

GENESIS OF BASEL BANKING REGULATION AGREEMENTS IN THE LIGHT OF LIQUIDITY RISK GROWING (Devoted to 25th anniversary of Basel I is)

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Abstract

Since adoption of first Basel accord on the banking regulatory framework 25 years ago, well-known as Basel I, shareholders` capital played a key role in the international standards of banking business. Yes, the capital is the cornerstone of the risk protection dam, but statistic and economic analysis of the banking history tells us that banks can be ruined by crisis, like walls by floods, if capital does not protected by the system of liquidity risk management, like stones of wall have to be stacked each other by cement. Liquidity risk is on the top of the pyramid of risks and the craft of measuring and managing it is the main pillar of the financial sector stability and growth.

Key words: capital adequacy, pyramid of risks, liquidity coverage ratio, liquidity reserves ratio, net stable funding ratio, economic capital.

1. Introduction

On June 15, 2013 we celebrate the 25th anniversary of Basel I adopted by 12 leading countries in 1988. The core of the signed agreement was that the capital adequacy for banks as a ratio of banking capital to the risk weighted assets (CAR), which should be 8% or more:

$$\text{CAR} = \text{Regulatory capital} / \text{Risk weighted assets} > 8\% \quad (1)$$

This document has changed the previous agreement on international banking regulation, well known as “Concordat”, launched in 1975. In that document in addition to capital, liquidity, currency control were in the regulatory list. There also was liquidity. Well known authors A. Santomero, J.Vinso (1997), L.Wall (1985), P. Rose (1993) outlined that banks had to be estimated by a wider (up to 8 (Rose)) range of criteria, and not only by capital adequacy. Based on their own research they concluded that majority of banks would become bankrupt even with doubled capital level.

The paradigm of banking regulation framework was built on the basis of capital adequacy level but history did not answer the question how much liquidity exposure was important in the measurement of banking risks.

2. A brief history of the Basel accord

CAR became the international measure of banks stability in 1988 and was obligatory implemented in 1993. The main reason why the capital won, was transparency of CAR calculation and its universal methodology.

For central banks decisions CAR can be more than 8% and some unstable components of capital may be excluded. For Ukraine CAR is 10%, intangible assets, losses and accrued income are excluded from Tier I capital and revaluation of tangible assets is not included in Tier II capital from 2010. CAR level is strongly impact on economic development like pills: higher level leads to growing capital, reducing credit activity and risky assets. But, simultaneously loan rates and credit risk are increasing in order to keep profitability of capital. Lower rates make banks more aggressive on lending along with reducing rates . As a result, economy grows more rapidly but risk of over landing and overheating the economy is growing. CAR ratio under the Basel I had to cover only lending and investments risks.

In 2004, 16 years after Basel I , the Committee decided to make radical changes in standards introducing a wider range of risks which should be covered by shareholders capital, mostly operational, trade and some other. The structure of Tier I and Tier II capital was unified and 3 pillars of banking business were launched: Capital requirement, Supervising, Market discipline. But 6 year before this, on the 10th anniversary of Basel I celebration, the ex-chairman of FRS Alan Grinspen (1998) outlined that big systemic banks had made a radical step in improving risk management and hedging but universal level of regulatory capital arbitrage of 8% could not be the measure of capital requirement for all banks. He had formulated 4 basic principles which became the cornerstone of Basel II:

- Standards of capital should reflect each kind of banking risk;
- Supervisors have to combine standards and risk - management systems control;
- Current standards of capital should be combined with probabilities of assets default estimations;

- Banks should disclose as much information as possible for their transparency and risk estimation.

Estimations of default probabilities under the Basel II generally had to be done on the basis of Rating agencies scores, for example, from 0,03% for AA borrowers to 100% for D class borrowers under Standard and Poor's ratings for US companies (FDIC). So, Basel II gave preferences to the big banks with sophisticated risk – management systems and high ranked borrowers.

The formula for calculating expected losses (EL) under IRP approach became the greatest innovation of Basel II:

$$EL = PD *LGD*EAD, \quad (2)$$

where PD – probability of assets default; LGD – loss given default; EAD – exposure at default.

Capital requirements to buffer the combination of expected and unexpected losses are known as economic capital, which is estimated on the basis of historical trends extrapolations (Tiesset, Troussard (2006)),

3.After the crises

For years it was difficult to say why Basel II did not buffer world financial crisis started in 2007 (probably it was not implemented properly at that time), but it pushed banks to create sophisticated risk evaluation and management systems and persuaded supervisory boards to be more concerned over the quality of banking operations.

The crisis dramatically revealed that the capital alone cannot protect bank from the risk of default, which is the bunch of different risks, facing in the banks business. The crisis raised a very important question “is the capital a key pillar of bank stability?”, and referred us back to the authors' precaution before Basel I that the capital itself was not a sufficient remedy for all economic diseases.

What should help? New, Basel III, of course. In 2010 the Basel committee proclaimed new standards for capital. There were two main documents: Countercyclical capital buffer proposal and International framework for liquidity risk measurement standards and monitoring. The key point in the capital framework was increasing Tier I capital buffer against risk weighted assets (CAR) from 4,5% on 1.01.2013 to 6% in 2015 and 8,5% by 2019. For total regulatory capital (Tier I + Tier II) CAR should reach 10,5% by that period. Simultaneously capital has to be cleaned from the different step-ups and core capital should consist only of shareholders' capital and disclosed reserves of capital. However, the approach for estimation of real risk – weighted assets has to be improved. Risk managers of banks should estimate risk of assets properly and do not rely on the third parties conclusions which can lead to the cliff effects and cherry – risks of wrong way risks estimation. Increasing CAR will lead to the results mentioned above . Nout Wellink (Central bank of Holland) outlined that GDP would drop by 0,2% within 4,5 year period as a result of higher interest rates (2010). But who knows whether the banking business will be more stable with new CAR?

But the most important thing is the new liquidity ratios, which are the second wing of Basel III: Liquidity coverage ratio (LCR) and Net stable funding ratio (NSFR). LCR cover liquidity risks in short – time period till 30 days :

$$LCR = LA/ NO > 100 \% \quad (3)$$

where LA – very liquid assets (cash, reserves in central bank, T-bonds and some others); NO – Net possible outflow of deposits under the stress scenario = outflow – inflow of cash to the bank. For stable deposits it is 7,5% of probable outflow, for non- insured deposits it is 15%.

NSFR indicates a long - term (more than 30 days) liquidity risk:

$$NSFR = ASF/RSF > 100 \% \quad (4)$$

where ASF – available amount of stable funding includes 100% of capital, 85% of retail deposits till 1 year maturity, 50% of not insured and short - term corporate deposits, etc.; RSF – required amount of funding includes 20% of corporate bonds AA rating and more than 1 year maturity, 50% of gold and AA- ratings bonds with more than 1 year maturity period, 85% retail loans, etc.

Both normative tell that liquid assets should cover probable outflow of deposits in crisis scenario and stable funding should cover unstable, meaning more risky, assets. The second ratio has a liquidity trap. The more stable, long term resources bank has, the larger size of risky assets it can create. Is it a rule? And it's coincide with CAR approach: the more capital You have, the bigger volume of assets under the risk You can create. This paradigm forms the base of all Basel accords. From this point we will start a more detailed analysis of the role of capital in liquidity risk protection.

First of all, we have to understand which type of risk is crucial for bank to survive . Among dozens of risks, liquidity risk is on top of risks pyramid. So, the most stable bank is the bank which can manage liquidity risk , but it cannot be the bank with the highest CAR ratio. We did several statistic researches concerning the dependence of liquidity ratio upon capital adequacy on the basis of statistics of 160 Ukrainian banks. The Figure 1 shows that with the growth of capital of banks theirs liquid assets are also growing. That is objectiveness, but correlation analysis tells us that liquid assets grow only by 0,85 UAH per 1 UAH of capital growth. That means, that the more capital banks have, the less liquid assets to capital ratio is, and, as a result, they have less CAR ratio.

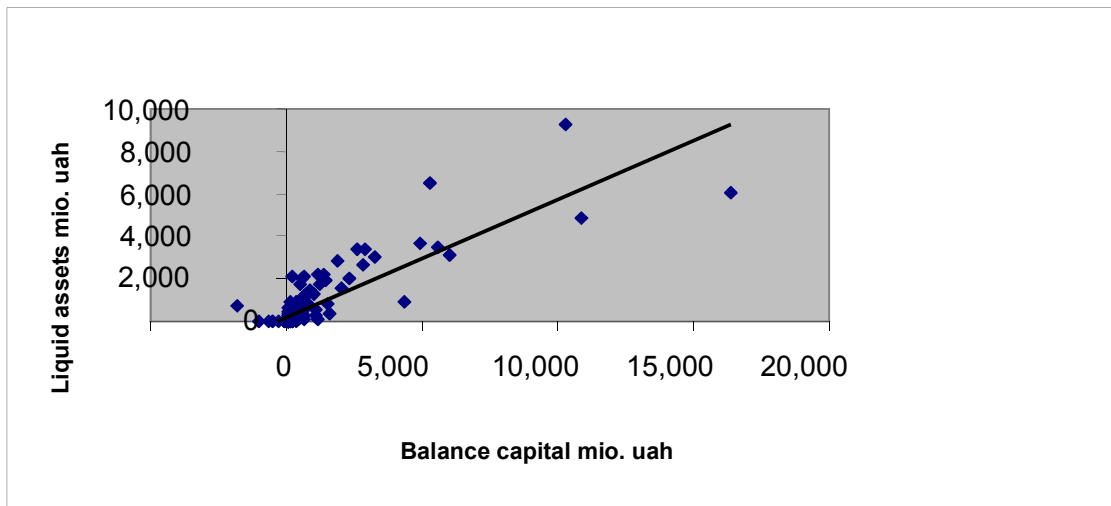


Figure 1: Balance capital and liquid assets (cash) of Ukrainian banks in 2010
 Source: Statistic of banking sector . Web site of National bank of Ukraine

Regression analysis of the relationship between CAR and Liquidity ratio (cash to liabilities) of Ukrainian banks gives correlation ratio of only 0,08. So, there is no correlation between capital adequacy level and liquidity risk at least in the Ukrainian banks.

The second important issue is the liquidity component in the structure of the bank's capital. If the bank revalues the assets, reduces reserves, decreases depreciation and does some other similar tricks, it increases the capital, but not the liquidity. In Ukraine banking capital consists of 10-15% of the non-monetary step-ups. They should be limited to a maximum of 10%. Similar disconnection is between liquidity and credit risk. The more reserves the bank creates to buffer credit risk, the more significantly it reduces risk-weighted assets and capital, but it does not affect the status of the bank's liquidity. The correlation coefficient between reserves to loans ratio (RtL) and liquid assets (cash and cash equivalents) to liabilities (LAtL) ratio of 17 largest Ukrainian banks (Figure 2) is only 0,007415. That means that the buffer of liquidity risk does not increase in proportion to the growth of liquidity risk (if reserves reflect it properly). The capital usually grows at least to buffer losses of reserves but liquidity is not necessarily increases.

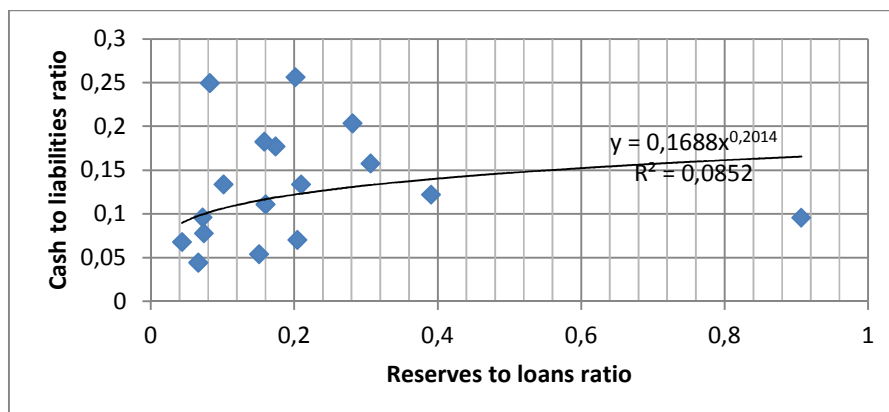


Figure 2: Reserves and liquidity ratios of top 17 ukrainian banks as of 10/1/ 2012

Source: Statistics of banking sector. Web site of the National bank of Ukraine.

There are at least 3 options to avoid such liquidity gap. The first is to introduce liquid assets to capital ratio. It can also be 8-10% as CAR ratio. The roadmap will be:

risk rise → reserves rise → capital should be increased → liquidity improved.

The second approach directly binds liquidity and reserves. It is possible to use for this liquid reserves ratio (LRR). Our proposal is that this ratio should be not less 100%:

$$LRR = LA_{tL} / RtL > 1 \quad (5)$$

For 17 top Ukrainian banks at the end of 2012 this ratio was 12,27%/10,88% = 1,128. But in 9 of these banks this ratio was less than 100%. So they have to improve liquidity level to get target ratio. And auditors should fairly control reserves level.

The third scenario is to launch flexible curve of liaison between LCR, Risk (RtL) and CAR ratios. The curve should has parabola shape (See the example is in table 1).

LCR, Risk and CAR ratios liaisons, %

Table 1

RISK	LCR	>15	10- 15	5-10	<5
		CAR			
< 5		8,0	8,5	9,0	9,5
5-10		8,5	9,0	9,5	10,0
10-15		9,0	9,5	10,0	10,5
>15		9,5	10,0	10,5	11,0

Source: own compilations.

4. Conclusions

Of course, Basel Committee can adopt any requirements for LCR, RISK and CAR ratios and authorized countries to use them in the national standards, but the approach should be the same: the more risky assets and less liquidity bank has, the more stringent requirements for capital adequacy it should follow. So, flexibility should be the main rule in banking regulation framework.

The other point is how to transfer capital into a liquid assets in extreme cases. The routine of increasing capital can take from the several months to the half a year. But banks sometimes have to improve liquidity level immediately. To do this, banks may issue stocks in advance and keep them for extraordinary cases. Consider shareholders have obligations to purchase 50% of this buffer capital fund and 50% may be traded on open market. This shares can be ordinary or privileged. In the last case they can be collateralized by bank property and have a stable income in order to attract purchasers.

And finally last point. If banks have to follow CAR limits, why should not borrowers not do the same? At least large borrowers (with loans more than 5 % of bank capital) have to follow capital adequacy ratio. CAR limit for borrowers can be lower than for banks and have stages format, as for example the following:

- more than 8% - green light for lending
- 3-8% - yellow - watch list
- less 3% - red light for lending

If the Basel Committee adopts basic rules for borrowers` capital and liquidity level, it may improve quality of landing and reduce credit risk.

Biography

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