会计稳健性的债务契约解释—来自中国上市公司的经验证据*

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摘要

　　对会计稳健性的债务契约解释应包括表现形式和内在机理两个方面：前者是指稳健性的债务契约需求特征；后者则为稳健性的债务契约有用性。本文尝试从需求特征和有用性两方面提供稳健性的债务契约解释在中国证券市场的初步证据。以中国A股1999至2005年的上市公司为样本，本文采用账面市价比法和Basu的方法度量截面会计稳健性，同时采用Khan and Watts构建的 *C_SCORE* 指标度量时间截面的稳健性，考查股东债权人冲突及其缓解与稳健性之间的关系。实证检验表明：当债务契约双方冲突较大时，公司的会计处理更加稳健；会计处理越稳健，公司越可能获得新增贷款。本文既丰富了稳健性的债务契约需求特征的经验证据，更首次直接验证了中国上市公司中稳健性的债务契约有用性。

关键词：稳健性、债务契约、需求特征、有用性、股东债权人冲突

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一、引言

会计稳健性的债务契约解释认为稳健性有助于协调股东与债权人之间的冲突，因而当债务契约冲突加大时产生对稳健性的需求。本文认为，对会计稳健性的债务契约解释包括表现形式和内在机理两个方面：一方面，如果稳健性具有债务契约治理功能，有效契约的签订和执行必然产生对冲突协调机制的需求，当债务契约双方利益冲突加大的时候，必然产生对稳健性这一冲突协调机制的需求，即需求特征是契约解释的表现形式。另一方面，稳健性越高，越有利于缓解债务契约双方利益冲突，具体体现为采取更加稳健会计处理有利于债务契约的签订和执行，即稳健性的债务契约有用性，这是契约解释的内在机理。

国外已有一些文献从需求特征和有用性两个方面验证了会计稳健性的债务契约解释（Leftwich, 1983; Ahamed *et al.*, 2002; Zhang, 2004; Ball *et al.*, 2005），但正如Watts（2003）指出的：利用美国公司作为样本进行的截面检验仅仅对稳健性的契约功能解释提供了较弱的证据。

而国内有关稳健性与债务契约关系的研究还仅限于验证稳健性的债务契约需求特征（孙铮等，2005；朱凯，2005；王毅春、孙林岩，2006），并没有进一步检验稳健性的债务契约有用性，不能提供中国证券市场中稳健性债务契约解释的完整证据。本文试图从需求特征和有用性两个方面提供稳健性的债务契约解释在中国证券市场的初步证据。因此，本文以我国上市公司1999至2005年的非金融类上市公司为研究样本，对上述问题进行实证检验。研究结果表明，股东债权人冲突越大，公司的会计处理越稳健；会计处理越稳健，公司越容易获得新的债务契约。

论文后续部分安排如下：第二部分是会计稳健性的债务契约解释的文献回顾及本文的研究假设；第三部分是对会计稳健性的债务契约需求特征的检验；第四部分是对会计稳健性的债务契约有用性的检验；第五部分是稳定性检验；第六部分对全文进行总结。

二、会计稳健性的债务契约解释：文献回顾与研究假设

（一）会计稳健性的债务契约需求特征

稳健性是股东与债权人利益冲突及其协调的产物，它有利于降低债务契约双方的代理成本，因此债务契约是稳健性存在的一个重要原因（Watts, 1993, 2003）。Leftwich（1983）通过对债务契约条款的调查发现，借款合同中使用的会计规则与GAAP有区别，这些会计规则相对于GAAP更加稳健。Ahamed *et al.*（2002）利用美国上市公司数据发现债务契约双方在股利政策上的冲突越严重，会计处理越稳健。Ball and Shivakumar（2005）发现，给定监管环境，公众

公司比私人公司报告得更加稳健，这是因为公众公司股东与债权人之间的信息不对称更加严重。Nichols *et al.*（2005）发现公众银行比私人银行更加稳健。Ball *et al.*（2005）考查了22个国家的数据发现，稳健性源于债务市场的报告需求，而不是股票市场的报告需求。他们发现，债务市场的规模解释了稳健性的国际差异，而权益市场的规模并不能解释稳健性的国际差异。Peek *et al.*（2006）利用欧洲的数据研究了公众公司和私人公司会计稳健性的差异，他们发现由于私人公司与公众公司面临不同的股东债权人冲突，因而呈现出不同的稳健性需求，即股东债权人之间的冲突是对两类公司在稳健性上差异的一个重要解释。他们发现一旦公司成为公众公司，股东与债权人之间的冲突就加大了，从而表现出对稳健性更大的需求。

近年来，国内也有学者开始讨论会计稳健性的债务契约需求特征。孙铮等（2005）利用我国A股上市公司1999至2002年的数据研究发现债务比重高的公司相对于债务比重低的公司，其会计政策选择更趋稳健，当企业盈利能力出现问题时，债权人会要求企业采取更加稳健的会计政策，债务对国家控股的上市公司稳健性的影响要明显小于对非国家控股上市公司的影响。朱凯（2005）也以Watts（2003）的契约理论为基础，分析股东与债权人之间利益冲突对稳健性的影响，发现国家控制的上市公司其稳健性程度较低，而民营控制的上市公司稳健性程度较高，但是股东特征对稳健性的影响，随着银行在公司中利益的增加而趋于一致。王毅春、孙林岩（2006）利用A股2004年数据研究发现，我国的资本市场存在着一般意义上的会计稳健性需求特征，即：股东与债权人的利益趋于一致，稳健性下降；如果股东与债权人之间的利益冲突很大，则稳健性上升。此外，他们还发现我国国有企业的会计稳健性是其公司治理结构的内生结果，是由于国有企业股东与国有商业银行之间的"准债权"关系削弱了银行对稳健性的需求。

综合以上国内外的经验证据和本文的研究目的，提出研究假设1：股东债权人冲突越大，公司的会计处理越稳健。

（二）会计稳健性的债务契约有用性

稳健性对股东债权人之间冲突的协调功能表现为：（1）减少对股东和经理的过度分配（Watts, 1993, 2003）；（2）提高会计信息质量，更有利于债权人评估债权的价值（Holthausen and Watts, 2001; Watts, 2003）；（3）减少管理层投资负净现值项目的风险（Ball *et al.*, 2003; Ball and Shivakumar, 2005; Watts, 2003），减少管理层的资产替代行为。

Ahamed *et al.*（2002）采用债务评级作为债务成本的替代变量，发现会计处理越稳健其债务成本越低，稳健性是协调股东债权人在股利政策上冲突的有效机制。Zhang（2004）用四种方法度量会计稳健性，发现公司会计处理越稳健，债权人越有可能修改债务契约条款，说明稳健性能够及时将坏消息传递给债权

人，使债权人获益；另一方面，她发现会计处理越稳健，债务契约的初始利率越低，说明稳健性也使债务人获益。Wittenberg（2006）发现增加的稳健性减少了第二次贷款交易中的要价。国外的研究证明稳健性的确具有债务契约冲突的协调功能，有利于债务契约的签订和执行。也就是说，客观存在着稳健性的债务契约有用性。

基于本文的研究目的，联系国内银行信贷监管不断强化的客观实际（周小川，2004），提出研究假设2：会计处理越稳健，公司越有可能获得新增贷款。

三、会计稳健性的债务契约需求特征

（一）变量

1、会计稳健性 *CONSV*

本文采用三种方式度量会计稳健性，前两种方式是对稳健性的截面度量，第三种是对稳健性的时间截面度量：一是稳健性的账面市价比计量 *CONSV_BTM*，采用Ahamed *et al.*（2002）的固定效应模型计量各公司相对于平均水平的稳健性程度；二是是采用Basu（1997）的逆回归模型，求解公司层面的稳健性度量 *CONSV_BASU*[3]；三是采用Khan and Watts（2007）对稳健性的时间截面度量

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[3]　我们认为用 *CONSV_BASU* 来度量公司层面的稳健性并不是一个很好的指标。尽管自Basu（1997）以来，许多学者利用非对称及时性来衡量会计稳健性，但是最近也有一些研究质疑用Basu的非对称及时性来度量稳健性的合理性（Givoly, Hayn, and Natarajan, 2003; Dietrich, Muller, and Reidl, 2005; Watts, 2006）。在一段估计期间内Basu测度的稳健性同期初 *BTM*、期末 *BTM* 有明显的相关性，在一个不够长的期间来考察公司个体非对称及时性的稳健性度量是有问题的。因为在估计期间的开始，*BTM* 的稳健性就已经发生了（Watts, 2006）。事实上，最近的研究文献中，稳健性概念被区分为了两个部分：条件和非条件稳健性（Ball and Shivakumar, 2005; Beaver and Ryan, 2005）。非条件稳健性代表同当前消息独立的一般性的稳健性，在研究中用 *BTM* 比率表示；条件稳健性代表同当期消息相关的稳健性，用Basu的非对称及时性表示。这两种稳健性的交互作用仍然是理论上还需要探索的内容。但即使稳健性有各种不同的形式和度量方式，*BTM* 仍然是经验研究中用来代表稳健性的一个可能的变量（Easton and Pae, 2004; Givoly and Hayn, 2000 and 2002; Pope and Walker, 2003; Gassen, Fülbier, and Sellhorn, 2006）。尤其是在总体稳健性并未被划分为条件和非条件稳健性之前，*BTM* 一直都被作为总体稳健性概念的一个合理的度量（Beaver and Ryan, 2000; Beaver, 1998; Feltham and Ohlson, 1995; Joos and Lang, 1994）。Roychowdhury and Watts（2006)也认为 *BTM* 包含了条件稳健性即非对称及时性的累计影响，因此Gassen, Fülbier, and Sellhorn（2006）和Ryan（2006）均认为，非条件稳健性比条件稳健性对总体稳健性有更大的贡献。本文并不致力于研究两类稳健性的差别，而是研究债务契约冲突对一般意义上的总体稳健性的影响，因此本文将主要采用 *BTM* 测度作为公司层面稳健性度量的基础。但是出于检验的充分性考虑，以及国内学者在研究稳健性时均采用Basu模型，我们仍然同时列出了采用Basu模型计算的截面稳健性 *CONSV_BASU* 的各模型的结果。

方法，构建了*CONSV_CSCORE*指标。这三种稳健性的度量方式都利用我国A股上市公司1999年至2005年共7年的面板数据求解，在此基础上检验稳健性的债务契约需求特征和债务契约有用性。

（1）截面稳健性的*CONSV_BTM*度量。本文首先采用净资产度量法中的账面价值与市场价值比率（简称账面市价比，*BTM*）法来度量公司层面的会计稳健性。Beaver and Ryan（2000）以及Ahamed *et al.*（2002）采用固定效应的变截距模型来计算会计稳健性。公司特定的效应反映由会计稳健性引起的持续有偏部分，时间特定的效应反映经济层面的暂时波动，滞后项反映股价波动未能及时在账面价值中得到确认。在保证横截面大样本的情况下，本文取得1999年至2005年共7年的面板数据，出于保证自由度和回归精度的考虑，对回归模型的市场回报项取当期和2期滞后：

$$BTM_{it} = \alpha + \alpha_i + \alpha_t + \beta_0 RET_{it} + \beta_1 RET_{it-1} + \beta_2 RET_{it-2} + \varepsilon_{it} \qquad （1）$$

其中：BTM_{it} = 第t年末第i家公司的账面市价比（数据库中市净率指标的倒数）；α = 所有公司和年度共同的截距；α_i = 特定公司的相对会计稳健性偏差；α_t = 特定年份的偏差；RET_{it} = 第i家公司第t年的股票年收益率（采用数据库中的月收益率指标计算得出：$RET_{it} = \prod_{j=1}^{12}(1 + RET_{ij}) - 1$，$RET_{ij}$表示第$i$家公司第$j$月的月股票收益率）。

上述模型求解出的α_i反映相对其他公司来说，特定公司的有偏部分，该项数值越小说明相对其他公司而言该公司越倾向于低估市场价值，会计处理越稳健。为了表述的方便，下文中以计算出的$\alpha_i \times (-1) = CONSV\_BTM_i$作为衡量各公司稳健性的指标。计算出的$CONSV\_BTM_i$越大，会计处理越稳健。根据假设1，$CONSV\_BTM_i$与股东债权人冲突正相关。

（2）截面稳健性的*CONSV_BASU*度量。采用Basu（1997）的逆回归模型，利用各公司1999年至2005年共7年的面板数据求解公司层面的会计稳健性。

$$\frac{EPS_{it}}{P_{it-1}} = \alpha 0 + \alpha 1_i * RET_{it} + \alpha 2_i * D * RET_{it} + \alpha 3_i * D + \varepsilon_{it} \qquad (2)$$

其中：EPS_{it}表示i公司第t年的每股税后净收益；P_{it-1}表示第$t-1$年年末的股票价格；RET_{it}表示i公司第t年的年股票收益率；D是哑变量，当RET_{it}小于0时取1，当RET_{it}大于0时取0；ε_{it}是随机误差项。该模型中，$\alpha 1$代表盈余对好消息的反应，$\alpha 1 + \alpha 2$代表盈余对坏消息的反应，有多少家公司就能计算得到多少个$\alpha 1$和$\alpha 1 + \alpha 2$。以往的研究中多用$\alpha 2$来表示非对称及时性，用两个斜率相减得到，$\alpha 2$越大表示会计处理越稳健，但这种方法很少被用在对截面稳健性的度量，Gassen *et al.*（2006）采用更加直观的方法度量公司层面的非对称及时性，即用斜

率所对应两条直线的夹角大小直接反映盈利对坏消息比对好消息反应更快的程度。本文中采用这一方法计算Basu稳健性，首先用7年的数据计算各公司的$\alpha1$和$\alpha1+\alpha2$，令$CONSV\_BASU = ARCTAN(\alpha1+\alpha2) - ARCTAN(\alpha1)$，得到的$CONSV\_BASU^4$越大，会计处理越稳健。根据上文的假定，$CONSV\_BASU_i$与股东债权人冲突正相关。

（3）稳健性的时间截面$CONSV\_CSCORE$度量（Khan and Watts, 2007）。根据以往的文献，允许系数随时间和个体变动的情况下，Basu（1997）的回归模型可以写为：

$$X_{it} = \beta_{1t} + \beta_{2t}D_{it} + \beta_{3it}R_{it} + \beta_{4it}D_{it}R_{it} + \varepsilon_{it} \tag{3}$$

其中X_{it}表示特定年份特定股票的会计收益率；R_{it}表示特定年份特定股票的市场收益率；D_{it}当R_{it}小于0时取1，否则取0。稳健性的时间截面度量即模型中的β_{4it}。Khan and Watts（2007）认为影响会计稳健性的主要因素是：帐面市价比（M/B）、公司规模（$SIZE$）、财务杠杆（LEV）。因此，Khan and Watts（2007）利用这三个变量和Basu的模型来估计稳健性的公司一年度度量，认为时间截面度量的好消息的及时性和坏消息的增量及时性可以表达为随时间和个体变化的变量的线性函数，即：

$$G\_SCORE \equiv \beta_{3it} = \mu_{1t} + \mu_{2t}SIZE_{it} + \mu_{3t}M/B_{it} + \mu_{4t}LEV_{it} \tag{4}$$

$$C\_SCORE \equiv \beta_{4it} = \lambda_{1t} + \lambda_{2t}SIZE_{it} + \lambda_{3t}M/B_{it} + \lambda_{4t}LEV_{it} \tag{5}$$

其中，λ_1，λ_2，λ_3，λ_4，和μ_1，μ_2，μ_3，μ_4随时间变化，但不随公司变化；G_SCORE代表盈余对好消息的反映速度，C_SCORE代表盈余对坏消息的反映速度和对好消息的反映速度之差，即坏消息的增量及时性或非对称及时性，代表会计稳健性的大小，该值越大，会计处理越稳健。将（4）和（5）代入（3）可以得到如下回归方程：

$$X_{it} = \beta_1 + \beta_2 D_{it} + R_{it}(\mu_1 + \mu_2 SIZE_{it} + \mu_3 M/B_{it} + \mu_4 LEV_{it}) + D_{it}R_{it}(\lambda_1 + \lambda_2 SIZE_{it} + \lambda_3 M/B_{it} + \lambda_4 LEV_{it}) + \varepsilon_{it} \tag{6}$$

估计该方程，能够得到λ_i和μ_i的估计值，其中$i = 1, 2, 3, 4$。将估计值代入（5）即得到的C_SCORE值，代表坏消息相对于好消息的增量及时性，本文中将其命名为$CONSV\_CSCORE_{it}$，作为对会计稳健性的时间截面度量。根据上文的假定，$CONSV\_CSCORE_{it}$与股东债权人冲突正相关。

4　计算公式中$ARCTAN$为反正切函数，返回与斜率值对应的弧度值，其取值范围为$(-\pi/2, \pi/2)$。我们还直接采用$\alpha2$度量截面稳健性$CONSV\_BASU_i$，结果发现两种$CONSV\_BASU_i$度量方式的相关系数为0.96，所有的实证结论均同采用夹角大小度量的一致。

2、股东债权人冲突

根据代理理论，获得固定收益与剩余收益的投资者在债务契约中存在利益冲突（Jensen and Meckling, 1976），信息不对称使得股东可能与经理合谋采用加大利润分配、过度负债、资产替代等行为增加企业的财务风险，降低债权的价值，将债权人的利益向股东转移。本文考查债务契约中股东债权人之间的冲突与会计稳健性的关系。由于冲突是一个潜变量，无法直接观测得到，本文采用以下三个变量表示股东债权人冲突：

（1）股利支付率*ASSDIV*：期初总资产股利支付率，等于年度派发的现金股利除以期初总资产。债务契约双方由于非对称收益，在公司股利分配上存在冲突，具体表现在：股东（主要指控股股东，下同）希望获得更多即时现金股利，其动机包括及时获取现金回报（一鸟在手理论），向外界传递公司经营良好的信息（信号传递理论），或通过发放现金股利减少代理成本（代理成本理论），甚至通过股利分配进行利益输送（利益输送理论）。而对债权人来讲，股利的过度支付会减少其对公司的固定收益权，增加公司的违约风险，从而将债权人的财富向股东转移。因此，债权人常常在债务契约中限制股利分配，并对存在较高偿债风险的公司的股利分配行为更为敏感（Black, 1976; Smith and Warner, 1979; Kalay, 1982）。吕长江和周县华（2005）发现，随着证监会对直接侵占资金行为监管和披露的加强，控股股东逐渐减少了对上市公司资金的直接侵占，但却更多的采用派发股利的方式合法的进行利益输送。唐国正（2005）发现过度派发现金股利在股权分置的情况下不仅加深了大股东与中小股东利益冲突，也损害了债权人的利益，债权人与股东之间的利益冲突更趋严重。

（2）资产负债率*LEV*。资产负债率是衡量企业偿债能力和财务风险的重要指标。债务水平高，意味着财务风险较大，债权人收回本息的风险增大。Parrino and Weisbach（1999）运用模拟方法直接验证了股东债权人冲突引起的投资歪曲行为。他们发现，股东债权人冲突确实存在，而且这种冲突随企业负债水平的增加而增加。

（3）投资风险性*RISK*。本文用投资风险性代表资产替代行为。Jensen and Meckling（1976）提出资产替代问题。它是指股东在企业债务融资后，将负债资金投资于高风险高收益的投资项目，而放弃低风险低收益的投资项目。他们认为，当公司的投资项目产生大量的收益时，股东得到超过负债账面价值的大部分收益；而当公司的投资项目失败时，股东只受有限责任的约束，而债权人则承担了项目失败的后果，因此股东能从投资高风险的项目甚至NPV为负的项目中获得收益。这种股东债权人之间风险与收益的不对称导致股东热衷于从事资产替代行为。江伟（2004）以及童盼、陆正飞（2005）的实证研究表明我国上市公司存在较为严重的资产替代问题。江伟、沈艺峰（2005）发现上市公司的大股东的确利用资产替代行为来侵害债权人的利益。他们用投资风险性表示大股东的资产替代行为，分别用经营性现金流量的变异系数和主营业务收入的变

异系数来表示投资风险性。本文也参考他们的做法，分别用经营性现金流量的变异系数RISK_CASH和主营业务收入的变异系数RISK_REVENUE来表示投资风险性。

3、控制变量

（1）成长性GROW：用主营业务收入的增长率表示；（2）控股股东性质STATE：国有控股的上市公司该变量等于1，否则等于0；（3）公司规模SIZE：用年末总资产的自然对数表示；（4）盈利能力ROA：用总资产报酬率表示；（5）行业IND：采用2001年4月中国证监会颁布的《上市公司行业分类指引》将所有上市公司分为22个行业，除制造业按亚类进行分类外，其他行业都为大类，剔除金融类上市公司，并以综合行业为基准设置20个行业哑变量；（6）年度YEAR：实证研究的样本区间为2000年至2005年共6年，以2000年为基准，设置5个年度哑变量。本阶段的变量释义见表1。

（二）模型：稳健性的债务契约需求特征

根据以上分析，验证会计稳健性的债务契约需求特征的实证模型如下：

$$CONSV_{i,t} = ASSDIV_{i,t-1} + LEV_{i,t-1} + RISK_{i,t-1} + ROA_{i,t} + GROW_{i,t} + SIZE_{i,t}$$
$$+ STATE_{i,t} + IND_i + YEAR_i + \varepsilon_{i,t} \tag{7}$$

（三）数据和样本形成过程

本文从Wind数据库调用1999年1月1日之前上市的我国A股上市公司，利用这些公司1999至2005年的面板数据求解稳健性的CONSV_BTM测度、CONSV_BASU测度和CONSV_CSCORE测度，去掉金融类上市公司和数据不全的公司后，分别得到778家和736家公司7年的稳健性度量共5446和5152个样本点，[5]为了简化表格，将研究对象统一为5152个样本点。此外，为了更好的揭示稳健性和债务契约冲突的关系，本文针对时间错开的数据进行实证分析，即考察2000年至2005年期间的个体稳健性是否受到1999年至2004年期间的个体债务契约冲突的影响，其他控制变量取2000年至2005年期间。因此，去掉1年的样本数据后，得到4416个样本点。最后，对除稳健性以外的所有连续变量进行1%和99%分位数的极值剔除后，得到最后的样本为3972个。

5　因为计算CONSV_BTM和CONSV_BASU、CONSV_CSCORE的模型和变量不一样，去掉各自的缺失值之后得到的观测点并不完全相同。

表1　　计稳健性需求特征的变量定义

变量类型	变量	描述	定义
因变量 $CONSV$： 00-05	$CONSV\_BTM$	稳健性的帐面 市价比测度	模型（1）计算，值越大越稳健
	$CONSV\_BASU$	稳健性的 Basu测度	模型（2）计算，值越大越稳健
	$CONSV\_CSCORE$	稳健性的时间 截面度量	等式（5）计算，值越大越稳健
解释变量 债务契约冲突： 99-04	$ASSDIV$	股利支付率	=本年派发的现金股利/期初总 资产
	LEV	负债水平	资产负债率
	$RISK$	投资风险性[6]	分别用主营业务收入的变异系 数$RISK\_REVENUE$和经营性 现金流量的变异系数$RISK\_$ $CASH$表示。
控制变量 00-05	ROA	盈利能力	Wind数据库中的总资产报酬率 指标。
	$GROW$	收入增长率	=（本期主营业务收入－上期主 营业务收入）/上期主营业务 收入
	$SIZE$	公司规模	=总资产的自然对数
	$STATE$	控股股东性质	国有控股取1，否则为0
	IND	所属行业	20个行业哑变量
	$YEAR$	所属年度	5个年度哑变量

（四）实证结果

1、描述性统计

　　表3提供了研究样本的描述性统计量。$CONSV\_BTM$表示各公司相对于总体的稳健性偏差，因此其均值接近于0；$CONSV\_BASU$表示公司层面的稳健性度量，其均值为0.024，大于0，表明平均而言我国上市公司会计盈余呈现稳健性特征，对坏消息的反映较好消息更快；其中位数为–0.007，小于0，表明大部分公

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[6]　本文采用变异系数来度量投资风险性，变异系数是统计学和财务管理学中表示风险或者波动程度的指标，用一个序列的标准差除以均值得到。本文中采用各个公司1999年至2005年共7年的数据序列来计算变异系数，一家公司只有一个变异系数，所以投资风险性是同时间无关的截面变量。

表2　验证会计稳健性需求特征的样本筛选过程

样本筛选过程	以账面市价比度量截面稳健性 CONSV_BTM	以Basu模型度量截面稳健性CONSV_BASU	以Watts（2007）的方法度量的时间截面稳健性：CONSV_CSCORE
从Wind数据库调用全部A股上市公司年报数据（截至2006年11月6日）	1353家	1353家	1353家
选取1999年1月1日之前上市的公司	786家	786家	786家
利用各公司7年的时间序列数据计算各公司 CONSV_BTM测度：去掉数据不全的公司	783家		
利用各公司7年的时间序列数据计算各公司 CONSV_BASU测度，去掉数据不全的公司，并利用等式（5）计算CONSV_CSCORE测度		741家	741家7年
去掉金融行业公司	778家	736家	736家7年
7年的面板数据	778家×7年=5446个样本点	736家×7年=5152个样本点	736家×7年=5152个样本点
为了简化表格，得到最大的统一样本数	5152	5152	5152
取00-05年的稳健性，99-04年的股利支付率，负债率、投资风险性、00-05年的其他控制变量。	4416个样本点	4416个样本点	4416个样本点
去掉除稳健性以外的其他连续变量1%和99%以外的极端值。	3972个样本点	3972个样本点	3972个样本点

表3 稳健性需求特征模型相关变量的描述性统计

	样本数	均值	中位数	标准差	最小值	最大值	偏度	峰度
CONSV_BTM	3972	−0.015	−0.002	0.175	−0.566	1.535	0.665	5.750
CONSV_BASU	3972	0.024	−0.007	0.326	−1.332	2.021	1.086	7.359
CONSV_CSCORE	3972	0.063	0.061	0.063	−0.131	0.444	0.803	3.167
ASSDIV	3972	0.0124	0.000	0.021	0.000	0.3133	3.424	22.063
LEV	3972	0.482	0.481	0.191	0.074	1.641	0.658	2.384
RISK_CASH	3972	0.638	0.917	6.495	−49.560	31.561	−2.860	20.923
RISK_REVENUE	3972	0.432	0.388	0.230	0.078	1.477	1.180	2.210
ROA	3972	3.585	4.527	7.235	−40.886	20.686	−1.978	6.491
GROW	3972	0.270	0.169	0.541	−0.601	6.107	4.557	32.424
SIZE	3972	21.097	21.049	0.873	18.776	23.540	0.133	−0.185
STATE	3972	0.657	1.000	0.475	0.000	1.000	−0.663	−1.561

司会计处理并不稳健；*CONSV_CSCORE*代表个体年度的稳健性度量，均值为0.063，大于0，说明2000年至2005年期间，我国上市公司平均而言会计处理体现了稳健性。平均股利支付率1.2%，平均资产负债率约为48%，平均经营性现金流量的变异系数大约为64%，平均销售收入的变异系数大约为43%，平均总资产报酬率约为3.6%，平均主营业务收入增长率约为27%，总资产的自然对数平均约为21，平均大约66%的样本为国有控股上市公司。

表4是变量间的Spearman和Pearson相关系数。可以发现，从单变量的相关性来看，*CONSV_BTM*、*CONSV_BASU*以及*CONSV_CSCORE*稳健性同股利支付率负相关，与资产负债率以及表示投资风险性的两个指标均为显著正相关，除股利支付率以外，债务契约冲突越大，越需要会计稳健性，给出了会计稳健性的债务契约需求特征的初步证据。此外，表4中自变量之间的相关系数均小于0.5，说明本文的实证模型中不存在显著的多重共线性问题。

2、回归结果

表5是对稳健性债务契约需求特征模型（7）进行OLS回归的结果，模型（1）、（2）、（3）、（4）、（5）、（6）中所有自变量的VIF值均小于3，说明自变量间不存在明显的多重共线性问题。根据假设1，我们预期*ASSDIV*，*LEV*，*RISK_CASH*和*RISK_REVENUE*的系数均大于0。从*CONSV_BTM*稳健性的需求特征回归结果来看，模型1和模型2中，*CONSV_BTM*稳健性与股利支付率、资产负债率以及代表投资风险性的*RISK_REVENUE*指标均为显著正相关，同假设1完全一致。模型3和模型4 *CONSV_BASU*稳健性的需求特征回归结果中，股利支付率以及投资风险性的系数和显著性同假设有一些差异，资产负债率的系数仍显著为正。*CONSV_CSCORE*稳健性的回归结果也同假设完全一致，2000年至2005年间的个体时间稳健性同1999年至2004年间的个体时间债务契约冲突显著正相关，具体而言，*CONSV_CSCORE*同*ASSDIV*，*LEV*，*RISK_REVENUE*均为显著正相关。综合来看，表5的结果较好反映了债务契约冲突越大，会计处理越稳健的特征，稳健性的债务契约需求特征得到较好的验证。

此外，我们发现三种稳健性度量均同盈利能力*ROA*显著负相关，与用主营业务收入增长率表示的成长机会*GROW*的关系则不显著或不明显，与公司规模*SIZE*显著负相关。孙铮等（2005）也发现在我国上市公司中公司规模与会计稳健性呈显著的负相关关系，这与国外的研究认为大公司因为承担更高的政治成本而更愿意选择稳健的会计处理的结论不一致，说明我国上市公司在决定会计选择的稳健性程度时并没有考虑太多政治成本因素。最后，我们发现国有控股对会计稳健性具有显著为负的影响，该结论与孙铮等（2005）、朱凯（2005）、王毅春和孙林岩（2006）的结论一致，即国有控股的性质削弱了债务契约对会计稳健性的影响。

表4 稳健性需求特征型相关变量的相关系数

相关系数	CONSV_BTM	CONSV_BASU	CONSV_CSCORE	ASSDIV	LEV	RISK_CASH	RISK_REVENUE	ROA	GROW	SIZE	STATE
CONSV_BTM	1	0.311***	0.617***	-0.276***	0.283***	0.129***	0.168***	-0.124***	-0.091***	-0.542***	-0.155***
CONSV_BASU	0.268***	1	0.245***	-0.185***	0.112***	0.134***	0.034**	-0.201***	-0.064***	-0.202***	-0.087***
CONSV_CSCORE	0.586***	0.217***	1	-0.423***	0.600***	0.190***	0.098***	-0.324***	-0.054***	-0.628***	-0.130***
ASSDIV	-0.140***	-0.112***	-0.317***	1	-0.331***	-0.161***	0.030*	0.395***	0.036***	0.252***	0.068***
LEV	0.316***	0.124***	0.662***	-0.311***	1	0.078***	0.108***	-0.212***	0.154***	0.071***	-0.061***
RISK_CASH	0.022	0.006	0.014	0.001	0.016	1	0.034**	-0.171***	-0.014	-0.165***	-0.053***
RISK_REVENUE	0.201***	0.009	0.143***	-0.009	0.117***	0.010	1	0.148***	0.236***	0.004	-0.106***
ROA	-0.192***	-0.198***	-0.426***	0.281***	-0.209***	-0.033**	0.031**	1	0.019	0.157***	-0.015
GROW	0.001	-0.009	0.054***	-0.062***	0.152***	0.018	0.228***	-0.039**	1	0.250***	-0.026
SIZE	-0.509***	-0.150***	-0.647***	0.145***	0.001	-0.012	-0.053***	0.212***	0.104***	1	0.107***
STATE	-0.144***	-0.080***	-0.128***	0.030*	-0.063***	0.016	-0.109***	0.020	-0.077***	0.107***	1

*** 表示1%的水平显著，** 表示5%的水平显著，* 表示10%的水平显著；上面是Spearman相关系数，下三角是Pearson相关系数。

表5 稳健性的债务契约需求特征回归结果

因变量CONSV	CONSV_BTM (N=3972)				CONSV_BASU(N=3972)				CONSV_CSCORE(N=3972)			
	模型（1）		模型（2）		模型（3）		模型（4）		模型（5）		模型（6）	
	系数	T值	系数	T值	系数	T值	系数	T值	系数	T值	系数	T值
(Constant)	1.840***	32.848	1.921***	34.122	0.806***	6.158	0.791***	6.098	0.895***	100.382	0.904***	101.687
DIV	0.305***	2.764	0.322***	2.877	-0.563**	-2.183	-0.567**	-2.198	0.049***	2.809	0.052***	2.931
LEV	0.300***	24.306	0.315***	25.331	0.166***	5.733	0.163***	5.672	0.204***	103.986	0.206***	104.860
RISK_CASH			0.000	0.813			0.000	0.149			0.000*	-1.812
RISK_REVENUE	0.108***	10.829			-0.020	-0.846			0.011***	7.172		
ROA	-0.001***	-3.448	-0.001***	-2.963	-0.007***	-9.361	-0.007***	-9.394	-0.002***	-29.609	-0.002***	-29.210
GROW	-0.013***	-2.572	0.002	0.470	-0.003	-0.291	-0.006	-0.553	0.001	1.310	0.003***	3.474
SIZE	-0.096***	-36.272	-0.098***	-36.518	-0.039***	-6.296	-0.039***	-6.253	-0.044***	-104.409	-0.044***	-104.463
STATE	-0.015***	-3.228	-0.020***	-4.116	-0.040***	-3.652	-0.039***	-3.595	-0.002***	-2.919	-0.003***	-3.487
R方	0.424		0.407		0.091		0.091		0.887		0.886	
调整R方	0.419		0.402		0.084		0.084		0.886		0.885	
F值	90.510		84.370		12.340		12.316		965.368		952.234	

*** 表示1%的水平显著，** 表示5%的水平显著，* 表示10%的水平显著。

3、对需求特征实证结果的进一步讨论

表5表明，使用混合的时间截面数据进行的回归较好验证了会计稳健性的债务契约冲突需求特征。但采用$CONSV\_BTM$和$CONSV\_BASU$作为稳健性的度量时，同一家公司各年的$CONSV\_BTM$和$CONSV\_BASU$都是相同的，这样的数据结构可能更容易引起异方差和自相关问题，从而影响估计量的有效性，但是当截面单位数量远大于时期数量时，这个问题可以得到缓解，本文中的截面单位数为700多家公司，时期数为6年。出于结论稳健性的考虑，本文对采用$CONSV\_BTM$和$CONSV\_BASU$作为因变量的模型（7）进行了异方差和自相关检验，并进行了相应的处理，作为对会计稳健性需求特征实证结论的补充。

（1）异方差问题：针对模型（7）进行异方差检验，如表6所示，计算得出的LM统计量均小于显著性为5%的χ^2临界值，说明模型（7）不存在异方差问题。

（2）自相关问题：表6中的D-W值均较低，为0.5左右或小于0.5，说明存在一阶正相关。因此，我们采用求各变量在时间上的平均值的方法来消除自相关。在均值方程模型中，原始样本仍采用模型（7）中去极值后的3972个时间截面样本点，对这些样本点以公司代码为关键字字段求得各变量在时间上的平均值，最后的公司数一共是707个，对均值方程的回归结果如表7所示。表7表明，$CONSV\_BTM$稳健性与股利支付率、资产负债率以及代表投资风险性的$RISK\_REVENUE$指标均为显著正相关，基本结论同不采用平均值时一样。

表6 需求特征模型异方差和自相关的检验

投资风险性的度量	$CONSV\_BTM$（N = 3972）		$CONSV\_BASU$（N = 3972）	
	RISK_CASH	RISK_REVENUE	RISK_CASH	RISK_REVENUE
样本数	3972	3972	3972	3972
辅助回归R^2	0.003	0.006	0.007	0.007
LM统计量	11.913	23.826	27.797	27.797
χ^2临界值（100）[7]	124.342	124.342	124.342	124.342
D-W值	0.581	0.574	0.393	0.393

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[7] 此处列出的是显著性为5%，自由度为100的卡方分布临界值，模型（7）的χ^2分布自由度远远大于100，其临界值大于124.34。从表中可知，LM统计量远小于卡方分布临界值，因此不存在异方差问题。

表7 稳健性的需求特征检验模型的均值回归结果

因变量CONSV	CONSV_BTM(N=707)				CONSV_BASU(N=707)			
	模型（1）		模型（2）		模型（3）		模型（4）	
	系数	T值	系数	T值	系数	T值	系数	T值
(Constant)	1.919***	12.158	2.018***	12.577	0.470	1.395	0.450	1.341
DIV	1.673***	3.383	1.811***	3.580	0.441	0.418	0.425	0.402
LEV	0.511***	13.127	0.544***	13.827	0.117	1.411	0.110	1.343
RISK_CASH			-0.001	-1.114			0.000	-0.147
RISK_REVENUE	0.156***	5.695			-0.033	-0.568		
ROA	-0.002	-1.237	-0.002	-1.429	-0.019***	-5.906	-0.019***	-5.890
GROW	-0.140***	-5.501	-0.077***	-3.250	0.091	1.688	0.078	1.582
SIZE	-0.104***	-13.846	-0.106***	-13.950	-0.022	-1.369	-0.021	-1.333
STATE	-0.032**	-2.086	-0.039**	-2.533	-0.045	-1.392	-0.043	-1.338
R方	0.489		0.465		0.119		0.119	
调整R方	0.468		0.444		0.084		0.084	
F值	24.037		21.881		3.408		3.395	

四、会计稳健性的债务契约有用性

（一）变量[8]

1. 新增贷款可能性（*LOAN*）。该指标反映债务冲突的缓解，[9]作为模型中的因变量，检验是否会计处理稳健的公司更容易获得新增贷款。该指标等于公司期初和期末长短期贷款（包括长期借款、短期借款和一年内将要到期的长期借款）的差额除以公司期初总资产。该指标大于0时，说明公司贷款申请获得银行批准。

2. 会计稳健性。采用上文计算出的 *CONSV_BTM*、*CONSV_BASU* 以及 *CONSV_CSCORE*。

3. 公司偿债能力和盈利能力变量。银行在决定是否贷款时参考的会计信息主要是公司的盈利能力和偿债能力。本文选取反映偿债能力的5个会计指标和反映盈利能力的3个会计指标进行因子分析，对这8个指标的描述见表9的序号5-12。根据特征值大于1的原则，采用主成分抽取方式和方差最大的正交旋转提取了两个公因子 *FACTOR1* 和 *FACTOR2*。表8是因子分析的结果，如表8所示，*FACTOR1* 对流动比率、速动比率、现金比率、股东权益比率和清算比率的倒数等反映偿债能力的指标具有大的正载荷，而 *FACTOR2* 对净资产收益率、总资产收益率、营业毛利率等反映盈利能力的指标有更大的正载荷，两个公因子解释了总体方差的约72%。

4. 其他控制变量：（1）主营业务收入增长率（*GROW*）＝（本期主营业务收入－上期主营业务收入）/上期主营业务收入，控制公司的成长性。（2）公司规模（*SIZE*）＝总资产的自然对数。（3）公司是否国有控股（*STATE*），控股股东为国有时该变量取1，否则取0。（4）自有资金比率（*CFIO*）＝（经营活动产生的现金流量净额－投资活动产生的现金流量净额）/期初总资产，公司在内部资金充裕的时候可能并不需要申请银行贷款，对这种情况加以控制。（5）权益筹资能力（*OFFER*）＝本期配股或增发筹集资金/期初总资产，公司可以获得廉价的权益融资时也不需要贷款，对这种情况加以控制。（6）行业 *IND*：采用2001年4月中国证监会颁布的《上市公司行业分类指引》将所有上市公司分为22个行业，除制造业按亚类进行分类外，其他行业都为大类，剔除金融类上市公司，并以综合行业为基准设置20个行业哑变量；（7）年度 *YEAR*：实证研究

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[8]　本部分验证会计稳健性对债务契约的影响，模型和变量的设计借鉴了孙铮等发表在《管理世界》2006年第10期论文"所有权性质、会计信息与债务契约 —— 来自中国上市公司的经验证据"。

[9]　另外一个可能的反映债务冲突是否协调的替代变量是债务成本，但考虑到我国上市公司披露的财务数据中将很大部分的借款费用资本化，并未计入财务费用，因此本文中未采用债务成本指标。

表8　主因子分析结果（N = 4114[10]）

| 变量 | 载荷矩阵（旋转后） | | 最终公因子 |
	FACTOR1	FACTOR2	方差估计
CURRENT	0.929	0.084	0.870
QUICK	0.941	0.070	0.891
CASH	0.841	0.118	0.721
EQUITY	0.774	0.320	0.701
LIQUID	0.889	0.122	0.805
GROSS	0.156	0.539	0.315
ROE	0.045	0.840	0.708
ROA	0.105	0.856	0.744

抽取方式: 主成分分析。

旋转方式: Varimax with Kaiser Normalization，方差最大的正交旋转法。

公因子解释了总体方差的71.932%.

的样本区间为2000年至2005年共6年，以2000年为基准，设置5个年度哑变量。本阶段的变量释义见表9。

（二）模型

本文建立以下模型考查会计稳健性对贷款可能性的影响，即会计稳健性的债务契约有用性：[11]

$$
\begin{aligned}
LOAN_{i,t} = {} & \alpha + \beta_1 * CONSV_{i,t-1} + \beta_2 * FACTOR1_{i,t-1} + \beta_3 * FACTOR2_{i,t-1} + \beta_4 * GROW_{i,t} \\
& + \beta_5 * SIZE_{i,t} + \beta_6 * STATE_{i,t} + \beta_7 * CFIO_{i,t} + \beta_8 * OFFER_{i,t} \\
& + \sum_{i=9}^{28} \beta_i * IND_i + \sum_{i=29}^{33} \beta_i * YEAR_i + \varepsilon_{i,t}
\end{aligned} \tag{8}
$$

根据研究假设2，预期该模型中，β_1系数显著为正。

（三）数据和样本形成过程

为了检验会计稳健性是否有利于企业获得新增贷款，本文采用上文中计算出的CONSV_BASU、CONSV_BTM和CONSV_CSCORE作为自变量，在第一阶段

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[10]　样本形成过程见表10。

[11]　本文直接考查稳健性的债务契约有用性，并不是考查不同稳健性公司中会计信息的债务有用性，因此与孙铮等（2006）的模型不同，我们的模型中没有设置交叉项。

表9 会计稳健性债务契约有用性检验的变量定义

变量类型	序号	变量	描述	定义
因变量 00-05年	1	LOAN	新增贷款比率	=（期末借款－期初借款）/期初总资产
解释变量：稳健性：99-04年	2	CONSV_BTM	稳健性的账面市价比测度	由实证模型（1）计算，值越大越稳健
	3	CONSV_BASU	稳健性的Basu测度	由实证模型（2）计算，值越大越稳健
	4	CONSV_CSCORE	稳健性的截面时间度量	等式（5）计算，值越大越稳健
因子分析变量 99-04年	5	CURRENT	流动比率	=流动资产/流动负债
	6	QUICK	速动比率	=（流动资产－存货）/流动负债
	7	CASH	现金比率	=现金及现金等价物期末余额/流动负债
	8	EQUITY	股东权益比率	=股东权益/总资产
	9	LIQUID	清算比率的倒数	=（股东权益－无形资产）/负债
	10	GROSS	营业毛利率	=主营业务利润/主营业务收入
	11	ROE	净资产收益率	=净利润/平均净资产
	12	ROA	总资产收益率	=（利润总额+财务费用）/平均总资产
控制变量：偿债能力和盈利能力因子：99-04年	13	FACTOR1[12]	偿债能力公因子	序号5－12会计指标提取的公因子99-04年
	14	FACTOR2	盈利能力公因子	序号5－12会计指标提取的公因子99-04年
	15	GROW	收入增长率	=（本期主营业务收入－上期主营业务收入）/上期主营业务收入
其他：00-05年	16	SIZE	公司规模	=总资产的自然对数
	17	STATE	控股股东性质	国有控股取1，否则为0
	18	CFIO	自有资金比率	=（经营活动产生的现金流量净额－投资活动产生的现金流量净额）/期初总资产
	19	OFFER	权益筹资能力	=本期配股或增发筹集资金/期初总资产
	20	IND	所属行业	20个行业哑变量
	21	YEAR	所属年度	5个年度哑变量

12 在进行因子分析过程中，没有使用利息保障倍数指标的理由是，数据库中的财务费用未包含资本化利息，因此本文避免采用该指标进行分析。

表10　稳健性的债务契约有用性检验的数据形成过程

筛选过程	*CONSV_BTM*	*CONSV_BASU*	*CONSV_CSCORE*	备注
第一阶段需求特征模型中去极值前的统一样本数	5152个样本点	5152个样本点	5152个样本点	
取00-05年的贷款可能性指标，99-04年的稳健性，00-05年的其他控制变量	4416个样本点	4416个样本点	4416个样本点	去掉1年的736个样本
去掉除稳健性外连续变量1%和99%以外的观测点	4114个样本点	4114个样本点	4114个样本点	按此时已经去极值后的样本进行因子分析

实证过程中得到去极值前统一样本共5152个；考虑时间错开的数据回归，去掉1年的数据后的统一样本数为4416；对除稳健性、*FACTOR1*和*FACTOR2*以外的所有连续变量进行1%和99%以外分位数剔除后，得到最终样本4114个，再对这4114个去极值后的样本进行因子分析，得到*FACTOR1*和*FACTOR2*的值，再对4114个样本点进行回归分析。样本的具体形成过程见表10。

（四）实证结果

表11是对会计稳健性的债务契约有用性检验的回归结果，所有解释变量的VIF值均小于3，说明不存在明显的多重共线性。模型（7）、（8）、（9）的结论显示：在控制公司盈利能力、偿债能力、成长性、规模、所有权性质、自有资金比例和权益筹资能力的情况下，会计稳健性有利于提高新增贷款可能性，*CONSV_BTM*、*CONSV_BASU*和*CONSV_CSCORE*的回归系数均为正，*CONSV_BTM*和*CONSV_BASU*的系数显著性水平分别为1%和11.5%，该实证结果说明，公司截面的会计稳健性特征能够影响其是否能够获得新增贷款，截面稳健性越大，获得新增贷款的可能性越大，但是公司前一年度的会计稳健性对当年是否能够获得银行贷款的影响则不明显。综合来看，会计稳健性能够促进新的债务契约的签订，为我国上市公司会计稳健性的债务契约有用性提供了初步的证据。

其他变量的系数符号和显著性都同孙铮等（2006）的完全一致，即在我国

表11 稳健性的债务契约有用性检验回归结果 N=4114

因变量LOAN	模型（7） (*CONSV* = *CONSV_BTM*)		模型（8） (*CONSV* = *CONSV_BASU*)		模型（9） (*CONSV* = *CONSV_CSCORE*)	
	系数	T值	系数	T值	系数	T值
常数项	−0.126***	−3.044	−0.149***	−3.223	−0.120***	−2.658
CONSV	0.011**	2.352	0.015*	1.575[13]	0.003	0.190
FACTOR1	0.005***	3.061	0.006***	3.412	0.005***	3.042
FACTOR2	0.012***	7.149	0.012***	7.173	0.012***	6.882
GROW	0.030***	8.858	0.030***	8.829	0.007***	3.366
SIZE	0.007***	3.771	0.009***	3.885	0.030***	8.818
STATE	−0.015***	−4.303	−0.015***	−4.280	−0.015***	−4.449
CFIO	0.071***	5.708	0.069***	5.590	0.069***	5.546
OFFER	0.028	1.092	0.032	1.247	0.029	1.137
R方	0.098		0.097		0.096	
调整R方	0.090		0.090		0.089	
F值	13.361***		13.259***		13.177***	

上市公司的银行贷款契约中，公司偿债能力、盈利能力、成长性、公司规模和自有资金比例有重要参考意义。它们都在1%的水平上对新增贷款可能性有正向作用，而*STATE*的符号在1%的水平上显著为负，表明非国有企业更容易获得新增贷款，原因可能是国有企业已经有较高的资产负债率，存量贷款基数较大，银行继续放贷的积极性不高。另一方面，伴随国有商业银行的改革和民间金融的发展，以及非国有经济近年来的蓬勃发展，非国有企业的贷款难问题得到一定的改善，能够从银行等金融机构获得更多的新增贷款。

五、稳定性检验

（一）对稳健性的债务契约需求特征的补充检验

根据李远鹏等（2005）的证据，亏损和稳健性之间有较强的关系，而亏损公司的*LEV*往往比较高，因此对稳健性的需求特征还有一种解释，就是亏损的公司稳健性高，这种稳健性不是由于债务契约冲突引起。因此，本文在需求特征

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[13] 显著性水平为11.5%。

模型（7）中加入是否亏损这一哑变量，对这一竞争性假说进行控制。[14]表12表明，在需求特征模型中加入亏损哑变量*LOSS*后，各变量的系数和显著性并未产生显著变化，因此，债务契约冲突各指标的确能够对会计稳健性产生正向影响。

（二）对稳健性的债务契约有用性的补充检验

在有用性回归模型中的新增贷款可能性还可能受到公司股利政策的影响，[15]如果公司发放了现金股利，可能需要更多的贷款来满足营运资金和投资的需要，同时现金股利也会影响会计稳健性。因此，原模型中新增贷款可能性与会计稳健性的正向关系可能是现金股利引起的，为了控制这一竞争性假说，我们在有用性检验模型中引入1999年至2004年的期初总资产股利支付率*ASSDIV*这一变量，实证结果如下表13，各变量的系数和显著性均没有显著变化，即截面稳健性的确有助于公司获得新增贷款，会计稳健性的债务契约有用性得到初步验证。

六、结论

本文从需求特征和有用性两个方面为会计稳健性的债务契约解释提供了中国上市公司的经验证据。本研究首先用期初总资产股利支付率、资产负债率和投资风险性表示公司的债务契约冲突，发现股利支付率越高、资产负债率越高、投资风险性越大的公司，会计处理越稳健。其原因是当公司过度支付股利，财务风险加大，实施资产替代行为导致债权价值降低时，股东与债权人的冲突加大，债权人必然寻求其他的利益保护机制来防止其利益被侵蚀，会计稳健性正是协调债务契约冲突的有效方式。因此，本文和其他的文献都观察到会计稳健性的债务契约需求特征，即当债务契约双方冲突加大时，产生对会计稳健性的需求。换句话说，稳健性之所以存在于企业的会计实践中，可能正是由于它具有缓解债务冲突的功能。在已经观察到稳健性的债务契约需求特征的基础上，本文进一步检验了需求特征存在的原因，即会计稳健性的债务契约有用性。实证结果表明，在控制其他因素的情况下，公司截面会计稳健性有利于企业获得新增贷款，说明会计稳健性的确具有协调债务契约冲突，促进有效契约签订的治理功能。因此，本文从表现形式和内在机理两个方面检验了会计稳健性的债务契约解释在中国上市公司中的适用性。

需要说明的是，从本文的实证结果来看，会计稳健性的需求特征在统计上比较显著，而在有用性检验模型中，三种稳健性度量的系数均为正，但只有用

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[14] 感谢匿名审稿人对此提出的意见。
[15] 感谢匿名审稿人对此提出的意见。

表12 控制亏损情况下，稳健的债务契约需求特征

因变量CONSV	CONSV_BTM(N=3972)				CONSV_BASU(N=3972)				CONSV_CSCORE(N=3972)			
	模型（1）		模型（2）		模型（3）		模型（4）		模型（5）		模型（6）	
	系数	T值	系数	T值	系数	T值	系数	T值	系数	T值	系数	T值
(Constant)	1.815***	32.559	1.891***	33.747	0.795***	6.061	0.779***	5.988	0.893***	100.110	0.902***	101.687
ASSDIV	0.260**	2.365	0.272**	2.441	-0.584**	-2.261	-0.588**	-2.274	0.047***	2.656	0.049***	2.931
LEV	0.295***	24.008	0.309***	24.960	0.163***	5.642	0.160***	5.572	0.204***	103.740	0.206***	104.860
RISK_CASH			0.000	0.805			0.000	0.147			0.000*	-1.812
RISK_REVENUE	0.103***	10.406			-0.022	-0.937			0.011***	6.990		
LOSS	0.066***	7.128	0.072***	7.721	0.031	1.420	0.029	1.361	0.004***	2.609	0.005***	3.060
ROA	0.001***	2.934	0.002***	3.683	-0.006***	-5.254	-0.006***	-5.336	-0.001***	-18.024	-0.001***	-17.476
GROW	-0.013**	-2.495	0.002	0.431	-0.003	-0.272	-0.006	-0.561	0.001	1.345	0.003***	3.461
SIZE	-0.095***	-36.307	-0.097***	-36.543	-0.039***	-6.259	-0.038***	-6.211	-0.044***	-104.385	-0.044***	-104.437
STATE	-0.014***	-2.989	-0.018***	-3.822	-0.039***	-3.599	-0.039***	-3.535	-0.002***	-2.825	-0.003***	-3.360
R方	0.431		0.416		0.092		0.091		0.887		0.886	
调整R方	0.426		0.411		0.084		0.084		0.886		0.885	
F值	90.416***		84.837***		12.030***		12.002***		937.701***		925.623***	

*** 表示1%的水平显著，** 表示5%的水平显著，* 表示10%的水平显著。

表13　控制股利支付率的情况下，稳健性的债务契约有用性检验回归结果 N = 4114

因变量 *LOAN*	模型（7）(*CONSV=CONSV_BTM*)		模型（8）(*CONSV=CONSV_BASU*)		模型（9）(*CONSV=CONSV_CSCORE*)	
	系数	T值	系数	T值	系数	T值
常数项	−0.115***	−2.770	−0.137***	−2.955	−0.110***	−2.440
CONSV	0.012***	2.563	0.015*	1.546[16]	0.005	0.292
FACTOR1	0.004**	2.425	0.005***	2.819	0.004**	2.502
FACTOR2	0.011***	6.353	0.011***	6.399	0.011***	6.153
ASSDIV	0.268***	3.297	0.254***	3.120	0.256***	3.143
GROW	0.007***	3.462	0.008***	3.588	0.007***	3.114
SIZE	0.030***	8.862	0.030***	8.829	0.030***	8.819
STATE	−0.015***	−4.283	−0.015***	−4.278	−0.015***	−4.436
CFIO	0.065***	5.194	0.063***	5.082	0.063***	5.035
OFFER	0.029	1.132	0.033	1.288	0.030	1.177
R方	0.100		0.099		0.098	
调整R方	0.092		0.091		0.091	
F值	13.319***		13.183***		13.107***	

账面市价比计量稳健性时能够达到1%的显著性水平，用Basu模型计量稳健性时统计显著性水平为11.5%，接近10%的统计显著性要求，而采用Khan and Watts（2007）的截面时间指标 *CONSV_CSCORE* 来度量时间截面稳健性时系数不显著，说明本研究的有用性检验论证了截面稳健性对债务契约签订的促进作用，但时间截面稳健性对当年新增贷款合约的影响并未能得到证实，这是本研究的一个遗憾。在今后的研究中，可以考虑改进计量方法或0者采用诸如债务成本、债务契约违约概率等来进一步检验会计稳健性的债务契约有用性。

参考文献

江伟，沈艺峰. 2005.“大股东控制、资产替代与债权人保护”.《财经研究》第12期，95–106.

江伟. 2004.“负债的两面性与公司价值”.《中国经济问题》第6期，64–73.

16　显著性水平为12%。

李远鹏，李若山. 2005. "是会计盈余稳健性，还是利润操纵?——来自中国上市公司的经验证据".《中国会计与财务研究》第3期，1–31.

吕长江，周县华. 2005."公司治理结构与股利分配动机——基于代理成本和利益侵占的分析".《南开管理评论》第3期，9–17.

孙铮，刘凤委，汪辉. 2005. "债务、公司治理与会计稳健性".《中国会计与财务研究》第2期：112–141.

孙铮，李增泉，王景斌. 2006."所有权性质、会计信息与债务契约——来自我国上市公司的经验证据".《管理世界》第10期，100–108.

唐正国. 2005. "股权二元结构对公司分配方式的影响".《金融研究》第5期，38–50.

童盼，陆正飞. 2005."负债融资、负债来源与企业投资行为".《经济研究》第5期，75–84.

王毅春，孙林岩. 2006."银企关系、股权特征与会计稳健性 —— 来自中国上市公司的经验证据".《财政研究》第7期，70–72.

周小川. 2004."金融市场中的分工和责任推诿现象".《比较》第13期，1–16.

朱凯. 2005."银企关系与会计信息稳健性：中国资本市场的经验证据". 见：香港中文大学公司治理中心及会计学院主办的2005年公司治理青年学者论坛论文集.

Ahamed, A. S., Billings, B. K., Morton, R. M., and Stanford-Harris, M. (2002), 'The Role of Accounting Conservatism in Mitigating Bondholder-Shareholder Conflicts over Dividend Policy and in Reducing Debt Costs', *The Accounting Review* 77(4): 867–890.

Ball, R., Robin, A., and Wu, J. S. (2003), 'Incentives Versus Standards: Properties of Accounting Income in Four East Asian Countries and Implications for Acceptance of IAS', *Journal of Accounting and Economics* 36: 235–270.

Ball, R., Robin, A., and Sadka, G. (2005), 'Is Accounting Conservatism Due to Debt or Share Markets? A Test of "Contracting" Versus "Value Relevance" Theories of Accounting', *Working Paper*, University of Chicago/Rochester Institute of Technology.

Ball, R. and Shivakumar, L. (2005), 'Earnings Quality in U.K. Private Firms: Comparative Loss Recognition Timeliness', *Journal of Accounting and Economics* (39): 83–128.

Basu, S. (1995), 'Conservatism and the Asymmetric Timeliness of Earnings', PhD. Dissertation, University of Rochester.

Basu, S. (1997), 'The Conservatism Principle and the Asymmetric Timeliness of Earnings', *Journal of Accounting and Economics* 24 (December): 3–37.

Beaver, W. H. (1998), *Financial Reporting: an Accounting Revolution, 3rd ed.*, Upper Saddle River, NJ: Prentice-Hall.

Beaver, W. H. and Ryan, S. G. (2000), 'Biases and Lags in Book Value and their Effects on the Ability of the Book-to-Market Ratio to Predict Book Return on Equity', *Journal of Accounting Research* 38 (Spring): 27–48.

Beaver, W. H. and Ryan, S. G. (2005), 'Conditional and Unconditional Conservatism: Concepts and Modeling', *Review of Accounting Studies* 10 (2/3): 269–309.

Black, F. (1976), 'The Dividend Puzzle', *Journal of Portfolio Management* 2 (2): 5–8.

Dietrich, J. R., Muller, K. A., and Riedl, E. J. (2005), 'Asymmetric Timeliness Tests of Accounting Conservatism', *Work Paper*, Ohio State University/Pennsylvania State University/Harvard Business School.

Easton, P. and Pae, J. (2004), 'Accounting Conservatism and the Relation between Returns and Accounting Data', *Review of Accounting Studies* 9 (4): 495–521.

Gassen, J., Fülbier, R. U., and Sellhorn, T. (2006), 'International Differences in Conditional Conservatism – The Role of Unconditional Conservatism and Income Smoothing', *Working Paper*, Humboldt-University.

Givoly, D. and Hayn, C. (2000), 'The Changing Time-Series Properties of Earnings, Cash Flows and Accruals: Has Financial Reporting Become More Conservative?', *Journal of Accounting and Economics* 29 (3): 287–320.

Givoly, D. and Hayn, C. (2002), 'Rising Conservatism: Implications for Financial Analyses', *Financial Analysts Journal* 58 (1): 56–74.

Givoly, D., Hayn, C., and Nataranjan, A. (2003), 'Measuring Reporting Conservatism', *Working Paper,* Pennsylvania State University and University of California – Los Angeles.

Feltham, G. and Ohlson, J. A. (1995), 'Valuation and Clean Surplus Accounting for Operating and Financial Activities', *Contemporary Accounting Research* 11 (2): 689–731.

Holthausen, R. W. and Watts, R. L. (2001), 'The Relevance of Value-Relevance Literature for Financial Accounting Standard Setting', *Journal of Accounting and Economics* 31 (September): 3–75.

Jensen, M. and Meckling, W. H. (1976), 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure', *Journal of Financial Economics* 3: 305–360.

Joos, P. and Lang, M. (1994), 'The Effects of Accounting Diversity: Evidence from the European Union', *Journal of Accounting Research* 32: 141–168.

Kalay, A. (1982), 'Stockholder-Bondholder Conflict and Dividend Constraints', *Journal of Financial Economics* 10 (2): 211–233.

Khan, M. and Watts, R. L. (2007), 'Estimation and Validation of a Firm-Year Measure of Conservatism', *Working Paper*, Massachusetts Institute of Technology.

LaFond, R. and Watts, R. L. (2006), 'The Information Role of Conservative Financial Statements', *Working Paper*, Massachusetts Institute of Technology.

Leftwich, R. (1983), 'Accounting Information in Private Markets: Evidence from Private Lending Agreements', *The Accounting Review* 58 (1): 23–42.

Nichols, D. G., Wahlen, J. M., and Wieland, M. M. (2005), 'Publicly-Traded Versus Privately-Held: Implications for Bank Profitability, Growth, Risk, and Accounting Conservatism', *Working Paper*, Cornell University and University of Georgia.

Peek, E., Cuijpers, R., and Buijink, W. (2006), 'Creditors' and Shareholders' Demand for Accounting Conservatism in Public Versus Private Firms: Evidence from Europe', *Working Paper*, Maastricht University.

Parrino, R. and Weisbach, M. S. (1999), 'Measuring Investment Distortions Arising from Stockholder-Bondholder Conflicts', *Journal of Financial Economics* 53: 3–42.

Pae, J., Thornton, D. B., and Welker, M. (2005), 'The Link between Earnings Conservatism and the Price-to-Book Ratio', *Contemporary Accounting Research* 22(3): 693–717.

Pope, P. E. and Walker, M. (2003), 'Ex-ante and Ex-post Accounting Conservatism, Asset Recognition and Asymmetric Earnings Timeliness', *Working Paper,* Lancaster University/University of Manchester.

Ryan, S. G. (2006), 'Identifying Conditional Conservatism', *European Accounting Review* 15 (4): 511–526.

Roychowdhury, S. and Watts, R. L. (2006), 'Asymmetric Timeliness of Earnings, Market-to-Book and Conservatism in Financial Reporting', *Working Paper,* Sloan School of Management, MIT.

Smith, C. and Warner, J. (1979), 'On Financial Contracting: An Analysis of Bond Covenants', *Journal of Financial Economics* 1 (2): 117–161.

Watts, R. L. (1993), 'A Proposal for Research on Conservatism', *Working Paper*, University of Rochester.

Watts, R. L. (2003a), 'Conservatism in Accounting Part I: Explanations and Implications', *Accounting Horizons* 17: 207–221.

Watts, R. L. (2003b), 'Conservatism in Accounting Part II: Evidence and Research Opportunities', *Accounting Horizons* 17: 287–301.

Watts, R. L. (2006), 'What Has the Invisible hand Achieved?', *Working Paper*, Massachusetts Institute of Technology.

Wittenberg-Moerman, R. (2006), 'The Role of Information Asymmetry and Financial Reporting Quality in Debt Contracting: Evidence From the Secondary Loan Market', *Working Paper*, University of Pennsylvania.

Zhang, J. (2004), 'Efficiency Gains from Accounting Conservatism: Benefits to Lenders and Borrowers', *Working Paper*, Massachusetts Institute of Technology.

THE DEBT CONTRACTING EXPLANATION FOR ACCOUNTING CONSERVATISM: AN EMPIRICAL STUDY ON CHINESE LISTED COMPANIES*

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ABSTRACT

The debt contracting explanation for accounting conservatism should be discussed in terms of two aspects: the extrinsic form, which refers to the characteristics of debt contracts' need for conservatism, and the intrinsic mechanism, which refers to conservatism's usefulness to debt contracts. This paper provides initial evidence relating to Chinese stock markets about the debt contracting explanation for conservatism in terms of need characteristics and usefulness. Based on sample data of Chinese A-share listed companies collected between 1999 and 2005, we investigate the relationship between accounting conservatism and shareholder-creditor conflicts, as well as the relationship between accounting conservatism and the mitigation of the conflicts. In this paper, we use the book-to-market ratio method and Basu method to measure cross-sectional conservatism, and *C_SCORE* to measure firm-year conservatism. The empirical results indicate that a higher level of conflicts between debt contracting parties leads to a higher level of conservatism in companies' accounting policy. Moreover, the more conservative the accounting policy, the more incremental loan a company can obtain. Our paper enriches the empirical literature on debt contracts' need for conservatism and provides, for the first time, evidence of the usefulness of conservatism to debt contracts in Chinese listed companies.

Keywords: Conservatism, Debt Contracting, Conservatism Need, Conservatism Usefulness, Shareholder-Creditor Conflicts

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I. INTRODUCTION

According to the debt contracting explanation for accounting conservatism, conservatism helps mitigate conflicts between shareholders and creditors, so conservatism evolves as the debt contracting conflicts increase. In this paper, the debt contracting explanation for accounting conservatism is examined in terms of two aspects: the extrinsic form and the intrinsic mechanism. On the one hand, if conservatism is able to govern debt contracting, the execution and performance of an effective contract will generate a demand for a conflict-harmonising mechanism, such as conservatism; therefore, conservatism evolves as conflicts increase. In other words, need characteristics are the extrinsic form of the contracting explanation. On the other hand, conservatism makes for a mitigation of conflicts of interest between the two parties of debt contracts. In other words, conservatism is useful for the execution and performance of debt contracts—the usefulness of conservatism to debt contracts, which is the intrinsic mechanism of contracting explanation.

Some Western literature validates the debt contracting explanation from the perspectives of need characteristics and usefulness (Leftwich, 1983; Ahamed *et al.*, 2002; Zhang, 2004; Ball *et al.*, 2005), but as Watts (2003) points out, the cross-sectional tests based on American data can only provide weak support for the contracting explanation of conservatism.

Chinese research on this topic is limited to testing the need characteristics (Sun *et al.*, 2005; Zhu, 2005; Wang and Sun, 2006), and there is no further proof about the usefulness of conservatism to debt contracts. There is thus no complete evidence on the contracting explanation for conservatism in China. This paper tries to provide initial evidence regarding Chinese stock markets about the debt contracting explanation for conservatism from the perspectives of both need characteristics and usefulness. Based on data from Chinese listed non-financial companies between 1999 and 2005, our empirical results indicate that a higher level of shareholder-creditor conflicts leads to a higher level of conservatism in a company's accounting policy. In addition, the more conservative the accounting policy, the more incremental loan a company can obtain.

This paper is structured as follows. Section II contains the literature review and research hypotheses. Section III describes the empirical analysis about need characteristics of conservatism, and Section IV the empirical analysis about the usefulness of conservatism to debt contracts. Section V focuses on the robustness test. Section VI concludes the paper.

II. DEBT CONTRACTING EXPLANATION FOR CONSERVATISM: LITERATURE REVIEW AND RESEARCH HYPOTHESES

2.1. Need Characteristics of Conservatism

Conservatism endogenously emerges from a debt contract as an effective contracting mechanism for reducing agency costs between the two contracting parties; therefore, debt contracting is one of the important reasons for the need of conservatism (Watts, 1993, 2003). Leftwich (1983) finds that accounting principles employed in debt

contracts are more conservative than the GAAP. Ahamed *et al.* (2002) use data of American listed companies and find that increased dividend policy conflicts between shareholders and bondholders lead to a higher level of conservatism in the firm's accounting policy. Ball and Shivakumar (2005) find that private and public firms in the UK, which report their audited financial statements under largely the same reporting and taxation rules but face different reporting demands, exhibit substantial differences in conservatism, because information asymmetry between shareholders and creditors in public firms is more serious than that in private firms. Nichols *et al.* (2005) find that public banks in the US report more conservatively than private banks. Ball *et al.* (2005) examine firms in 22 countries and find that conservatism is generated from the reporting needs of the debt market rather than from the reporting needs of the stock market, and the size of the debt market rather than the size of the equity market explains the international differences in conservatism. Using data from Europe, Peek *et al.* (2006) test the difference in conservatism between public and private firms, and find different needs for conservatism because of different shareholder-creditor conflicts between these two types of firms. Their findings suggest that shareholder-creditor conflicts are an important explanation for the differences in conservatism between public and private firms.

Recently, Chinese scholars have begun to explore the need characteristics for conservatism. Using sample data of Chinese A-share listed companies collected between 1999 and 2002, Sun *et al.* (2005) find that corporations with a higher proportion of debt tend to adopt a more conservative accounting policy; creditors request the company to adopt a more conservative accounting policy when the company's earnings ability worsens, and the influence of debt on accounting conservatism in state-controlled listed companies is significantly smaller than that in other companies. Based on the contracting theory of Watts (2003), Zhu (2005) finds that the level of conservatism in non-state-owned listed companies is higher than that in state-owned listed companies, and the influence of shareholder type on conservatism tends to be consistent between these two types of companies as banks' interests in the companies increase. Wang and Sun (2006) use A-share data for the year 2004 and find that general need characteristics of accounting conservatism exist in China capital markets—conservatism decreases as shareholder-creditor conflicts are reduced and increases as shareholder-creditor conflicts rise. In addition, they find that the conservatism of state-owned enterprises endogenously evolves from corporate governance, and the quasi-creditor relationship between state-owned enterprises and commercial banks reduces the banks' need for conservatism.

In view of the evidence above and our research purpose, we put forward the first hypothesis as follows:

H1: A higher level of shareholder-creditor conflicts will lead to a higher level of conservatism in companies' accounting policy.

2.2. Usefulness of Conservatism to Debt Contracts

The harmonising function of conservatism is exhibited in the following ways: (i) to reduce excess payoffs to shareholders and managers (Watts, 1993, 2003); (ii) to

enhance the quality of accounting information and help the creditors to evaluate the value of debts (Holthausen and Watts, 2001; Watts, 2003); and (iii) to reduce the risk of managers investing in negative-NPV projects and managers' asset substitution effects (Ball *et al.*, 2003; Ball and Shivakumar, 2005; Watts, 2003).

Ahamed *et al.* (2002) use debt ratings as the proxy of debt costs to find that the degree of accounting conservatism is negatively correlated with the costs of debt—the higher the level of conservatism, the lower the costs of debt are, and that conservatism is an effective mechanism to mitigate shareholder-creditor conflicts over dividend policies. Using four methods to measure conservatism, Zhang (2004) argues that the likelihood of covenant violations after negative news increases with a higher level of conservatism, and creditors are more likely to violate covenants because conservatism can transfer bad news in a timely fashion to creditors and so benefit them. On the other hand, the costs of debt are lowered as conservatism increases, indicating that conservatism also benefits the debtors. Wittenberg (2006) finds that an increased level of conservatism reduces the bid-ask spread of secondary loan trades. Overseas evidence suggests that conservatism helps harmonise conflicts over debt contracts and makes for the execution and performance of debt contracts. In other words, the usefulness of conservatism to debt contracts does exist.

According to the objective of this research, and in view of the increasingly strengthened monitoring and supervision of Chinese bank credit, we put forward the second hypothesis as follows:

> **H2: A company adopting a more conservative accounting policy will be more likely to obtain new loans.**

III. NEED CHARACTERISTICS OF CONSERVATISM

3.1. Variables

3.1.1. Conservatism

This paper uses three measures to assess conservatism; the first two measures are cross-sectional, and the third is time and cross-sectional. The first measure is *CONSV_BTM*, which is based on the book-to-market ratio (*BTM*), and the fixed-effect model (Ahamed *et al.*, 2002) is used to measure the relative level of conservatism of a company. The second measure is *CONSV_BASU*,[3] using the reverse

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[3] We do not think that *CONSV_BASU* is a good proxy for conservatism. Although many researchers use Basu's asymmetrical timeliness to measure conservatism since 1997, recently some papers have questioned the rationality of Basu's asymmetrical timeliness (Givoly, Hayn, and Natarajan, 2003; Dietrich, Muller, and Reidl, 2005; Watts, 2006), because it is significantly relative to the initial and final *BTM* of a given limited period, and it is problematic to measure the asymmetrical timeliness estimated for a short period. At the beginning of the estimation period, *BTM* conservatism exists already (Watts, 2006). In fact, based on recent literature, the overall concept of conservatism is broken into two sub-concepts: conditional and unconditional conservatism (Ball and Shivakumar, 2005; Beaver and Ryan, 2005). Unconditional conservatism is a general, pervasive bias

regression approach (Basu, 1997) to measure cross-sectional conservatism. The third one is *CONSV_CSCORE*, the firm-year measure of conservatism (*C_SCORE*) used by Khan and Watts (2007). We use pooled data of Chinese A-share listed firms between 1999 and 2005 to obtain the three proxies of conservatism, and make further tests on the need characteristics and usefulness of conservatism.

(i) The firm-level proxy of conservatism—*CONSV_BTM*. In this paper, we use the book-to-market ratio (*BTM*) to measure firm-level accounting conservatism. Beaver and Ryan (2000) employ pooled time-series and cross-sectional data to regress book-to-market ratios on individual year and firm dummy variables and on individual firm stock returns for the current and previous five years. Ahamed *et al.* (2002) use the fixed-effect model with a changing intercept to estimate the substitute variable of accounting conservatism. The estimated coefficient of an individual firm's dummy captures the persistent portion of the difference between the firm's book and market values of equity, which reflects the eternal difference between the market and book values. The estimated coefficient of an individual time's dummy reflects the temporary difference in years, and the lagged term reflects market shocks not yet recognised in the book value. With a big cross-sectional sample, we obtain seven years' panel data between 1999 and 2005, and use the current and two lagged market returns in the model to ensure the degree of freedom and precision of regression:

$$BTM_{it} = \alpha + \alpha_i + \alpha_t + \beta_0 RET_{it} + \beta_1 RET_{it-1} + \beta_2 RET_{it-2} + \varepsilon_{it}, \tag{1}$$

where:
BTM_{it} = the book-to-market ratio for firm i at the end of fiscal year t;
   α = the intercept across all firms and years;
   α_i = the persistent firm-specific bias component of the book-to-market ratio over the sample period;

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unrelated to current news, and towards reporting low book values of equity, which is measured by *BTM*. Conditional conservatism refers to news-dependent conservatism, and is measured by Basu's asymmetric timeliness. The complex interplay between *BTM*, unconditional conservatism, and conditional conservatism still requires theoretical explorations. Given the different forms and measures of conservatism, *BTM* is used in empirical studies as one possible proxy for conservatism (Easton and Pae, 2004; Givoly and Hayn, 2000, 2002; Pope and Walker, 2003; Gassen, Fülbier, and Sellhorn, 2006). In particular, before the sub-division of overall conservatism, *BTM* is always considered to be the rational proxy of conservatism (Beaver and Ryan, 2000; Beaver, 1998; Feltham and Ohlson, 1995; Joos and Lang, 1994). Roychowdhury and Watts (2006) believe that *BTM* captures cumulative effects of conditional conservatism; therefore, Gassen, Fülbier, and Sellhorn (2006) and Ryan (2006) argue that unconditional conservatism seems to be a much greater contributor to overall conservatism than conditional conservatism. This paper will not study the differences between the two concepts of conservatism, but will test the relationship between the general conservatism and debt contracts. We thus mostly use the *BTM* method to measure firm-level conservatism. In view of the test's sufficiency and the applicability of Basu's measure, we also use *CONSV_BASU* as a proxy of conservatism.

α_t = the year-specific component of the book-to-market ratio across all firms;
RET_{it} = the stock return for firm i for year t calculated based on monthly returns:

$$RET_{it} = \prod_{j=1}^{12}(1+RET_{ij})-1,$$ where RET_{ij} denotes the return of stock i for the month j.

The coefficient α_i reflects the persistent firm-specific component of the book-to-market ratio relative to the other firms in the sample. As a component of the book-to-market ratio, α_i measures conservatism inversely—the lower the coefficient, the more the book value of net assets is biased downwards and the more conservative the firm's accounting policy is. For simplicity, $CONSV\_BTM_i$ ($\alpha_i \times (-1) = CONSV\_BTM_i$) is used as a proxy for the extent to which conservatism varies across firms. We expect that a higher level of accounting conservatism will yield a higher measure of $CONSV\_BTM_i$; therefore, H1 predicts a positive relation between $CONSV\_BTM_i$ and shareholder-creditor conflicts.

(ii) The firm-level proxy of conservatism—$CONSV\_BASU$. We use the "reverse regression" approach (Basu, 1997) to measure the asymmetric timeliness of loss versus gain recognition based on the panel data of listed companies between 1999 and 2005:

$$\frac{EPS_{it}}{P_{it-1}} = \alpha 0 + \alpha 1_i * RET_{it} + \alpha 2_i * D * RET_{it} + \alpha 3_i * D + \varepsilon_{it}, \qquad (2)$$

where:

EPS_{it} indicates the after-tax net income per share of company i for year t; P_{it-1} indicates the stock price at the end of year $t-1$; RET_{it} indicates the yearly stock return of company i for year t; D is a dummy variable that equals 1 when RET_{it} is less than 0, and 0 when RET_{it} is greater than 0; and ε_{it} denotes a random error item. In this model, $\alpha 1$ measures good news timeliness, and $\alpha 1 + \alpha 2$ measures bad news timeliness. The number of $\alpha 1$ and $\alpha 1 + \alpha 2$ values is the same as the number of firms. $\alpha 2$ is the coefficient of conservatism, which is the dispersion of the two slope coefficients measuring the incremental timeliness for bad news over good news, and we expect that a higher level of accounting conservatism will yield a higher measure of $\alpha 2$. But this method is seldom used as a cross-sectional proxy of conservatism; so with a more intuitionistic measure, Gassen (2006) calculates the metric of asymmetric timeliness based on the regression coefficients and on the geometric notion of a kink in the resulting line as the angle of kink, and the radian of the angle reflects the degree of firm-specific conservatism that accounting earnings react more rapidly to "bad news" than to "good news". In this paper, we first calculate the values of $\alpha 1$ and $\alpha 1 + \alpha 2$ in the regression model based on individual firms' data for the seven years, and then calculate $CONSV\_BASU$ by the equation $CONSV\_BASU = ARCTAN(\alpha_1 + \alpha_2) - ARCTAN(\alpha_1)$. We expect that a higher level

of accounting conservatism will yield a higher value of *CONSV_BASU*,[4] thus H1 predicts a positive relation between $CONSV\_BASU_i$ and shareholder-creditor conflicts.

(iii) The firm-year proxy of conservatism—*CONSV_CSCORE* (Khan and Watts, 2007). According to previous literature, the standard regression specification of Basu (1997) can be rewritten as follows to allow coefficients to vary across firms and over time:

$$X_{it} = \beta_{1t} + \beta_{2t}D_{it} + \beta_{3it}R_{it} + \beta_{4it}D_{it}R_{it} + \varepsilon_{it}, \tag{3}$$

where i indexes the firm; t indexes time; X is earnings; R denotes market returns for measuring news; and D is a dummy variable, which equals 1 when R is less than 0, and 0 otherwise. The measure of firm-year conservatism is β_{4it}. Khan and Watts (2007) choose three factors that are commonly considered to be theoretically and empirically related to conservatism: the market-to-book ratio (*M/B*), firm size (*SIZE*), and leverage (*LEV*) to calculate the firm-year conservatism. And they specify that both the timeliness of good news and the incremental timeliness of bad news are linear functions of time-varying firm-specific characteristics:

$$G\_SCORE \equiv \beta_{3it} = \mu_{1t} + \mu_{2t}SIZE_{it} + \mu_{3t}M/B_{it} + \mu_{4t}LEV_{it} \tag{4}$$

$$C\_SCORE \equiv \beta_{4it} = \lambda_{1t} + \lambda_{2t}SIZE_{it} + \lambda_{3t}M/B_{it} + \lambda_{4t}LEV_{it}, \tag{5}$$

where:

λ_1, λ_2, λ_3, and λ_4, and μ_1, μ_2, μ_3, and μ_4 are constant across firms, but vary over time. *G_SCORE* is the firm-year measure of good news timeliness. *C_SCORE* is our firm-year measure of conservatism, and a higher value of *C_SCORE* indicates a higher level of conservatism. Substituting regression equation (3) with equations (4) and (5) yields equation (6) as follows:

$$X_{it} = \beta_1 + \beta_2D_{it} + R_{it} (\mu_1 + \mu_2SIZE_{it} + \mu_3M/B_{it} + \mu_4LEV_{it}) +$$
$$D_{it}R_{it} (\lambda_1 + \lambda_2SIZE_{it} + \lambda_3M/B_{it} + \lambda_4LEV_{it}) + \varepsilon_{it} \tag{6}$$

Equation (6) is estimated using annual cross-sectional regressions, and *C_SCORE* is then recovered using equation (5), which represents the incremental timeliness (*CONSV_CSCORE*$_{it}$) as a firm-year proxy of conservatism. Thus, H1 predicts a positive relation between $CONSV\_CSCORE_{it}$ and shareholder-creditor conflicts.

3.1.2. Shareholder-Creditor Conflicts

The agency theory suggests that fixed and residual claimants in a firm have conflicts of interest in debt contracts (Jensen and Meckling, 1976). Asymmetric information

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[4] In the equation, *ARCTAN* is the function of reverse tangent, which brings back the radian value, falling in $(-\pi/2, \pi/2)$. We also substitute $CONSV\_BASU_i$ for $\alpha2$ and find that the two measures have a correlation coefficient of 0.96. All the empirical results are consistent.

causes shareholders and managers to increase the firm's financial risk and reduce the value of debts to transfer wealth from bondholders to shareholders by increasing profit distribution, excess borrowing, and asset substitution. This paper examines the relationship between shareholder-creditor conflicts and conservatism. As conflict is an unobservable variable, we use the following three proxies as substitutes for shareholder-creditor conflicts:

(i) The level of dividends—*ASSDIV*, calculated as dividends divided by beginning assets. The two parties of debt contracts are conflicted about dividend policies because their incomes are asymmetric. These conflicts include: majority shareholders wish to receive more immediate cash dividends with the motivation to get timely cash returns ("A bird in the hand is worth two in the bush"), sending good operating information to outside parties ("signal sending"), reducing agency costs by distribution ("the agency theory"), or even transferring interests by distribution ("the theory of interests transfer"). But to creditors, excessive payments of dividends can transfer wealth from bondholders to shareholders by reducing the assets available for meeting bondholders' fixed claims, and hence increasing the default risks of the company. To address this conflict, creditors typically include dividend policy restrictions in debt contracts and are sensitive to payments of high financial risk (Black, 1976; Smith and Warner, 1979; Kalay, 1982). Lu and Zhou (2005) find that as the China Securities Regulatory Commission (CSRC) has strengthened supervision and disclosure of direct capital appropriation, majority shareholders show less capital appropriation behaviour, but transfer interests by dividend payments. Tang (2005) suggests that under the split share structure in China, excessive payments of cash dividends deepen not only the conflicts between majority and minority shareholders but also the conflicts of interest between shareholders and creditors.

(ii) The liability-to-asset ratio—*LEV*. The liability-to-asset ratio is an important index measuring the solvency and financial risk of a company. High leverage means a high level of financial risk. Parrino and Weisbach (1999) test the distorted investment behaviour arising from shareholder-creditor conflicts using the simulation method. They find that shareholder-creditor conflicts do exist, and that the conflicts become severer as the level of debts increases.

(iii) Investment risks—*RISK*. We use investment risks as the proxy for asset substitution behaviour. Jensen and Meckling (1976) put forward the asset substitution problem—shareholders may give up projects with low risks and little income and turn to invest the capital raised in projects with high risks and more income after corporate financing. They suggest that shareholders gain the most income that exceeds the book value of debt but assume limited liability only, while creditors have to bear the results of a failed project. This asymmetry of risk and income between shareholders and creditors causes shareholders to be wild about asset substitution. Jiang (2004) and Tong and Lu (2005) find that there are many asset substitution activities in Chinese listed firms. Jiang and Shen (2005) consider that majority shareholders appropriate the interests of creditors through asset substitution. In their empirical test, investment risk is a proxy for asset substitution, which

is represented by the variability coefficients of operating cash flows and main business revenue. Following Jiang and Shen, we use the variability coefficients of operating cash flows and main business revenue as proxies for investment risk, respectively named *RISK_CASH* and *RISK_REVENUE*.

3.1.3. Controlling Variables
(1) Growth—*GROW* denotes the growth rate of main business revenue;
(2) Ownership nature—*STATE*, which equals 1 when the company is completely held by the state, and 0 otherwise;
(3) Corporate size—*SIZE*, which is expressed by the natural logarithm of corporate total assets;
(4) Profitability—*ROA*, which is expressed as net income divided by total assets;
(5) Industry—*IND*, which is classified based on the Guidelines on Classification of Listed Companies issued by the CSRC in 2001. All listed companies are classified into 22 industries. Manufacturing is further divided into subsectors, and financial companies are excluded. Finally, there are 20 industry dummies with a composite industry being used as the benchmark;
(6) Year—*YEAR*, which is based on an empirical research sample of six years between 2000 and 2005; there are five dummies, with the year 2000 being used as the benchmark. Definitions of variables are given in Table 1.

3.2. Model: Need Characteristics
Based on the analysis above, we design model (7) to test the influence of debt contracts conflicts on conservatism:

$$CONSV_{i,t} = ASSDIV_{i,t-1} + LEV_{i,t-1} + RISK_{i,t-1} + ROA_{i,t} + GROW_{i,t} + \\ SIZE_{i,t} + STATE_{i,t} + IND_i + YEAR_t + \varepsilon_{i,t} \tag{7}$$

3.3. Selection Process of Data and Sample
We select all A-share companies listed before 1999 on the Shanghai and Shenzhen Stock Exchanges from the Wind database, and calculate the values of *CONSV_BTM*, *CONSV_BASU*, and *CONSV_CSCORE* based on the data between 1999 and 2005. Excluding financial companies and observations with any missing data, we obtain 5446 and 5152 observations of 778 and 736 firms, respectively, under three measures of conservatism.[5] For simplicity, we unify the sample firms into 5152 observations. Moreover, in order to explore the relationship between conservatism and debt contracts, the stagger-time data are used in our empirical test; we examine whether a firm's debt contract conflicts between 1999 and 2004 affect the level of conservatism

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[5] Since different models and variables are used to calculate *CONSV_BTM*, *CONSV_BASU*, and *CONSV_CSCORE*, there are different numbers of observations excluding missing data.

Table 1 Definitions of Variables for Testing Need Characteristics

Variable type	Variable	Description	Definition
Dependent variable: *CONSV*: Years 00–05	*CONSV_BTM*	Conservatism measure based on *BTM*	A high value indicates a higher level of conservatism, calculated from model (1)
	CONSV_BASU	Conservatism measure based on *BASU*	A high value indicates a higher level of conservatism, calculated from model (2)
	CONSV_CSCORE	Firm-year measure of conservatism	A high value indicates a higher level of conservatism, calculated from equation (5)
Explanatory variable: Debt contracts conflict: Years 99–04	*ASSDIV*	Dividend payout ratio	= cash dividends / beginning total assets
	LEV	Level of debt	Liability-to-asset ratio
	RISK	Investment risk[6]	Variability coefficients of operating cash flows and main business revenue, respectively named *RISK_CASH* and *RISK_REVENUE*
Controlling variable: Years 00–05	*ROA*	Profitability	Net income divided by total assets
	GROW	Growth rate of revenue	= (current period's main business revenue − previous period's main business revenue) / previous period's main business revenue
	SIZE	Corporate size	= natural logarithm of corporate total assets
	STATE	Ownership nature	Equals 1 when the company is state-owned, and 0 otherwise
	IND	Industry	20 industry dummy variables
	YEAR	Year	Dummy variables for five years

[6] We measure investment risk by variability coefficients, which are indices to denote risk and fluctuations in statistics and finance management science, and are valued by standard deviations divided by the mean of a series. This paper employs the variability coefficients calculated with seven years' data between 1999 and 2005. Every firm has only one variability coefficient, so investment risk is a cross-sectional variable irrespective to year.

between 2000 and 2005, with other controlling variables taken between 2000 and 2005. Therefore, taking out one year's data, we obtain 4416 observations. Excluding outliers of 1 per cent and 99 per cent of all the continuous variables, we have finally 3972 observations. The selection procedure results in a sample of 3972 firm-year observations as shown in Table 2.

Table 2 Selection Procedure for Testing Need Characteristics

Procedure of sample selection	Conservatism measure *CONSV_BTM*	Conservatism measure *CONSV_BASU*	Conservatism measure *CONSV_CSCORE*
All listed firms from the Wind database as of 6 November 2006	1353 firms	1353 firms	1353 firms
Selecting firms listed before 1 January 1999	786 firms	786 firms	786 firms
Excluding observations with any missing data, calculate every firm's *CONSV_BTM* measure with seven years' time-series data	783 firms		
Excluding observations with any missing data, calculate every firm's *CONSV_BASU* measure with 7 years' time-series data using equation (5)		741 firms	741 firms for each of the 7 years
Excluding financial companies	778 firms	736 firms	736 firms for each of the 7 years
7 years' pooled data	778 firms × 7 years = 5446 observations	736 firms × 7 years = 5152 observations	736 firms × 7 years = 5152 observations
For simplicity, obtain one unified sample	5152 observations	5152 observations	5152 observations
Conservatism measure for years 00–05, dividend payout ratios, debt levels, investment risk for years 99–04, and other controlling variables for years 00–05	4416 observations	4416 observations	4416 observations
Excluding outliers of 1 per cent and 99 per cent of all the continuous variables	3972 observations	3972 observations	3972 observations

3.4. Empirical Results
3.4.1. Descriptive Statistics

Table 3 contains descriptions of key variables in the model. *CONSV_BTM* denotes deviations from average conservatism, so its mean is close to 0; *CONSV_BASU* denotes firm-level conservatism, and its mean is 0.024, which is positive, meaning that earnings of Chinese listed companies are generally conservative and are more sensitive to bad news than to good news, but its median is −0.007, which is less than 0, indicating that the accounting policy of most firms is not conservative. *CONSV_CSCORE* denotes firm-year conservatism, and its mean is 0.063, which is greater than 0, indicating that Chinese listed companies are generally conservative between 2000 and 2005. The average dividend payout ratio is 1.2 per cent, and the average liability-to-asset ratio is about 48 per cent. The average variability coefficients of operating cash flows and main business revenue are about 64 per cent and 43 per cent, respectively. The average return on assets is about 3.6 per cent, and the average growth rate of main business revenue is about 27 per cent. The average natural logarithm of corporate total assets is about 21, and about 66 per cent of the sample firms are state-owned.

Table 4 lists the Spearman and Pearson correlation coefficients. It can be seen from the table that *CONSV_BTM*, *CONSV_BASU*, and *CONSV_CSCORE* are negatively related to the dividend payout ratio, and significantly and positively related to the liability-to-asset ratio and two investment risk proxies. All correlation coefficients, except for the dividend payout ratio, show that the demand for conservatism increases with a higher level of debt contract conflicts, providing primary evidence on need characteristics of accounting conservatism. In addition, each correlation coefficient between explanatory variables is less than 0.5, indicating that there is no significant problem of multicollinearity in the models.

3.4.2. Regression Results

Table 5 presents the OLS regression results for model (7) to test debt contracts' need for conservatism. For all models, the VIF value of each variable is less than 3, indicating that the models have no serious problems of multicollinearity. According to H1, we predict that the coefficients of *ASSDIV*, *LEV*, *RISK_CASH*, and *RISK_REVENUE* will all be greater than 0. When conservatism is measured with *CONSV_BTM*, in models (1) and (2), *CONSV_BTM* is significantly and positively related to the dividend payout ratio, the liability-to-asset ratio, and *RISK_REVENUE*, which is consistent with H1. When conservatism is measured with *CONSV_BASU*, in models (3) and (4), the coefficients and significance of the dividend payout ratio and investment risk are inconsistent with our hypothesis, but the liability-to-assets ratio is significantly positive. The regression results for conservatism measured with *CONSV_CSCORE* are consistent with H1. The firm-year conservatism between 2000 and 2005 is significantly and positively related to firm-year debt contracting conflicts between 1999 and 2004; in other words, *CONSV_CSCORE* is significantly and positively related to *ASSDIV*, *LEV*, and *RISK_REVENUE*. To sum up, the findings in Table 5 support the view of need characteristics that a higher level of shareholder-creditor conflicts leads to a higher level of conservatism in the companies' accounting policy.

Table 3 Descriptive Statistics of Variables for Need Characteristics Models

	N	Mean	Median	Std Dev	Min	Max	Skewness	Kurtosis
CONSV_BTM	3972	−0.015	−0.002	0.175	−0.566	1.535	0.665	5.750
CONSV_BASU	3972	0.024	−0.007	0.326	−1.332	2.021	1.086	7.359
CONSV_CSCORE	3972	0.063	0.061	0.063	−0.131	0.444	0.803	3.167
ASSDIV	3972	0.0124	0.000	0.021	0.000	0.3133	3.424	22.063
LEV	3972	0.482	0.481	0.191	0.074	1.641	0.658	2.384
RISK_CASH	3972	0.638	0.917	6.495	−49.560	31.561	−2.860	20.923
RISK_REVENUE	3972	0.432	0.388	0.230	0.078	1.477	1.180	2.210
ROA	3972	3.585	4.527	7.235	−40.886	20.686	−1.978	6.491
GROW	3972	0.270	0.169	0.541	−0.601	6.107	4.557	32.424
SIZE	3972	21.097	21.049	0.873	18.776	23.540	0.133	−0.185
STATE	3972	0.657	1.000	0.475	0.000	1.000	−0.663	−1.561

Table 4 Correlation Coefficients of Variables for Need Characteristics Models

Correlation coefficient	CONSV_BTM	CONSV_BASU	CONSV_CSCORE	ASSDIV	LEV	RISK_CASH	RISK_REVENUE	ROA	GROW	SIZE	STATE
CONSV_BTM	1	0.311***	0.617***	-0.276***	0.283***	0.129***	0.168***	-0.124***	-0.091***	-0.542***	-0.155***
CONSV_BASU	0.268***	1	0.245***	-0.185***	0.112***	0.134***	0.034**	-0.201***	-0.064***	-0.202***	-0.087***
CONSV_CSCORE	0.586***	0.217***	1	-0.423***	0.600***	0.190***	0.098***	-0.324***	-0.054***	-0.628***	-0.130***
ASSDIV	-0.140***	-0.112***	-0.317***	1	-0.331***	-0.161***	0.030*	0.395***	0.036***	0.252***	0.068***
LEV	0.316***	0.124***	0.662***	-0.311***	1	0.078***	0.108***	-0.212***	0.154***	0.071***	-0.061***
RISK_CASH	0.022	0.006	0.014	0.001	0.016	1	0.034**	-0.171***	-0.014	-0.165***	-0.053***
RISK_REVENUE	0.201***	0.009	0.143***	-0.009	0.117***	0.010	1	0.148***	0.236***	0.004	-0.106***
ROA	-0.192***	-0.198***	-0.426***	0.281***	-0.209***	-0.033**	0.031**	1	0.019	0.157***	-0.015
GROW	0.001	-0.009	0.054***	-0.062***	0.152***	0.018	0.228***	-0.039**	1	0.250***	-0.026
SIZE	-0.509***	-0.150***	-0.647***	0.145***	0.001	-0.012	-0.053***	0.212***	0.104***	1	0.107***
STATE	-0.144***	-0.080***	-0.128***	0.030*	-0.063***	0.016	-0.109***	0.020	-0.077***	0.107***	1

*** denotes significance at the 1 per cent level, ** denotes significance at the 5 per cent level, and * denotes significance at the 10 per cent level; the upper triangular portion contains Spearman correlation coefficients, and the lower triangular portion contains Pearson correlation coefficients.

Table 5 Regression Results of Need Characteristics

Dependent variable CONSV	CONSV_BTM (N = 3972)				CONSV_BASU (N = 3972)				CONSV_CSCORE (N = 3972)			
	Model (1)		Model (2)		Model (3)		Model (4)		Model (5)		Model (6)	
	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value
(Constant)	1.840***	32.848	1.921***	34.122	0.806***	6.158	0.791***	6.098	0.895***	100.382	0.904***	101.687
DIV	0.305***	2.764	0.322***	2.877	−0.563**	−2.183	−0.567**	−2.198	0.049***	2.809	0.052***	2.931
LEV	0.300***	24.306	0.315***	25.331	0.166***	5.733	0.163***	5.672	0.204***	103.986	0.206***	104.860
RISK_CASH			0.000	0.813			0.000	0.149			0.000*	−1.812
RISK_REVENUE	0.108***	10.829			−0.020	−0.846			0.011***	7.172		
ROA	−0.001***	−3.448	−0.001***	−2.963	−0.007***	−9.361	−0.007***	−9.394	−0.002***	−29.609	−0.002***	−29.210
GROW	−0.013***	−2.572	0.002	0.470	−0.003	−0.291	−0.006	−0.553	0.001	1.310	0.003***	3.474
SIZE	−0.096***	−36.272	−0.098***	−36.518	−0.039***	−6.296	−0.039***	−6.253	−0.044***	−104.409	−0.044***	−104.463
STATE	−0.015***	−3.228	−0.020***	−4.116	−0.040***	−3.652	−0.039***	−3.595	−0.002***	−2.919	−0.003***	−3.487
R^2	0.424		0.407		0.091		0.091		0.887		0.886	
Adj. R^2	0.419		0.402		0.084		0.084		0.886		0.885	
F-value	90.510		84.370		12.340		12.316		965.368		952.234	

*** denotes significance at the 1 per cent level, ** denotes significance at the 5 per cent level, and * denotes significance at the 10 per cent level.

In addition, we find that three proxies of conservatism are significantly and negatively related to profitability and company size (*SIZE*), but are not significantly related to growth. Sun *et al.* (2005) also find a significantly negative relationship between conservatism and company size. This finding differs from the finding reported in Western literature that a company of bigger size has to bear higher political costs, and will thus have the tendency to adopt a more conservative accounting policy to relieve its political costs. Our findings indicate that Chinese listed companies do not consider much about political costs when they decide on their accounting policies. Finally, we find that state ownerships impose significantly negative influences on accounting conservatism, consistent with the findings of Sun *et al.* (2005), Zhu (2005), and Wang and Sun (2006); in other words, state ownerships weaken the influence of debt contracts on accounting conservatism.

3.4.3. Further Discussion of the Results of the Need Characteristics Model

According to Table 5, the pooled data support the need characteristics. But when conservatism is measured with *CONSV_BTM* and *CONSV_BASU*, the values of *CONSV_BTM* and *CONSV_BASU* of the same firm are the same; this data structure may cause problems of heteroscedasticity and self-correlation leading to bias in our regression results, but if the number of cross-sectional firms is much bigger than the number of periods, the problems may be alleviated. In this paper, there are about 700 firms, and the number of years is 6. Considering the consistency of our conclusions, we conduct heteroscedasticity and self-correlation tests for model (7) when the dependent variable is *CONSV_BTM* or *CONSV_BASU*.

(a) Heteroscedasticity: in Table 6, the value of the LM statistic is less than the critical value of χ^2 at the 5 per cent significance level, indicating that there is no heteroscedasticity.

Table 6 Heteroscedasticity and Self-Correlation Tests for Need Characteristics

Investment Risk	*CONSV_BTM* (N = 3972)		*CONSV_BASU* (N = 3972)	
	RISK_CASH	*RISK_REVENUE*	*RISK_CASH*	*RISK_REVENUE*
N	3972	3972	3972	3972
R^2 of assistant regressions	0.003	0.006	0.007	0.007
LM	11.913	23.826	27.797	27.797
Critical value of χ^2 (100)[7]	124.342	124.342	124.342	124.342
D-W	0.581	0.574	0.393	0.393

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[7] This is the critical value of χ^2 whose degree of freedom is 100, and it is significant at the 5 per cent level. D.F. of model (7) is far more than 100; the critical value will be more than 124.34. The value of LM is far less than the critical value, so there is no heteroscedasticity.

(b) Self-correlation: in Table 6, the values of D-W are small, equal to or less than 0.5, indicating one period of positive self-correlation. Therefore, we use the mean of time-series data of each variable to dispel self-correlation. In the mean equation model, we take the mean of time-series data of each variable using the 3972 observations after excluding outliers in model (7), and eventually 707 firms' mean values are obtained. The results of mean equation regressions in Table 7 indicate that *CONSV_BTM* is significantly and positively related to the dividend payout ratio, the liability-to-asset ratio, and χ^2. The basic conclusions still hold.

IV. TEST FOR USEFULNESS OF CONSERVATISM TO DEBT CONTRACTS

4.1. Variables[8]

4.1.1. Likelihood of Incremental Loans (*LOAN*)

This variable[9] reflects alleviation of debt contracting conflicts, which is a dependent variable of the model to test whether it is easier for a conservative company to obtain incremental loans. The value of *LOAN* is the difference between ending and beginning loans (including long-term and short-term loans and long-term loans maturing in a year) divided by beginning assets. A positive coefficient of the variable indicates that the loans are warranted by banks.

4.1.2. Accounting Conservatism

Values of *CONSV_BTM*, *CONSV_BASU*, and *CONSV_CSCORE* calculated above.

4.1.3. Solvency and Profitability

Solvency and profitability are important factors for banks to decide on a loan. We select five accounting indices that reflect solvency and three indices that reflect profitability for factor analyses. Items no. 5 to no. 12 of Table 9 contain descriptions for these eight indices. Based on the principle that the eigenvalue is greater than 1, we obtain two common factors—*FACTOR1* and *FACTOR2*—by the extraction method of principal component analysis and the rotation method of varimax with Kaiser normalisation. Table 8 contains the results of factor analyses, in which *FACTOR1* has a bigger positive load for the liquidity ratio, quick liquidity ratio, cash ratio, equity ratio, and reciprocal of the liquidation ratio, while *FACTOR2* has a bigger positive load for *ROE*, *ROA*, and the gross profit ratio, and both factors explain about 72 per cent of the collective variance.

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[8]   In this section, we refer to Sun *et al.* (2006) for model and variable design.
[9]   Another possible proxy for alleviation of conflicts is debt costs, but the financial costs disclosed by Chinese listed companies exclude most of the capitalised debt costs, so we do not use this proxy.

Table 7 Mean Regression Results for Need Characteristics

Dependent variable CONSV	CONSV_BTM (N = 707)				CONSV_BASU (N = 707)			
	Model (1)		Model (2)		Model (3)		Model (4)	
	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value
(Constant)	1.919 ***	12.158	2.018***	12.577	0.470	1.395	0.450	1.341
DIV	1.673***	3.383	1.811***	3.580	0.441	0.418	0.425	0.402
LEV	0.511***	13.127	0.544***	13.827	0.117	1.411	0.110	1.343
RISK_CASH			−0.001	−1.114			0.000	−0.147
RISK_REVENUE	0.156***	5.695			−0.033	−0.568		
ROA	−0.002	−1.237	−0.002	−1.429	−0.019***	−5.906	−0.019***	−5.890
GROW	−0.140***	−5.501	−0.077***	−3.250	0.091	1.688	0.078	1.582
SIZE	−0.104***	−13.846	−0.106***	−13.950	−0.022	−1.369	−0.021	−1.333
STATE	−0.032**	−2.086	−0.039**	−2.533	−0.045	−1.392	−0.043	−1.338
R^2	0.489		0.465		0.119		0.119	
Adj. R^2	0.468		0.444		0.084		0.084	
F-value	24.037		21.881		3.408		3.395	

*** denotes significance at the 1 per cent level, ** denotes significance at the 5 per cent level, and * denotes significance at the 10 per cent level.

Table 8 Results of Factor Analyses (N = 4114[10])

Variables	Component Matrix (rotated)		Communalities
	FACTOR1	*FACTOR2*	Variance
CURRENT	0.929	0.084	0.870
QUICK	0.941	0.070	0.891
CASH	0.841	0.118	0.721
EQUITY	0.774	0.320	0.701
LIQUID	0.889	0.122	0.805
GROSS	0.156	0.539	0.315
ROE	0.045	0.840	0.708
ROA	0.105	0.856	0.744

Extraction method: principal component analysis.
Rotation method: varimax with Kaiser normalisation.
Total variance explained is 71.932 per cent.

4.1.4. Other Controlling Variables

(1) Growth rate of main business revenue (*GROW*) = (current main business revenue − previous main business revenue) / previous main business revenue, which controls for growth. (2) Company size (*SIZE*) = natural logarithm of corporate total assets. (3) State ownership (*STATE*), which takes the value of 1 when the company is state-owned, and 0 otherwise. (4) Own capital ratio (*CFIO*) = (Operating net cash flows − investing net cash flows) / beginning total assets, controlling for the condition that a company may not need bank loans if it has ample internal cash. (5) Ability of equity financing (*OFFER*) = capital raised for the current period by rights issues or seasoned offerings / beginning total assets, controlling for the condition that a company may not need bank loans if cheap equity financing can be easily obtained. (6) Industry (*IND*): Based on the Guidelines on Classification of Listed Companies issued by the CSRC in 2001, all listed companies are classified into 22 industries; manufacturing is further divided into sub-sectors, and financial companies are excluded. Finally, there are 20 industry dummies with composite industry being used as the benchmark. (7) Year (*YEAR*): Based on an empirical research sample of six years between 2000 and 2005, there are five dummies with the year 2000 being used as the benchmark. Table 9 contains the definitions of variables.

4.2. Model

We build the following model to examine the influence of conservatism on the likelihood of incremental loans, namely the usefulness of conservatism to debt contracts:[11]

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[10] The sample selection procedure is listed in Table 10.

[11] This paper directly examines the usefulness of conservatism to debt contracts, not the accounting information's usefulness to debt contracts for companies with different levels of conservatism, so our model has no interaction terms, unlike the one of Sun *et al.* (2006).

Table 9 Definitions of Variables for Testing Usefulness of Conservatism

Variable type	No.	Variable	Description	Definition
Dependent variable: Years 00–05	1	*LOAN*	Ratio of incremental loans	= (ending loans − beginning loans) / beginning total assets
Explanatory variables: Conservatism: Years 99–04	2	*CONSV_BTM*	Conservatism measure based on *BTM*	A higher value indicates a higher level of conservatism, calculated from model (1)
	3	*CONSV_BASU*	Conservatism measure based on *BASU*	A higher value indicates a higher level of conservatism, calculated from model (2)
	4	*CONSV_CSCORE*	Conservatism's firm-year measure	A higher value indicates a higher level of conservatism, calculated from equation (5)
Variables for factor analyses: Years 99–04	5	*CURRENT*	Liquidity ratio	= current assets / current liabilities
	6	*QUICK*	Quick liquidity ratio	= (current assets − stock-in-trade) / current liabilities
	7	*CASH*	Cash ratio	= ending cash and cash equivalents / current liabilities
	8	*EQUITY*	Equity ratio	= equity / total assets
	9	*LIQUID*	Reciprocal of liquidation ratio	= (equity − intangible assets) / liabilities
	10	*GROSS*	Gross profit ratio	= main business profit / main business revenue
	11	*ROE*	Returns on equity	= net income / average net assets
	12	*ROA*	Returns on assets	= (total profit + financial expense) / average assets

Table 9 *Continued*

Variable type	No.	Variable	Description	Definition
Controlling variables: Factors of solvency and profitability: Years 99–04 Others: Years 00–05	13	*FACTOR1*[12]	Factor of solvency	Factor extracted based on variable nos. 5–12: years 99–04
	14	*FACTOR2*	Factor of profitability	Factor extracted based on variable nos. 5-12: years 99–04
	15	*GROW*	Growth rate of revenue	= (current main business revenue − previous main business revenue) / previous main business revenue
	16	*SIZE*	Company size	= natural logarithm of corporate total assets
	17	*STATE*	Ownership nature	Equals 1 when the company is state-owned, and 0 otherwise
	18	*CFIO*	Own capital ratio	= (operating net cash flows − investing net cash flows) / beginning total assets
	19	*OFFER*	Ability of equity financing	= capital raised for the current period by rights issues or seasoned offerings / beginning total assets
	20	*IND*	Industry	20 industry dummy variables
	21	*YEAR*	Year	5 year dummy variables

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[12] In factor analyses, an interest-ensured multiple is not used because financial expenses provided in the database do not include capitalised interest.

$$LOAN_{i,t} = \alpha + \beta_1 * CONSV_{i,t-1} + \beta_2 * FACTOR1_{i,t-1} + \beta_3 * FACTOR2_{i,t-1} + \beta_4 * GROW_{i,t}$$
$$+ \beta_5 * SIZE_{i,t} + \beta_6 * STATE_{i,t} + \beta_7 * CFIO_{i,t} + \beta_8 * OFFER_{i,t}$$
$$+ \sum_{i=9}^{28} \beta_i * IND_i + \sum_{i=29}^{33} \beta_i * YEAR_i + \varepsilon_{i,t} \tag{8}$$

According to H2, the coefficient of β_1 is significantly positive.

4.3. Sample Selection Procedure

To test whether conservatism helps add new loans, in this section the above variables *CONSV_BASU*, *CONSV_BTM*, and *CONSV_CSCORE* serve as explanatory variables. During the first testing stage, there are 5152 unitive observations before outliers are excluded; considering stagger-time data, we obtain 4416 unitive observations after excluding one year's data; and after eliminating the observations falling in the top and bottom 1 per cent of all the continuous variables except conservatism, *FACTOR1*, and *FACTOR2*, we obtain 4114 observations. The values of *FACTOR1* and *FACTOR2* are obtained after factor analyses upon eliminating outliers of the 4114 observations, and regressions are conducted on the 4114 observations. Table 10 describes the sample selection procedure.

4.4. Regression Results

Table 11 lists the regression results of testing the usefulness of conservatism to debt contracts, where all the VIF values of explanatory variables are below 3, indicating that there is no significant problem of multicollinearity. Conclusions from models (7), (8), and (9) are as follows: after controlling for profitability, solvency, growth, company size, ownership nature, own capital ratio, and equity financing ability, the coefficients of *CONSV_BTM*, *CONSV_BASU*, and *CONSV_CSCORE* are all positive, and the significance of coefficients of *CONSV_BTM* and *CONSV_BASU* is 1 per cent and 11.5 per cent, respectively, indicating that cross-sectional conservatism helps increase the likelihood of incremental loans—a higher level of cross-sectional conservatism leads to a greater likelihood of obtaining incremental loans, but it is not significant whether previous year's conservatism influences current year's bank loans. To summarise, the above results suggest that conservatism can promote the execution of new debt contracts, which provides primary evidence for the usefulness of accounting conservatism to debt contracts in Chinese listed companies.

The sign and significance of coefficients of other variables are all consistent with those of Sun *et al.* (2006), which suggests that the company's solvency, profitability, growth, size, and own capital ratio are important references for banks to provide loans. These indices have positive effects on incremental loans at the level of 1 per cent, while the coefficient of *STATE* is significantly negative at the level of 1 per cent, indicating that non-state-owned enterprises are more likely to obtain new loans; one possible reason for this is that the liability-to-asset ratio of a state-owned enterprise is high enough, and the base of loan is big, causing banks to have little enthusiasm to provide new loans. On the other hand, with the reformation of

Table 10 Sample Selection Procedure for Testing the Usefulness of Conservatism

Selection procedure	CONSV_BTM	CONSV_BASU	CONSV_CSCORE	Remarks
During the first testing stage, max. of unitive observations before excluding outliers	5152 observations	5152 observations	5152 observations	
Loan: years 00–05 Conservatism: years 99–04 Other controlling variables: years 00–05	4416 observations	4416 observations	4416 observations	Excluding 736 observations of one year
Eliminating observations falling in the top and bottom 1 per cent of all the continuous variables except conservatism, *FACTOR1*, and *FACTOR2*	4114 observations	4114 observations	4114 observations	Factor analyses based on the sample

state-owned banks and development of civilian finance and a non-state-owned economy, it is less difficult for non-state-owned enterprises to acquire loans from banks and other financial institutions.

V. ROBUSTNESS TESTS

5.1. Test for Need Characteristics

According to Li *et al.* (2005), there is a strong correlation between loss and accounting conservatism, and the financial leverage of a loss company tends to be higher. Another explanation for the need characteristics of conservatism is that loss companies are conservative, and this conservatism is not caused by debt contracting conflicts but by loss. To control this rivalrous case, we add the dummy variable of loss.[13] Table 12 indicates that after loss is controlled, the sign and significance of

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[13] We would like to thank the anonymous referees for their advice provided in this respect.

Table 11 Regression Results for Testing the Usefulness of Conservatism to Debt Contracts N = 4114

Dependent variable: LOAN	Model (7) $CONSV = CONSV\_BTM$		Model (8) $CONSV = CONSV\_BASU$		Model (9) $CONSV = CONSV\_CSCORE$	
	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value
Intercept	-0.126***	-3.044	-0.149***	-3.223	-0.120***	-2.658
CONSV	0.011**	2.352	0.015*	1.575[14]	0.003	0.190
FACTOR1	0.005***	3.061	0.006***	3.412	0.005***	3.042
FACTOR2	0.012***	7.149	0.012***	7.173	0.012***	6.882
GROW	0.030***	8.858	0.030***	8.829	0.007***	3.366
SIZE	0.007***	3.771	0.009***	3.885	0.030***	8.818
STATE	-0.015***	-4.303	-0.015***	-4.280	-0.015***	-4.449
CFIO	0.071***	5.708	0.069***	5.590	0.069***	5.546
OFFER	0.028	1.092	0.032	1.247	0.029	1.137
R^2	0.098		0.097		0.096	
Adj. R^2	0.090		0.090		0.089	
F-value	13.361***		13.259***		13.177***	

*** denotes significance at the two-tailed 1 per cent level, ** denotes significance at the two-tailed 5 per cent level, and * denotes significance at the two-tailed 10 per cent level.

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[14] Significant at the level of 11.5 per cent.

all variables show no significant changes. In other words, proxies for debt contracts conflicts can have positive effects on accounting conservatism.

5.2. Test for Conservatism's Usefulness to Debt Contracts

The likelihood of incremental loans may also be affected by a company's dividend policy.[15] After cash dividends are paid out, more loans are needed for operations and investment, and dividend policies may influence accounting conservatism. Therefore, the positive correlation between the likelihood of incremental loans and conservatism may be caused by cash dividends. To control this rivalrous case, we add the proxy of *ASSDIV*—the dividend payout ratio—between 1999 and 2004 in our usefulness testing model. Table 13 indicates that there is no significant difference in coefficients and significance, meaning that cross-sectional conservatism indeed promotes a new debt contract; this primarily validates the usefulness of conservatism to debt contracts.

VI. CONCLUSIONS

This research provides empirical evidence on the debt contracting explanation for accounting conservatism in Chinese listed companies from two perspectives: debt contracts' need for conservatism and conservatism's usefulness to debt contracts. First, we use three variables for proxies of debt contracting conflicts, and find that a company is more conservative with higher levels of dividend payout ratio, liability-to-asset ratio, and investment risk. When a company makes excessive dividend payments, it will face higher financial risks, and then when it uses asset substitution to reduce the value of debts, shareholder-creditor conflicts will increase. Creditors will surely find some mechanisms to protect their interests, such as accounting conservatism, which helps harmonise conflicts in debt contracts. Therefore, this paper and other literature all find the need characteristics for conservatism, which means that a higher level of debt contracting conflicts generates a greater need for accounting conservatism. In other words, the existence of conservatism in accounting practice is due to its mitigating function for debt contracting conflicts. Based on the findings for need characteristics, we make further tests on the reason for the existence of need characteristics, which refers to conservatism's usefulness to debt contracts. The results indicate that with other factors controlled, the cross-sectional conservatism helps to promote new loan contracts, and that accounting conservatism indeed harmonises shareholder-creditor conflicts and helps the execution of effective contracts. Hence, the results support our conclusion that the debt contracting explanation for conservatism is applicable to Chinese companies.

However, it should be noted from the empirical results that the need characteristics are statistically significant, while the usefulness of conservatism is not always statistically significant. Although the coefficients of the three proxies for conservatism

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[15] We would like to thank the anonymous referees for their advice provided in this respect.

Table 12 Test Results for Need Characteristics after Controlling Loss

Dependent variable: CONSV	CONSV_BTM (N = 3972)				CONSV_BASU (N = 3972)				CONSV_CSCORE (N = 3972)			
	Model (1)		Model (2)		Model (3)		Model (4)		Model (5)		Model (6)	
	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value
(Constant)	1.815***	32.559	1.891***	33.747	0.795***	6.061	0.779***	5.988	0.893***	100.110	0.902***	101.687
ASSDIV	0.260**	2.365	0.272**	2.441	−0.584**	−2.261	−0.588**	−2.274	0.047***	2.656	0.049***	2.931
LEV	0.295***	24.008	0.309***	24.960	0.163***	5.642	0.160***	5.572	0.204***	103.740	0.206***	104.860
RISK_CASH			0.000	0.805			0.000	0.147			0.000*	−1.812
RISK_REVENUE	0.103***	10.406			−0.022	−0.937			0.011***	6.990		
LOSS	0.066***	7.128	0.072***	7.721	0.031	1.420	0.029	1.361	0.004***	2.609	0.005***	3.060
ROA	0.001***	2.934	0.002***	3.683	−0.006***	−5.254	−0.006***	−5.336	−0.001***	−18.024	−0.001***	−17.476
GROW	−0.013**	−2.495	0.002	0.431	−0.003	−0.272	−0.006	−0.561	0.001	1.345	0.003***	3.461
SIZE	−0.095***	−36.307	−0.097***	−36.543	−0.039***	−6.259	−0.038***	−6.211	−0.044***	−104.385	−0.044***	−104.437
STATE	−0.014***	−2.989	−0.018***	−3.822	−0.039***	−3.599	−0.039***	−3.535	−0.002***	−2.825	−0.003***	−3.360
R^2	0.431		0.416		0.092		0.091		0.887		0.886	
Adj. R^2	0.426		0.411		0.084		0.084		0.886		0.885	
F-value	90.416***		84.837***		12.030***		12.002***		937.701***		925.623***	

*** denotes significance at the two-tailed 1 per cent, ** denotes significance at the two-tailed 5 per cent level, and * denotes significance at the two-tailed 10 per cent level.

Note: LOSS is a dummy variable, which equals 1 when a company suffers a loss. Other variables are defined as above.

Table 13 Regression Results for the Usefulness Test after Controlling for the Dividend Payout Ratio (N = 4114)

Dependent variable: LOAN	Model (7) ($CONSV = CONSV\_BTM$)		Model (8) ($CONSV = CONSV\_BASU$)		Model (9) ($CONSV = CONSV\_CSCORE$)	
	Coefficient	T-Value	Coefficient	T-Value	Coefficient	T-Value
Intercept	−0.115***	−2.770	−0.137***	−2.955	−0.110***	−2.440
CONSV	0.012***	2.563	0.015*	1.546[16]	0.005	0.292
FACTOR1	0.004**	2.425	0.005***	2.819	0.004**	2.502
FACTOR2	0.011***	6.353	0.011***	6.399	0.011***	6.153
ASSDIV	0.268***	3.297	0.254***	3.120	0.256***	3.143
GROW	0.007***	3.462	0.008***	3.588	0.007***	3.114
SIZE	0.030***	8.862	0.030***	8.829	0.030***	8.819
STATE	−0.015***	−4.283	−0.015***	−4.278	−0.015***	−4.436
CFIO	0.065***	5.194	0.063***	5.082	0.063***	5.035
OFFER	0.029	1.132	0.033	1.288	0.030	1.177
R^2	0.100		0.099		0.098	
Adj. R^2	0.092		0.091		0.091	
F-value	13.319***		13.183***		13.107***	

*** denotes significance at the two-tailed 1 per cent level, ** denotes significance at the two-tailed 5 per cent level, and * denotes significance at the two-tailed 10 per cent level.

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[16] The significance level is 12 per cent.

are positive, only the proxy based on *BTM* conservatism is significant at the level of 1 per cent; the proxy based on the Basu model is significant at the level of 11.5 per cent, close to the level of 10 per cent; and the proxy of *CONSV_CSCORE* based on the firm-year measure of Khan and Watts (2007) is not significant. The results suggest that cross-sectional conservatism plays a role in the execution of debt contracts, but to our regret, the results cannot validate that firm-year conservatism can influence new loan contracts. Future research may consider improving the measuring methods, or taking such variables as debt costs and default probability of debt contracts to further test conservatism's usefulness to debt contracts.

REFERENCES

Please refer to pp. 104–107.