firm has large payables at time $t - 1$ and it reverses these payables at time t, CFOs will be affected downwards at time t. Therefore, our results in Table 2 may just be a consequence of accrual accounting. In order to control for this accrual accounting effect, we improve the measure of discretionary CFOs.

First, we use Model (4) to control for the effect of the reversal of accruals on *DIF*(*4*).

$$DIF(4) = \gamma_0 + \gamma_1 CUASSET(3) + \gamma_2 CULIABILITY(3) + \varepsilon \qquad (4)$$

In Model (4), *CUASSET*(*3*) and *CULIABILITY*(*3*) are the current assets (= total current assets − cash and cash equivalents − short-term investment − short-term assets to be disposed) and current liabilities (= total current liabilities − short-term debt) at the end of the third quarter divided by total assets at the beginning of the year, respectively. On the basis of accrual accounting, we can expect γ_1 to be positive and γ_2 to be negative. We estimate Model (4) by industry. We delete the samples with less than 15 firms in that industry. The final sample includes 1516 firm-year observations, 678 of which are for 2003, and 838 for 2004. The regression results (not presented in this paper) show that, of the groups for different years

and different industries, more than 75 per cent have a positive γ_1, and the mean of γ_1 is 0.0929. The γ_2 of more than 85 per cent of the groups is negative, and the mean of γ_2 is −0.1336. Both these coefficients are significant at the 1 per cent level.

After regressing Model (4), we obtain the coefficients by industry. Then we use the estimated model to compute a residual for each firm-year observation. These residuals are the improved discretionary CFOs after controlling for the reversal of accruals. We name these improved discretionary CFOs as $R(4)$. The improved models for testing the matching motivation are as follows:

$$R(4) = \beta_0 + \beta_1 DEV(3) + \beta_2 D + \beta_3 D*DEV(3) + \beta_4 SIZE + \varepsilon \quad (5a)$$

$$R(4) = \beta_0 + \beta_1 DEV\_O(3) + \beta_2 D + \beta_3 D*DEV\_O(3) + \beta_4 SIZE + \varepsilon \quad (5b)$$

The regression results of Models (5a) and (5b) are listed in Table 3. Compared with Table 2, the results are similar except that the significance level and explanatory power are slightly lower in Table 3. If CFOs are lower than earnings during the first three quarters, managers will increase the CFOs in the fourth quarter. A larger deviation leads to a greater magnitude of manipulation. We notice that, as shown from the results in Table 2, the explanatory power of Model (5b) is lower than that of Model (5a). This is an additional piece of evidence that it is the net income, not the operating income, with which managers try to match CFOs. In the following section, we will only list the results on the basis of $DEV(3)$.

(iv) Is it Earnings-Quality Manipulation or a Seasonal Reversal?

A direct question about the above result arises: does it exist in the fourth quarter only? If the result is found for the other three quarters with similar significance, we cannot attribute it to CFO management since the manipulation motivation is much weaker in other quarters. We need, therefore, to prove that the change in CFOs in the fourth quarter is not simply a seasonal reversal.

With this argument, we develop the following models:

$$\begin{aligned} DIF(i) = {} & \beta_0 + \beta_1 DEV(i-1) + \beta_2 D(i-1) + \beta_3 D(i-1)*DEV(i-1) \\ & + \beta_4 D1 + \beta_5 D1*DEV(i-1) + \beta_6 D1*D(i-1) \\ & + \beta_7 D1*D(i-1)*DEV(i-1) + \varepsilon \end{aligned} \quad (6)$$

$$\begin{aligned} R(i) = {} & \beta_0 + \beta_1 DEV(i-1) + \beta_2 D(i-1) + \beta_3 D(i-1)*DEV(i-1) + \beta_4 D1 \\ & + \beta_5 D1*DEV(i-1) + \beta_6 D1*D(i-1) + \beta_7 D1*D(i-1)*DEV(i-1) + \varepsilon, \end{aligned} \quad (7)$$

where i (= 2, 3, or 4) is the subscript for quarter, and $i-1$ is the quarter before quarter i. $D(i-1)$ is a dummy, which takes the value of 1 if $DEV(i-1)$ is negative, and 0 otherwise. $D1$ is also a dummy, which takes the value of 1 when the fourth quarter is taken into account, and 0 otherwise. DIF, DEV, and R are defined as before. If the results in Tables 2 and 3 are simply due to seasonal reversals, β_5, β_6, and β_7 should not be significant. Since we take firm-quarter observations as the sample, the number of observations is different from those for Tables 2 and 3. We have 5814 firm-quarter observations when regressing Model (6). To regress Model

Table 3 Results of the Improved Model for Testing the Matching Motivation

Sample	No. of Sample firms	β_0	β_1 (−)	β_2 (+)	β_3 (?)	β_4	Adj. R^2	Pr > F
Model (5a): $R(4) = \beta_0 + \beta_1 DEV(3) + \beta_2 D + \beta_3 D^* DEV(3) + \beta_4 SIZE + \varepsilon$								
Total	1516	0.0542	−0.0078	**0.0256**	**−0.0387**	−0.0033	0.0699	0.0000
		(0.2917)	(0.3068)	(0.0000)	(0.0004)	(0.1693)		
2003	678	0.0756	−0.0166	**0.0295**	**−0.0291**	−0.0044	0.0914	0.0000
		(0.3309)	(0.1347)	(0.0000)	(0.0595)	(0.2285)		
2004	838	0.0385	−0.0008	**0.0223**	**−0.0466**	−0.0025	0.0522	0.0000
		(0.5769)	(0.9372)	(0.0009)	(0.0030)	(0.4358)		
Model (5b): $R(4) = \beta_0 + \beta_1 DEV\_O(3) + \beta_2 D + \beta_3 D^* DEV\_O(3) + \beta_4 SIZE + \varepsilon$								
Sample	1516	0.0542	−0.0139	**0.0272**	**−0.0246**	−0.0034	0.0677	0.0000
		(0.2911)	(0.1705)	(0.0000)	(0.0492)	(0.1602)		
2003	678	0.0798	−0.0237	**0.0291**	−0.0224	−0.0046	0.0948	0.0000
		(0.3017)	(0.1031)	(0.0000)	(0.2104)	(0.1997)		
2004	838	0.0372	−0.0058	**0.0257**	−0.0264	−0.0025	0.0463	0.0000
		(0.5901)	(0.6834)	(0.0001)	(0.1304)	(0.4341)		

$R(4)$ is the residual of $DIF(4) = \gamma_0 + \gamma_1 CUASSET(3) + \gamma_2 CULIABILITY(3)$
$CUASSET(3)$ and $CULIABILITY(3)$ are the current assets (= total current assets − cash and cash equivalents − short-term investment − short-term assets to be disposed) and current liabilities (= total current liabilities − short-term debt) at the end of the third quarter divided by total assets at the beginning of the year, respectively. The definitions of other variables are the same as in Table 2. The significance level of the two-tailed t test is placed in parentheses.

(7), we further delete the firms with less than 15 firms in the industry and finally obtain 4548 observations.

The results of Models (6) and (7) are shown in Table 4. The coefficient of $D(i-1)$ is positive, that is, when CFOs are lower than earnings in the previous quarter, CFOs will increase in the current quarter. The coefficient of $D1*D(i-1)$ is also positive, which implies that the increase in CFOs in the fourth quarter is significantly higher than that in other quarters. The coefficient of $D(i-1)*DEV(i-1)$ is significantly negative for the whole sample and the 2004 sample, meaning that the magnitude of CFOs is positively correlated with the degree of CFO deviation for firms with negative *DEV*. This shows a seasonal reversal effect; however, the matching motivation in the fourth quarter cannot be denied. We have two reasons. First, the coefficients of $DEV(i-1)$ and $D1*DEV(i-1)$ are not significant, which means that the reversal exists only in firms with lower CFOs than earnings. Second, the coefficients of $D1*D(i-1)*DEV(i-1)$ are significantly negative at the 1 per cent level in all regressions; that is to say, the reversal effect is much stronger in the fourth quarter. Comparing β_3 and β_6, we can find that the reversal effect in the other quarters is only 5 per cent of that in the fourth quarter. Therefore, we conclude that the results in Table 4 cannot be explained only by reason of common seasonal reversals.

(v) Regression Analysis of the Policy-Driven Hypothesis

As we have discussed in Section II, the firms intending to issue equity on the capital market must obtain approval from the CSRC. The CSRC uses CFOs to evaluate the quality of applicants' earnings. Compared with other firms, the potential candidates for SEOs have stronger incentives to make their earnings look as if they are of a high quality.

To test this equity-issuance or policy-driven motivation of CFO management, we divide the sample into four groups according to firms' ROEs and analyse whether the potential candidates for SEOs have stronger motivations for manipulating CFOs on the basis of Models (5a) and (5b). The CSRC issued the "Regulation on Equity Issuance by Listed Firms in China" in March 2001, which requires that the mean of ROEs of SEO applicants should not be lower than 6 per cent for the past three years. We divide the sample into four groups based on ranges of ROEs: $(-\infty, 0]$, $(0, 6\%]$, $(6\%, 8\%]$, and $(8\%, +\infty]$. Obviously, the firms in the range $(6\%, 8\%]$ belong to the "suspicious" or threshold group since they just reach the threshold of the CSRC requirement. They are marginally eligible for equity issuance, and the CSRC may be particularly careful when deciding on whether to grant them issuance approval or not. The quality of earnings is certainly one of the important considerations of the CSRC. If the CFOs of the firms in this range are less than earnings, the probability of obtaining approval will sharply decrease. In this case, there would be an urgent need for these firms to manage their CFOs so that they match their earnings. The empirical results for these four groups are presented in Table 5A. Our expectation is supported by the results based on the total sample. The coefficient of D is 0.0512 for the group of $(6\%, 8\%]$—the largest value among all four groups.

Table 4 CFO Management or Seasonal Reversal?

	Model (6)			Model (7)		
	Total (5814*)	2003 (2667)	2004 (3147)	Total (4548)	2003 (2034)	2004 (2514)
Inter.	**–0.0125**	**–0.0103**	**–0.0141**	**–0.0101**	**–0.0106**	**–0.0113**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0004)	(0.0000)
DEV(*i* – 1)	–0.0002	–0.0003	–0.0001	–0.0002	–0.0002	–0.0002
	(0.2460)	(0.3400)	(0.4360)	(0.2411)	(0.5149)	(0.3285)
D(*i* – 1)	**0.0221**	**0.0176**	**0.0257**	**0.0179**	**0.0178**	**0.0222**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
D(*i* – 1)**DEV*(*i* – 1)	**–0.0024**	–0.0022	**–0.0023**	**–0.0024**	–0.0020	**–0.0022**
	(0.0067)	(0.2834)	(0.0132)	(0.0015)	(0.3094)	(0.0020)
D1	**–0.0061**	**–0.0123**	–0.0010	–0.0053	–0.0073	–0.0038
	(0.0612)	(0.0103)	(0.8253)	(0.1152)	(0.1515)	(0.3990)
*D1*DEV*(*i* – 1)	0.0029	0.0024	0.0034	–0.0064	–0.0146	0.0001
	(0.6080)	(0.7696)	(0.6644)	(0.3282)	(0.1405)	(0.9887)
*D1*D*(*i* – 1)	**0.0140**	**0.0238**	0.0058	0.0076	**0.0135**	0.0027
	(0.0030)	(0.0006)	(0.3656)	(0.1208)	(0.0675)	(0.6797)
*D1*D*(*i* – 1)**DEV*(*i* – 1)	**–0.0634**	**–0.0716**	**–0.0560**	**–0.0377**	**–0.0290**	**–0.0452**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0379)	(0.0006)
Adj. R^2	0.0620	0.0703	0.0554	0.0463	0.0488	0.0429
Pr > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

$$DIF(i) = \beta_0 + \beta_1 DEV(i-1) + \beta_2 D(i-1) + \beta_3 D(i-1)*DEV(i-1) + \beta_4 D1 + \beta_5 D1*DEV(i-1) + \beta_6 D1*D(i-1) + \beta_7 D1*D(i-1)*DEV(i-1) + \varepsilon \quad (6)$$

$$R(i) = \beta_0 + \beta_1 DEV(i-1) + \beta_2 D(i-1) + \beta_3 D(i-1)*DEV(i-1) + \beta_4 D1 + \beta_5 D1*DEV(i-1) + \beta_6 D1*D(i-1) + \beta_7 D1*D(i-1)*DEV(i-1) + \varepsilon \quad (7)$$

where i (= 2, 3, or 4) is the subscript for quarter, and *i – 1* is the quarter before quarter *i*. *D*(*i – 1*) is a dummy, which takes the value of 1 if *DEV*(*i – 1*) is negative, and 0 otherwise. *D1* is a dummy, which takes the value of 1 when the fourth quarter is taken into account, and 0 otherwise. *DIF*(*i*), *DEV*(*i – 1*), and *R*(*i*) are defined as in Tables 2 and 3. * represents the number of observations. The significance level of the two-tailed *t* test is placed in parentheses.

Table 5 Test on the Policy-Driven Motivation
A: Regression on the basis of Model (5a)—by groups of ranges

Sample	ROE	No. of sample firms	*Inter.*	*DEV*(3)	*D*	*D*DEV*(3)	*SIZE*	Adj. R^2	Pr > F
Total	(–∞, 0)	144	0.0581	0.0174	0.0313	–0.0265	–0.0041	0.0054	0.3166
			(0.7950)	(0.3659)	(0.1034)	(0.3835)	(0.7003)		
	[0, 6%)	645	0.0960	**–0.0210**	**0.0189**	**–0.0601**	–0.0053	0.0928	0.0000
			(0.2712)	(0.0468)	(0.0120)	(0.0018)	(0.2031)		
	[6%, 8%)	228	–0.0280	0.0174	**0.0512**	**–0.0560**	0.0001	0.1108	0.0000
			(0.8669)	(0.3750)	(0.0002)	(0.0205)	(0.9878)		
	[8%, +∞)	499	0.0764	**–0.0696**	0.0079	0.0158	–0.0037	0.0588	0.0000
			(0.2702)	(0.0200)	(0.3336)	(0.6453)	(0.2474)		
2003	(–∞, 0)	56	–0.1867	–0.0904	–0.0014	0.0600	0.0081	–0.0116	0.5051
			(0.5293)	(0.2471)	(0.9675)	(0.5349)	(0.5638)		
	[0, 6%)	289	**0.2722**	**–0.0378**	0.0070	**–0.1391**	**–0.0136**	0.2281	0.0000
			(0.0584)	(0.0193)	(0.5400)	(0.0000)	(0.0463)		
	[6%, 8%)	117	0.0027	0.0210	**0.0719**	–0.0289	–0.0018	0.1436	0.0003
			(0.9902)	(0.2444)	(0.0000)	(0.2075)	(0.8599)		
	[8%, +∞)	216	0.0470	**–0.0907**	0.0062	0.0685	–0.0022	0.0398	0.0135
			(0.6145)	(0.0319)	(0.5714)	(0.1630)	(0.6192)		
2004	(–∞, 0)	88	0.5033	0.0178	0.0368	–0.0178	–0.0248	0.0286	0.1718
			(0.1328)	(0.3947)	(0.1470)	(0.5992)	(0.1174)		
	[0, 6%)	356	–0.0238	–0.0091	**0.0250**	–0.0039	0.0004	0.0257	0.0106
			(0.8213)	(0.4981)	(0.0093)	(0.8724)	(0.9394)		
	[6%, 8%)	111	–0.0330	–0.0691	0.0067	–0.0833	0.0013	0.1964	0.0000
			(0.8883)	(0.6161)	(0.7763)	(0.5555)	(0.9094)		
	[8%, +∞)	283	0.0904	–0.0584	0.0098	–0.0097	–0.0045	0.0629	0.0002
			(0.3605)	(0.1585)	(0.4039)	(0.8376)	(0.3272)		

Table 5 Continued
B: Results after adding interaction terms to Model (5a)

No. of sample firms	Total (1516)	2003 (678)	2004 (838)
Inter.	0.0557	0.0799	0.0436
	(0.2788)	(0.2963)	(0.5235)
DEV(*3*)	–0.0139	**–0.0424**	–0.0002
	(0.1018)	(0.0028)	(0.9834)
D	**0.0204**	0.0084	**0.0251**
	(0.0001)	(0.2903)	(0.0005)
*D*DEV*(*3*)	**–0.0362**	**–0.0660**	–0.0245
	(0.0070)	(0.0038)	(0.1381)
DROE	–0.0113	**–0.0254**	0.0091
	(0.1910)	(0.0278)	(0.5798)
*DROE*DEV*(*3*)	0.0305	**0.0627**	–0.0673
	(0.1137)	(0.0042)	(0.5768)
*DROE*D*	**0.0296**	**0.0625**	–0.0195
	(0.0214)	(0.0003)	(0.3664)
*DROE*D*DEV*(*3*)	–0.0192	0.0376	–0.0609
	(0.4443)	(0.2282)	(0.6244)
SIZE	–0.0033	–0.0043	–0.0028
	(0.1727)	(0.2329)	(0.3851)
Adj. R^2	0.0718	0.1273	0.0709
Pr > F	0.0000	0.0000	0.0000

In Table 5A, all variables are defined as in Table 3. The dependent variable is *R*(*4*). In Table 5B, we add *DROE* and its two interaction terms in Model (5a). *DROE* is a dummy, which takes the value of 1 if ROE is in the range of (6%, 8%], and 0 otherwise. The significance level of the two-tailed *t* test is placed in parentheses.

The coefficient of *D*DEV*(*3*) is negative; in other words, lower CFOs than earnings by the end of the third quarter lead to a larger magnitude of CFO management in the fourth quarter. Another interesting result in Table 5A is that for the group of ROEs greater than 8 per cent, the coefficient of *DEV*(*3*) is negatively significant. This means that for this group, CFO management mainly occurs in the firms with CFOs higher than earnings, probably reflecting the cost of CFO management. For the firms with both high earnings and high CFOs, it is easy to defer some CFOs at a lower cost. Comparatively, there is no evidence of any CFO manipulation in loss firms. This fact is reasonable since for the loss firms, the benefit of CFO management is low, and these firms do not have much ability to manage CFOs.

The results based on the sub-sample of 2003 are similar to those based on the full sample, but the results based on the 2004 sample are not significant.

The results of Table 5A show that the firms with ROEs in the range of (6%, 8%] have a higher magnitude of CFO manipulation. In Table 5B, we add an ROE dummy variable (*DROE*, which takes the value of 1 if the ROE is in the range of (6%, 8%],

and 0 otherwise) and two interaction terms *DROE*D* and *DROE*D*DEV*(*3*) to test the significance of difference between the threshold group and other groups. The results shows that the CFO management of threshold firms in the fourth quarter is significantly stronger than that of the other firms if the former's CFOs are lower than earnings by the end of the third quarter (the coefficient of *DROE*D* is significantly positive). But there is no consistent evidence on the relationship between the degree of deviation and the magnitude of CFO manipulation (the coefficient of *DROE*D*DEV*(*3*) is insignificant).

Table 5 offers partial support for Hypothesis 2 which expects that candidates for SEOs, especially threshold candidates, will manage CFOs more strongly in the fourth quarter when their CFOs are lower than earnings by the end of the third quarter.[9]

The regulation of the CSRC focuses on "whether the change in cash flows (CFs) is negative, or whether CFOs are negative". If the change in CFs is negative, or CFOs are negative, either of which is regarded as a signal of financial risks. Therefore, the CSRC is concerned not only with earnings quality but also with financial risks. In order to test the effect of SEO policy on CFO management, we establish the following models:

$$DIF(i) = \beta_0 + \beta_1 NETCASH(i-1) + \beta_2 NETCFO(i-1) + \beta_3 D + \beta_4 D^{*} NETCASH(i-1) + \beta_5 D^{*} NETCFO(i-1) + \varepsilon \quad (8)$$

$$R(i) = \beta_0 + \beta_1 NETCASH(i-1) + \beta_2 NETCFO(i-1) + \beta_3 D + \beta_4 D^{*} NETCASH(i-1) + \beta_5 D^{*} NETCFO(i-1) + \varepsilon, \quad (9)$$

where i (= 2, 3, or 4) is the subscript for quarter and $i - 1$ is the quarter before quarter i. Both $NETCASH(i-1)$ and $NETCFO(i-1)$ are dummies. If the change in net CFs is negative by the end of the i^{th} quarter, $NETCASH(i-1)$ is 1, and 0 otherwise. If CFOs are negative by the end of the i^{th} quarter, $NETCFO(i-1)$ is 1, and 0 otherwise. *D* is also a dummy but of a different definition from Model (3)—it takes the value of 1 when it represents the fourth quarter, and 0 otherwise. The definitions of *DIF* and *R* are the same as those mentioned above. Obviously, if the

[9] These weak results may be due to the bias when we use a certain ROE range to detect the motivation of CFO management. The basis of Hypothesis 2 is that the CSRC and underwriters will pay attention to the CFOs of SEO applicants. But some of the firms with ROEs within the range 6%–8% may not issue equity in year *t*. For example, if they plan to issue new stocks in year $t + 1$, they will not manage CFOs in year *t* since this will affect their CFOs in year $t + 1$ negatively. One anonymous referee suggests that a proper sample to test this hypothesis would consist of firms having real financing plans. Following up this suggestion, we compare CFO manipulation between these firms (the SEO proposal is passed by the board or annual general meeting in the current or the following year, or firms will implement SEOs in the following year) and other firms, but we did not find any significant results. One of the reasons may be that a large proportion of these firms have good performances and they have no need to manipulate CFOs at all. Only firms with marginal ROEs need to manipulate CFOs.

Table 6 Policy-Driven Motivation: Test on the Basis of Change in Net Cash Flows and CFOs

	Model (8)			Model (9)		
	Total (5814)	2003 (2667)	2004 (3147)	Total (4548)	2003 (2034)	2004 (2514)
Inter.	**–0.0142**	**–0.0148**	**–0.0138**	**–0.0118**	**–0.0134**	**–0.0106**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0003)
NETCASH(*i* – *1*)	**0.0110**	**0.0131**	**0.0093**	**0.0095**	**0.0116**	**0.0078**
	(0.0000)	(0.0010)	(0.0122)	(0.0006)	(0.0055)	(0.0364)
NETCFO(*i* – *1*)	**0.0185**	**0.0151**	**0.0213**	**0.0146**	**0.0150**	**0.0142**
	(0.0000)	(0.0010)	(0.0000)	(0.0000)	(0.0003)	(0.0001)
D	**–0.0068**	**–0.0121**	–0.0025	**–0.0087**	–0.0075	**–0.0096**
	(0.0533)	(0.0200)	(0.6088)	(0.0172)	(0.1711)	(0.0496)
*D*NETCASH*(*i* – *1*)	0.0041	0.0046	0.0039	0.0029	–0.0013	0.0061
	(0.3742)	(0.4952)	(0.5310)	(0.5462)	(0.8547)	(0.3345)
*D*NETCFO*(*i* – *1*)	**0.0359**	**0.0506**	**0.0235**	**0.0273**	**0.0312**	**0.0241**
	(0.0000)	(0.0000)	(0.0003)	(0.0000)	(0.0000)	(0.0003)
Adj. R^2	0.0539	0.0685	0.0431	0.0399	0.0449	0.0344
Pr > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Dependent variables are *DIF*(*i*) and *R*(*i*) in Models (8) and (9), respectively. *DIF*(*i*) and *R*(*i*) are defined as in Table 2 and Table 3, respectively. If the change in net CFs is negative by the end of the third quarter, *NETCASH*(*i* – *1*) takes the value of 1, and 0 otherwise. If CFOs are negative by the end of the third quarter, *NETCFO*(*i* – *1*) takes the value of 1, and 0 otherwise. *D* is a dummy, which equals 1 when it represents the fourth quarter, and 0 otherwise. The significance level of the two-tailed *t* test is placed in parentheses.

firms are concerned about the regulations of the CSRC on SEOs, and CFO management occurs in the fourth quarter, β_4 and β_5 should be positive.

Table 6 shows that the results for the two models are similar. β_1 and β_2 are positive, meaning that for the second and third quarters, if the change in net CFs is negative or CFOs are negative by the end of the previous quarter, CFO will increase in the current quarter. If the manipulation only occurs in the fourth quarter, it should be a seasonal reversal. For the fourth quarter, the coefficients of *NETCASH*(*i* – *1*) and *NETCFO*(*i* – *1*) are ($\beta_1 + \beta_4$) and ($\beta_2 + \beta_5$), respectively. β_4 and β_5 reveal that if the change in net CFOs is negative by the end of the third quarter, the CFOs in the fourth quarter will be managed sharply upwards. There is no significant effect for the change in net cash flows.

Considering together the requirement of ROEs imposed by the CSRC, a reasonable expectation is that CFO management should be stronger among the threshold candidates of SEOs. We further add a dummy *DROE*, which equals 1 if the ROE is in the range of 6 per cent to 8 per cent, and 0 otherwise, and its two interaction terms to test this expectation. The results are listed in Table 7.

In Table 7, the coefficient of *DROE*D*NETCASH*(*i* – *1*) is positive both for the

Table 7 Policy-Driven Motivation: Test on the Basis of Change in Net Cash Flows and CFOs: Threshold Firms

	Dependent: *DIF*(*i*)			Dependent: *R*(*i*)		
	Total (5814)	2003 (2667)	2004 (3147)	Total (4548)	2003 (2034)	2004 (2514)
Inter.	**–0.0144**	**–0.0144**	**–0.0145**	**–0.0117**	**–0.0128**	**–0.0108**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0002)	(0.0003)
NETCASH(*i – 1*)	**0.0136**	**0.0145**	**0.0128**	**0.0116**	**0.0132**	**0.0104**
	(0.0000)	(0.0007)	(0.0012)	(0.0000)	(0.0036)	(0.0089)
NETCFO(*i – 1*)	**0.0171**	**0.0142**	**0.0196**	**0.0128**	**0.0139**	**0.0120**
	(0.0000)	(0.0009)	(0.0000)	(0.0000)	(0.0021)	(0.0026)
D	**–0.0070**	**–0.0121**	–0.0028	**–0.0088**	–0.0075	**–0.0098**
	(0.0492)	(0.00204)	(0.5563)	(0.0161)	(0.1728)	(0.04440)
*D*NETCASH*(*i – 1*)	–0.0010	0.0018	–0.0029	–0.0006	–0.0036	0.0018
	(0.8427)	(0.8033)	(0.6628)	(0.9035)	(0.6322)	(0.7892)
*D*NETCFO*(*i – 1*)	**0.0348**	**0.0492**	**0.0233**	**0.0253**	**0.0282**	**0.0231**
	(0.0000)	(0.0000)	(0.0008)	(0.0000)	(0.0004)	(0.0010)
DROE	0.0016	–0.0020	0.0063	–0.0002	–0.0031	0.0029
	(0.7307)	(0.7599)	(0.3544)	(0.9597)	(0.6580)	(0.6854)
*DROE*NETCASH*(*i – 1*)	**–0.0158**	–0.0085	**–0.0238**	**–0.0138**	–0.0091	**–0.0186**
	(0.0208)	(0.3810)	(0.0138)	(0.0569)	(0.3801)	(0.0670)
*DROE*NETCFO*(*i – 1*)	0.0079	0.0052	0.0107	0.0114	0.0063	0.0160
	(0.2701)	(0.6098)	(0.2945)	(0.1361)	(0.5647)	(0.1351)
*DROE*D*NETCASH*(*i – 1*)	**0.0306**	0.0163	**0.0427**	**0.0223**	0.0128	**0.0307**
	(0.0012)	(0.2342)	(0.0011)	(0.0260)	(0.3886)	(0.0245)
*DROE*D*NETCFO*(*i – 1*)	0.0119	0.0074	0.0171	0.0176	0.0179	0.0206
	(0.3521)	(0.6767)	(0.3540)	(0.1914)	(0.3484)	(0.2858)
Adj. R^2	0.0570	0.0681	0.0490	0.0430	0.0451	0.0392
Pr > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

DIF(*i*) and *R*(*i*) are defined as in Table 2 and Table 3, respectively. *DROE* is a dummy, which takes the value of 1 if the ROE is in the range of (6%, 8%), and 0 otherwise. If the change in net CFs is negative by the end of the third quarter, *NETCASH*(*i – 1*) takes the value of 1, and 0 otherwise. If CFOs are negative by the end of the third quarter, *NETCFO*(*i – 1*) takes the value of 1, and 0 otherwise. *D* is a dummy, which equals 1 when it represents the fourth quarter, and 0 otherwise. The significance level of the two-tailed *t* test is placed in parentheses.

total sample and the 2004 sample. In other words, if the change in net cash flows is negative by the end of the third quarter, the magnitude of CFO manipulation of the threshold firms will be significantly higher than that of the other firms. The coefficient of *DROE*NETCASH*(*i – 1*) is negative and marginally significant, implying that there is no "negative-change-in-net-cash-flows" effect in the second and third quarters. We fail to find a negative-CFO effect for the threshold firms from Table 7.

The results in Tables 6 and 7 reveal that against the institutional background relating to the SEO policy, apart from the matching motivation, firms may

manipulate CFOs to present lower financial risks to the market. When the change in net cash flows is negative or CFOs are negative by the end of the third quarter, firms will increase CFOs in the fourth quarter. The degree of manipulation is higher for threshold firms than for other firms.

To sum up, our matching hypothesis is partly supported. We have no strong evidence to prove that when CFOs are **higher than** earnings in the first three quarters, firms will manage CFOs downwards in the fourth quarter to make a reserve. But we do find that when CFOs are **lower than** earnings, firms will manage CFOs upwards to make CFOs match earnings better. These results show that one of the purposes of CFO management is to dress up earnings quality. In this sense, we can say that CFO management is an extension of earnings management. Our policy-driven hypothesis is also supported by the results. As for candidates for SEOs, they manage CFOs not only to make earnings quality look better, but also to avoid any negative change in net cash flows or negative CFOs, either of which is regarded as a signal of financial risks. To meet the requirement imposed by the CSRC, the firms, and especially the threshold firms, have stronger incentives to manipulate CFOs. When CFOs are negative by the end of the third quarter, the threshold firms will manipulate CFOs to a significantly larger extent than other firms.

(vi) CFO Management and Its Persistence

If CFOs in the fourth quarter are managed, then there will be a reversal in the first quarter of the following year. The persistence of CFOs of the fourth quarter must be lower than that of the other quarters. Following Sloan (1996), we design a similar model to investigate the difference in CFO persistence between the second or third quarter and the fourth quarter.[10]

$$CFO(i) = \beta_0 + \beta_1 CFO(i-1) + \beta_2 D + \beta_3 D^* CFO(i-1) + \varepsilon \qquad (10)$$

In Model (10), i stands for the third or fourth quarter of year t or the first quarter of year $t + 1$. $i - 1$ is the quarter before quarter i. *CFO* is industry-adjusted cash flows from operations deflated by total assets at the beginning of the year. The potential industry effect is controlled by subtracting the median of industry CFOs from firm-specific CFOs. D is a dummy, which equals 1 when i represents the first quarter of year $t + 1$, and 0 otherwise. β_1 is expected to be positive and β_3 to be negative since CFO management in the fourth quarter will reduce the persistence of CFOs.

Table 8-A contains the results of Model (10) for all firms. The results for the total sample and the 2004 sub-sample are perfectly consistent with our expectation, showing significant persistence for CFOs of the second and third quarters; the persistence is 0.0532 for the total sample. There is a large reversal of CFOs of the fourth quarter in the first quarter of the following year, and the persistence coefficient of CFOs of the fourth quarter is 0.0441 (−0.0973 + 0.0531). In panel B, only

[10] We focus on the effect of CFO management on CFO persistence. Since CFO management will affect CFOs in the first quarter of year $t + 1$, we delete the data for the first quarter.

Table 8 CFO Management and CFO Persistence

	No. of sample firms	*Inter.*	*CFO*(*i* – *1*)	*D*	*D*CFO*(*i* – *1*)	Adj. R^2	Pr > F
A Based on the whole sample							
Total	5814	**–0.0168**	**0.0532**	**0.0142**	**–0.0973**	0.0160	0.0000
		(0.0000)	(0.0039)	(0.0000)	(0.0001)		
2003	2667	**–0.0169**	**–0.0582**	**0.0148**	0.0366	0.0124	0.0000
		(0.0000)	(0.0319)	(0.0000)	(0.3259)		
2004	3147	**–0.0163**	**0.1831**	**0.0132**	**–0.2530**	0.0351	0.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)		
B Based on the threshold sample with ROEs within [6%, 8%)							
Total	1232	**–0.0086**	**0.2060**	–0.0004	**–0.3143**	0.0261	0.0000
		(0.0000)	(0.0000)	(0.9171)	(0.0000)		
2003	624	**–0.0107**	**0.1606**	0.0001	**–0.3257**	0.0212	0.0010
		(0.0002)	(0.0028)	(0.9829)	(0.0000)		
2004	608	**–0.0064**	**0.2731**	–0.0015	**–0.3195**	0.0356	0.0000
		(0.0000)	(0.0000)	(0.7617)	(0.0000)		

$CFO(i) = \beta_0 + \beta_1 CFO(i-1) + \beta_2 D + \beta_3 D^{*} CFO(i-1) + \varepsilon$

i stands for the third or fourth quarter of year *t* or the first quarter of year *t + 1*. *i – 1* is the quarter before quarter *i*. *CFO* is industry-adjusted cash flows from operations deflated by total assets at the beginning of the year. The potential industry effect is controlled by subtracting the median of industry CFOs from firm-specific CFOs. *D* is a dummy, which equals 1 when *i* is the first quarter of year *t + 1*, and 0 otherwise.

the threshold sample with an ROE in the range of (6%, 8%] is selected. β_3 is more negative than that in panel A . From the results in panel B, we can conclude that stronger CFO management in the fourth quarter leads to a larger reversal in the first quarter of the following year. The results in Table 8 offer additional support for the former findings.

V. CONCLUSIONS

Accounting information, especially earnings, is one of the most important information resources for pricing stocks. But numerous studies have shown that earnings are managed by managers to affect stock prices, to avoid breaching contracts, or to avoid interference by the government. The prevalence of earnings management has led users of financial statements to pay increasing attention to earnings quality apart from the amount of earnings. When all the players (investors, analysts, or supervisors) in the capital market begin to put emphasis on earnings quality, will the managers manipulate earnings quality just as they manage earnings amounts?

Compared with earnings, CFOs are less affected by accounting estimations and accounting policy choices. Therefore, users of financial statements always take CFOs as a ruler to measure earnings. When earnings are matched by sufficient

CFOs, these users tend to believe that earnings are not simply "book fortune", and earnings quality is guaranteed. People seldom doubt the reliability of CFOs. But even CFOs can be manipulated. Firms can increase CFOs by postponing payments of accounts payable, front-loading sales, and even misstating cash flows from investment to operations. Hence, managers do have incentives to manipulate CFOs to make earnings quality look better.

We use the quarterly data of Chinese listed firms between 2003 and 2004 to investigate the incentives for CFO manipulation. If CFOs are lower than earnings by the end of the third quarter, managers will manage CFOs upwards to match earnings in the fourth quarter. The regulation of the CSRC on SEOs is another trigger of CFO management. Compared with other firms, the magnitude of CFO manipulation in the fourth quarter is much higher for the threshold potential applicants for SEOs when their changes in net cash flows are negative, or when CFOs are negative, or when CFOs are lower than earnings by the end of third quarter. This phenomenon is obviously driven by the policy on SEOs set by the CRSC. It is another piece of evidence that government policies can influence accounting. Regardless of the incentive, be it the matching motivation or the policy-driven motivation, the managed CFOs in the fourth quarter will be reversed in the first quarter of the following year. The persistence of CFOs of the fourth quarter is lower than that of the other quarters.

Our research offers a new perspective for understanding and using financial reports. Users of accounting information generally consider that cash flows cannot be manipulated. Our empirical results show that CFO management is common when CFOs are lower than earnings. Therefore, when investors make forecasts for future CFOs on the basis of current CFOs, or when the market supervisors monitor firms on the basis of CFOs, the abnormal change in CFOs should be considered.

Our paper is the first attempt to investigate CFO management, and we hope that it will open up a new field in research into accounting manipulation. In this paper, we study the motivations for CFO management only. Many questions remain unanswered. Is there any other motivation for managers to manipulate CFOs? How are CFOs managed? How does the manipulation affect stock prices? Can investors see through this? We will try to answer these questions in our future research.

As one of the very first attempts to study CFO management, this paper has some limitations. CFO management is more difficult to detect than earnings management. Moreover, the method of manipulation is different from the methods employed for earnings management. We innovate a model to test CFO management in this paper. Its effectiveness depends on the assumption that we can control the seasonal effect of industry-adjusted CFOs. If the seasonal effect is different among the firms in the same industry, the results in this paper may still be influenced by the seasonal factor. A potential solution is to use time-series data to estimate the firm-specific seasonal factor, but data for a long time series are required. It is impossible for us to find such data because quarterly data have only been required to be disclosed for the last two years. To mitigate this potential limitation, we present a case study

on CFO management, and hope that the case study will offer an additional piece of direct evidence.

REFERENCES

Please refer to pp. 93–94.

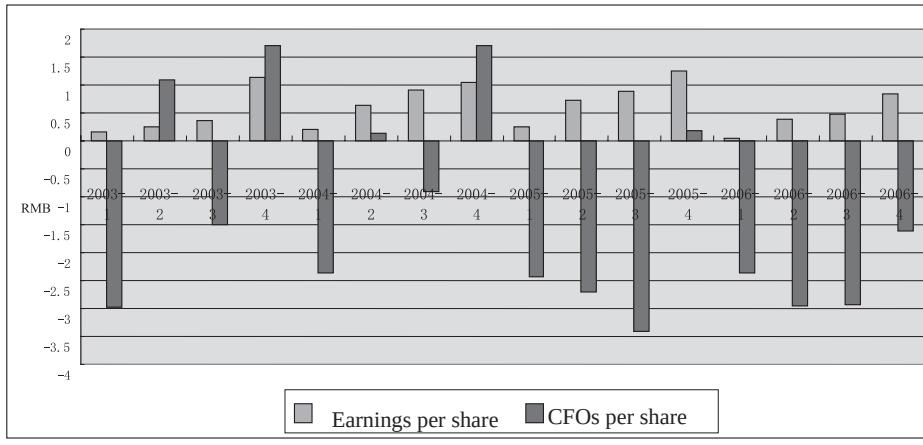
APPENDIX

A Case Study on Cash Flows from Operations (CFOs) of the ZTE Corporation (Code: 000063)

ZTE is one of the largest providers of telecommunications equipment and network solutions in China. It is the only listed telecommunications product manufacturer in China, and its shares are publicly traded on both the Hong Kong and Shenzhen Stock Exchanges. We have chosen ZTE for a case analysis for two major reasons: (1) Since the firm went public, its financial performance has been above the average level in the overall capital market in terms of both earnings per share and returns on equity. It is of greater practical significance for investors to focus on companies with high earnings; (2) financial analysts and investors have been a little alarmed by the firm's CFO situation, which is regarded as a main source of financial risks. When the firm is in a bad cash flow situation during the first three quarters, the managers are inclined to increase cash flows in the fourth quarter to dispel suspicions in the market. In the following analysis, we take a closer look at the possible manipulation of CFOs by ZTE on the basis of our theoretical analysis in the main text.

Figure A1 represents the firm's earnings per share and CFOs per share by the end of each quarter from 2003 to 2006. It clearly indicates a deteriorating trend in CFOs for the two most recent years. The quarterly changes in the firm's CFOs in 2003 and 2004 reveal that its main cash inflows take place in the second and fourth quarters. Viewed on a yearly basis, not only were its CFOs positive but also higher than earnings—an indication of the high quality of the firm's earnings. However, beginning from 2005, the firm's CFOs have been deteriorating badly. The cash inflows began to take place mostly in the fourth quarter. Although the CFOs remained

Figure A1 Earnings per share and CFOs per share of ZTE by the end of each quarter between 2003 and 2006



positive in 2005, they were far lower than earnings. The situation got worse in 2006. As a result, ZTE incurred huge net outflows even though earnings were still positive. For simplicity, we will concentrate on its CFOs in the fourth quarter of 2005. As a matter of fact, it is also possible that the firm manipulated CFOs in the years 2004 and 2006 (see the column labelled "excess contribution ratio" in Table A1). In this analysis, we have raised the threshold of comparison by taking the CFOs of 2004 and 2006 as the benchmark. If there was no CFO manipulation in the fourth quarter of 2004 and 2006, the result would be more significant.

Since ZTE showed a good performance in CFOs during the past years, it would strive to maintain this image of high earnings quality even in a bad market situation in 2005. This gave rise to the potential incentive for increasing its CFOs through manipulation.

We take the quarterly distribution of CFOs in 2004 as being normal and compare it with that in 2005. The cash flows in 2006 can also be used as a relatively reliable benchmark for comparison, but the problem is that these cash flows would be affected by the reversal of manipulative cash flows in 2005. Table A1 displays the quarterly distribution of the operating cash inflows and outflows of ZTE in 2004 and 2006. Applying the method used in the main text, we compute quarterly cash inflow (outflow) ratios [= cash inflows (outflows) in quarter *t* / total cash inflows (outflows) in that year] and the difference between the inflow ratio and the outflow ratio, which we name as the excess contribution of CFOs in quarter *t* (similar to the variable *DIF* in the main text). We list them in the last three columns of Table A1. It can be seen from these three columns that the excess contribution ratios (ECRs) of the fourth quarters in 2004 and 2006 are relatively close. Each of the

Table A1 Quarterly Distribution of Cash Inflows and Outflows from Operations

Quarters	CFO inflows (in million RMB)	CFO outflows (in million RMB)	Quarterly inflows / yearly inflows (%)	Quarterly outflows / yearly outflows (%)	Excess contribution ratio (%)
2004–1	3789	5364	16.0	24.3	–8.3
2004–2	7635	5947	32.1	26.9	5.2
2004–3	4238	5081	17.8	23.0	–5.1
2004–4	8092	5718	**34.1**	**25.9**	**8.2**
2005–1	2765	5101	12.6	23.5	–10.9
2005–2	6063	6314	27.7	29.1	–1.4
2005–3	4414	5092	20.2	23.5	–3.3
2005–4	8651	5208	**39.5**	**24.0**	**15.5**
2006–1	3897	6169	16.8	25.0	–8.1
2006–2	5607	6171	24.2	25.0	–0.8
2006–3	4989	4967	21.6	20.1	1.4
2006–4	**8643**	7385	**37.4**	**29.9**	**7.4**

* Excess contribution ratio = Quarterly inflows / yearly inflows − Quarterly outflows / yearly outflows.

two ECRs is only about one half of the ECR of the fourth quarter in 2005, which stood at 15.5 per cent. A comparison between the inflow ratio and outflow ratio in the fourth quarters of the three years clearly demonstrates that both the increased inflow ratio and decreased outflow ratio have contributed a higher ECR in the fourth quarter of 2005.

Is this higher ECR in the fourth quarter of 2005 a normal reflection of the firm's operations? To answer this question, we need to analyse the specific components of its cash flows and the changes in the accrual items of its balance sheet. Table A2 sets out the major components of the quarterly CFOs and their ratios to net sales from 2004 to 2006. In comparison with those of 2004 and 2006, the cash inflows from sales of the fourth quarter in 2005 are much higher, while cash outflow items (cash paid for purchases, cash paid for employees, and cash paid for other operating activities) are much lower. Of the cash outflow items, cash paid for employees requires special attention because it can be easily manipulated by managers.

Moreover, due to the rigidity of wages, their manipulation is likely to produce the most significant reversal effect. This is mirrored sharply in Table A2. The cash paid for employees in the fourth quarter of 2005, both in absolute and relative value, is considerably lower than that of 2004 and 2006. If the cash paid for employees in the fourth quarter of 2005 had been kept at the same level as in 2004, the CFOs in 2005 would be reduced by 80 per cent. Moreover, the cash paid for employees in the first and second quarters of 2006 was obviously higher than that paid in the corresponding quarters of the years 2004 and 2005, indicating the reversal effect of delaying cash payment to the employees in the fourth quarter of 2005.

In Table A3, we analyse the potential reasons for quarterly CFO changes by examining some major accrual items. The second to fourth columns list the changes in inventory and the changes in operating receivables and payables, respectively. The overall effects of these three accrual items (inventory change + accounts receivable change – accounts payable change) in the fourth quarters of three years are negative. This means that the increase in operating cash flows in the fourth quarters reflects, to some extent, the effect of the reversal of accruals. Nevertheless, the firm is not cleared of the suspicion of cash flow manipulation in the fourth quarter of 2005. First, the reversal of 2005 is the biggest one, which signifies that part of the reversal is the result of manipulation. Second, regarding the specific items, the reversal of 2005 is mainly attributed to the increase in operating payables (while the reversal of 2004 comes from the reduction in inventory and in operating receivables). Compared with postponing purchases and collecting receivables in advance, deferring payment is undoubtedly easier to handle.

Is the reversal of accruals in the fourth quarter the result of earnings management? Existing empirical studies have found that earnings management occurs mostly in the fourth quarter (see literature review in the main text). In this case, if ZTE had any motivation for managing earnings in the fourth quarter, it should have increased rather than decreased earnings; in other words, there should have been positive changes in the accrual items in the fourth quarter. However, Table A3

Table A2 Major Components of Quarterly Operating Cash Flows and Their Proportions in Relation to Sales

Quarters	Sales (in million RMB) (a)	Cash received from sales of goods or rendering of services (in million RMB) (b)	(c) = (b)/(a) (%)	Cash paid for goods and services (in million RMB) (d)	(e) = (d)/(a) (%)	Cash paid to and for the employees (in million RMB) (f)	(g) = (f)/(a) (%)	Other cash paid for operating activities (in million RMB) (h)	(i) = (h)/(a) (%)
2004–1	3789	3721	98.2	3962	104.6	415	11.0	795	21.0
2004–2	7986	7511	94.1	3764	47.1	895	11.2	828	10.4
2004–3	4559	4042	88.7	4108	90.1	445	9.8	248	5.4
2004–4	6365	**7926**	**124.5**	**3726**	**58.5**	**524**	**8.2**	**909**	**14.3**
2005–1	4291	2582	60.2	3594	83.8	603	14.1	613	14.3
2005–2	6012	5963	99.2	3551	59.1	1186	19.7	1137	18.9
2005–3	4728	4322	91.4	3263	69.0	612	12.9	983	20.8
2005–4	6545	**8448**	**129.1**	**3508**	**53.6**	**392**	**6.0**	**593**	**9.1**
2006–1	4590	3815	83.1	4339	94.5%	724	15.8	933	20.3
2006–2	5901	5140	87.1	3896	66.0%	1357	23.0	527	8.9
2006–3	5431	4552	83.8	3920	72.2%	670	12.3	61	1.1
2006–4	7110	**8094**	**113.8**	**5530**	**77.8%**	**763**	**10.7**	**704**	**9.9**

Table A3 Changes in the Accrual Items and CFOs (in Million RMB)

Quarters	Change in inventory (1)	Change in operating receivables (2)	Change in operating payables (3)	Overall effect (1) + (2) − (3)	CFOs
2004–1	974	809	–210	1992	–1575
2004–2	–644	–48	–846	155	1689
2004–3	1689	1871	2209	1352	–844
2004–4	**–1599**	**–3321**	**–2636**	**–2285**	**2375**
2005–1	795	1530	–794	3119	–2336
2005–2	–774	1126	–444	796	–252
2005–3	9	–110	–1078	977	–678
2005–4	**837**	**–531**	**2878**	**–2573**	**3444**
2006–1	195	1489	–670	2353	–2271
2006–2	–78	856	–444	1222	–564
2006–3	–503	1688	713	471	22
2006–4	**767**	**–420**	**1080**	**–732**	**1258**

demonstrates that the accrual items of the fourth quarter in 2005 are negative and huge in sum. No evidence is available to prove that the firm has managed earnings during that period. Is there a possibility that the company managed earnings in the first three quarters through accrual items resulting in negative accruals in the fourth quarter? This argument is not tenable either. On the one hand, there is a lack of theoretical and empirical support for earnings management in the first three quarters. Our analysis of the firm's investing and financing activities has not found any apparent motivation for ZTE to manage earnings after analysing the firm's investment and financing activities. On the other hand, even if 100 per cent of reversals in the fourth quarter comes from earnings management in the first three quarters, the firm's CFOs coming from non-accrual items in the fourth quarter of 2005 are still much higher than those of the same quarters of 2004 and 2006.

The above analysis shows that ZTE may have manipulated its CFOs. The unfavourable comments on the firm's CFOs from analysts as we mentioned at the beginning of this case might be one of the motivations for ZTE's managers to manage CFOs.