

关于 implicit government guarantee 的衡量

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2021 年 9 月 10 日

摘要

这种报告只要是关于隐性政府担保的衡量的。第一篇是 Journal of Corporate Finance 上面关于 IGG 的衡量，第二篇是对 Survey 那篇论文的总结，主要比较了通过利差法、信用评级法、Contingent Claims 方法和事件法来衡量研究政府隐性担保的优缺点。

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1 第一篇 Implicit government guarantees and credit ratings

期刊作者: Journal of Corporate Finance(Yi Dong, Qiannan Hou, Chenkai Ni, 2021)

数据: We begin with 3993 issuances of corporate bonds, enterprise bonds, medium-term notes and short-term notes by listed firms in China (also known as A-share firms) during 2010–2018.

衡量 implicit government gurantees 的方法:

$$\text{Ln(Rating)} = a_0 + a_1 * \text{Implicit Guarantee (Size, Employee or Tax)} + \text{Control Variables} + \text{Industry Effects} + \text{Year Effects} + \varepsilon$$

$$\text{Ln(Rating)} = a_0 + a_1^* \text{Implicit Guarantee (GovShare, CSOE or SOE)} + \text{Control Variables} + \text{Industry Effects} + \text{Year Effects} + \varepsilon$$

其中 rating 是 Wind 数据库的信用评级, 比如 A+ 记为 1, AA-记为 2, 以此类推。

第一种衡量 implicit government gurantees(IGG) 是基于 Too big to fail 的观点来衡量 IGG, 用三个变量来衡量 IGG:

- 1 firm size(size), 定义 $\log(1 + \text{公司总资产})$
- 2 员工数目, 定义为 $\log(1 + \text{员工数目})$
- 3 交的税, 定义为 $\log(1 + \text{交的税})$

(第一种衡量方式直接就是默认了 TBTF 的存在会导致隐性政府担保了。)

第二种是基于与政府连接的观点来衡量 IGG, 也用了 3 个变量来衡量 IGG,

- 1 政府在前十个股东中的股份占比
- 2 如果中央政府机构控制的就为 1 (a central SOE indicator (CSOE) which equals one if the firm's ultimate controlling shareholder is a central government agency at the last fiscal year end, and zero otherwise;)
- 3 如果政府机构控制的就为 1(an SOE indicator (SOE) which equals one if the firm's ultimate controlling shareholder is a government agency at the last fiscal year end, and zero otherwise. Central SOEs constitute a subset of SOEs.)

主要结论:

- 1 作者认为隐性政府担保主要有两个因素造成。第一个是 too big to fail 造成的, 作者发现信用评级和发行公司大小 (issuer size), 员工数目和交的税是正相关; 第二个是 government link, 作者探索了信用评级和发行公司所有权的关系。
- 2 更重要的是, 当 SOE(state-owned enterprise) 违约的时候, 隐性担保对信用评级的解释力度变小了。

隐性担保的一些例子：

可能以后论文需要举例的时候可以用到

The phenomenon of implicit government guarantees is widely observed across the world. For example, during the 2008–09 mortgage crisis, the U.S. government provided support to large financial institutions including Citigroup, AIG as well as industrial firms such as those in the auto industry (Bond and Goldstein, 2015). Other than the U.S., firms also enjoy implicit government guarantees in many other countries (Faccio et al., 2006). Due to the more pronounced presence of state ownership, the provision of implicit government guarantee has a wider scope and a greater degree in China (Amstad and He, 2020). Naturally, such a provision results in low default risks perceived by the debt market in China (Zhu, 2016).

2 Survey 里面的观点

主要比较了通过利差法、信用评级法、Contingent Claims 方法和事件法来衡量研究政府隐性担保的优缺点。前面两种方法是通过比较融资成本优势来衡量的。

2.1 从利差来估计融资成本优势

估计方式：

观察特征类似，但是一种有政府隐性担保，另一种没有政府隐性担保的证券利息，比较二者之间的利差可以来估计政府隐性担保。

用存款融资优势也可以用来估计 IGG：

前面说的利差主要是债券的利差，但是也有学者比较过大小银行之间的存款利差，这也是一种融资成本优势的体现。比如 Jacewitz and Pogach (2014) 比较过 2007-2008 年金融危机时候大小银行的存款利差（但我个人觉得这种研究不对，因为造成存款利差的不一定只有 IGG，还有很多其他因素）

这种估计方式的优点：

文中没有提及这种方式的优点

这种估计方式的缺点：

- 1 首先这样的证券很难找到
- 2 这种证券的利差不仅反应信贷风险溢价 (credit-risk premia)，还反应流动性 (liquidity) 和其他的溢价，很难把这些关系给剥离出来，最后只剩下隐性政府担保 (IGG)。作者还举了几个例子，Goldman Sachs(2013) 发现美国大银行的 IGG 其实并不显著，IMF(2014) 在控制银行杠杆相同的时候，发现政府的隐性担保是显著的。作者同时也指出如何控制各种因素是比较困难的。
- 3 处理跨地区的价格信息的时候比较难用，因为每个市场的情况不同，在处理基点宏观数据时候会产生不同，比如中国和美国的基准利率不同，所以很难跨地区比较

(Direct estimates of funding costs advantages based on observed market prices are difficult to implement, especially if the intent is to consider cross-country evidence, which is typically the case as a large part of the reforms are internationally co-ordinated.)

可以通过对照组进行改进这种方法：

通过衡量金融机构公司和非金融机构公司可以有效地进行对照，因为非金融机构公司一般可以假设不会收到任何的财务支持。

关于对照法，作者举的例子包括，Santos(2014) 比较大小规模金融公司之间的利差，比大小规模非金融公司之间的利差要大；另外一个是我们之前看过的 Acharya 的文章里面用到的。

2.2 从信用评级来估计融资成本优势

估计方式：

一般来说信用机构会有两种评价，一种是'all-in' 信用评价（个人理解是这种信用评价把所有的因素都考虑进去了），另外一种是'stand-alone' (intrinsic strength) 信用评级（个人理解这种信用评价是只考虑银行自身实力的）。然后对两种评级做差，就是政府隐性担保了。

(原文是下面这句：credit rating agencies explicitly distinguish between an issuer 'all-in' credit rating and a 'stand-alone'(or intrinsic strength) credit rating, with the former but not the latter including the rating agency's assumption regarding the external support provided for bank debt (Packer and Tarashev, 2011). The difference between the two ratings is typically referred to as the credit rating uplift and reflects the value of assumed support from public authorities in case the bank is in distress.)

这种方法的优点：

- 1 虽然评估不一定准确，但是市场参与者在评估银行债务（比如证券）的时候，会考虑这些评价机构的评估，进而影响银行的融资成本的，所以说通过信用评价来评估银行担保还是有一定道理的 (Morgan and Stiroh, 2005; Rime, 2005)
- 2 Rime (2005) observes that credit rating agencies produce credit ratings that are homogenous measures of perceived credit risk of banks that can be easily compared across banks.

A ratings-based approach is straightforward to implement even across different countries or markets.

(大致意思是用评级可以在不同的国家和市场去估计 IGG，使用范围较广)

(我对这句话的理解是，评估机构对风险感知衡量是用同质的衡量方法来评估的，所以不同银行间可以进行比较。但是我比较疑惑现实中真的是用相同的方法来衡量吗，而且后面又指出 Unfortunately, however, extraction of these support assumptions is not always straightforward and the required approach differs across rating agencies，感觉有点自相矛盾)

- 3 相比于传统直接用大小规模来衡量信贷利差的方法，信用评价还考虑了像银行连通性等因素。
- 4 外部机构做的评级比较客观。
- 5 这种方法比较简单而且数据好获取

这种方法的缺点：

- 1 信用评级机构的评估不一定是准确的
- 2 信用评级和融资成本的关系不稳定，只有在全球金融危机的时候才最接近 (Noss and Sowerbutts, 2012)
- 3 目前部分政策制定者正在淡化这种机构的评级在金融监管中的作用，可能以后信用评级的影响力会降低。(Currently, there is an effort on the part of policy makers co-ordinated by the Financial Stability Board (FSB) to de-emphasize the role of credit agency ratings in financial regulation and in particular the mechanical reliance on such ratings by some market participants, so that the role of credit ratings might change in the future.)

2.3 Contingent Claims Method to Compare Observed and Hypothetical CDS Spreads

(这个方法中专业术语我翻译的不好，所以大多保留了原文)

估计方法：

有两种估计方法，第一种是

One approach is to view the banking sector as a residual claimant on the government, receiving a pay-off equal to that of a hypothetical put option that allows the owner to sell the banking sector assets at a quasi ‘strike price’ given by the trigger point at which the banks fail.

(第一种方法大致的意思就是把银行看成一个期权，然后 BSM 期权定价公式去估计政府担保的价值 value of a guarantee)

第二种是下面几点：

- Another approach uses data on the price paid for credit default swaps (CDSs) on bank bonds, that is CDS spreads, and compares the latter with hypothetical so-called ‘fair-value’ CDS spreads calculated from equity price information.
- Assuming that equity holders are wiped out in the event of default, information on the probability of default on bonds can be extracted from equity prices. That information allows one then to calculate a ‘fair-value’ CDS spread that by definition abstracts from the possibility of external support for bank debt.
- The difference between the observed and the ‘fair-value’ spread measures the value of implicit bond debt guarantee.

(第二种方法的意思大致是先用股票价格数据估计出一个公正的 CDS 利差 fair-value, 然后用这种真实的 CDS 利差减去估计出来的 fair-value 的利差, 最后就是政府隐性担保的衡量)

这种方法的优点:

- 1 可以区分银行间异质和同质的风险

(Contingent claims analysis is conceptually attractive and allows one to distinguish between idiosyncratic and collective risk)

这种方法的缺点:

- 1 这个方法需要有一个假设前提: 在达到某个阈值时后, 政府会肯定救助银行, 即这时政府救助银行的概率为 1, 但实际中并不是这样的
- 2 这种估计方法的波动性很大, 很多时候很难解释结果

2.4 通过事件研究法探究隐性担保的影响

估计方法

寻找一个会导致政府隐性担保会变多或者变少的事件, 然后探究这个时间对银行债券和股票等资产收益率的影响。

这种方法的优点:

- 1 An advantage of this approach is that, provided the probability of bank financial distress is unaffected by the event, the asset price change reflects the change in the assumed probability of support for the bank if in distress.
- 2 an event-study approach is particularly useful if the question addressed is to identify what has been the effect of specific regulatory or other policy actions or announcements on the value of implicit bank debt guarantees

这种方法的缺点:

- 1 One shortcoming of studies considering the effect of events on bank equity, as opposed to bond returns, is that the results are difficult to interpret.
- 2 One drawback of event studies is the difficulty in precisely attributing a change in the regulation or resolution framework to a specific date. Such changes are typically the results of long-term processes and it is difficult to identify which dates were the most relevant in providing 'news' about framework changes.