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***ВЫЯВЛЕНИЕ ПРОБЛЕМ БАНКОВ И ИДЕНТИФИКАЦИЯ ПОДХОДОВ:
ЭМПИРИЧЕСКАЯ ОЦЕНКА***

Фредерик Аннинг

Студент международной магистерской программы «Banking»

Сибирский федеральный университет

Красноярск, Россия

Аннотация

В настоящее время большинство банков так или иначе самостоятельно разрабатывают собственную политику управления рисками ликвидности. При этом эти банки довольно часто пренебрегают внешними факторами, оказывающими влияние на ликвидность, принимая во внимание лишь общий компонент риска в финансовой системе. В связи с этим мы предлагаем банкам эмпирически выявлять проблемы, связанные с принятием решения. С другой стороны, существуют инструменты, в том числе установленные регулятором, стимулирующие банки в качестве альтернативы разработки собственной политики использовать коллективные стратегии принятия рисков, что может увеличить системный риск

Ключевые слова: ликвидность, банки, риск, регулирование

***A REFLECTION OF BANKS PROBLEMS AND IDENTIFICATION
APPROACHES AN EMPIRICAL ASSESSMENT***

Frederick Anning

Graduate Student

Siberian Federal University

Krasnoyarsk, Russia

Abstract

Most Banks independently enhanced their liquidity risk management policies one way or the other. In doing so, these banks out of neglect did not take into accounts the associated externalities which were created by way of some of the choice of decision the took with regards to the general risk component within the financial system. In view of this we try to reflect on the banks problems caused by their choice of decision empirically. On the other hand, there may be incentives, associated for instance to the role of the main regulator, for banks to enhance their choices not rigorously at the individual level, but appealing as an alternative in collective risk taking strategies, which may increase systemic risk.

Keywords: Liquidity, Banks, risk, regulation

Overview

The liquid liabilities of Banks within an economy could generally be packaged as illiquid claims which could be considered as loans by way of extension. The role of Banks in this regard as intermediaries make them rely on maturity mismatches amongst other assets as well as other liabilities which makes the banks find themselves in extremely exposed positions with regards to the risk of funding which is a liquidity risk and or the general runs within the [1]. There is massive literature regarding the subject matter, whilst on the other hand there is surprisingly limited empirical evidence on banks' developmental mismatches notwithstanding their exposure to the risk of liquidity which could be associated to funding. It is in view of this that we do an empirical assessment on the subject matter.

Methodology

To begin with, we set a multivariate by assessing the impact of other banks liquidity decision within a particular industry, eg. Banks within Russia i.e Sberbanks

liquidity decisions as against that of let's say Gazprom Banks liquidity decisions. This could be assessed by employing the formula below defined as (1)

$$Liqx_{it} = \alpha_0 + \alpha_i + \beta_1 Capital_{it-1} + \beta_2 Banksize_{it} + \beta_3 profitabilty_{it-1} + \beta_4 Cost_inc_{it-1} + \beta_5 Lend_spec_{it-1} + \beta_6 (Liq - x_{it-1}) + i_t + \varepsilon_{it}$$

based on the parameters of equation (1) above, we then generate the equation below as equation (2)

$$Liqx_{it} = \alpha_0 + \alpha_i + \beta_0 \sum \frac{Liqx_{jt}}{N_{it-1}} + \beta_1 capital_{it-1} + \beta_2 capital_{it-1} + \beta_2 banksize_{it} + \beta_3 profitabilty_{it-1} + \beta_4 Cost_inc_{it-1} + \beta_5 lend_spec_{it-1} + \beta_6 (Liq - x_{it-1}) + i_t + \varepsilon_{it}$$

thus, representing the average liquidity indicators of peer or other banks as well as all the parameter's and or variables as stipulated in the first equation (1)

In a multivariate setting, the effects of a peer banks decision taking choices with respect to liquidity could be determined by employing the version as stipulated below:

$$Liqx_{it} = \alpha_0 + \alpha_i + \beta_0 \sum \frac{Liqx_{jt}}{N_{it} - 1} + \beta_1 capital_{it-1} + \beta_2 capital_{it-1} + \beta_2 banksize_{it} + \beta_3 profitabilty_{it-1} + \beta_4 Cost_inc_{it-1} + \beta_5 lend_spec_{it-1} + \beta_6 (Liq - x_{it-1}) + i_t + \varepsilon_{it}$$

where

$$\sum_{j \neq i} \frac{Liqx_{jt}}{N_{it} - 1}$$

We then determine the coefficient β_0 by taking into account the degree by which a banks choice of liquidity decision reflects that of the group it finds itself.

This assessment notwithstanding entails sever macroeconomic challenges; this stem from the postulates not limited to;

- Arguments as to how peer (competitor) choices may affect the decisions of a specific bank,
- Our inability to rule out the fact that the decisions of a bank will not, in turn, affect the choices made by its competitors and or other players within the same industry.

This is however captured in the works [2] as a reverse causality problem in peer effects is commonly stated to as the reflection problem. Manski in his works distinguishes three different extents of peer effects:

- i) The exogenous or contextual effects, that is related to the impact of exogenous peer features;
- ii) The endogenous effects, rising from the effect of peer results (i.e., peers (competitors) liquidity choices); and
- iii) The correlated effects that simultaneously affects the major elements of the peer group.

It is however empirically challenging to separate these effects. [2] However argues that the difficulties arise from the difference between effective peer effects (which are either endogenous or exogenous) from that of other correlated effects. Moreover, the proof of endogenous and exogenous effects could be challenged by the reflection problem, as the peer decision which occurs simultaneously could result in a perfect collinearity which would exist between the expected mean outcomes of the group as well as its mean characteristics, as stipulated in the works of [3] as well as that of [4].

We can realize from this work that an assessment of the second equation i.e. equation (2) does not give room for accurate assessment of peer and or competitor effects, our response to this inaccuracy could be rectified by the use of an instrument as a way to mitigate the corresponding problems in lieu of endogeneity. There is

further assertion in the work of [5] suggestion that this problem regarding the reflection issue could be rectified by incorporating an instrumental variable which will directly affect the results of some of the members of the peer group.

Works by researchers [6] as well as that of [7], suggests that such an instrument need be orthogonal to systematic and or show herding effects. Using this assertion, we then employ the values stated as predicted values of the liquidity indicators of the peer banks with emphasis on the determinants regarding the regression of the liquidity indicators. In doing so, we could realize that the predicted values will depend on the bank characteristics within the peer group, without bank i . It is worthy to note that these predicted values depend solely on observable bank features and thus be orthogonal to systematic or show herding effects. We can then suggest that the predicted values in respect of the liquidity indicators of these peer banks must not indirectly affect $Liqx_{it}$ the banks liquidity indicators of the bank i at time t , since the predicted values are centred solely on the observable bank features.

We then try to control the time effects, and it could be done by being able to orthogonalize all the systematic shocks in the banks. This notwithstanding, there's the need for the predicted values of the peer banks to be highly correlated with regards to the average liquidity indicators which were observed as part of our possible endogenous variables.

Our instrumental variables approach is thus equivalent to that of the estimation, i.e.

$$Liqx_{it} = \alpha_0 + \alpha_i + \beta_0 \sum \frac{Liqx_{jt}}{N_{it-1}} + \beta_1 capital_{it-1} + \beta_2 banksize_{it} + \beta_3 profitability_{it} + \beta_4 Cost_inc_{it-1} + \beta_5 lend_spec_{it-1} + \beta_6 (Liq - x_{it-1}) + i_t + \varepsilon_{it}$$

where the first step equation is

$$\begin{aligned} \sum_{j \neq i} \frac{Liqx_{jt}}{N_{it} - 1} = & \alpha_0 + \alpha_j + \gamma_1 \sum \frac{Liqx_{predx_{jt}}}{N_{it} - 1} + \beta_1 capital_{jt-1} + \beta_2 banksize_{jt} \\ & + \beta_3 profitability_{jt-1} + \beta_4 Cost_inc_{jt-1} + \beta_5 lend_spec_{jt-1} \\ & + \beta_6 (Liq - x_{it-1}) + i_t + \varepsilon_{it} \end{aligned}$$

In this way

$$\sum_{j \neq i} \frac{Liqx_{jt}}{N_{it} - 1}$$

signifies the average predicted values for $Liqx_{it}$ for the peer group

As employed in the equation:

$$\begin{aligned} Liq_predx_{it} \\ = & \alpha_0 + \alpha_i + \beta_1 capital_{it-1} + \beta_2 Banksize_{it} + \beta_3 Profitability_{it-1} \\ & + \beta_4 Cost_inc_{it-1} + \beta_5 Lend_spec_{it-1} + \beta_6 (Liq - x_{it-1}) + i_t \end{aligned}$$

we are however able to ascertain peer effects having dealt adequately with the problem of reflection, and we would have realized biased results if we had ignored the problem.

Conclusion

Previous works however defines the benchmark peer group as the banks operating within the same country and within the same year. These banks are however the banks that is most probable to employ collective risk-taking actions by virtue of the implicit or explicit bailout anticipations. That is to say in Russia for example, a number of banks engage in funding liquidity strategies which they

consider globally risky (for example, too much dependence in short term debt in terms of financing long-term assets or projects or there tend to be large funding gaps or in situations where players in the industry tend to tap persistently into the interbank markets). When most banks employ these strategies simultaneously, there tend to be an automatic increase in the level of systemic risk. As argued in the works [8] and that of [9], the central bank as a lender of last resort is not necessarily going to bail out a bank that gets into crisis due to its own distinctive wrong choices (if not this supposed bank is clearly too big to fail as perceived in the 2007-2008 financial crisis). Nevertheless, it is noteworthy that when a number of banks are at risk, the onus lies on the lender of last resort to take the necessary actions to have a systemic risk approach to bring sanity in the industry. When this happens the probability of a bailout thus increases, should one of these banks finds itself in a crisis there is likelihood of other banks following afterwards.

With this in mind, a given bank within a country has clearly high incentives to involve in related risky but profitable methods. Nonetheless, same cannot be assumed for a bank operating within a different country, where the work of the central bank is quite different. This notion justifies the need for reference peer group.

Reference

1. Diamond and Dybvig, 1983 Bank Runs, Deposit Insurance, and Liquidity
2. Manski (1993) Identification of Endogenous Social Effects: The Reflection Problem
3. Bramoullé et al (2009) Identification of peer effects through social networks
<https://www.sciencedirect.com/science/article/pii/S0304407609000335>
4. Carrell et al (2009) Is poor fitness contagious? Evidence from randomly assigned friends.
<https://pdfs.semanticscholar.org/9adf/69f0c9fb932752dfff7343731c1e205dc1da.pdf>

5. Manski (2000) Economic Analysis Of Social Interactions. *Journal of Economic Perspectives* 14 (3), 115-136
6. Brown, J., Z. Ivkovic, P. Smith and S. Weisbenner (2008), Neighbors Matter: Causal Community Effects and Stock Market Participation, *Journal of Finance*, 63, 1509-1531.
7. Leary and Roberts (2010) The pecking order, debt capacity, and information asymmetry
<https://EconPapers.repec.org/RePEc:eee:jfinec:v:95:y:2010:i:3:p:332-355>
8. Rochet and Tirole (1996) Interbank Lending and Systemic Risk
<https://EconPapers.repec.org/RePEc:mcb:jmoncb:v:28:y:1996:i:4:p:733-62>
9. Ratnovski, L. (2009), Bank liquidity regulation and the lender of last resort, *Journal of Financial Intermediation*, 18(4), 541-558.