

CAPITAL ADEQUACY (SOLVENCY) AND LIQUIDITY RISK MANAGEMENT: ANALYSIS, EVALUATION, AND POSSIBILITIES FOR IMPROVEMENT

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Abstract. *The main purpose of the present research is to analyse the supervision, capital adequacy (solvency) and liquidity prudential norms, limits and requirements of commercial banks operating in Lithuania, as well as to assess the quality of capital adequacy and liquidity risk management impact on the banking industry.*

The paper consists of two main parts: the analysis of literature and legislation, and the research, its results, recommendations, and conclusions. The first part reviews the theoretical analysis of the level of banking supervision and capital adequacy, liquidity prudential standards value. The authors have examined the banks' supervising authorities and the regulation of their activities. There were presented prudential standards of capital adequacy and liquidity for banks operating in Lithuania, their values change after the Basel III reforms, and the scientific opinion about their development and tightening standards.

The authors have carried out a study of the analysis of capital adequacy and liquidity prudential requirements, their evaluation and possibilities for improvement in banks operating in Lithuania. The analysis consists of the assessment of assets and liabilities of banks ensuring the prudential standards depending on the type of risk. The research revealed that the most important in banks' capital adequacy and liquidity risk management is quality control and the harmonization of bank assets and liabilities. Besides, it is offered to review the calculation of requirements and procedures, to impose additional limits to ensure the basic standards and an efficient banking security.

Key words: *commercial banks, supervision, liquidity and capital adequacy (solvency) rates, qualitative and quantitative analysis, evaluation*

Introduction

The recent international financial crisis revealed not only the major problems in the financial sector, its management and operations, but also disclosed the gaps of inadequate supervisory regulation and a need for systemic regulation in the banking system. It has been universally recognised that new means and measures are required to improve the abilities of the banking sector to cope with the turbulence caused by financial and economic difficulties.

For that purpose, in 2011, the Basel Committee on Banking Supervision (BCBS) and the European Commission approved a set of reform measures, Basel III, based on the

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Fourth capital adequacy directive CRD IV. The reform seeks to enhance capital adequacy and liquidity risk management by introducing more stringent risk assessment procedures at credit institutions and establishing more stringent prudential standards for banks with a view to strengthening their capital. Furthermore, the new finance supervisory system based on the centralised bank supervision system on the European scale is expected to be made operational, starting with 2014. The objective of the reform is to ensure the security and reliability of the banking system and enhance financial integration and stability in Europe.

For the purpose of implementing the Basel III and supervisory system reforms, the Bank of Lithuania will be obliged to enhance its supervision of banks and establish new standards approximated to those recommended or required by the EU. However, currently, Lithuanian banks comply with the prudential requirements with a considerable reserve; therefore, strengthening the standards may not only facilitate ensuring a low risk level or a high banking sector liquidity or solvency level, but may also adversely affect customers and financial markets as well as the national economy by causing a decline in investment volumes, restricting operations development, possibilities for introducing new products, moving to new markets or meeting public needs.

In the opinion of the authors, the high capital adequacy and liquidity prudential rates do not really reflect the actual quality of managing assets or liabilities; the important factors are the risk management policy and the ratio calculation procedure; therefore, prudential requirements must be strengthened in order to ensure a high quality of risk management at banks operating in Lithuania. The supervision centralisation of the banking system would benefit the capital adequacy and liquidity risk management in the commercial banks of the EU; however, due account must be taken of the peculiarities of the economic processes and cycles of each particular economy in order to be able to implement the country-specific supervision of financial institutions.

For the purpose of analysing the literature sources related to this paper and the opinion of different authors on the object being surveyed, the authors of the present paper referred to the literature analysis method, and for the purpose of evaluating the legal basis of the paper the authors used the legal document analysis method. The statistical data analysis and synthesis methods were used to analyse the financial statements of Lithuanian commercial banks, performance overviews of credit institutions and other data provided by the Bank of Lithuania. For evaluating and analysing the capital adequacy and liquidity prudential requirements, the authors used the qualitative and quantitative data analysis and systematising, grouping, evaluation and comparison methods.

Literature review

All authors analysing financial markets and the banking sector are unanimous in their opinion that banks are the institutions that are specifically important for every country and its economy. Financial institutions, and banks in particular, play and perform

an important intermediary role, and as such they face significant risk on a daily basis (Deksnytė, 2010). One of the indicators of a robust financial system is the smooth operation of the banking sector. Being among the most active participants of the financial system, banks redistribute the major share of disposable funds in search of maximising their return (Novickytė, 2010). The recent financial crisis revealed the security and the reliability of the banks as a vitally important factor for properly functioning capital markets, the growing economy and stability of the financial system (Palvia, 2011).

In Lithuania, banks represent the major part of the financial market. The importance of banks stems from the role of the banks in managing risks, increasing liquidity between lenders and borrowers, decreasing transaction costs and facilitating development of businesses (Jasevičienė, 2013). Since the importance of the banking sector and its stability is beyond doubt, most authors claim that the collapse of a bank, in contrast to the bankruptcy of any other institution, has a huge impact upon the whole society. The history of banking is littered with bankruptcies and systemic bank collapses that caused, or were caused by, the economic decline of countries (Vaičiulionienė, 2011). The role of banks has always been outstanding due to the complexity of the financial mechanism and the development of the economic system; therefore, societies have always been looking for ways to ensure an efficient, reliable and secure performance of banks. Bankruptcy of banks and the threat to the entire system are conditioned by the very essence of their operations, which have and are related to all types of risks.

Risk is defined as a probability of unspecified future events, a foregone or a missed opportunity, or a positive or a negative deviation from the projected outcome, the probability of damage or profit (Jasevičienė, 2013, Garbanov, 2010). It is for this reason that the solvency and the liquidity risk in banking is an object to be managed in order to ensure a successful performance of the banking system. A successful solution of risk management problems becomes a guarantor of the success of the activity being surveyed. Risk management issues in Lithuania, as well as worldwide, are receiving exceptional attention and importance both in terms of expanding the variety of the risks being surveyed and of developing a set of risk management instruments.

Solvency and liquidity risk management is a process that enables shareholders of the bank to maximise their profit without exceeding an acceptable risk. One of the most important objectives in banking operations is to choose the most appropriate ratio between the risk level and the profit rate (Jasienė, 2012). In the banking sector, risk ordinarily means a threat that a bank may lose part of its resources, revenues, or suffer higher costs when performing certain financial operations. Assumption of a risk in the banking business does not, however, always mean loss. Efficient management of capital adequacy and liquidity risks at the bank may build a solid basis for a successful business. G. Garbanov (2010) describes efficient risk management as one of the methods enhancing a bank's competitiveness, decreasing its financial costs and increasing the worth of

the bank. In the banking business, risk management does not mean the full elimination of risk from the operations of the bank; complete elimination of risk not being feasible does not mean that banks can do nothing and reconcile to the damage caused by risk as if it were inevitable. Therefore, the objective that any bank defines is a proper risk management. This puts banks on a level playing field to compete among themselves while properly managing the risk.

The Bank of Lithuania has defined the objective of the supervision over credit institutions – to monitor the compliance by credit institutions with laws, the requirements defined by regulations of the Bank of Lithuania, the international accounting standards, as well as the secure and reliable banking standards recommended by the Basel Committee. A number of financial crises arose specifically because of the failure to efficiently use the available regulatory measures of the financial markets (Leika, 2008). While seeking to reduce the impact of faults on financial markets it is specifically important not to create any new distortions of the financial markets. In the opinion of Deksnytė (2010), the fact that bankruptcies of banks cause damage to the entire economy justifies the necessity to regulate the entire banking system. Another factor necessitating the regulation of the banking system is the asymmetry of information. Thus, there can be no doubt as to the necessity for an oversight of the banking sector, as one of the reasons making it necessary to regulate and supervise the financial sector is the asymmetry of information (Jasienė, 2008; Leika, 2008; Palvia, et al., 2011.).

The efficient functioning of participants of the financial market of each state is the basis for its financial stability and efficient functioning (Šenavičius, 2012). No efficient and stable performance of financial market participants is possible without a financial market supervision system. Such considerations have caused wide-scale discussions as to the best ways to identify and discipline financial institutions before they assume excessive risks. Researchers analysing the banking sector have unanimously recognised the importance of a prudential supervision of banks. Risk may also be mitigated by the ex-ante impact on banks, the method, however, being significantly more complex. Banks are required to maintain the level of risk enabling them to comply, at any time, with the prudential requirements established by the Bank of Lithuania (Jasevičienė, 2013). Banks strive to assume more risk (because of competition) and to maximise their profits; at the same time, supervisory authorities seek to control the activities of banks with a view to mitigating the operating risk of banks.

Ordinarily prudential supervision and oversight of banks is the prerogative of the central banks of countries, hence the undeniable significance of the central banks to the performance of financial systems. Maintaining the stability of the financial system should be among the most important objectives of a central bank seeking to ensure stability of the financial system (Vasarevičienė, 2009; Deksnytė, 2010).

Regulation of the management of capital adequacy and liquidity risk of commercial banks

The banking sector supervision system is extensively developed and is constantly being improved. Although up to now the system has been functioning on a decentralised basis, starting with 2014, with the regulatory reform on the way, efforts will be made to centralise the EU banking system to the maximum extent possible.

The recent global financial crisis has revealed the necessity to further improve capital adequacy and liquidity risk management, governance and to enhance the transparency of the operations of credit institutions. While encountering a variety of risks in their operations, banks may incur loss that primarily is compensated from the bank's capital, therefore the management of capital adequacy risk of banks must be given particular attention. Accordingly, the accrued reserves of liquid assets must be sufficient to withstand adverse liquidity shocks, as inadequate liquidity of the bank may lead the bank to collapse in exactly the same way as a shortage of capital.

In the aftermath of the financial crisis of 2008–2009, the Basel Committee of Banking Supervision (BCBS) initiated a programme to revise its existing capital adequacy guidelines. The resultant capital adequacy framework is termed Basel III. The legal regulation of the EU credit institutions based on this agreement is defined by the Fourth Capital Requirements Directive (CRD IV). The CRD IV covered a number of issues including liquidity, leverage ratio, own funds structure, cooperation between home and host Member States, precautionary measures, credit risk, counterparty risk (Basel, III, 2011). The supervision of commercial banks and credit institutions as established in the regulatory packages of the Basel Committee on Banking Supervision within the European Union is implemented by respective directives (see Table 1).

In the aftermath of the international financial crisis which revealed the gaps of insufficient supervisory regulation and clearly pointed out to the need for a systemic regulation, large-scale efforts were focused, both globally and at EU level, on the search for new measures possibly strengthening the banks' capacities to cope with the turbulences and their ability to manage capital adequacy and liquidity risks. Following the improvement of credit institution regulation by the Basel III reform document package by the BCBS, the EU accordingly adopted the additional directives and regulations aimed at improving the supervision of the financial sector.

After the call in 2012 to create an integrated banking union, the European Commission in the same year published Guidelines on the development of the banking union, which were positively evaluated by the ECB. In October 2013, the Council of the EU adopted a regulation whereby the ECB was assigned specific tasks related to the prudential supervision of credit institutions. The regulation came into effect on 3 November

TABLE 1. Regulation of risk management in the EU

Package	Name of the legal acts	Purpose of the legal acts
CRD I	Directive 2006/48/EC of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions.	The Directive establishes the rules relating to the taking up and pursuit of business by credit institutions and the rules for their prudential supervision.
	Directive 2006/49/EC of the European Parliament and of the Council of 14 June 2006 on the capital adequacy of investment firms and credit institutions.	The Directive establishes capital adequacy requirements for investment companies and credit institutions and the rules for their prudential supervision.
CRD II	Directive 2009/111/EC of the European Parliament and of the Council of 16 September 2009 as regards banks affiliated to central institutions, certain own funds items, large exposures, supervisory arrangements, and crisis management (part, together with Directives 2009/27/EC and 2009/83/EC, of the second legislative package).	This Directive aims at ensuring the financial soundness and reliability of investment firms and credit institutions; improving the management of large exposures, liquidity risk management, risk management for securitised products, and the quality of banks' capital.
	Directive 2007/64/EC of the European Parliament and of the Council on payment services in the internal market.	This Directive lays down the rules in accordance with which Member States shall distinguish the six categories of payment service provider.
CRD III	Directive 2010/76/EU of the European Parliament and of the Council (amending Directives 2006/48/EC and 2006/49/EC).	The directives are related to the capital requirements for the trading book and for re-securitisations, and the supervisory review of remuneration policies.

Compiled by the authors on the basis of EU Directives and regulations.

2013; the implementation of the tasks defined by the regulation by the relevant institutions will be launched in 2014.

The legal acts defining the legal regulation of EU credit institutions based on the provisions of the Basel III reform include the Fourth Capital Requirements Directive (CRD IV) – Directive 2013/36/EU of the European Parliament and of the Council on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, and Regulation (EU) No 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms. The Regulation establishes the common provisions related to the prudential requirements for a respective CRD IV, which sets forth the rules on the access to the activity of credit institutions, supervisory powers of competent authorities, prudential supervision, and requirements for the publicity and publication of information. It may be concluded that the principal areas governed by the legal acts defining prudential requirements for banks are the requirements for the capital of the bank and the liquidity standards.

In 2006, for the purpose of implementing the requirements of the Basel Committee and the EU directives concerning the supervision of credit institutions, the Bank of Lithuania passed the Resolution *On the approval of the general regulations for the internal capital adequacy assessment process and for the supervisory review and evaluation process*. The Resolution came into effect in 2006; however, it was amended with a view to ensuring compliance with the relevant EU regulations by Resolution No. 03-129 of 21 October 2010, and Resolution No. 03-153 of 29 September 2011. In 1998, the Board of the Bank of Lithuania passed Resolution No. 224 *On the implementation of the core principles of efficient banking supervision approved by the Basel Committee on Banking Supervision* (2007), and in 2007 – a Resolution amending the Resolution of 1998.

Prudential capital adequacy and liquidity requirements of Lithuanian commercial banks

The core principles of the efficient supervision of banking activities governed by the BCBS and the other EU documents not only encompass the qualitative supervision of bank operations (rules, requirements, etc.), but also define a certain quantitative evaluation of the performance of credit institutions – the prudential requirements and ratios.

The respective resolutions of the Bank of Lithuania indicate that the minimum mandatory capital adequacy requirements for banks operating in Lithuania must be not less than those established in the Basel Capital Accord and its amendments. The prudential requirements established by the Bank of Lithuania are necessary to ensure an adequate liquidity of a specific bank as well as of the entire banking system in which one or several banks suffer a crisis. The compliance with the capital adequacy and liquidity requirements causes the banks to take lower risks, perform in a safer manner, and strengthens confidence in banks and the entire financial system.

Alongside the other ratios, the Law on Banks of the RL establishes prudential capital adequacy and liquidity requirements that are binding for all commercial banks operating in Lithuania. The values of the ratios and their calculation methodology (see Table 2) are established by the Bank of Lithuania, which is authorised to establish even more stringent requirements that do not contradict the recommendations of the BCBS or the EU directives.

However, following the financial crisis, the effective capital requirements were not adequate for modern banks; therefore, the Basel Committee and the relevant EU institutions decided to strengthen the capitalisation level of banks. The Basel III and the relevant CRD IV documents introduced additional and improved the requirements and limits in force (see Table 3).

Currently, the CRD IV project improvement and the preparation for the project implementation operations are underway. The Bank of Lithuania is submitting its position on a regular basis on a number of relevant issues in close cooperation with the EU

TABLE 2. Calculation of the capital requirement and the liquidity prudential requirements

Requirements	Formula	Legends
Capital adequacy ration (8 %)	$Y_0 = (K / (BT_l + NS_l)) * 100\%$	Y_0 – bank capital adequacy ratio, K – the eligible bank capital (total of Tier 1 and Tier 2 capitals), BT_l – risk-weighted balance sheet assets of the bank, NS_l – risk-weighted off-balance sheet items.
Liquidity requirement (30 %)	$\tau_0 = BLT / BE_l * 100\%$	τ_0 – bank liquidity ratio, BLT – liquid assets of the bank, BE_l – current liabilities of the bank.

Compiled by the authors on the basis of the Board of the Bank of Lithuania, 2011.

TABLE 3. Recommended and/or additional ratios to be calculated

Bank capital requirements	Bank liquidity requirements
<p>Minimum total equity rate – from 3.5% in 2013 up to 4.5% in 2015. (the current Basel II requirement is 2%, not specified by the Bank of Lithuania).</p> <p>Minimum Tier 1 capital – from 4.5% in 2013 up to 6.0% in 2015.</p> <p>Capital buffer – phased requirement starting with 2016 on additional capital buffer accounting for 2.5% of risk-weighted assets (2019).</p> <p>Total capital adequacy ratio – 10.5% starting from 2019.</p> <p>Countercyclical buffer is an additional capital reserve intended to reduce the possible loss of a bank in view of cyclical economic fluctuations, the amount whereof depends on the rate of growth of the loan portfolio, the scope of activity, and the geography of services. (Preliminary value 0–2.5% of the risk-weighted assets).</p> <p>Leverage ratio is an additional capital evaluation ratio computed as a ratio of the Tier 1 bank capital with the assets and the off-balance sheet items.</p>	<p>Liquidity coverage ratio – liquidity reserve ratio to the net funding gap. The liquidity buffer should be the short end of the counterbalancing capacity. The net funding gap is the negative difference calculated by subtracting the sum of expected outflows from the sum of expected inflows. The projected minimum required value – 100%.</p> <p>Net stable funding ratio – ratio of the non-current liabilities to the required non-current liabilities (the amount is computed according to the non-current assets available to a bank). The ratio is intended for the reconciliation of the non-current assets and liabilities structure. The projected minimum required value – 100%.</p>

Compiled by the authors on the basis of Basel III, 2011.

institutions and the Ministry of Finance of the RL. In the course of the project, all banks operating in Lithuania established their capital requirements by at least 2 percentage points higher than the minimum required. In the opinion of the Bank of Lithuania, another important area for strengthening the supervision is the liquidity level. The banks intend to establish two recommended quantitative liquidity ratios – for limiting the short-term and the long-term liquidity risks. Lithuanian banks have been computing the liquidity ratios since 2012.

Analysis of the implementation solvency and liquidity prudential requirements by commercial banks

Liquidity risk management analysis

During 2012, the liquidity status of the banking system was stable: volumes of deposits, the principal source of the funding source of banks, were on the rise and bank liquid assets were increasing. The stability of deposit levels is ensured by the deposit insurance system whose reliable performance has been demonstrated by the compensation of deposits after the bankruptcies of several credits institutions within recent years. Figure 1 presents the liquidity ratios of Lithuanian banks in 2005–2013.

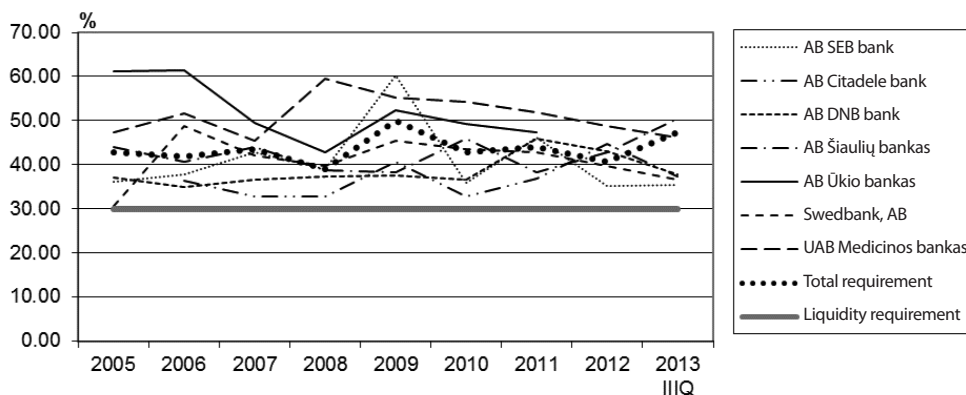


FIG. 1. Implementation of the liquidity requirements in banks in 2005–2013

Compiled by the authors on the basis of the reports of the Bank of Lithuania in 2005–2013.

Throughout the period being surveyed, the liquidity at the banks operating in Lithuania was ensured and maintained with a sufficient buffer. The banks were prepared to realise at any time their liquid assets and to fulfil all their obligations to their clients. The liquidity requirement at banks exceeded the required level by 10 percentage points on average. The lowest average liquidity ratio of banks (39.1%) was observed in 2008. To a large extent the fall of the liquidity ratio was caused by a significant increase in the amounts of short-term and term deposits due to the rather high interest rates. With the economic crisis gaining momentum and in view of the adverse interest rate, the situation in the market in 2009 tended to increase the resilience of Banks to the liquidity risk by increasing their liquid assets reserves. Furthermore, the amounts of deposits held by clients were changing, too. The liquidity ratio at banks increased to 49.9%. Starting with 2010, with the national economy stabilising, the ratio under analysis started declining again – credit institutions were increasing their short-term obligations, thus late in 2012 the liquidity ratio was 40.8% (The Bank of Lithuania..., 2013).

Analysis of the situation at the end of 2012 showed that the banks were maintaining a rather high level of liquidity. Three local banks were maintaining larger liquid funds as compared with foreign bank groups. This can be explained by the fact that in case of necessity, banks of patronised groups can seek assistance from their parent banks, while in this respect local capital banks are more vulnerable. However, high liquidity rate values may mean a high liquidity of the bank for non-professional market participants only.

The comparison of the banks under analysis disclosed several general trends. First, the largest share of the liquid assets that are intended to cover the current liabilities in the short term is represented by loans to clients. However, at all banks the share of short-term loans, in particular in the entire loan portfolio, was less than 2%. Further, a significant part (about 40%) of short-term assets is attracted from investment in short-term security markets. Client deposits represent the largest part of liquid liabilities. It may be concluded that while declaring their high liquidity level, the banks actually use assets with a lower credit risk profile (securities and funds in the banks' accounts), thus avoiding lending to short-term projects and meeting the needs of individual retail clients. Securities, however, not only have a lower rate of return than loans, but also encounter a fairly high market risk, which is disregarded when computing the rates. Although trading in securities in general does have a positive impact on this financial sector, in this case the principal function of banks, which is the redistribution of funds, i.e. securing of excess funds of clients and lending to customers in need of funding, seems to be disregarded.

Most of the deposits held in banks and the assumed undertakings towards clients are short-term. This undoubtedly has been caused by the difficulties of banks to attract long-term deposits; furthermore, clients can withdraw their non-fixed deposits at any time. This group of liabilities has been steadily increasing and required coverage by increasingly higher liquid assets.

Another clearly observable trend is that for the purpose of covering their liabilities banks accumulate liquid assets, such as cash, funds with the central banks, financial assets or investment in securities. Only a small part of most liquid assets is represented by loans to clients and credit and financial institutions. Starting with 2012, in response to the recommendations of supervisory authorities, foreign banks have been seeking to reduce their securities portfolio share in liquid assets as well as keeping less cash at hand and at credit institutions. At the same time, Lithuanian capital banks have been increasing their investment in securities and issuing short-term loans to clients following a still fairly conservative lending policy.

In the opinion of the authors, this pattern of assets and liabilities management may adversely affect not only the bank itself, but also its potential clients and impede the growth of the State economy:

- a) most liquid assets are accumulated while generating lower-than-possible interest revenues (the securities yield is lower than the loan interest rates), at the same

time failing to ensure the continuity of the bank's operations (not receiving short-term credit, clients' search for alternative loan sources). Furthermore, the securities held are not entirely risk-free, being dependent on the market risk, which may cause changes in the securities price, yield or even the exchange rate;

- b) where banks refuse to issue short-term credits, funding is not provided to short-term projects or the working capital of companies, and it is this deficiency of short-term funding which eventually impedes the development of small and medium-sized enterprises or individual activities. This results in limited possibilities for such economic entities to compete;
- c) the excessive volume of deposits in banks leads to lower interest rates, thus clients turn to higher-risk saving institutions (where deposits are not insured by the State). The low level of lending is counter-productive to the overall growth of the national economy: entities are discouraged from looking for new short-term investment markets or products which do not receive the required funding. Cash at banks is held in accounts of credit institutions; their turnover is stagnated, resulting in a reduced volume of cash within the State, which eventually causes a decline in gross demand. As a result, economic development is not being promoted, and neither is the competitiveness or attractiveness of the country with respect to national and foreign investors.

While generalising the above observations, it may be concluded that the liquidity ratio value, although reflecting the liquidity level of a bank, does not reveal the measures by which the liquidity is ensured, i.e. does not represent the quality of liquidity. It should be recalled that the liquidity requirements of the two Lithuanian banks that went bankrupt were fairly high in the last years of their operations. With regard to the above observations, it may be concluded that the important factor is not the ratio itself but rather its calculation procedure and the quality of current assets.

In 2011, the Basel Committee claimed that the recent international financial crisis clearly demonstrated the importance of liquidity risk management; therefore the new, CRD IV, directive was adopted to introduce new liquidity management standards, i.e. two new ratios (Regulation of the European Parliament and of the Council ..., 2011). In line with the requirements described earlier, the Communication of the Bank of Lithuania of 2012 had provided that in the future years supervisory activities will be basically focused on increasing liquidity by additionally introducing two liquidity ratios as a means for the prudential supervision of short-term and long-term liquidity risks (Table 2).

The introduction of the new ratios at Lithuanian banks would strengthen their counterbalancing capacity and encourage banks to ensure the required level of liquidity on a steady basis. For this purpose, banks should make up their cash flow forecasts encompassing the expected inflows, outflows broken down according to the key financial

instruments, maturity buckets, and the business lines specified by the bank. A specific net funding gap would be determined for each maturity bucket specifying the different funding sources to cover the gap. The liquidity counterbalancing capacity would operate as a permanent assets maintenance feasibility plan, adjusting when necessary the operating model or applying other measures. The very recommendation to introduce such ratios shows that the BCBS wants to consider not only the overall liquidity ratios of banks, but also the quality of liquidity management, current assets, and liabilities.

The liquidity coverage ratio is already being calculated by Lithuanian banks, which also comply with the prescribed requirements – the ratio at banks exceeds the required value two- to threefold. This essentially means that Lithuanian banks do ensure their short-term liquidity. In the meantime, the data provided in bank reports are not sufficient to calculate the net stable funding ratio. However, according to the data of the Bank of Lithuania (Annual Report of the Bank of Lithuania, 2013), Lithuanian banks still do not compute this ratio because the current and non-current assets’ structure has not yet been reconciled. Therefore, the banks are encouraged not only to start calculating the ratio and ensure its required value, but also to apply additional limits ensuring the long-term liquidity of the institution.

Analysis of the capital adequacy (solvency) risk management

At the end of 2012, all banks registered in Lithuania were exceeding the minimum capital requirements. Their capital was significantly larger than the required value: “... in 2012, the national banking sector was well capitalised – at the end of the year the capital adequacy ratio was 14.4%” (... of the Bank of Lithuania, 2013).

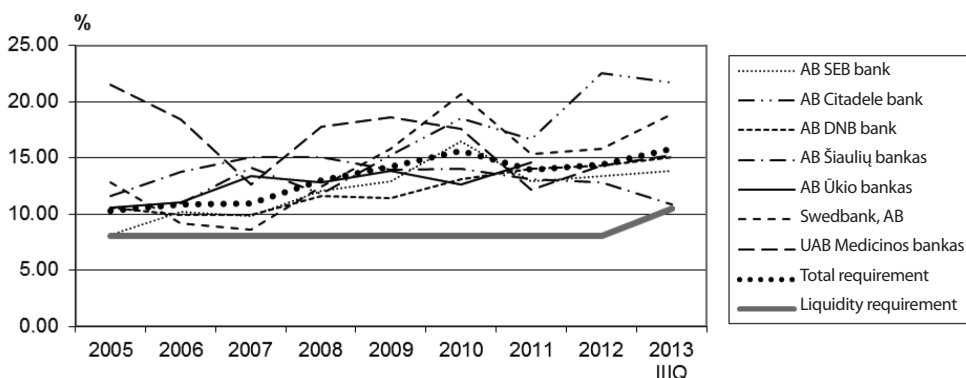


FIG. 2. Implementation of the capital requirements in banks in 2005–2013

Compiled by the authors on the basis of the reports of the Bank of Lithuania in 2005–2013.

The survey of the Lithuanian commercial banks concluded that all of them were fulfilling the requirement with a buffer, i.e. were exceeding the required limits. In 2010, the ratio reached particularly high values. The financial crisis of 2008 forced the banks to act with caution, reduce the assumed risk and ensure solvency in case of a failure; therefore, the capital adequacy ratio started rising. In 2011, in view of the global economy returning to the path of stability and the recovering confidence in banks on the part of consumers, banks started assuming larger risks. As early as 2012, the ratio values returned to the level of 2008. Figure 2 shows that the overall capital requirement has been exceeding the required value by more than 2 percentage points since 2005 and by as much as 6 percentage points since 2008. This fact was partly caused by the requirement of the Bank of Lithuania for several banks to maintain a 10% capital rate and a recommendation to ensure the capital adequacy ratio by at least 2 percentage points higher than required.

Within the period covered by the survey, there have been observable changes in the risky asset items of four banks being analysed, as well as their capital base and capital adequacy ratio. In the period 2010–2012, the loan portfolio of banks was increasing, as were their financial and investment assets and the funds (in repositories), as well as credit institutions. In 2011, the increase in cash volume was caused by the return of the deposits of a bankrupt bank to its clients through the branches of operating banks. In the meanwhile, the capital base for the corresponding period was reducing. As a result, the capital adequacy ratio values declined accordingly.

The analysis of the policy and quality of the capital requirements management by the banks referred to earlier revealed several key problem issues:

- a) although the capital adequacy ratios at the banks being reviewed were sufficiently high, one of the principal sources of capital adequacy risk reduction is the risk-free funds held in accounts of different financial institutions. The lending policy still remains conservative;
- b) there was an observable trend in the reduction of the capital base, thus ensuring the solvency of banks, despite the recommendations of the Basel Committee and of the EU to strengthen the base;
- c) investment in intangible assets, such as software, licences, goodwill, etc. is clearly insufficient;
- d) banks tend to maintain a higher capital adequacy level in times of economic decline and higher in times of economic uprising. It was only in 2012, in line with efforts to strengthen the supervision of financial institutions, that banks turned to securing a higher solvency level.

These observations only confirm the conclusions made earlier in this paper: willing to ensure excess solvency, banks accumulate the low-risk assets (funds in banks and financial institutions) that generate a lower-than-possible interest income. With the capital base at

the banks decreasing, so does their lending, reducing their potential earnings accordingly. Loans not exceeding 70% of the value of the assets (that should be the key source of the bank's assets) do not increase bank efficiency: they are not intended for lending to develop activities, or ensure sufficient cash flows, or covering a shortage of the working capital. The decreasing supply of loans eventually reduces the demand for deposits; as a result, banks reduce interest rates for their depositors. Furthermore, the low-scale lending impedes the economic development of the country and thus eventually lead to a loss of foreign investors, making the State less attractive and the banking sector less competitive within the EU.

The principal shortcoming of the procedure for the calculation of the capital adequacy ratio by banks is the inclusion in the requirement of the Tier 2 capital subordinated loans. Such loans most often are granted by parent banks or shareholders and, therefore, increase the capital, but they are repaid on the demand of the creditor from the profit earned; therefore, in this case, the banks focus on profit rather than on risk. The high-value subordinated loans also mean that banks are strengthening their capital base by means of shareholders' contributions rather than by their own efficient performance. According to the data of the banks being analysed in 2012, subordinated loans of the SEB bank totalled LTL 244,214 million. The loans were obtained from the SEB parent bank (AB SEB bank ... 2013). At the end of 2012, Swedbank had outstanding subordinated loans granted by Swedbank AS (Estonia) (Swedbank, AB..., 2013). In 2012, the subordinated loans of the Medicinos bankas granted by its shareholder amounted to LTL 34,528 million. At the end of 2012, the Šiaulių bankas did not have any subordinated loans, however, late in February 2013 the Bank concluded an agreement concerning EUR 20 million (LTL 69 million) with the EBRD, the largest shareholder of the Bank (AB Šiaulių bankas 2013).

It might be concluded that subordinated loans ensure a higher capital adequacy of banks; however, in this case the principal focus of the banks is maximising profit, and loan recovery for shareholders. Such measures strengthen the capital base for a short period only, at the same time creating a significant pressure on banks, and may eventually adversely affect their risk management policy.

Another identified shortcoming is the decision by banks to refuse to pay dividends to shareholders. The non-payment of dividends increases the amount of retained profit attributed to the Tier 2 capital; however, it adversely affects the shareholders of the banks, their existing or potential investors, causes a decline in share prices which in turn affects the future investment decisions.

Similarly as has been concluded in respect of the issues discussed earlier, the capital adequacy ratio does not always reflect the actual reliability of a bank or its solvency or quality assets management. The two commercial banks that went bankrupt (AB bankas SNORAS and AB Ūkio bankas) were declaring a sufficiently high level of securing their solvency risk in the last years of operation.

Evaluation and further improvement possibilities of banking supervision and risk management reforms

The summary of the survey conducted for this paper revealed the trends of securing the compliance of prudential capital and liquidity requirements common for all banks operating in Lithuania. The analysis carried out showed that the high values of the established requirements are not really reflective of the risk management quality; rather, on the contrary, they may have a negative impact on the performance of the banking sector, clients of lending institutions and, eventually, on the economic processes of the entire country. Accordingly, the authors propose the further improvement in capital adequacy (solvency) and liquidity risk management, as well as improvement in the compliance of commercial banks with the respective prudential requirements. The qualitative and quantitative improvement suggestions are summarised in Table 4.

TABLE 4. Proposals for improvement of the implementation solvency and liquidity prudential requirements by commercial banks

Risk type	Qualitative proposals	Quantitative proposals
Solvency risk	Strengthening of the capital base. Adjustment of dividend policy according to the capital strengthening. Control over the use of subordinated loans for capital strengthening. Increasing of the credit portfolio.	Securing the requirement rates approximate to those proposed. Establishment of the ratios relevant to the cyclical character of economics. Introduction of additional capital adequacy ratios. Specific attention for Tier 1 capital ratio. Qualitative assessment and limitation of the risk related to derivative financial instruments.
Liquidity risk	Principles of short-term crediting. Reduction of securities portfolio. Reduction of the volumes of funds held at banks. Reduction of off-balance sheet liabilities.	Introduction and securing of new liquidity ratios. Establishment of additional liquidity limits: <ul style="list-style-type: none"> • ratio of short-term loans to total loans, • ratio of short-term deposits to total deposits, • ratio of long-term loans to deposits. Improvement in the calculation of liquidity ratio.

Source: compiled by the authors.

It is vitally important to take into consideration the principal threats related to the strengthening of adequacy ratios. First, strengthening the capital base could possibly cause an increase in service fees, which would be transferred to clients. Furthermore, should the banks focus on increasing capital only, lending institutions may possibly lose some of their small clients. Furthermore, a centralisation of the deposit insurance system would force banks to allocate an additional part of other liabilities, and this may result in a price increase, or eventually a reduction of deposit interest rates. Therefore, it is recommended that the Bank of Lithuania point out to banks their principal purpose – funds redistribution, meeting of client needs, and a responsible, honest and efficient performance.

With a view to improving liquidity risk management, the supervisory authorities are advised to recommend to banks that they ensure a sufficient level of liquidity not only by accumulating liquid assets in the form of cash and securities, but also by using short-term financial instruments. It is recommended that banks provide wider possibilities for short-term borrowing and reconcile the volumes of assets and liabilities in terms of maturity. The coordination of assets could be evaluated by introducing additional limits recommended for banks.

Conclusions

Commercial banks play a specifically important role in the economy of any country and its growth. Bank supervision is one of the most efficient measures restricting the risk, both managed and caused by banks; such supervision is implemented not only by controlling, monitoring or inspecting the operations of lending institutions, but also by establishing respective prudential supervisory requirements that enable an evaluation of each bank's abilities to undertake risks, as well as the limits of the risks assumed.

The analysis (carried out for the purpose of this paper) of the implementation of the capital adequacy and prudential requirements by Lithuanian commercial banks in 2005–2013 revealed the following key trends. Starting from 2005, Lithuanian commercial banks have been complying with the prudential requirements with a significant buffer which was specifically notable during the financial crisis. However, the analysis also revealed a number of issues pointing to the insufficiently effective management of assets and liabilities for the purpose of ensuring compliance with the requirements set forth by the Bank of Lithuania. First, with a view to ensuring compliance with the liquidity and capital requirements, banks often opt not only to lend to clients, but also to invest in risk-bearing securities, or hold funds with financial institutions or repositories. Banks also tend to avoid lending for short-term projects or searching for new markets and products. Second, there is an observable trend of capital decrease for the purpose of ensuring the solvency of banks. Furthermore, Lithuanian banks mostly tend to give loans for immovable property, production and trade sectors; there is a tangible risk caused by the excessive concentration of the credit portfolio. Credit institutions are also lending excessively to their subsidiaries and associated persons. This not only decreases the assets of the banks and their client loan portfolio, but also causes a high insolvency risk in the case of a failure of several subsidiaries.

In the opinion of the authors, this pattern of assets and liabilities management may adversely affect not only the bank itself, but also its potential clients, and may impede the growth of the State economy. Most liquid assets are accumulated by generating a lower-than-possible interest revenue for banks. In case credit institutions fail to provide loans

for short-term projects or the working capital of companies, this eventually impedes the development of small- and medium-sized enterprises or individual activities. This results in impeded possibilities for such economic entities to compete. The excessive volumes of deposits at banks cause lower interest rates, thus clients eventually lose part of their income and chose higher-risk saving alternatives, or refuse to save at all. The holding of assets by banks leads to a reduced stock of money in the country; the conservative lending pattern does not contribute to the growth of the national economy or its competitiveness within the EU.

To avoid deficiencies in risk management by banks, the authors offer recommendations concerning the improvement of the prudential capital adequacy and risk requirements.

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