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会计盈余及其组成部分的价值相关性
—来自沪、深股市的经验证据[1]

张国清[2]　夏立军[3]　方轶强[4]

摘要

本文以中国证券市场上 2000 至 2003 年期间的上市公司为对象，考察了公司会计盈余及其组成部分的价值相关性。我们首先考察净利润与公司股票累计异常收益率之间的关联性。在此基础上，将净利润分解为经营活动现金流量、操纵性应计利润和非操纵性应计利润三个部分，考察其与公司股票累计异常收益率之间的关联性。研究发现，经营活动现金流量与净利润互相具有信息增量，操纵性应计和非操纵性应计被证券市场定价了，在经营活动现金流量之外具有增量信息，改进了净利润解释股票回报的能力。进一步的证据表明，会计盈余的操纵性部分传递了与企业价值有关的信息，有利于预测企业未来的盈利能力，使得会计盈余更能够反映企业的经济基本面，提高了会计盈余的持续性和价值相关性。

关键词：价值相关性、会计盈余、经营活动现金流量、操纵性应计、非操纵性应计

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[2] 张国清，厦门大学管理学院会计系，讲师。通信地址：厦门大学管理学院会计系，邮编 361005 。电子邮件：gqzhang@xmu.edu.com 。

[3] 夏立军，上海财经大学会计与财务研究院，专职研究员。

[4] 方轶强，中国人民银行上海总部。

一、问题的提出

针对安然、环球通讯、康塞科、环球电讯、联合航空公司、银广厦等一件件会计丑闻，世人在剖析这些公司陨落的自身原因之外，还需反思现行财务会计报告模式以历史信息、单一每股盈余、当期盈利为重心所导致的偏差。这些公司的陨落都是从"巨额收入、利润"开始的。人们不禁要怀疑虚假收入、虚假利润的频繁出现与收入、利润导向的相关性。现实中的案例以及上个世纪末令人难忘的金融危机使人们对"现金为王"的道理有了更深层次的领悟。投资者看重的可能是一个公司的未来，而不是现在，更不是过去；决定公司内在价值的不是其账面盈余，而是公司未来获取(自由)现金流量的规模和速度。因此，淡化会计利润指标对公司价值评估的影响，倡导"经营性现金流量"、"自由现金流量"指标便提上日程。

随着我国证券市场蓬勃发展，会计信息日益受到证券监管部门和广大投资者关注。一方面，实证研究表明，投资者利用了会计数字，特别是利用会计利润进行相关的决策，且一些政策法规中也开始使用会计数字作为监管基准[5]；另一方面，未来现金流量与公司价值间的联系为财务经济学家所认同，未来现金流量是公司价值经济模型中的主要变量。以经验来看，决定企业命运、反映企业本质的是现金流，在众多价值评价方法中基于现金流的评价最具权威性，唯有现金支撑的盈利才能带来增值。现金流比利润更能说明企业的收益质量。并且，国外实证研究表明，公司股价与利润指标的相关性越来越小，而与公司现金流的相关性越来越强（陈志斌等， 2002）。

在美国， 20 世纪 70 年代的高利率和频频发生的企业破产，引起人们对应计制会计数字和现金流量数字有用性的关注，并最终导致了财务会计准则公告第 95 号（SFAC NO.95)《现金流量表》的颁布，用现金流量表代替了财务状况变动表。对现金流量这一更原始概念的强调是对当时应计制会计占主导地位这一制度环境的背离。众所周知，在现行应计制会计中，为了得到会计利润，应计利润是必不可少的部分，关于应计利润的研究也成了一个热门的话题。应计程序是财务会计和财务报表现行结构的核心内容。尽管会计的信息观(也即财务报表应该提供未来现金流量评价的有用信息，这在 SFAC NO.1 中有详细阐述)潜在地代表了财务报表目标方面的巨大转变，但证券分析中的一个新趋势是盈余导向的计价方法正向现金流量的折现方法转移。然而，美国财务会计准则委员会（FASB）仍然认为，以净收益披露为主的应计制会计优于这一"新"目的—与关于未来现金流量的信息保持一致的现金流量会计(Beaver, 1998)。FASB（1978）指出，以应计制为基础的有关企业盈余的信

[5] 例如，我国上市公司配股权资格的规定，就利用了净资产收益率（ROE）这一财务指标。

息通常在反映企业当前和持续产生现金流量的能力方面优于仅限于现金收入和付出方面的财务信息，财务呈报的主要目的是关于盈余及其构成的信息。

应计制会计代表了公司转移或积累现金流量的一种方式，它反映的是除现金收入和付出之外的信息。例如，在成本与市价孰低法下的存货，可以反映存货变现能力的信息。从更一般意义上说，应计利润反映了公司管理当局对未来现金流量的期望和以一个比过去和现在的现金流量更具潜在综合性的信息系统。此外，应计制会计还可以传递出不包括现金收入和付出在内的信息。正如FASB所提议的，应计制会计可以把现金流量转换为比当前更具有表现力的未来现金流量和股利支付能力的信息。从某种意义上来说，应计制会计可以看成是在一个只呈报现金流量与一个较为充分揭示的制度之间的一种潜在的成本与效率间的权衡（Beaver, 1998）。

2000 年 2 月 11 日，美国财务会计准则委员会发布了第 7 号财务会计概念公告（SFAC NO.7）《在会计计量中使用现金流量信息和现值》。这份公告为在初始确认或新开始确认时运用未来现金流量作为一项会计计量基础以及摊销的利息法提供了一个框架，提出了指导现值使用的一般原则。英国会计准则委员会（ASB）也于1997年4月公布了一份类似的草案“财务会计中的折现”。国际会计准则委员会（简称 IASC，现对外改称 IASB）还专门成立了一个有关现值会计的筹划委员会，对现值的使用进行专门研究。我国财政部在 1998 年 3 月 18 日发布了《企业会计准则—现金流量表》，并在 2001 年 1 月 18 日进行了修订。这标志着人们又重新重视基于现金制的现金流量信息，似乎是对现金制会计的一种更高水平的否定之否定。

自1998年度起，我国企业应当编制现金流量表。其目的在于提供企业一定期间内现金和现金等价物流入和流出的信息，以便于报表使用者了解和评价企业获取现金和现金等价物的能力，并据以预测企业未来现金流量，做出相关决策。Dechow（1994）认为，与现金流量相比，会计盈余是一个更好的业绩计量指标，因为它减轻了内含于计量短期现金流量的时间（Timing）和错误匹配（Mismatching）问题。然而，现行会计准则允许企业有一定的灵活性，从而使应计制会计难免不受管理当局主观判断和机会主义行为的影响。管理者的判断增加了盈利的信息含量，通过允许传递私人信息；另一方面，管理报酬契约的存在，可能会促使经理利用会计准则允许的灵活性，机会主义地操纵利润，因而歪曲了报告净利润（Subramanyam, 1996）。提供现金流量表，是否在利润表之外提供了增量信息？证券市场对净利润的组成项目又是如何定价的？这些问题有待回答。本文基于中国证券市场，对这些问题进行探讨。

二、文献综述

在现行应计制会计实务中，应计利润（应计总额）是由现金流量导出净利润的必要部分。根据琼斯（Jones, 1991）的定义，净利润为现金流量与应计总

额之和。尽管研究人员从契约角度广泛研究了会计选择，但是研究会计选择与净利润各组成部分在证券市场中的定价的关系，只是最近兴起的。一些文献也检验了资本市场对特定操纵性项目的反应情况，例如，Dechow（1994）的研究表明，排除了特别项目的净利润能更好地解释股票回报。以成熟市场如美国和英国市场为背景的许多研究，探讨了应计利润是否给经营活动现金流量带来了增量信息而提高了会计盈余的价值相关性，以及市场对操纵性应计（Discretionary accruals）和非操纵性应计（Nondiscretionary accruals）的定价方式是否一样。一些研究发现应计利润和经营活动现金流量相互具有增量信息，并且在市场上的定价方式不同（Bowen 等，1987；Wilson，1986，1987；Dechow，1994；Cheng 等，1997）。而 Bernard 和 Stober（1989）的研究表明，将净利润分解成经营活动现金流量和应计利润，在净利润之外没有增量信息。

Sloan（1996）探讨了应计总额的市场定价。他发现，市场没能充分评价应计总额中持续性比较低的项目，因此对应计总额过高地定价了。Collins 和 Hribar（2000）利用季度财务数据，也发现市场对应计总额过高地定价了。但是他们都没有探讨市场的过高估价是由于操纵性应计项目还是由于非操纵性应计引起的。Subramanyam（1996）研究发现，市场对以 Jones 模型（1991）为基础估计的操纵性应计项目定价了，而且操纵性应计与未来的盈利能力和股利的变化都正向相关。他进一步的证据表明，收益平滑（Income smoothing）普遍存在，而正是这种收益平滑提高了会计盈余的持续性和可预测性，也即管理层的判断提高了会计盈余反映经济价值的能力。但 Subramanyam（1996）的研究显示，操纵性应计与未来盈利能力正向相关，未必就意味着市场对这种正向相关合理定价了。Teoh 等（1998a,b）和 Rangan（1998）研究发现，在 IPO 或者股票增发之前，经理选择正的操纵性应计项目机会主义地增加会计盈余，并且市场对这些操纵性应计项目过高地定价了。但是，对于在更一般的背景下，也即经理层未必存在操纵会计盈余的机会主义动机时，市场是否错误地定价操纵性应计项目？Xie（2001）填补了以上各项研究的空白，他发现，市场对操纵性应计项目过高地定价了，而对于非操纵性应计项目是否被过高地定价还缺乏足够的证据。他指出，Sloan（1996）所报告应计总额缺乏持续性并被过高定价主要是由于非操纵性应计，并且操纵性应计项目的过高定价在一般的背景下就会发生，而不仅限于 IPO 或者股票增发。

以中国资本市场为背景的几项研究也探讨了类似的问题，但结论众说纷纭。Haw 等（2001）选取 1995-1998 年期间 1,561 家 A 股公司 / 年度样本，以市场调整后的股票年收益率为因变量，以净利润及其组成部分的水平值为自变量，结果表明会计盈余相对于经营活动现金流量具有增量的价值相关性，而经营活动现金流量相对于会计盈余则不具有增量的价值相关性，会计盈余比经营活动现金流量具有更大的持续性和可预测性，而且操纵性应计和非操纵性应

计都被市场定价了。刘旻(2001)的研究认为，我国的会计盈余和经营活动现金流量都具有价值相关性，并且相互具有增量的价值相关性。但陆静等(2002)的研究发现，我国会计信息的价值相关性主要表现在会计盈余上，而经营活动现金流量不具有价值相关性，也不具有增量的价值相关性。可见，现有的国内研究仍未取得一致性的结果。并且，从1998年到现在，中国的会计环境发生了巨大的变化，特别是现金流量表准则的颁布。提供现金流量表，是否在利润表之外提供了增量信息？证券市场对(非)操纵性应计定价了吗？回答这些问题，不仅有助于理解我国证券市场处理会计信息的方式，还有助于理解（非）操纵性应计的本质以及操纵性会计选择的经济动机。

三、研究方法

(一) 样本选择和数据来源

我们选取2000年至2003年期间的沪深两市所有上市公司作为初选样本。理由是，本文需要用到详细的上市公司行业分类信息以估计操纵性应计，而中国证监会公布的上市公司行业分类指引始自 2000 年度上市公司。截至 2000 年末、 2001 年末、 2002 年末和 2003 年末，沪深两市总共有上市公司 1,088 家、 1,160 家、 1,224 家和 1,287 家，我们进一步对这些公司执行如下筛选程序：

1、剔除当年末已发行 B 股或 H 股的上市公司。这些公司面临境内外双重监管环境和投资者群体，与其他上市公司不同，为了集中于本文所要研究的问题，以及计算公司股票收益率的方便，剔除这些公司。

2、剔除当年度新上市（距年度报告日上市时间不到 1 年）的公司。原因是，本文需要用到上年财务指标以计算公司操纵性应计，而新上市公司上年财务数据很多都是模拟而来，同时由于上市融资，公司规模和股本结构发生较大变化，而这会引起操纵性应计计算的误差。

3、剔除金融保险行业的上市公司。由于金融保险行业公司应计利润和其他行业相比具有独特性，我们剔除这些公司。

4、剔除股价数据缺失的上市公司。本文计算公司股票累计异常收益率时需要用到上市公司股票价格数据，但部分公司数据缺失，因此剔除这些公司。

5、剔除财务数据缺失的上市公司。本文需要用到公司净利润、营业利润、经营活动现金流量、主营业务收入、固定资产原值等财务数据，但部分公司数据缺失，因此剔除这些公司。

经过上述程序，我们最后获得 3,666 个样本公司和年度观测值，其中 2000 、 2001 、 2002 和 2003 年的样本分别为 792 个、 910 个、 983 个和 981个。表1列出了样本筛选过程。本文中使用的公司财务指标、股票价格、

行业分类、上市时间等数据均来自于CSMAR中国股票市场研究数据库。数据处理使用 Stata 8.0 计量分析软件进行。

表 1 样本筛选过程

	2000 至 2003 年	2000 年	2001 年	2002 年	2003 年
各年末上市公司总数	4,759	1,088	1,160	1,224	1,287
减：含 B 股或 H 股的公司数	547	133	135	139	140
当年度新上市的公司数	335	133	69	68	65
金融保险行业的公司数	28	6	7	7	8
股价数据缺失的公司数	176	24	37	26	89
财务数据缺失的公司数	7	0	2	1	4
最终样本公司数	3,666	792	910	983	981

（二）检验模型和变量设定

为了检验净利润及其组成部分在证券定价的相对作用，我们使用类似于 Bowen 等（1987）、Subramanyam（1996）所使用的横截面回归方法。我们首先建立如下一系列检验模型以检验净利润、经营活动现金流量以及净利润其他组成部分的相对和增量价值相关性：

模型 1：$CAR_i = \beta_0 + \beta_1 * NI_i + e_i$

模型 2：$CAR_i = \beta_0 + \beta_1 * CFO_i + e_i$

模型 3：$CAR_i = \beta_0 + \beta_1 * NI_i + \beta_2 * CFO_i + e_i$

模型 4：$CAR_i = \beta_0 + \beta_1 * NDNI_i + e_i$

模型 5：$CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * TA_i + e_i$

模型 6：$CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * NDA_i + e_i$

模型 7：$CAR_i = \beta_0 + \beta_1 * DA_i + \beta_2 * NDNI_i + e_i$

模型 8：$CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * DA_i + \beta_3 * NDA_i + e_i$

其中，β_0 为截距，β_1，β_2，β_3 为回归系数，e_i 为残差。模型中各变量的含义如下：

1、因变量

CAR_i 为公司 i 的股票累计异常收益率。为了确定事件窗口的股票累计异常收益率，需要确定事件窗口的大小及其股票累计异常收益率的计量。我们选择年度事件窗口，有以下几个原因：（1）与会计盈余类似，相当多的现金流量数据有可能在整个年度慢慢为市场参与人知晓；（2）对于较小的事件窗口（比如日、周或者月）要得到有意义的现金流量和（非）操纵性应计数据是不

切实际的；（3）年度报告公布后较小的事件窗口可能无法发现现金流量和（非）操纵性应计的增量信息，因为应计利润信息是慢慢地流向市场的，直到年度报告的公布。与 Fan 和 Wong（2002）一致，本文采用市场调整模型计算累计异常收益率，即股票实际的月收益率减去对应的市场收益率，再进行年度累计，其中累计窗口为 12 个月，即年度报告当年的 5 月份至下一年度的 4 月份（例如，对于 2000 年年报，其累计窗口为 2000 年 5 月至 2001 年 4 月）[6]。

2、自变量

OI_i 为本期营业利润与上期期末总资产的比值，CFO_i 为本期经营活动现金流量与上期期末总资产的比值，OA_i 是公司 i 的营业性总应计利润，计算公式为 $OA_i = OI_i - CFO_i$。我们利用截面 Jones 模型将营业性总应计利润分解为营业性非操纵应计利润（$ONDA$）和营业性操纵应计利润（ODA），其中 $ONDA_i$ 为营业性非操纵性应计利润与上期期末总资产的比值，计算公式如下：

$$ONDA_i = \alpha_1 + \alpha_2 * (\Delta REV_i / A_i) + \alpha_3 * (PPE_i / A_i)$$

其中：ΔREV_i 是公司 i 当期主营业务收入和上期主营业务收入的差额，PPE_i 是公司 i 当期期末厂场、设备等固定资产原值，A_i 是公司 i 上期期末总资产，α_1，α_2，α_3 是行业特征参数。这些行业特征参数 α_1，α_2，α_3 的估计值根据以下模型，并运用经过不同行业分组的数据进行回归取得：

$$OA_i = a_1 + a_2 * (\Delta REV_i / A_i) + a_3 * (PPE_i / A_i) + \varepsilon_i$$

其中：a_1，a_2，a_3 是 α_1，α_2，α_3 的 OLS 估计值，ε_i 为剩余项，代表各公司营业性总应计利润中的操纵性应计利润部分，也即 $ONDA_i$。其他变量含义和上文相同。

在对 OA_i 进行分解之后，我们将 $NDOI_i$ 定义为非操纵性营业利润，计算公式为 $NDOI_i = CFO_i + ONDA_i$。假设 NI_i 为本年净利润与上期期末总资产的比值，那么 NI_i 与 OI_i 之间的差额即为非营业性利润项目 NOI_i，也即 $NOI_i = NI_i - OI_i$。尽管有诸多证据表明中国的上市公司利用非营业性利润项目来操纵利润比较普遍，但是如果将所有非营业性利润项目全部视为操纵性应计利润，则失之偏颇。如何将非营业性利润项目分解为操纵性和非操纵性的部分确实是一个难题，但进行一些适当的区分还是可行的。我们将分行业、分年度的公司非营业性利润项目的均值作为相应行业和年度的非操纵性的非营业性利润项目 $NNOI_i$，其与非营业性利润之间的差额作为操纵性的非营业性利润项目 $DNOI_i$，也即 $DNOI_i = NOI_i - NNOI_i$。理由是，经过公司规模调整后的公司非操纵性的非营业性利润项目在同一行业和同一年度可能是类似的。

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[6] 此外，我们使用了与会计年度相对应的累计窗口（即年度报告当年的 1 月至 12 月）作为敏感性分析，所得到的检验结果无重大差异。

$NDNI_i$为本年净利润中的非操纵性部分与上期期末总资产的比值，计算公式为：$NDNI_i = NI_i - DA_i = CFO_i + NDA_i$。其中，$DA_i$为操纵性应计利润与上期期末总资产的比值，计算公式为：$DA_i = TA_i - NDA_i$。其中，TA_i为总应计利润与上期期末总资产的比值，计算公式为：$TA_i = NI_i - CFO_i$；NDA_i为非操纵性应计，计算公式为：$NDA_i = ONDA_i + NNOI_i$。换言之，DA_i的计算公式为：$DA_i = ODA_i + DNOI_i$。因此总应计利润进行两次分解之后由四个部分组成，也即 $TA_i = NDA_i + DA_i = ONDA_i + NNOI_i + ODA_i + DNOI_i$。

夏立军(2003)在对中国上市公司的利润表和现金流量表进行解析的基础上，对多个盈余管理计量模型及其调整模型在中国证券市场的使用效果进行了比较。研究发现，在中国证券市场上，相对其他模型来说，分行业估计、采用营业性总应计利润作为因变量来估计行业特征参数，并且将非营业性利润项目全部纳入操纵性应计利润中的截面 Jones 模型能够较好地揭示公司的盈余管理。本文上述 ODA_i、$ONDA_i$、DA_i、NDA_i的计算过程基本上是按照这一模型进行的，但我们进一步将非营业性利润项目分解为操纵性和非操纵性两个部分。

（三）检验模型的比较

我们拟用两种方法检验上述八个模型，即首先进行年度截面回归，然后以所有的样本建立混合模型（Pooled）。每个模型在各个估计期间都有拟合系数（调整R^2），它表示自变量对 *CAR*的解释程度。简单地比较模型的拟合系数，无法提供统计上可靠的证据表明哪个模型的解释能力更强。为了在统计上比较各个模型的解释能力，Bowen 等（1986）和 Murdoch 和 Krause（1989）使用弗里德曼秩检验（Friedman's Test of Ranks）。但是，本研究采用的是横截面预测模型，而非单个公司的时间序列模型，所以弗里德曼秩检验是不恰当的。

本文要比较的是相互竞争模型之间的解释能力，而且假定没有优劣之分；Vuong（1989）提供了一种似然比检验，并且没有假定某个模型更接近于“真实的数据产生过程”。从直觉上看，Vuong 检验能够告诉我们哪个模型具有相对更好的解释能力，并且，当各个模型之间都可能相互存在增量解释能力时，Vuong 检验也能够辨别模型解释能力的强弱。因此，本研究使用 Vuong 检验[7]。这样，当模型 1 与模型 2 相比较（模型 1 vs 模型 2），如果 Vuong 检验所构建的 Z 统计量显著为正，那么模型 1 的解释能力更强；如果 Z 统计量显著为负，那么模型 2 的解释能力更强；否则就无法区分模型 1 与 2 的解释能力强弱。

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[7] 关于 Vuong 检验进一步的解释和计算程序，请参见 Dechow（1994）附录 2。

四、实证分析结果及解释

（一）变量描述性统计

各个变量的描述性统计量列示于表 2 。 *NI* 的正值率为 87% ，说明我们的样本偏向盈利的公司，它的平均值为 0.02 ， *NDNI* 的平均值为 0.04 ，表明总体而言样本公司是盈利的。 *CFO* 的平均值为 0.05 ，而且其标准差比 *NI* 的标准差要大一些，这表明 NI 的波动性比 *CFO* 更小； *TA* 、 *NDA* 和 *DA* 的平均值为负。这些结果类似于美国的研究（比如 Sloan ， 1996 ； Subramanyam ， 1996），但是与 Haw 等人（2001）的研究结果不一致。这一方面可能是研究期间不一样，我们的研究期间是2000–2003年， Haw等人的研究期间是 1995–1998 年；另一方面可能是由于数据来源方面的差异，我们的经营活动现金流量数据直接来自上市公司年报，而 Haw等人是估算的；而且，在过去的近10年期间，中国的会计制度已经发生重大变化，在很多方面已经与国际惯例趋同，上市公司管理层拥有更大的选择空间。表2也列示了 *CAR*与各个变量之间的Pearson相关系数。除了非操纵性应计和非操纵性非营业性利润项目之外， *CAR* 与 *NI* 及其组成部分都显著正相关。

（二）模型检验及比较

接下来，我们对上述八个模型进行检验和比较。在建立回归模型时，我们使用的是各个财务数字的水平值，而非通常使用的未预期值，这与 Dechow (1994) 在检验应计制会计的价值相关性时使用会计盈余和现金流量总值的方法是一致的[8] 。表 3 提供了各个模型的统计量，下面对其进行分析。

首先，用净利润与上期期末总资产的比值（*NI*）、经营活动现金流量与上期期末总资产的比值（*CFO*）、非操纵性净利润与上期期末总资产的比值（*NDNI*）估计三个单变量模型，结果如表 3 的第一组所示。为了评价这三个变量的相对信息含量，可对三个模型的系数值和解释能力（调整 R^2）进行比较，这与 Dechow（1994）所用的方法是类似的。假如像 Dechow 所主张的，应计制会计通过减轻了内含于计量短期现金流量的时间和错误匹配问题，而增加了报告净利润的价值相关性，那么，从 *CFO*到 *NDNI*（两者仅相差 *NDA*），

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[8] 使用净利润及其组成部分的水平值，而非通常使用的未预期值，有理论和实证上的支持。 Ohlson 和 Shroff (1992) 得出的结论是，会计盈余水平值本身就可充当解释股票收益率的起点，如果股票收益率和会计盈余水平值都不可预测，那么利用会计盈余水平值必然会带来比较大的拟合系数； Kothari (1992) 描述了作为未预期净利的替代，净利润水平值比净利润的改变量表现更好的条件； Easton 和 Harris (1991) 则为之提供了实证支持，认为会计盈余的水平值和变化量在证券定价中都发挥了作用，并且在解释股票收益率时，会计盈余的水平值不比其未预期值差。

表 2　变量描述性统计

变量	最小值	最大值	均值	标准差	正值率	与 *CAR* 的相关系数
股票累计异常收益率(*CAR*)	−0.01	0.12	0.00	0.02	0.42	—
净利润 / 上期期末总资产（*NI*）	−1.61	0.53	0.02	0.10	0.87	0.320*
营业利润 / 上期期末总资产（*OI*）	−0.78	1.89	0.03	0.09	0.80	0.307*
营业活动现金流量 / 上期期末总资产（*CFO*）	−1.45	1.17	0.05	0.11	0.77	0.152*
营业性应计总额 / 上期期末总资产（*OA*）	−1.09	1.96	−0.02	0.12	0.37	0.084*
营业性操纵应计 / 上期期末总资产（*ODA*）	−1.04	1.79	0.00	0.11	0.55	0.076*
营业性非操纵应计 / 上期期末总资产（*ONDA*）	−0.76	0.81	−0.02	0.05	0.21	0.037**
应计总额 / 上期期末总资产（*TA*）	−1.60	1.62	−0.03	0.13	0.36	0.109*
操纵性应计 / 上期期末总资产（*DA*）	−1.58	1.43	−0.02	0.13	0.46	0.106*
非操纵性应计 / 上期期末总资产（*NDA*）	−0.75	0.83	−0.01	0.54	0.28	0.020
非营业性利润项目 / 上期期末总资产（*NOI*）	−1.88	0.59	−0.01	0.06	0.36	0.068*
非操纵性非营业性利润项目（*NNOI*）	−0.15	0.09	0.01	0.01	0.81	−0.067*
操纵性非营业性利润项目（*DNOI*）	−1.95	0.61	−0.02	0.06	0.26	0.077*
非操纵性经营利润 / 上期期末总资产（*NDOI*）	−1.24	1.14	0.03	0.11	0.72	0.175*
非操纵性净利润 / 上期期末总资产（*NDNI*）	−1.23	1.14	0.04	0.11	0.69	0.166*

注：表中的数据是以所有 3,666 个样本为基础进行计算的。表中的相关系数是指年度 Pearson 相关系数，* 和 ** 分别表示 0.01 和 0.05 以下水平显著（双尾检验）。

系数值和解释能力应该会得到改进；假如像一些理论界人士（如 Revsine ，1991）所主张的，判断性会计选择（*DA*）给报告净利润引入了噪音，那末，从 *NDNI* 到 *NI*（两者仅相差 *DA*），系数值和解释能力不仅得不到改进，甚至会减少。

从表 3 中第一组的三个模型来看，模型 1 、 2 和 4 的系数与调整 R^2 均显著，表明净利润、经营活动现金流量、非操纵性净利润均具有信息含量。与模型 2 相比，模型 1 的系数值和解释能力均得到了显著改进，表 3 第三组模型“1vs2”对应的 Z 值显著为正（13.7），而 *NI* 与 *CFO* 仅相差应计总额（*TA*），这初步表明：市场对应计总额定价了，市场上可能存在净利润的“功能锁定”现象，这与 Dechow（1994）、 Haw 等人（2001）的结论相一致。这表明应计制会计盈余比现金流量指标更有用。与模型 2 相比，模型 4 的系数值和解释能力得到微弱改进，表3第三组模型“4vs2”对应的Z值接近显著（1.85），而 *NDNI* 与 *CFO* 仅相差 *NDA* ，这表明：非操纵性应计的引入并不能显著增加模型的解释能力。与模型 4 相比，模型 1 的系数值和解释能力均得到显著改进，表 3 第三组模型“1vs4”对应的 Z 值显著为正（12.10），而 *NDNI* 与 *NI* 仅相差 *DA* 。所以证据初步表明：净利润的价值相关性大大高于非操纵性净利润的价值相关性，而非操纵性净利润的价值相关性稍微高于经营活动现金流量，操纵性应计给净利润引入了有用的信息，提高了会计盈余的价值相关性。

其次，为了验证净利润与经营活动现金流量之间是否相互具有信息增量，我们建立了模型 3 。表 3 第二组的数据表明，模型 3 中净利润与经营活动现金流量的系数均为正且显著；表 3 第三组模型“3vs1”对应的 Z 值不显著（1.98），说明模型中同时包括 *NI* 和 *CFO* 其解释能力并没有比仅包括 *NI* 时得到显著改进。因此，净利润和经营活动现金流量相互之间均具有信息增量，但是增加经营活动现金流量模型的解释能力并没有得到显著改进。

最后，通过 *CAR* 与净利润各组成部分间的多变量线性回归模型，进一步分析净利润的操纵性与非操纵性部分的信息增量，结果如表3中的第二组数据所示。模型 5 中，把净利润分解成经营活动现金流量和应计总额，调整 R^2 是 10.9% ，比模型 1 和 2 都好；*CFO* 和 *TA* 的系数都显著为正，这表明 *CFO* 和 *TA* 相互之间都具有增量信息，该结果与 Subramanyam（1996）一致，第三组的 Vuong 检验也支持这一点。模型 6 把非操纵性净利润分解成经营活动现金流量和非操纵性应计，调整 R^2 是 2.7% ，对应的系数分别是 0.033 、 0.028 ，并且都显著，这表明非操纵性应计在证券定价中发挥了作用，非操纵性应计与经营活动现金流量之间相互具有信息增量；从模型 2 到模型 6 ，调整 R^2 仅增加 0.5% ，对应的Z值接近显著，因此尽管非操纵性应计在证券定价中发挥了作用，然而非操纵性应计的引入并不能显著增加模型的解释能力。模型7把净利润分解成非操纵性净利润和操纵性应计， *DA*和 *NDNI*的系数都显著为正，

表 3　超常股票收益率与净利润及其组成部分的关系

	截距	*NI*	*CFO*	*TA*	*DA*	*NDA*	*NDNI*	调整 R^2
第一组：单变量模型								
模型 1	0.006	0.068						10.3%
	(15.50)	(20.30)						
模型 2	−0.006		0.028					2.2%
	(−12.80)		(9.20)					
模型 4	−0.005						0.032	2.7%
	(−12.56)						(10.16)	
第二组：多变量模型								
模型 3	−0.006	0.067	0.013					10.9%
	(−15.50)	(18.20)	(5.10)					
模型 5	−0.006		0.079	0.069				10.9%
	(−15.50)		(19.80)	(19.20)				
模型 6	−0.005		0.033			0.028		2.7%
	(−12.40)		(10.10)			(4.06)		
模型 7	−0.005				0.065		0.081	10.8%
	(−15.30)				(18.20)		(20.10)	
模型 8	−0.006		0.082		0.066	0.068		10.9%
	(−15.40)		(20.02)		(18.40)	(9.85)		
第三组：相对解释能力— Vuong 检验								
模型	1vs2	4vs2	5vs2	6vs2	3vs1	1vs4	7vs4	8vs6
调整 R^2 增量（%）	8.10	0.50	8.70	0.50	0.60	7.60	8.10	8.20
Vuong 检验的 Z 值	13.70	1.85	16.10	1.85	1.98	12.10	13.70	14.10

注：括号里的数字是对应系数的 t 值（双尾检验）。表中“1vs2”等列对应的“调整 R^2 增量”是前一模型减后一模型的差。表中参数是 Pooled 模型为基础，样本总数 3,666；年度回归模型参数没有报告，尽管有一些变化，但结果基本一致。

调整 R^2（10.8%）与模型 4 的（2.7%）相差较大，表 3 第三组模型“7vs4”对应的 Z 值（13.70）显著为正；这些都表明，操纵性应计和非操纵性净利润之间相互具有信息增量。模型8把净利润分解成经营活动现金流量、非操纵性应计和操纵性应计，*CFO*、*NDA* 和 *DA* 的系数都为正而且显著，调整 R^2（10.9%）与模型 6 的（2.7%）相比有显著提高，表 3 第三组模型“8vs6”对应的 Z 值（14.10）显著为正。对模型 6、7、8 的分析比较表明，非操纵性应计和操纵性应计都被证券市场定价了，操纵性应计的引入大大提高了模型的解释能力，但是非操纵性应计的引入并不能显著增加模型的解释能力。

总之，以上结果表明，若截面 Jones 模型（用于分解营业性利润）和行业模型（用于分解非营业性利润）能将应计总额正确地分解成非操纵性应计和操纵性应计，则非操纵性应计和操纵性应计都被证券市场定价了，非操纵性应计和操纵性应计在经营活动现金流量之上具有增量信息，改进了净利润解释股票回报的能力。换言之，证券市场在形成股价时，利用了操纵性会计选择，也利用了非操纵性会计选择。此外，我们的证据也表明，净利润、经营活动现金流量、非操纵性净利润均具有信息含量，而且净利润与经营活动现金流量之间相互具有信息增量，经营活动现金流量与应计总额之间相互具有增量信息；操纵性应计给净利润引入了有用的信息，提高了会计盈余的价值相关性，市场上可能存在“利润功能锁定”（Income fixation）现象（Sloan，1996；赵宇龙和王志台，1999）。

（三）对不包括非营业性利润项目的敏感性分析

企业盈余管理的途径包括营业性应计项目和非营业性利润项目。营业性应计项目主要由流动资产和流动负债组成，非营业性利润项目包括投资收益、营业外收入、营业外支出和补贴收入等。在西方研究文献中，证券市场非常成熟，监管也严密，通过非营业性利润项目进行大规模盈余管理比较少见，而主要是通过营业性应计项目进行。而我国上市公司中大股东绝对控制很普遍，非营业性利润项目成为上市公司盈余管理的首选途径（朱红军，2002）。根据前面对各个变量的界定，*NI*、*TA*、*DA* 和 *NDA* 都包括非营业性利润项目，而相对应的四个变量 *OI*、*OA*、*ODA* 和 *ONDA* 都不包括非营业性利润项目。为了检验上述经验证据对非营业性利润项目的敏感性，我们仿照模型1、3、4、5、6、7 和 8，建立如下 7 个模型：

模型 9：$CAR_i = \beta_0 + \beta_1 * OI_i + e_i$

模型 10：$CAR_i = \beta_0 + \beta_1 * OI_i + \beta_2 * CFO_i + e_i$

模型 11：$CAR_i = \beta_0 + \beta_1 * NDOI_i + e_i$

模型 12：$CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * OA_i + e_i$

模型 13：$CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * ONDA_i + e_i$

模型 14：$CAR_i = \beta_0 + \beta_1 * ODA_i + \beta_2 * NDOI_i + e_i$

模型 15：$CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * ODA_i + \beta_3 * ONDA_i + e_i$

表 4 列示了敏感性分析结果。首先，从表 4 第一组来看，模型 9 的系数与调整 R^2 均显著，表明营业利润具有信息含量。与模型 2 相比，模型 9 的系数值和解释能力均得到了显著改进，表 4 第三组模型“9vs2”对应的 Z 值显著为正（10.90），而 *OI* 与 *CFO* 仅相差营业性应计总额（*OA*），这初步表明：市场上可能存在利润的“功能锁定”现象。与模型 2 相比，模型 11 的系数值和解释能力得到改进，表4第三组模型“11vs2”对应的Z值为正(2.10)，这正是营业性非操纵应计的引入所导致的。与模型 11 相比，模型 9 的系数值和解释能力均得到显著改进，表 4 第三组模型“9vs11”对应的 Z 值显著为正(8.80)，而 *OI* 与 *NDOI* 仅相差 *ODA*。这些证据表明，营业利润的价值相关性大大高于非操纵性营业利润的价值相关性，而非操纵性营业利润的价值相关性略高于经营活动现金流量，营业性操纵应计给经营利润引入了有用信息，提高了会计盈余的价值相关性。

其次，为了验证营业利润与经营活动现金流量之间是否相互具有信息增量，我们建立了模型 10。表 4 第二组的数据表明，模型 10 中营业利润与经营活动现金流量的系数均为正而且显著；表 4 第三组模型“10vs9”对应的 Z 值不够显著（1.85），说明模型中同时包括 *OI* 和 *CFO* 其解释能力并没有得到显著改进。因此，营业利润与经营活动现金流量之间相互具有信息增量，但是增加经营活动现金流量模型的解释能力并没有得到显著改进。

最后，通过 *CAR* 与营业利润各组成部分间的多变量线性回归模型，进一步分析营业利润的操纵性与非操纵性部分的信息增量，结果如表4中的第二组数据所示。模型12中，把营业利润分解成经营活动现金流量和营业性应计总额，调整 R^2 是 9.8%，比模型 9 和 2 都好；*CFO* 和 *OA* 的系数都显著为正，这表明 *CFO* 和 *OA* 相互之间都具有增量信息；表 4 第三组的 Vuong 检验也证明了这一点。模型13把非操纵性营业利润分解成经营活动现金流量和营业性非操纵性应计，调整 R^2 是 2.8%，对应的系数分别是 0.033、0.037，并且都显著，这表明营业性非操纵性应计在证券定价中发挥了作用，营业性非操纵性应计与经营活动现金流量之间相互具有信息增量；从模型 2 到模型 13，调整 R^2 仅增加 0.6%，对应的 Z 值不够显著，因此尽管营业性非操纵性应计在证券定价中发挥了作用，然而营业性非操纵性应计的引入并不能显著增加模型的解释能力。模型 14 把营业利润分解成非操纵性经营利润和营业性操纵应计，*ODA* 和 *NDOI* 的系数都显著为正，调整 R^2（9.8%）与模型 11 的（2.9%）相差较大，表 4 第三组模型“14vs11”对应的 Z 值（9.70）显著为正。这些都表明，营业性操纵应计和非操纵性营业利润之间相互具有信息增量，而且营业性操纵应计的引入大大提高了模型的解释能力。模型15把营业利润分解成经营活动现金流量、营业性非操纵性应计和营业性操纵应计，*CFO*、*ONDA* 和 *ODA* 的系数都为正而且显著，调整 R^2（9.9%）相比模型 13 的（2.8%）有显著提高，表 4 第三组模型“15vs13”对应的 Z 值（10.80）显著为正。对模

表 4　超常股票收益率与营业利润及其组成部分的关系

	截距	*OI*	*CFO*	*OA*	*ODA*	*ONDA*	*NDOI*	调整 R^2
第一组：单变量模型								
模型 9	−0.0052	0.063						9.3%
	(−14.8)	(18.7)						
模型 2	−0.006		0.028					2.2%
	(−12.8)		(9.2)					
模型 11	−0.003						0.033	2.9%
	(−12.1)						(10.1)	
第二组：多变量模型								
模型 10	−0.005	0.068	0.014					9.8%
	(−16.1)	(16.9)	(4.2)					
模型 12	−0.007		0.082	0.067				9.8%
	(−17.5)		(19.1)	(17.3)				
模型 13	−0.004		0.033			0.037		2.8%
	(−11.3)		(9.9)			(4.9)		
模型 14	−0.006				0.067		0.081	9.8%
	(−16.6)				(16.7)		(19.5)	
模型 15	−0.006		0.083		0.068	0.070		9.9%
	(−16.0)		(19.4)		(16.8)	(19.7)		
第三组：相对解释能力— Vuong 检验								
模型	9vs2	11vs2	9vs11	10vs9	12vs2	13vs2	14vs11	15vs13
调整 R^2 增量（%）	7.10	0.70	6.40	0.50	7.60	0.60	6.90	7.10
Vuong 检验的 Z 值	10.90	2.10	8.80	1.85	12.70	1.94	9.70	10.80

注：括号里的数字是对应系数的 t 值（双尾检验）。表中“9vs2”对应的“调整 R^2 增量”是模型 9 的调整 R^2 减去模型 2 调整 R^2 的差。表中参数是 Pooled 模型为基础，样本总数 3,666；年度回归模型参数没有报告，尽管有一些变化，但结果基本一致。

型 13 、 14 、 15 的分析比较表明，营业性非操纵性应计和营业性操纵应计都被证券市场定价了，营业性操纵应计的引入大大提高了模型的解释能力，但是营业性非操纵性应计的引入并不能显著增加模型的解释能力。

以上结果表明，表 3 的研究结果对会计盈余或应计项目是否包括非营业性利润项目不敏感。

（四）进一步的分析

由于（非）操纵性应计的定价是对（非）操纵性应计的本质和市场定价机制的共同检验，所以操纵性应计被证券市场定价存在如下的备择解释。其一，因为净利润的操纵性部分具有公司价值相关信息，所以操纵性应计被证券市场定价了，在这个假设下，经理利用财务报告制度，改进了报告净利润反映公司基本价值的能力，例如，经理可能平滑报告净利润，以便减少盈利的暂时性波动，给投资者以信心，也可能利用其判断，传递其知晓的关于公司盈利能力的信息。其二，经理可能机会主义地利用其判断，从而歪曲了报告净利润，给会计盈余引入了噪音，降低了会计盈余的价值相关性，因此操纵性应计被证券市场定价，可能是证券市场错误定价的证据，可能是因为存在对操纵性盈余数字的“功能锁定”现象，即证券市场不能识别经理的机会主义行为。

通过检验操纵性应计是否提高了会计盈余反映未来盈利的能力，我们可以进一步检验这两个解释。由于我国《企业会计准则—现金流量表》实施的时间较短，无法进行时间序列分析，所以我们拟用以下三种方法：首先，通过净利润各个组成部分的相关分析，检验是否存在收益平滑；其次，检验收益平滑对净利润、经营活动现金流量和非操纵性净利润的持续性与可预测性的影响，方法是考察净利润、经营活动现金流量和非操纵性净利润变量之间的自相关与交叉相关系数；最后，检验（非）操纵性应计是否传递了关于未来盈利能力的信息，方法是分析（非）操纵性应计与未来盈利能力计量指标之间的关联性。

1 、净利润与其组成部分的相关分析

会计盈余在发挥证券估价或契约作用时，其平稳或者可预期是理想的特性，有利于降低风险、提高股票价格或者最大化经理人的薪酬。因此，盈余管理的动机之一是平滑会计盈余。“平滑”是盈余管理的一种，其目的是减少所报告的会计盈余和“正常”或“预期”值之间的差异（Morses ， 1987）。尽管收益平滑天生具有机会主义特性，但是未必所有的平滑都是机会主义的。如果平滑收益是为了达到市场预期、增加盈余的及时性或者减轻暂时性的现金流量所带来的影响，使得报告盈余表现得更平稳，那么收益平滑就有可能提高盈余的价值相关性。接下来我们通过变量之间的相关分析，检验是否存在收益平滑的证据。

表 5 列示了各个自变量之间的 Pearson 相关系数。净利润、经营利润与其

表 5　自变量之间相关系数表

	OI	*CFO*	*OA*	*ODA*	*TA*	*DA*	*ONDA*	*NDOI*	*NDA*	*NDNI*	*NOI*
NI	0.82*	0.22*	0.39*	0.36*	0.56*	0.54*	0.16*	0.30*	0.13*	0.23*	0.43*
OI		0.26*	0.50*	0.44*	0.40*	0.33*	0.20*	0.36*	0.20*	0.36*	−0.16*
CFO			−0.71*	−0.65*	−0.70*	−0.61*	−0.30*	0.89*	−0.28*	0.88*	−0.03
OA				0.92*	0.90*	0.79*	0.41*	−0.55*	0.40*	−0.54*	−0.09*
ODA					0.82*	0.87*	−0.01*	−0.67*	0.00	−0.67*	−0.07*
TA						0.91*	0.36*	−0.54*	0.34*	−0.54*	0.35*
DA							−0.03	−0.65*	−0.07*	−0.65*	0.41*
ONDA								0.16*	0.97*	0.17*	−0.04*
NDOI									0.16*	0.99*	−0.05*
NDA										0.20*	−0.08*
NDNI											−0.07*

注：表中的数据是以所有 3,666 个样本为基础进行计算的。表中的相关系数是指年度 Pearson 相关系数，* 表示 0.01 以下水平显著（双尾检验）。

各个组成部分都显著正相关，这不足为奇，因为会计盈余只是其各个组成部分的综合。*CFO* 与 *OA* 、 *TA* 之间的相关系数分别是 –0.71 、 –0.70 ，这表明经营活动现金流量与应计项目显著负相关，这与前人（如 Dechow ， 1994；Subramanyam ， 1996；Haw 等人， 2001）的证据是一致的，这种负相关可能产生于应计制会计，也可能产生于收益平滑；*CFO* 与 *ODA* 、 *DA* 、 *ONDA* 、 *NDA* 之间的相关系数分别是 –0.65 、 –0.61 、 –0.30 、 –0.28 ，这表明经营活动现金流量与操纵性应计和非操纵性应计都显著负相关，并且主要是操纵性应计导致了经营活动现金流量与应计项目间的负相关；*NDNI* 与 *DA* 、 *NDOI* 与 *ODA* 之间的相关系数分别是 –0.65 、 –0.67 ，存在显著负相关关系；操纵性应计与非操纵性应计之间、营业性非操纵性应计和营业性操纵应计之间都显著负相关。这些证据表明存在收益平滑现象。

2 、自相关与交叉相关分析

表 6 列示了净利润、经营活动现金流量和非操纵性净利润变量之间的自相关与交叉相关系数，自相关性越强，意味着越具有持续性。首先，从自相关系数来看，净利润的持续性最强，经营活动现金流量次之，非操纵性净利润最弱，例如， *NI* 、 *CFO* 和 *NDNI* 变量滞后一期自相关系数分别是 0.48 、 0.13 和 0.104 。尽管随着滞后时间的拉长，自相关系数变得越来越弱，但是滞后二、三期自相关系数也可以得到类似结果。其次，从交叉相关系数来看，非操纵性净利润与历史净利润和历史经营活动现金流量的相关性，不一定比经营活动现金流量与历史非操纵性净利润和历史净利润的相关性强，例如，非操纵性净利润与滞后一期净利润和经营活动现金流量的相关系数都是 0.12（在 0.01水平下显著），而经营活动现金流量与滞后一期非操纵性净利润和净利润的相关系数分别是 0.08 、 0.05（统计上不显著），而滞后二、三期的相关系数排序却与此不同。此外，我们分别用 *OI* 、 *ONDA* 、 *ODA* 、 *NDOI* 代替 *NI* 、 *NDA* 、 *DA* 、 *NDNI* ，也即剔除非营业性利润项目的影响，得到类似的结果。总之，会计盈余的持续性最强，非操纵性净利润（营业利润）与经营活动现金流量的持续性各有强弱。

表 6 *NI* 、 *CFO* 与 *NDNI* 自相关与交叉相关系数表

变量	滞后一期（N = 747）			滞后二期（N = 747）			滞后三期（N = 747）		
	NI_{t-1}	CFO_{t-1}	$NDNI_{t-1}$	NI_{t-2}	CFO_{t-2}	$NDNI_{t-2}$	NI_{t-3}	CFO_{t-3}	$NDNI_{t-3}$
NI_t	0.48*	0.29*	0.28*	0.25*	0.24*	0.25*	0.11*	0.14*	0.17*
CFO_t	0.05	0.13*	0.08*	0.05	0.18*	0.12*	0.02	0.10*	0.07*
$NDNI_t$	0.12*	0.12*	0.104*	0.04	0.12*	0.14*	0.00	0.04	0.08*

注：表中的数据是以所有可以获得的样本为基础进行计算的，“N”表示样本数。表中的相关系数是指 Pearson 相关系数，“*”表示 0.01 以下水平显著（双尾检验）。

3、操纵性应计与未来盈利能力

以前的研究表明，经理利用公认会计原则容许的判断向市场传递私人信息，这些信息能够反映企业的经济价值。操纵性应计被证券市场定价，未必是传递私人信息的有力证据，但是也许与这个背景相吻合。为了检验（非）操纵性应计是否传递了关于未来盈利能力的信息，我们直接建立多元回归模型，以提前一、二、三期经营活动现金流量、非操纵性净利润和净利润为因变量，作为未来盈利能力的计量指标，自变量包括经营活动现金流量、非操纵性应计和操纵性应计。表 7 列示了所有的回归结果。表 7 第一组报告了与提前一期盈

表 7 净利润组成部分与未来 *CFO* 、 *NDNI* 、 *NI* 的回归结果统计表

因变量	自变量				调整 R^2	去除 *DA* 后的调整 R^2 变化
	截矩	*CFO*	*NDA*	*DA*		
第一组：提前一期盈利能力预测模型（N = 2241）						
CFO_{t+1}	0.032	0.240	−0.102	−0.001	0.039	0.014
	(11.800)	(6.800)	(−1.400)	(−3.900)		[2.380]
$NDNI_{t+1}$	0.020	0.300	0.045	0.135	0.037	0.011
	(3.700)	(8.900)	(0.950)	(4.300)		[2.200]
NI_{t+1}	−0.003	0.630	0.460	0.417	0.220	0.075
	(−2.000)	(25.900)	(11.400)	(21.400)		[12.300]
第二组：提前二期盈利能力预测模型（N = 1494）						
CFO_{t+2}	0.042	0.220	0.011	−0.010	0.032	0.011
	(11.300)	(5.200)	(0.230)	(−2.200)		[2.300]
$NDNI_{t+2}$	0.021	0.139	0.126	−0.013	0.023	0.010
	(5.800)	(2.900)	(1.750)	(−2.900)		[2.100]
NI_{t+2}	−0.012	0.670	0.270	0.208	0.074	0.023
	(−2.300)	(12.800)	(4.200)	(5.400)		[3.200]
第三组：提前三期盈利能力预测模型（N = 474）						
CFO_{t+3}	0.029	0.103	0.010	−0.010	0.006	0.002
	(4.700)	(1.500)	(0.120)	(−0.300)		[0.630]
$NDNI_{t+3}$	0.017	0.050	0.180	−0.490	0.0048	0.001
	(2.800)	(0.600)	(1.300)	(−1.410)		[0.350]
NI_{t+3}	−0.002	0.200	0.236	0.035	0.030	0.007
	(−0.650)	(3.400)	(2.700)	(3.700)		[0.930]

注：表中的数据是以所有可以获得的样本为基础进行计算的，N表示样本数。圆括号中是系数的 T 值。“调整 R^2”对应的是三变量预测模型拟合系数；“调整 R^2 增量”是三变量预测模型拟合系数相对二变量预测模型（仅相差 *DAC*）的增量，方括号中是 Vuong 检验对应的 Z 统计量，显著性水平为 0.01（双尾检验）。

利能力预测有关的结果。经营活动现金流量、非操纵性应计、操纵性应计解释经营活动现金流量、非操纵性净利润和净利润的 3.9% 、 3.7% 和 22% ； *CFO* 和 *DA* 在三个预测模型中均显著，而 *NDA* 只在一个预测模型中显著。最后，我们将三个盈利能力预测模型中的 *DA* 变量去除，相应的调整 R^2 增量及其 Vuong检验Z统计量列示在第一组的最后一列；表中的结果表明，去除 *DA*变量无法提高模型的预测能力，有时反而降低。

表 7 第二、三组分别列示了提前二、三期盈利能力预测模型的回归结果。由分析得知，随着提前期间的拉长，模型的解释能力逐渐降低； *CFO* 和 *DA* 在大部分模型中都显著，而 *NDA* 只在个别模型中显著。此外，我们分别用 *OI* 、 *ONDA* 、 *ODA* 、 *NDOI* 代替 *NI* 、 *NDA* 、 *DA* 、 *NDNI* ，也即剔除非营业性利润项目的影响，所得到的结果类似。

表 7 的结果表明，经营活动现金流量和操纵性应计都有利于预测未来的盈利能力，而且相互具有信息增量，而非操纵性应计预测未来盈利能力的作用较弱，这与前面关于非操纵性应计的引入无法显著地提高模型的解释能力是相一致的。因此经理可能利用操纵性应计向外部投资者传递关于未来盈利能力的私人信息。

总之，进一步的证据表明，操纵性应计被证券市场定价是因为会计盈余的操纵性部分传递了与公司价值有关的信息，有利于预测公司未来的盈利能力，经理人员通过判断使得收益平滑，使得会计盈余更能够反映企业的经济基本面，提高了会计盈余的持续性和价值相关性。

五、研究结论与启示

尽管会计盈余的价值相关性为国内外诸多研究所证实，国内一些研究也证实现金流量具有价值相关性（比如，赵春光， 2004），但是关于会计盈余中的应计总额及其中的非操纵性应计和操纵性应计，是否有利于证券定价？得出的结论众说纷纭。一方面，FASB等会计准则制定机构认为，正是应计项目使得会计盈余成为一个有用的业绩计量指标，因此会计盈余比现金流量更受市场的青睐；另一方面，现行会计准则允许企业有一定的灵活性，从而使应计制会计难免不受管理当局主观判断的影响，可能会促使经理机会主义地操纵利润，因而歪曲了报告净利润。提供现金流量表，是否在利润表之外提供了增量信息？证券市场对应计总额、（非）操纵性应计定价了吗？本文对这些问题进行了探讨。

本文以 2000 至 2003 年作为研究窗口，样本包括来自在沪市和深市的 A 股公司，共3,666个公司/年度。我们建立了多个线性回归模型，以股票累计异常收益率为因变量，自变量是净利润、经营利润、经营活动现金流量、应计总额、操纵性应计、非操纵性应计、非操纵性净利润水平量的若干组合。其

中，我们利用截面 Jones 模型将营业性应计总额分解成营业性操纵应计和营业性非操纵性应计，并且利用行业模型将非营业性利润分解为操纵性部分和非操纵性部分。通过对模型间的系数与解释能力进行比较，以及 Vuong 检验，并辅之以敏感性测试，我们得出本文的主要结论。

我们的证据表明，若本文使用的截面 Jones 模型和行业模型能将应计总额正确地分解成非操纵性应计和操纵性应计，则操纵性应计和非操纵性应计被证券市场定价了，操纵性应计和非操纵性应计在经营活动现金流量之外具有增量信息，改进了净利润解释股票回报的能力。换言之，证券市场在形成股价时，利用了操纵性会计选择，也利用了非操纵性会计选择。我们进一步的证据表明，会计盈余的操纵性部分传递了与公司价值有关的信息，有利于预测公司未来的盈利能力，经理人通过判断使得收益平滑，使得会计盈余更能够反映企业的经济基本面，提高了会计盈余的持续性和价值相关性。

此外，通过净利润与其各个组成部分的相关分析，我们得到收益平滑的证据；净利润、经营活动现金流量和非操纵性净利润变量之间的自相关与交叉相关系数分析表明，净利润的持续性最强，非操纵性净利润与经营活动现金流量的持续性各有强弱；通过建立盈利能力预测模型，我们发现，经营活动现金流量和操纵性应计都有利于预测未来的盈利能力，而且相互具有信息增量，而非操纵性应计预测未来的盈利能力的作用较弱。

对于新兴加转轨的中国资本市场，我们的实证结果意味着：（1）应计制会计比现金制会计更具信息含量，不仅因为它减轻了内含于计量短期现金流量的时间和错误匹配问题（Dechow，1994），更因为会计准则中的灵活性容许经理反映不为盈余非操纵性部分所涵盖的价值相关信息；（2）自 1998 年现金流量表准则颁布实施以来，尽管中国的投资者在估价过程中同样重视会计盈余和经营活动现金流量信息，但是“利润功能锁定”现象可能仍然存在；（3）操纵性应计和非操纵性应计被证券市场定价，说明财政部陆续发布的若干具体会计准则和《企业会计制度》，虽然增加了公司管理层在会计方法选择和会计估计方面的灵活性（Flexibility），带来了更多盈余管理的机会，却未必降低了会计盈余的持续性和价值相关性。

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THE VALUE RELEVANCE OF EARNINGS AND THEIR COMPONENTS — EMPIRICAL EVIDENCE FROM THE SHANGHAI AND SHENZHEN STOCK EXCHANGES[1]

Guoqing Zhang,[2] Lijun Xia,[3] and Yiqiang Fang[4]

ABSTRACT

Using firms listed on the Chinese securities market from 2000 to 2003 as our sample, this study investigates the value relevance of earnings and their components. We first explore the association between net income and cumulated abnormal return. By decomposing the net income into cash flows from operations, discretionary and non-discretionary accruals, we examine the association between the various components of net income and cumulated abnormal return. We find that the net income and cash flows from operations have incremental information content over each other and that both discretionary and non-discretionary accruals are priced by the market. They also have incremental information content beyond cash flows from operations, and improve the ability of net income to explain returns. Further evidence shows that the discretionary part of earnings communicates useful information about firm value, helps forecast the future profitability of the firm, improves the ability of earnings to mirror the fundamental economic value of the firm, and enhances the persistence and predictability of earnings.

Keywords: Value Relevance, Earnings, Cash Flows from Operations, Discretionary Accruals, Non-discretionary Accruals

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[2] Guoqing Zhang, Lecturer, Accounting Department, School of Business, Xiamen University. Address: Accounting Department, School of Business, Xiamen University (361005). E-mail: gqzhang@xmu.edu.com.

[3] Lijun Xia, Full-time Research Fellow, Institute of Accounting and Finance, Shanghai University of Finance and Economics.

[4] Yiqiang Fang, the Shanghai Headquarters of the People's Bank of China.

I. INTRODUCTION

In the face of various accounting scandals, such as those that happened to Enron, WorldCom, Conseco, GlobalCrossing, United Airlines, and Yinguangxia, we need to reflect on the bias brought about by current financial accounting models that focus on historical information, single earnings per share (EPS), and current profit. Almost all the collapses of these companies began with huge revenue and profit, and profits manipulation was not uncommon. Investors might be concerned about the future of a company. Rather than accounting earnings, the intrinsic value of a company is determined by the scale and speed of that company to attain (free) cash flows. What the investors concern about may be the future of a company alone. The intrinsic value of a company is determined by the scale and speed of that company and not accounting earnings to attain (free) cash flows. Therefore, it is time to call for operating cash flow and free cash flow, and to water down the impact of accounting profit on corporate valuation.

With the development of the Chinese securities market, both the regulator and investors are more and more concerned about accounting information. On the one hand, the empirical evidence shows that investors have made use of accounting numbers, especially accounting earnings, for decision making. Accounting numbers are also used as a regulation benchmark[5] in certain rules and regulations. On the other hand, economists have identified an association between future cash flow and corporate value, and future cash flow is the major variable of the economic model of corporate value. Cash flow not only best reflects the nature of a firm, but also determines its fate. Among all the valuation approaches, the one based on cash flows has the highest authority, and only earnings that are supported by cash flows can add value to the company. Cash flow also has stronger explanatory power over the accounting profit in earnings quality. Moreover, foreign empirical research shows that as the association between share price and corporate profit becomes weaker, the association between share price and cash flows becomes stronger (Chen *et al.*, 2002).

The high interest rate and frequent corporate bankruptcy that took place in the 1970s in the United States alerted people to the relative usefulness of accrual accounting numbers and cash flow numbers. As a result, the Financial Accounting Standards No. 95 (SFAC NO. 95) *The Statement of Cash Flows* was promulgated, in which the Statement of Changes in Financial Position was replaced by the Statement of Cash Flows. Such an emphasis on cash flows deviates from the dominating accrual-based accounting system. Under the current accrual-based accounting system, accruals are indispensable components for determining earnings. The accrual procedure is the core of financial accounting and the current framework of financial statements. Although the information perspective (that is, that financial statements should provide useful information to assess future cash flow, which is specified in

[5] For example, the regulation on rights issues of Chinese listed firms uses *ROE* (return on equity) as a regulation benchmark.

SFAC NO. 1) potentially represents a dramatic shift in the purpose of financial statements, the earnings-oriented valuation method, which refers to the approach of discounting cash flows, is a new trend in securities analysis. However, the Financial Accounting Standards Board (FASB) concluded that accrual accounting with its net income number is still superior to cash flow accounting, which contains information about future cash flows (Beaver, 1998). The FASB (1978) argues that information about enterprise earnings based on accrual accounting generally provides a better indication of an enterprise's present and ongoing ability to generate cash flows than information limited to the financial aspects of cash receipts and payments; and the primary focus of financial reporting is information on earnings and their components.

Accrual accounting represents the transfer or accumulation of cash flows of a firm and reflects information other than cash receipts and disbursements. For example, inventory, under the lower cost or market rule, may mirror information on salability of inventory. More generally, the accrued earnings reflect the management's expectations about future cash flows and are based on an information system potentially more comprehensive than past and current cash flows. As suggested by the FASB, accrual accounting may transform cash flows to provide a better indicator of future cash flows and dividend paying ability than current cash flows do. In this context, accrual accounting can be viewed as a potentially cost-effective compromise between merely reporting cash flows and a more ambitious system of fuller disclosure (Beaver, 1998).

On 11 February 2000, the FASB published the Statement of Financial Accounting Concepts No. 7, *Using Cash Flow Information and Present Value in Accounting Measurements*. This statement provides a framework for using future cash flows as an accounting measurement basis during initial and fresh-start recognitions and for interest allocation, and puts forward a general principle to guide the use of the present value. In April 1997, the Accounting Standards Board (ASB) of the UK promulgated a similar draft, *the Discount Used by Financial Accounting*. The International Accounting Standards Committee (IASC, now called IASB) set up a steering committee specialising in studying the use of present value. On 18 March 1998, the Ministry of Finance of the People's Republic of China issued *Accounting Standard for Business Enterprises—Cash Flow Statements*, and this was revised on 18 January 2001. All this indicates that people again gave due regard to cash-based cash flow information.

Since 1998, all Chinese enterprises have been required to prepare cash flow statements, which aim at providing users with information on the inflow and outflow of cash and cash equivalents in an accounting period, hence enabling financial statement users to understand and evaluate the enterprise's ability to generate cash and cash equivalents, predict future cash flows of the enterprise, and make relevant decisions accordingly. Accrual earnings are viewed as a superior measurement of firm performance to cash flows because they mitigate timing and mismatching problems inherited in measuring cash flows over short intervals (Dechow, 1994). However, due to the flexibility of the current Generally Accepted Accounting Prin-

ciple (GAAP) in China, accrual accounting is undoubtedly subject to the discretion and opportunism of managers, who take the final responsibility for preparing and issuing the financial reports. On the one hand, managerial discretion could improve earnings information content by allowing communication of private information. On the other hand, with the existence of management remuneration contracts, misalignment of managers' and shareholders' incentives could induce managers to take advantage of the flexibility of GAAP to opportunistically manipulate earnings, thus creating noise in the reported earnings (Subramanyam, 1996). Do cash flow statements carry incremental information beyond the income statement? How does the securities market price net income and its components? All these questions remain open, and we try to answer all of them in the context of the Chinese securities market.

II. LITERATURE REVIEW

Under the current accrual accounting practice, accrued earnings (total accruals) are fundamental in deriving the net income from cash flows. According to Jones (1991), the net income is the sum of cash flows and total accruals. Though researchers have long extensively examined the accounting choice from a contracting perspective, study of the relationship between accounting choice and the pricing of earnings as well as their components has only been conducted fairly recently. Some studies examine the capital market pricing of specific discretionary accruals items. For example, the exclusion of special items improves the ability of net income to explain stock return (Dechow, 1994). Prior studies based on the mature capital market such as in the United States and the UK examine whether accrued earnings provide incremental information beyond cash flows from operations and improve the value relevance of accrual earnings, and whether capital markets price discretionary accruals and non-discretionary accruals in the same manner. Certain studies (Bowen *et al.*, 1987; Wilson, 1986, 1987; Dechow, 1994; Cheng *et al.*, 1997) show that accrued earnings and cash flows from operations have incremental information content over each other, and that the stock market prices them differently. However, Bernard and Stober (1989) show that the decomposition of net income into accrued earnings and cash flows from operations provides no incremental information beyond the net income.

Sloan (1996) investigates the market pricing of total accruals. He finds that the market fails to fully appreciate the accrual component of earnings of lower persistence and, consequently, overprices total accruals. Using quarterly data, Collins and Hribar (2000) also find that total accruals are overpriced by the market. However, they do not investigate whether the overpricing is due to discretionary accruals, non-discretionary accruals, or both. Subramanyam (1996) finds that the market prices discretionary accruals based on Jones's (1991) model, in which discretionary accruals are positively associated with future profitability and dividend changes. Further evidence shows that income smoothing is pervasive, which improves the persistence and predictability of reported earnings; that is, managerial discretion

improves the ability of earnings to reflect the economic value. However, according to Subramanyam (1996), the fact that discretionary accruals are positively related to future profitability does not necessarily mean that the market rationally prices these accruals with respect to their association with future profitability. Teoh *et al.* (1998a, b) and Rangan (1998) document that managers choose positive discretionary accruals to opportunistically increase earnings before initial public offerings (IPOs) or seasoned equity offerings (SEOs), and that the market overprices these discretionary accruals. However, the extant literature has not investigated whether the market misprices discretionary accruals in more general settings where managers may or may not have opportunistic incentives to manipulate earnings. Xie (2001) extends the prior studies. His results suggest that the market overprices discretionary accruals, but the evidence on the overpricing of non-discretionary accruals is mixed and weak. He argues that Sloan's findings regarding the lack of persistence and the overpricing of total accruals are largely due to discretionary accruals, and that the overpricing of discretionary accruals arises in general contexts and is not limited to IPOs or SEOs.

Various studies based on the Chinese capital market explore similar issues with mixed results. Haw *et al.* (2001) regress annual market-adjusted stock returns on the levels of earnings and their components. Based on a sample of 1,561 firm-year observations of Chinese listed firms during the period 1995–98, the results show that earnings have relative information content over cash flows from operations, but cash flows from operations have no relative information content over earnings. Further, earnings have greater persistence and predictability than cash flows from operations, and both discretionary and non-discretionary accruals are priced by the market. Liu (2001) finds that both earnings and cash flows from operations have value relevance in China, and incremental value relevance over each other. However, Lu *et al.*'s (2001) results indicate that the value relevance of Chinese accounting information is mainly embodied in earnings, and that cash flows from operations have neither value relevance nor incremental value relevance. Moreover, since 1998, the accounting settings of China have changed a great deal, particularly with the issuance of the accounting standard of cash flow statements. Do cash flow statements have incremental information content beyond the income statement? Does the securities market price discretionary and non-discretionary accruals? Evidence on these issues would not only help us gain a better understanding of how the capital markets process accounting information, but also provide us with insights into the nature of discretionary and non-discretionary accruals, and the economic incentives for discretionary accounting choice.

III. RESEARCH METHODOLOGY

3.1 Sample Selection and Data Source

We choose all the firms listed on both the Shanghai and Shenzhen Stock Exchanges (SHSE and SZSE) from 2000 to 2003 as our initial sample. We need the detailed information on the industry categories of listed firms for discretionary accruals

estimation, but such information was not available from the China Securities Regulatory Commission until 2000. At the end of 2000, 2001, 2002, and 2003, there were 1,088, 1,160, 1,224, and 1,287 listed firms, respectively. The following firms are excluded from our sample:

1. Firms with B or H shares at the end of each sample year. Unlike other firms, these firms are under both domestic and overseas regulatory supervision with different types of investors. For the sake of focusing on our research objective, these firms are excluded.
2. IPO firms that have listed for less than one year till the end of the sample year as we need to use the financial ratios of last year for discretionary accruals estimation, but those ratios of IPO firms are usually estimated. Moreover, the size and equity structure of these firms experience drastic changes for listing purposes which will affect the accuracy of discretionary accruals estimation.
3. Firms in the financial or insurance industry as they have special accruals compared with firms in other industries.
4. Firms without the stock price data. We need to use the stock price data to calculate the cumulated abnormal return, but some firms have no such data, so we have to exclude them.
5. Firms without the financial data. We need to use data on net income, operating income, cash flows from operations, main operating revenue, the cost of fixed assets, and so on, but some firms do not have such data, so we have to exclude them.

We now have 3,666 firm-year observations after excluding all the above firms, and the number of observations in 2000, 2001, 2002, and 2003 is 792, 910, 983, and 981, respectively. Table 1 lists the sample selection process. The data on financial ratios, stock price, industry category, and listing age are from the CSMAR database. We use Stata 8.0 as our data analysis software.

Table 1 Sample Selection Process

	2000 to 2003	2000	2001	2002	2003
Number of firms listed at the end of each year	4,759	1,088	1,160	1,224	1,287
Exclude: Firms with B or H shares	547	133	135	139	140
IPO firms	335	133	69	68	65
Firms in financial or insurance industry	28	6	7	7	8
Firms without stock price data	176	24	37	26	89
Firms without financial data	7	0	2	1	4
The final sample	3,666	792	910	983	981

3.2 The Model and Variables

To test and compare the role of net income and its components in stock pricing, we use the cross-sectional regression method like that of Bowen *et al.* (1987) and Subramanyam (1996). We first construct a series of models, as listed below, to test

the relative and incremental value relevance of net income, cash flows from operations, and other components of net income.

Model 1: $CAR_i = \beta_0 + \beta_1 * NI_i + e_i$
Model 2: $CAR_i = \beta_0 + \beta_1 * CFO_i + e_i$
Model 3: $CAR_i = \beta_0 + \beta_1 * NI_i + \beta_2 * CFO_i + e_i$
Model 4: $CAR_i = \beta_0 + \beta_1 * NDNI_i + e_i$
Model 5: $CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * TA_i + e_i$
Model 6: $CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * NDA_i + e_i$
Model 7: $CAR_i = \beta_0 + \beta_1 * DA_i + \beta_2 * NDNI_i + e_i$
Model 8: $CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * DA_i + \beta_3 * NDA_i + e_i$

where β_0 is the intercept; β_1, β_2, and β_3 are the coefficients; and e_i is the residual. The definitions of the variable in the model are given below.

3.2.1 Dependent Variables

CAR_i is the cumulated abnormal return of firm *i*. To calculate the *CAR* of the event window, we need to determine the length of the window and the method of calculating *CAR*. We determine the window as one year for the following reasons: (1) like accounting earnings, the market may gradually be aware of most of the information on cash flows within the whole year; (2) it is impracticable to obtain meaningful data on cash flows and discretionary or non-discretionary accruals for the short window such as day, week, or month; and (3) the short window after the disclosure date of the annual reports may not be suitable for investigating the incremental information of cash flows and discretionary or non-discretionary accruals because the information of accrued earnings flows slowly to the market till the disclosure of the annual reports. Consistent with Fan and Wong (2002), we calculate *CAR* by using the market-adjusted model; that is, the cumulated 12-month (from May to April of the next year; for example, for the 2000 annual report, the window is from May 2000 to April 2001) difference between the actual monthly return and the corresponding market return.[6]

3.2.2 Independent Variables

OI_i is the operating income of the current year divided by the total assets of firm *i* at the end of the previous year. CFO_i is cash flows from operations of the current year divided by the total assets at the end of the previous year of firm *i*. OA_i is the operating accruals of firm *i*; that is, $OA_i = OI_i - CFO_i$. We decompose the operating accruals into operating non-discretionary accruals (*ONDA*) and operating discretionary accruals (*ODA*) by using the cross-sectional Jones model, where $ONDA_i$ is the operating non-discretionary accruals divided by the total assets at the end of the previous year of firm *i*. Its formula is as follows:

$$ONDA_i = \alpha_1 + \alpha_2 * (\Delta REV_i/A_i) + \alpha_3 * (PPE_i/A_i),$$

[6] Besides this window, we use the window of accounting year (from January to December of the year of the annual report) as a sensitivity test. The results have no substantial difference.

where ΔREV_i is the difference between the sales from major operating activities of firm i of the current year and that of the previous year. PPE_i is the original value of the fixed assets such as property, plant, and equipment of firm i at the end of the current year. A_i is the total assets of firm i at the end of the previous year. α_1, α_2, and α_3 are industry characteristic parameters. The estimated value of these parameters can be obtained from the following model and the regression of the data taken from different industries:

$$OA_i = a_1 + a_2 * (\Delta REV_i/A_i) + a_3*(PPE_i/A_i) + \varepsilon_i,$$

where a_1, a_2, and a_3 are the OLS estimation value of α_1, α_2, and α_3. ε_i is the residual item, representing discretionary accruals in the operating accruals of firm i; that is, $ONDA_i$. The definition of other variables is the same as above.

After the decomposition, we define $NDOI_i$ as the non-discretionary operating income, and it is calculated by $NDOI_i = CFO_i + ONDA_i$. If we define NI_i as the ratio of net income of the current year over the total assets of the previous year, then the difference between NI_i and OI_i is the non-operating income (NOI_i); that is, $NOI_i = NI_i - OI_i$. Though there is much evidence indicating that Chinese listed firms generally use non-operating income items to engage in earnings management, there may be bias if we treat the whole non-operating income as discretionary. It is difficult, but not infeasible, to decompose non-operating income items into discretionary and non-discretionary parts. In this paper, we treat the average non-operating income for certain year and industry as the non-discretionary non-operating income ($NNOI_i$) in that year and industry, and the difference between non-operating income and $NNOI_i$ as discretionary non-operating income ($DNOI_i$); that is, $DNOI_i = NOI_i - NNOI_i$. The reason for this is that the non-discretionary non-operating income of different firms adjusted by their firm size might be similar to those of the same industry and year.

$NDNI_i$ is the non-discretionary part of the net income of the current year divided by the total assets of the previous year, and it is calculated as $NDNI_i = NI_i - DA_i = CFO_i + NDA_i$. DA_i is the discretionary accruals divided by the total assets of the previous year, and it is calculated as $DA_i = TA_i - NDA_i$, where TA_i is the total accruals divided by the total assets of the previous year; that is, $TA_i = NI_i - CFO_i$. NDA_i is the non-discretionary accruals, and it is calculated as $NDA_i = ONDA_i + NNOI_i$. In other words, $DA_i = ODA_i + DNOI_i$. Therefore, the total accruals can be decomposed into four parts: $TA_i = NDA_i + DA_i = ONDA_i + NNOI_i + ODA_i + DNOI_i$.

Xia (2003) evaluates many earnings management measuring models and their adjustments based on the decomposition of the income statement and cash flow statement of Chinese listed firms. He finds that, in the Chinese stock market, compared with other models, the basic cross-sectional Jones model that estimates the characteristic parameters by industry and by taking total operating accruals as dependent variable, and treats all of the non-operating income items as discretionary, can better disclose earnings management. The above process of calculating ODA_i, $ONDA_i$, DA_i, and NDA_i is based on this model, and we further decompose the non-operating income into discretionary and non-discretionary parts.

3.3 The Comparison of Models

Two methods are used to test the above eight models: we first run cross-sectional regressions by year, and then with pooled data including all firm-years. Each model has the R-square statistic in each regression period, and this statistic indicates the explanatory power of the independent variables for *CAR*. Simply comparing the R-square of each model cannot provide us with reliable evidence on which model is superior in explanatory power. To compare the explanatory power of each model, Bowen *et al.* (1986) and Murdoch and Krause (1989) use Friedman's Test of Ranks. But what we are doing is comparing cross-sectional models rather than time-series models for each firm, so Friedman's Test of Ranks is not suitable for us.

We compare the relative explanatory power of the competing models with the assumption that one model is not superior to another. Vuong (1989) provides a likelihood ratio test, and assumes that no model is closer to the real process of data production. Intuitively, Vuong's test can tell us which model has more explanatory power and which model's explanatory power is stronger when each model has incremental explanatory power to the other. Therefore, we use Vuong's test in this paper.[7] When Model 1 is compared with Model 2 (Model 1 vs Model 2), if the Z statistic of Vuong's test is significantly positive, then this indicates that the explanatory power of Model 1 is stronger; if the Z statistic of Vuong's test is significantly negative, then this indicates that the explanatory power of Model 2 is stronger; otherwise, it is not possible to distinguish the explanatory powers of Models 1 and 2.

IV. EMPIRICAL RESULTS AND EXPLANATION

4.1 Descriptive Statistics

Table 2 provides the descriptive statistics for all variables in our models. Net income is positive in 87 per cent of the sample. The means of net income and non-discretionary net income are 0.02 and 0.04, respectively, which shows that there appears to be a slight bias towards profitable firms. The mean of cash flows from operations is 0.05, and the standard deviation of *CFO* is greater than that of *NI*, which suggests that *CFO* is more volatile than *NI*. The means of total accruals, non-discretionary accruals, and discretionary accruals are negative. These results are similar to those of US-based studies (e.g., Sloan, 1996; Subramanyam, 1996), but are inconsistent with those of Haw *et al.* (2001). The inconsistency may be partly due to the difference in study periods - ours is from 2000 to 2003 and Haw *et al.*'s (2001) is from 1995 to 1998; and partly due to the difference in the data source—our data of cash flows from operations come directly from the financial report of listed companies, but those used by Haw *et al.* (2001) are estimations. During the past 10 years, the accounting system of China has also been drastically changed to converge to international conventions. Table 2 also displays the Pearson correlation

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[7] For further discussion of the merits and technical details of Vuong's test, see "Appendix 2" of Dechow (1994).

Table 2 Descriptive Statistics of Variables

Variables	Minimum	Maximum	Mean	Standard Deviation	% Positive	Correlation Coefficients
CAR	−0.01	0.12	0.00	0.02	0.42	–
NI	−1.61	0.53	0.02	0.10	0.87	0.320*
OI	−0.78	1.89	0.03	0.09	0.80	0.307*
CFO	−1.45	1.17	0.05	0.11	0.77	0.152*
OA	−1.09	1.96	−0.02	0.12	0.37	0.084*
ODA	−1.04	1.79	0.00	0.11	0.55	0.076*
ONDA	−0.76	0.81	−0.02	0.05	0.21	0.037**
TA	−1.60	1.62	−0.03	0.13	0.36	0.109*
DA	−1.58	1.43	−0.02	0.13	0.46	0.106*
NDA	−0.75	0.83	−0.01	0.54	0.28	0.020
NOI	−1.88	0.59	−0.01	0.06	0.36	0.068*
NNOI	−0.15	0.09	0.01	0.01	0.81	−0.067*
DNOI	−1.95	0.61	−0.02	0.06	0.26	0.077*
NDOI	−1.24	1.14	0.03	0.11	0.72	0.175*
NDNI	−1.23	1.14	0.04	0.11	0.69	0.166*

Note: The statistics come from the 3,666 firm-year observations. Pearson correlation coefficients between *CAR* and other variables are reported. * and ** represent significance at the 1 per cent and 5 per cent levels, respectively (two-tailed test). *CAR* is annually cumulated abnormal return measured over a 12-month period ending four months after the fiscal year end; *NI* is the net income; *OI* is the operating income; *CFO* is cash flows from operations; *OA* is operating accruals; *ODA* is operating discretionary accruals; *ONDA* is operating non-discretionary accruals; *TA* is total accruals; *DA* is discretionary accruals; *NDA* is non-discretionary accruals; *NOI* is non-operating income; *NNOI* is non-discretionary non-operating income; *DNOI* is discretionary non-operating income; *NDOI* is non-discretionary operating income; and *NDNI* is non-discretionary net income. Except for *CAR*, all variables are scaled by one-year-lagged total assets.

coefficients between *CAR* and other variables. Except for *NDA* and *NNOI*, the Pearson correlation coefficients between *CAR* and *NI* and their components are significantly positive.

4.2 Test and Comparison of Models

Next, we will test and compare the eight models listed in 3.2. In our regression equations, we use various levels of financial numbers, but not the corresponding change variable. This is consistent with Dechow (1994), who also uses levels of earnings and cash flows to examine the value relevance of accrual accounting.[8] Table 3 provides the statistics of all models followed by our analysis.

To begin with, univariate regressions respectively utilising three alternative performance indicators—net income (*NI*), cash flows from operations (*CFO*), and non-discretionary net income (*NDNI*)—are estimated. Panel 1 of Table 3 displays the relevant results. With a view to evaluating the relative information content of the three indicators, we compare the explanatory power and the slope coefficients of the three models. This is similar to the approach used by Dechow (1994). If accrual accounting increases the value relevance of reported net income by reducing the timing and mismatching problems, as argued by Dechow (1994), moving from cash *CFO* to *NDNI* (the difference is only *NDA*) should show an improvement in the explanatory power and the coefficient. If the discretionary accounting choice (*DA*) introduces noise to the reported net income, as argued by certain academics (such as Revsine, 1991), then little improvement (or even a decline) in the explanatory power and the coefficient might be evident when shifting *NDNI* to *NI*, between which the only difference is *DA*.

According to Panel 1 of Table 3, the coefficients and adjusted R-square are statistically significant, indicating that net income, cash flows from operations, and non-discretionary net income have information content. Compared with those of Model 2, the explanatory power and the coefficients of Model 1 are markedly improved. The Vuong's statistic corresponding to "1 vs 2" in Panel 3 of Table 3 is 13.70 (significant at the 1 per cent level), and the only difference between *NI* and *CFO* is total accruals, basically suggesting that total accruals are priced by the market and there may exist a functional fixation on earnings, a conclusion inconsistent with

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[8] The use of net income and its components levels, but not the corresponding change variable, in a regression of returns on earnings and their components has theoretical and empirical support. Ohlson and Shroff (1992) conclude that the earning levels variable itself serves as the natural starting point in explaining returns. That is, if neither the returns variable nor the earnings level variable is predictable, then the latter must be the maximum R^2 explanatory variable. Kothari (1992) describes the conditions under which the earnings level is superior to earnings change as a substitute for unexpected earnings. Easton and Harris (1991) provide empirical evidence consistent with these claims. Their evidence shows that, in multivariate regressions of securities' abnormal return on both the current earnings level and the earnings change variables, both coefficients are generally significantly different from zero. When the current earnings level variable is used to explain the stock return, it performs equally well as the earnings change variable.

Table 3 Regression of *CAR* on Net Income and Its Components

	Intercept	*NI*	*CFO*	*TA*	*DA*	*NDA*	*NDNI*	Adj. R^2
Panel 1: Univariate Models								
Model 1	0.006	0.068						10.3%
	(15.50)	(20.30)						
Model 2	−0.006		0.028					2.2%
	(−12.80)		(9.20)					
Model 4	−0.005						0.032	2.7%
	(−12.56)						(10.16)	
Panel 2: Multivariate Models								
Model 3	−0.006	0.067	0.013					10.9%
	(−15.50)	(18.20)	(5.10)					
Model 5	−0.006		0.079	0.069				10.9%
	(−15.50)		(19.80)	(19.20)				
Model 6	−0.005		0.033			0.028		2.7%
	(−12.40)		(10.10)			(4.06)		
Model 7	−0.005				0.065		0.081	10.8%
	(−15.30)				(18.20)		(20.10)	
Model 8	−0.006		0.082		0.066	0.068		10.9%
	(−15.40)		(20.02)		(18.40)	(9.85)		
Panel 3: Relative Explanatory Power—Vuong's test								
Model	1 vs 2	4 vs 2	5 vs 2	6 vs 2	3 vs 1	1 vs 4	7 vs 4	8 vs 6
Incremental R^2 (%)	8.10	0.50	8.70	0.50	0.60	7.60	8.10	8.20
Vuong's Z–statistic	13.70	1.85	16.10	1.85	1.98	12.10	13.70	14.10

Note: Figures in parentheses denote t-statistics (two-tailed test). In Panel 3, the figure 8.1 per cent located under "Incremental R^2 %" and "1 vs 2" equals the R^2 of Model 1 minus that of Model 2. The results are based on the pooled model. The sample consists of 3,666 firm-year observations. We do not report the statistics of the annual regression model. Although there are differences, the results are basically the same.

Dechow (1994) and Haw *et al.* (2001), and indicating that accrual earnings are more useful than cash flow indicators. Compared with those of Model 2, the explanatory power and the coefficients of Model 4 are slightly improved. The Vuong's statistic corresponding to "4 vs 2" in Panel 3 of Table 3 is 1.85 (insignificant at the 1 per cent level), and the only difference between *NDNI* and *CFO* is non-discretionary accruals, suggesting that the introduction of non-discretionary accruals cannot significantly improve the explanatory power of the model. Compared with those of Model 4, the explanatory power and the coefficients of Model 1 are evidently improved. The Vuong's statistic corresponding to "1 vs 4" in Panel 3 of Table 3 is 12.10 (significant at the 1 per cent level), and the only difference between *NDNI* and *NI* is discretionary accruals. Therefore, it is evident that the value relevance of net income is much greater than that of non-discretionary net income, the value relevance of non-discretionary net income is slightly greater than that of cash flows from operations, and discretionary accruals introduce useful information into net income and improve the value relevance of earnings.

Secondly, in order to examine whether the net income and cash flows from operations have incremental information content over each other, Model 3 is established. According to Panel 2 of Table 3, the coefficients of net income and cash flows from operations in Model 3 are significantly positive, and the Vuong's statistic corresponding to "3 vs 1" in Panel 3 of Table 3 is 1.98 (almost significant at the 1 per cent level), suggesting that the explanatory power of the model including *NI* and *CFO* is no better than that of the model including *NI* alone. Therefore, the net income and cash flows from operations have incremental information content over each other, but the inclusion of cash flows from operations cannot remarkably improve the explanatory power of the model.

Lastly, by regressing the stock return on net income's components in multivariate models, we test the incremental information content of the discretionary and non-discretionary parts of the net income. Panel 2 of Table 3 reports the relevant results. In Model 5, the net income is decomposed into cash flows from operations and total accruals. The adjusted R-square is 10.90 per cent, which is better than that of Models 1 and 2. The regression coefficients of *CFO* and *TA* are significantly positive, indicating that both *CFO* and *TA* have incremental information content, a result that is further supported by Vuong's test in Panel 3 of Table 3. This result is similar to that of Subramanyam (1996). In Model 6, the non-discretionary net income is decomposed into cash flows from operations and non-discretionary accruals. The adjusted R-square is 2.70 per cent, and the coefficients of *CFO* and *NDA* are 0.033 and 0.028 (both significant at the 1 per cent level), respectively. This suggests that non-discretionary accruals are priced by the market, and both non-discretionary accruals and cash flows from operations have incremental content over each other. From Models 2 to 6, the adjusted R-square is increased by 0.50 per cent, and the corresponding Vuong's statistic is almost significant at the 1 per cent level. Therefore, although non-discretionary accruals are priced by the market, the inclusion of non-discretionary accruals cannot remarkably improve the explanatory power of the model. Model 7 decomposes net income into non-discretionary net income and

discretionary accruals. The regression coefficients of *DA* and *NDNI* are significantly positive, and the adjusted R-square is 10.8 per cent, which is much greater than that of Model 4 (2.7 per cent). The Vuong's statistic corresponding to "7 vs 4" in Panel 3 of Table 3 is 13.70 (significant at the 1 per cent level). These results indicate that discretionary accruals and non-discretionary net income have incremental information content over each other. In Model 8, net income is decomposed into cash flows from operations, non-discretionary accruals, and discretionary accruals. The regression coefficients of *CFO*, *NDA*, and *DA* are significantly positive, the adjusted R-square is 10.9 per cent, which is much greater than that of Model 6 (2.7 per cent), and the Vuong's statistic corresponding to "8 vs 6" in Panel 3 of Table 3 is 14.10 (significant at the 1 per cent level). These results, based on Models 6, 7, and 8, indicate that both non-discretionary and discretionary accruals are priced by the market, the inclusion of discretionary accruals evidently improves the explanatory power of the model, but the inclusion of non-discretionary accruals is unable to remarkably improve the explanatory power of the model.

In sum, the above results show that, under the maintained assumption that the cross-sectional Jones model (used to decompose operating accruals) and the industry model (used to decompose non-operating income) can accurately decompose total accruals into non-discretionary and discretionary accruals, both accruals have incremental information content beyond cash flows from operations, they improve the ability of net income to explain returns, and they are priced by the market. In other words, the capital market makes use of discretionary and non-discretionary accounting choice in pricing stocks. According to our evidence, the net income, cash flows from operations, and non-discretionary net income all have information content; net income and cash flows from operations have incremental information content over each other; both cash flows from operations and total accruals have incremental information content over each other; discretionary accruals introduce useful information into the net income and improve the value relevance of earnings; and income fixation may be existed in the market (Sloan, 1996; Zhao and Wang, 1999).

4.3 Sensitivity Analysis by Excluding Non-Operating Income Items

Earnings can be managed by manipulating operating accruals and non-operating income items. Operating accruals mainly consist of current assets and current liabilities, and non-operating income items mainly consist of investment income, non-operating profit, non-operating expenses, and subsidised income. In Western literature, as the securities markets are mature and are being closely supervised, earnings are generally managed by operating accruals rather than by non-operating income items. However, in China, it is not uncommon that a listed company is wholly controlled by the major shareholders, and non-operating income items become the preferred means to manage earnings (Zhu, 2002). According to the prior definition of various variables, every variable of *NI*, *TA*, *DA*, and *NDA* includes non-operating income items, but this is not the case for the corresponding four variables, *OI*, *OA*, *ODA*, and *ONDA*. To examine the above-mentioned results' sen-

sitivity to non-operating income items, the following seven models are tested based on Models 1, 3, 4, 5, 6, 7, and 8:

Model 9: $CAR_i = \beta_0 + \beta_1 * OI_i + e_i$

Model 10: $CAR_i = \beta_0 + \beta_1 * OI_i + \beta_2 * CFO_i + e_i$

Model 11: $CAR_i = \beta_0 + \beta_1 * NDOI_i + e_i$

Model 12: $CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * OA_i + e_i$

Model 13: $CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * ONDA_i + e_i$

Model 14: $CAR_i = \beta_0 + \beta_1 * ODA_i + \beta_2 * NDOI_i + e_i$

Model 15: $CAR_i = \beta_0 + \beta_1 * CFO_i + \beta_2 * ODA_i + \beta_3 * ONDA_i + e_i$

Table 4 reports the results of sensitivity analysis. Firstly, according to Panel 1 of Table 4, the coefficients and adjusted R-square of Model 9 are statistically significant, indicating that operating income has information content. Compared with those of Model 2, the explanatory power and the coefficients of Model 9 are markedly improved. The Vuong's statistic corresponding to "9 vs 2" in Panel 3 of Table 4 is 10.90 (significant at the 1 per cent level), and the only difference between *OI* and *CFO* is operating accruals, suggesting that there may exist functional fixation on earnings. Compared with those of Model 2, the explanatory power and the coefficients of Model 11 are improved. The Vuong's statistic corresponding to "11 vs 2" in Panel 3 of Table 4 is 2.10. These results are induced precisely by the inclusion of operating non-discretionary accruals (*ONDA*). Compared with those of Model 11, the explanatory power and the coefficients of Model 9 are evidently improved. The Vuong's statistic corresponding to "9 vs 11" in Panel 3 of Table 4 is 8.80 (significant at the 1 per cent level), and the only difference between *NDOI* and *OI* is operating discretionary accruals (*ODA*). Therefore, it is evident that the value relevance of operating income is much greater than that of non-discretionary operating income, the value relevance of non-discretionary operating income is slightly greater than that of cash flows from operations, and operating discretionary accruals introduce useful information into operating income and improve the value relevance of earnings.

Secondly, to examine whether the operating income and cash flows from operations have incremental information content over each other, we establish Model 10. According to Panel 2 of Table 4, the coefficients of operating income and cash flows from operations in Model 10 are significantly positive, and the Vuong's statistic corresponding to "10 vs 9" in Panel 3 of Table 4 is 1.85 (not significant at the 1 per cent level), suggesting that the explanatory power of the model including *OI* and *CFO* is no better than that of the model including *OI* alone. So operating income and cash flows from operations have incremental information content over each other, but the inclusion of cash flows from operations cannot remarkably improve the explanatory power of the model.

Lastly, the analysis examines the incremental information content of the discretionary and non-discretionary parts of operating income by regressing stock returns on operating income's components in multivariate models. Panel 2 of Table 4 reports the relevant results. In Model 12, the operating income is decomposed into cash flows from operations and operating accruals. The adjusted R-square is 9.8 per

cent, which is better than Models 9 and 2. The regression coefficients of *CFO* and *OA* are significantly positive, indicating that both *CFO* and *OA* have incremental information content, a result that is further supported by the Vuong's test in Panel 3 of Table 4. Model 13 reports the results of decomposing the non-discretionary operating income into cash flows from operations and operating non-discretionary accruals. The adjusted R-square is 2.8 per cent, and the coefficients of *CFO* and *ONDA* are 0.033 and 0.037 (both significant at the 1 per cent level), respectively. The results indicate that operating non-discretionary accruals are priced by the market, and have incremental content beyond cash flows from operations. From Models 2 to 13, the adjusted R-square is increased by 0.6 per cent, and the corresponding Vuong's statistic is insignificant at the 1 per cent level. Therefore, although operating non-discretionary accruals are priced by the market, the inclusion of operating non-discretionary accruals cannot evidently improve the explanatory power of the model. Model 14 decomposes operating income into non-discretionary operating income and operating discretionary accruals. The coefficients of *NDOI* and *ODA* are significantly positive, and the adjusted R-square is 9.8 per cent, which is much greater than that of Model 11 (2.9 per cent). The Vuong's statistic corresponding to "14 vs 11" in Panel 3 of Table 4 is 9.70 (significant at the 1 per cent level). The results suggest that operating discretionary accruals and non-discretionary operating income have incremental information content over each other, and the introduction of operating discretionary accruals can greatly improve the explanatory power of the model. Model 15 decomposes operating income into cash flows from operations, operating non-discretionary accruals, and operating discretionary accruals. The regression coefficients of *CFO*, *ONDA*, and *ODA* are significantly positive, the adjusted R-square is 9.9 per cent, which is much greater than that of Model 13 (2.8 per cent), and the Vuong's statistic corresponding to "15 vs 13" in Panel 3 of Table 4 is 10.80 (significant at the 1 per cent level). According to the analysis of Models 13, 14, and 15, both operating discretionary and non-discretionary accruals are priced by the market, and the introduction of operating discretionary accruals remarkably improves the explanatory power of the model, but the introduction of operating non-discretionary accruals cannot evidently improve the explanatory power of the model.

Based on the above sensitivity analysis, our major results in Table 3 still hold no matter whether or not the non-operating income items are included in earnings or accruals.

4.4 Further Analysis

Since the pricing of discretionary and non-discretionary accruals is a joint examination of the nature of these accruals and the market pricing mechanism, the evidence that discretionary accruals are priced by the market may be consistent with two alternative but not mutually exclusive explanations. In the first case, because the discretionary component captures value relevance information, discretionary accruals are priced by the market. Under this assumption, managers use the financial reporting system to improve the ability of reported earnings to mirror the

Table 4 Regression of *CAR* on Operating Income and Its Components

	Intercept	*OI*	*CFO*	*OA*	*ODA*	*ONDA*	*NDOI*	Adj. R^2
Panel 1: Univariate Models								
Model 9	−0.0052	0.063						9.3%
	(−14.8)	(18.7)						
Model 2	−0.006		0.028					2.2%
	(−12.8)		(9.2)					
Model 11	−0.003						0.033	2.9%
	(−12.1)						(10.1)	
Panel 2: Multivariate Models								
Model 10	−0.005	0.068	0.014					9.8%
	(−16.1)	(16.9)	(4.2)					
Model 12	−0.007		0.082	0.067				9.8%
	(−17.5)		(19.1)	(17.3)				
Model 13	−0.004		0.033			0.037		2.8%
	(−11.3)		(9.9)			(4.9)		
Model 14	−0.006				0.067		0.081	9.8%
	(−16.6)				(16.7)		(19.5)	
Model 15	−0.006		0.083		0.068	0.070		9.9%
	(−16.0)		(19.4)		(16.8)	(19.7)		
Panel 3: Relative Explanatory Power—Vuong's Test								
Model	9 vs 2	11 vs 2	9 vs 11	10 vs 9	12 vs 2	13 vs 2	14 vs 11	15 vs 13
Incremental R^2 %	7.10	0.70	6.40	0.50	7.60	0.60	6.90	7.10
Vuong's Z–statistic	10.9	2.10	8.80	1.85	12.70	1.94	9.70	10.80

Note: Figures in parentheses denote t-statistics (two-tailed test). In Panel 3, the figure 7.1 per cent located under "Incremental R^2 %" and "9 vs 2" equals the R^2 of Model 9 minus that of Model 2. The results are based on the pooled model. The sample consists of 3,666 firm-year observations. We do not report the statistics of the annual regression model. Although there are differences, the results are basically the same.

fundamental value of the firm. For instance, managers might as well smooth out the reported earnings to reduce transitive fluctuation in earnings and inflate the confidence of the investors towards the firm, and also make use of their judgment to communicate their private information about the firm's profitability. In another case, it may be that the managers exercise their discretion opportunistically, which distorts the reported net income and decreases the value relevance of earnings. Under this assumption, probably due to the functional fixation on the discretionary income number—that is, the capital market fails to recognise the opportunistic behaviour of managers—the pricing of discretionary accruals is evidence of mispricing.

By examining whether discretionary accruals improve the ability of earnings to mirror the future profitability of the firm, we can disentangle the alternative explanations. Because the *Accounting Standard for Business Enterprises—Cash Flow Statements* has been implemented in China for less than 10 years, we cannot conduct the time-series analysis. Instead, three methods are adopted. Firstly, by calculating the correlation coefficients of earnings component variables, we study whether firms smooth earnings. Secondly, by computing the autocorrelations and cross-correlations among net income, cash flows from operations, and non-discretionary net income, we examine the impact of income smoothing on the persistence and predictability of these three variables. Thirdly, by analysing the association between discretionary and non-discretionary accruals as well as future measures of profitability, we examine if these accruals succeed in conveying the information of the firm's future profitability.

4.4.1 Correlation Analysis on Earnings Component Variables

When earnings are used in evaluating securities and formulating contracts, stability or predictability is regarded as an ideal characteristic that helps to reduce risks, promote stock prices, or maximise managers' remuneration. One motivation of earnings management is therefore to smooth out reported earnings. Smoothing is defined as a form of earnings management with the objective to "reduce the divergence of reported earnings from an earnings number that is 'normal' or 'expected' for the firm" (Morses, 1987, p. 360). Although income smoothing has an opportunistic connotation, not all smoothing is necessarily opportunistic. If income smoothing aims to align expectations with those of the market, to improve the timeliness of earnings, or to mitigate the impacts of transitory cash flows so as to stabilise the reported earnings, then income smoothing is able to improve the value relevance of earnings. Next, a correlation analysis on earnings component variables is conducted to study if firms smooth earnings.

Table 5 reports the contemporaneous Pearson correlation coefficients of various components of net income. Net income and operating income are positively correlated with each of their components. Apparently, this is not surprising in that net income (or operating income) is only an aggregation of its components. The correlation coefficients between cash flows from operations and operating accruals as well as between cash flows from operations and total accruals are –0.71 and –0.70, respectively, indicating that cash flows from operations are significantly negatively

correlated with accruals, consistent with the prior evidence of Dechow (1994), Subramanyam (1996), and Haw *et al.* (2001). This negative correlation may be due to accrual accounting or income smoothing. The correlation coefficients between *CFO* and operating discretionary accruals, discretionary accruals, operating non-discretionary accruals, and non-discretionary accruals are –0.65, –0.61, –0.30, and –0.28, respectively, suggesting that cash flows from operations are significantly negatively correlated with discretionary and non-discretionary accruals. Discretionary accounting choices also explain the negative correlation between cash flows from operations and accruals. Non-discretionary net income (*NDNI*) is significantly negatively correlated with discretionary accruals (*DA*): the correlation coefficient is –0.65. Non-discretionary operating income (*NDOI*) is significantly negatively correlated with operating discretionary accruals (*ODA*): the correlation coefficient is –0.67. Discretionary accruals are significantly negatively correlated with non-discretionary accruals, and operating discretionary accruals are significantly negatively correlated with operating non-discretionary accruals. These results show that firms do smooth earnings.

4.4.2 Autocorrelation and Cross-Correlation Analysis

Table 6 reports the autocorrelations and cross-correlations among net income, cash flows from operations, and non-discretionary net income. The higher are these autocorrelations, the greater is the persistence. Firstly, in terms of autocorrelations, net income has greater persistence than do cash flows from operations, which have greater persistence than does non-discretionary net income. For example, the autocorrelations at lag 1 year of net income, cash flows from operations, and non-discretionary net income are 0.48, 0.13, and 0.104 (all significant at the 1 per cent level), respectively. Although the autocorrelations weaken with time, the autocorrelations at lag 2 or 3 years display similar results. Secondly, in terms of cross-correlations, the correlations of non-discretionary net income vis-à-vis historical net income or historical cash flows from operations are not necessarily greater than those of cash flows from operations vis-à-vis historical non-discretionary net income or historical net income. For instance, the correlations of non-discretionary net income vis-à-vis historical net income or historical cash flows from operations at lag 1 year are 0.12 (significant at the 1 per cent level), but the correlations of cash fIflows from operations vis-à-vis historical non-discretionary net income or historical net income at lag 1 year are 0.08 and 0.05, respectively. However, the cross-correlations at lag 2 or 3 years do not display the same results. In addition, we get similar results when *NI*, *NDA*, *DA*, and *NDNI* are replaced with *OI*, *ONDA*, *ODA*, and *NDOI*, respectively; that is, eliminating the impact of non-operating income items. In short, earnings have the strongest persistence, and the persistence of non-discretionary net (operating) income is not necessarily greater than that of cash flows from operations.

4.4.3 Discretionary Accruals and Future Profitability

Prior studies suggest that managers may utilise the discretion built in GAAP to convey the market private information that can mirror the economic value of the

Table 5 Pearson Correlation Coefficients of Earnings Component Variables

	OI	*CFO*	*OA*	*ODA*	*TA*	*DA*	*ONDA*	*NDOI*	*NDA*	*NDNI*	NOI
NI	0.82*	0.22*	0.39*	0.36*	0.56*	0.54*	0.16*	0.30*	0.13*	0.23*	0.43*
OI		0.26*	0.50*	0.44*	0.40*	0.33*	0.20*	0.36*	0.20*	0.36*	−0.16*
CFO			−0.71*	−0.65*	−0.70*	−0.61*	−0.30*	0.89*	−0.28*	0.88*	−0.03
OA				0.92*	0.90*	0.79*	0.41*	−0.55*	0.40*	−0.54*	−0.09*
ODA					0.82*	0.87*	−0.01*	−0.67*	0.00	−0.67*	−0.07*
TA						0.91*	0.36*	−0.54*	0.34*	−0.54*	0.35*
DA							−0.03	−0.65*	−0.07*	−0.65*	0.41*
ONDA								0.16*	0.97*	0.17*	−0.04*
NDOI									0.16*	0.99*	−0.05*
NDA										0.20*	−0.08*
NDNI											−0.07*

Note: The statistics come from the 3,666 firm-year observations. Pearson correlation coefficients of earnings component variables are reported here. * represents significance at the 1 per cent level (two-tailed test).

Table 6 Autocorrelations and Cross-Correlations among *NI*, *CFO*, and *NDNI*

Variable	Lag 1 Year (N = 747)			Lag 2 Year (N = 747)			Lag 3 Year (N = 747)		
	NI_{t-1}	CFO_{t-1}	$NDNI_{t-1}$	Ni_{t-2}	CFO_{t-2}	$NDNI_{t-2}$	NI_{t-3}	CFO_{t-3}	$NDNI_{t-3}$
NI_t	0.48*	0.29*	0.28*	0.25*	0.24*	0.25*	0.11*	0.14*	0.17*
CFO_t	0.05	0.13*	0.08*	0.05	0.18*	0.12*	0.02	0.10*	0.07*
$NDNI_t$	0.12*	0.12*	0.104*	0.04	0.12*	0.14*	0.00	0.04	0.08*

Note: The statistics come from as many of the firm-year observations as we can get. "N" denotes the number of observations. Pearson correlation coefficients of earnings components variables are reported here. * represents significance at the 1 per cent level (two-tailed test).

firm. Discretionary accruals are priced by the market, which is not necessarily powerful evidence of signalling private information. In order to examine whether discretionary or non-discretionary accruals convey the information about the future profitability of the firm, we regress future profitability on cash flows from operations, discretionary, and non-discretionary accruals, where future profitability is measured in terms of one-, two- or three-year-ahead cash flows from operations, non-discretionary income, and net income.

Table 7 reports all the empirical evidence. Panel 1 of Table 7 displays results pertaining to one-year-ahead profitability. Collectively, the three components (cash flows from operations, non-discretionary accruals, and discretionary accruals) explain 3.9 per cent, 3.7 per cent, and 22 per cent of one-year-ahead cash flows from operations, non-discretionary income, and net income. *CFO* and *DA* are significant in the three profitability forecast models, but *NDA* is significant only in one profitability forecast model. Lastly, we delete the independent variable *DA* from the profitability forecast models, and the incremental adjusted R-square and Vuong's Z-statistic are listed in the last tier. According to the reported results, the inclusion of discretionary accruals significantly increases the explanatory power in almost all cases.

Panels 2 and 3 of Table 7 provide results pertaining to two- or three-year-ahead profitability forecast models. Based on our analysis, the explanatory power of the models gradually becomes weaker when the ahead-period becomes longer. *CFO* and *DA* are significant in most of the models, but *NDA* is significant in only a few models. Again, we get similar results when *NI*, *NDA*, *DA*, and *NDNI* are replaced with *OI*, *ONDA*, *ODA*, and *NDOI* respectively; that is, eliminating the impact of non-operating income items.

Based on the results of Table 7, both cash flows from operation and discretionary accruals help to forecast future profitability and have incremental information content over each other, but non-discretionary accruals do not serve very well in forecasting future profitability, a result consistent with the prior result that the introduction of non-discretionary accruals does not significantly improve the

Table 7 Regression of *CFO*, *NDA*, and *DA* with Levels of Future *CFO*, *NDNI*, and *NI*

Dependent Variable	Independent Variable				Adj. R^2	Incremental Adj. R^2
	Intercept	*CFO*	*NDA*	*DA*		
Panel 1: Regression of *CFO*, *NDA*, and *DA* with One-Year-Ahead Level of Profitability (N = 2241)						
CFO_{t+1}	0.032	0.240	−0.102	−0.001	0.039	0.014
	(11.800)	(6.800)	(−1.400)	(−3.900)		[2.380]
$NDNI_{t+1}$	0.020	0.300	0.045	0.135	0.037	0.011
	(3.700)	(8.900)	(0.950)	(4.300)		[2.200]
NI_{t+1}	−0.003	0.630	0.460	0.417	0.220	0.075
	(−2.000)	(25.900)	(11.400)	(21.400)		[12.300]
Panel 2: Regression of *CFO*, *NDA*, and *DA* with Two-Year-Ahead Level of Profitability (N = 1494)						
CFO_{t+2}	0.042	0.220	0.011	−0.010	0.032	0.011
	(11.300)	(5.200)	(0.230)	(−2.200)		[2.300]
$NDNI_{t+2}$	0.021	0.139	0.126	−0.013	0.023	0.010
	(5.800)	(2.900)	(1.750)	(−2.900)		[2.100]
NI_{t+2}	−0.012	0.670	0.270	0.208	0.074	0.023
	(−2.300)	(12.800)	(4.200)	(5.400)		[3.200]
Panel 3: Regression of *CFO*, *NDA*, and *DA* with Three-Year-Ahead Level of Profitability (N = 474)						
CFO_{t+3}	0.029	0.103	0.010	−0.010	0.006	0.002
	(4.700)	(1.500)	(0.120)	(−0.300)		[0.630]
$NDNI_{t+3}$	0.017	0.050	0.180	−0.490	0.0048	0.001
	(2.800)	(0.600)	(1.300)	(−1.410)		[0.350]
NI_{t+3}	−0.002	0.200	0.236	0.035	0.030	0.007
	(−0.650)	(3.400)	(2.700)	(3.700)		[0.930]

Note: The statistics come from as many of the firm-year observations as we can get. "N" denotes the number of observations. Figures in parentheses denote t-statistics. "Adj. R^2" denotes the adjusted R-square of the regression equation with three independent variables. "Incremental Adj. R^2" refers to the increase in explanatory power of the three variables regression equation compared with that of the two variables, where the difference is discretionary accruals. Figures in square brackets denote Vuong's Z-statistic with a significance level of 0.01 using the two-tailed test.

explanatory power of the model. Therefore, managers may use discretionary accruals to convey private information about future profitability to outside investors.

In sum, according to further evidence, discretionary accruals are priced by the market because the discretionary part of earnings communicates useful information about firm value, and helps to forecast the future profitability of the firm. Also, as

managers smooth out income by discretion, both the ability of earnings to mirror the fundamental economic value of the firm as well as the persistence and predictability of earnings can be improved.

V. CONCLUSION AND IMPLICATIONS

Although the value relevance of earnings has been evidenced by various domestic and foreign studies, and local studies also support that cash flows have value relevance (such as Zhao, 2004), are earnings components, such as total accruals, discretionary accruals, and non-discretionary accruals, in favour of the pricing of securities? The answer varies. On the one hand, accounting standards setting bodies, for example, the FASB, recognise that it is accruals that make earnings a useful performance measurer, and so earnings are more popular than are cash flows in the capital market. On the other hand, due to the flexibility built into the present accounting standards for business enterprises, accrual accounting is undoubtedly subject to the discretions of management, and managers may have incentives to opportunistically manipulate earnings, thus garbling the reported earnings. Do cash flow statements have incremental information content beyond the income statement? Does the securities market price total accruals, discretionary accruals, or non-discretionary accruals? Our study has attempted to explore all these issues.

This study chooses 3,666 firm-year observations from firms listed on the SHSE and SZSE from 2000 to 2003. We regress cumulated abnormal return on net income and its components levels, such as operating income, cash flows from operations, total accruals, discretionary and non-discretionary accruals, and non-discretionary net income. We decompose the operating accruals into operating discretionary and non-discretionary accruals by the cross-sectional Jones model, and non-operating income into discretionary and non-discretionary non-operating income by the industry model. We reach our major conclusion by comparing the regression coefficients and the explanatory power of the varied models, and by conducting additional Vuong and sensitivity tests.

Our evidence basically indicates that, under the maintained assumption that the cross-sectional Jones model and the industry model can accurately decompose total accruals into discretionary and non-discretionary accruals, both accruals are priced by the market, have incremental information content beyond cash flows from operations, and improve the ability of net income to explain returns. In other words, in the valuation process, the capital market utilises discretionary and non-discretionary accounting choice. According to our further evidence, the discretionary part of earnings communicates useful information about firm value, and helps to forecast the future profitability of the firm. Also, as managers smooth out income by discretion, both the ability of earnings to mirror the fundamental economic value of the firm as well as the persistence and predictability of earnings can be improved.

In addition, by exercising a correlation analysis on net income and its component variables, we find that firms do smooth out earnings. By analysing the autocorrelations and cross-correlations among net income, cash flows from operations, and

non-discretionary net income, we confirm that earnings have the strongest persistence, and the persistence of non-discretionary net income is not necessarily greater than that of cash flows from operations. By establishing various prediction models of future profitability, we find that both cash flows from operation and discretionary accruals help to forecast future profitability, and have incremental information content over each other, but non-discretionary accruals do not serve well in forecasting future profitability.

In the emerging and transitional capital market of China, our results have several implications. Firstly, accrual accounting has more information content than cash flow accounting not only because the former reduces timing and mismatching problems inherited in measuring cash flows over short intervals (Dechow, 1994), but also because the flexibility accorded by GAAP allows managers to mirror value relevance information not captured in the non-discretionary component. Secondly, since the *Accounting Standard for Business Enterprises — Cash Flow Statements* was implemented in 1998, although Chinese investors may pay regard to both earnings and cash flows, there may still be a functional fixation on earnings in the market. Thirdly, discretionary and non-discretionary accruals are priced by the market, implying that though the Ministry of Finance of China has issued certain accounting standards and *Enterprises Accounting System*, which have increased the flexibility of the management in making accounting estimates and their choices in selecting accounting methods, thereby providing the management more opportunities to manage earnings, the persistence and value relevance of earnings may not necessarily be reduced.

REFERENCES

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