The Challenges of Basel III for the Czech Banking Sector

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Abstract
As the global crisis has shown, a revision of Basel II regulation was needed to reflect the current trends in the world financial markets. New regulatory Basel III proposals may not hit banks in the Czech Republic significantly because these banks report high capital ratios and liquidity buffers already. However, some negative impacts might be expected. In this paper we discuss the Basel III proposal and its expected direct and indirect impacts on the Czech banking sector. The most significant direct impacts encompass newly-introduced liquidity requirements, higher capital requirements for counterparty risk and higher capital requirements for trade finance products. The indirect impacts include lower banks´ profitability due to expected lower growth of the Czech economy (resulted from Basel III implementation in Western Europe) and uncertain reaction on regulatory proposals of foreign parent banks that own a vast majority of banks operating in the Czech Republic.

Keywords: Bank, regulation, Basel II, Basel III, Czech Republic
JEL codes: G01, G23, K23, L51

1. Introduction

As the global crisis has shown, a revision of Basel II regulation was needed to reflect the current trends in the world financial markets. New regulatory Basel III proposals may not hit banks in the Czech Republic significantly because these banks report high capital ratios and liquidity buffers already. However, some negative impacts might be expected. In this paper we discuss the Basel III proposal and its expected direct and indirect impacts on the Czech banking sector. Moreover, we discuss Central European banks´ financial performance during the financial market upheaval. The paper is structured as follows. In the second section we discuss the Basel II regulatory framework and bank capital management. The third section presents Central European banks´ performance within the global crisis. In the fourth section we discuss Basel III in general terms while in the fifth section we

focus on impacts of Basel III on the Czech banking sector. Finally, the last section concludes the paper and states the final remarks.

2. Basel II Framework and Bank Capital Management

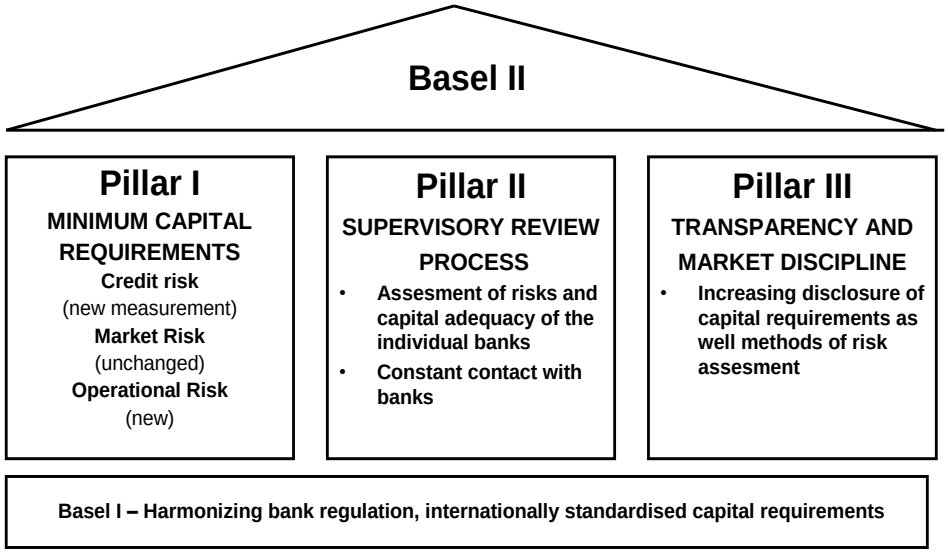
The current set of rules for banking supervision, commonly referred as Basel II, was officially published in June 2006 by the Basel Committee on Banking Supervision under the name "International Convergence of Capital Measurement and Capital Standards". It was a result of long term process of improvement of the original Basel Capital Accord from 1988, a document which provided first comprehensive set of rules for banks' supervision. With growing globalization and integration of the banking sector this Basel Capital Accord, or Basel I, soon proved to be insufficient. However, its capital adequacy framework together with the structure of the 1996 Amendment incorporating market risk formed a basis for the new set of rules, Basel II (Teplý, et al, 2007).

The aim of Basel II was to "develop a framework that would further strengthen the soundness and stability of the international banking system while maintaining sufficient consistency that capital adequacy regulation will not be a significant source of competitive inequality among internationally active banks" (BCBS, 2005). Improving Basel I meant to address its main criticisms. Among those were especially low risk sensitivity, limited recognition of collateral, incomplete coverage of risk sources and no diversification. The first set of proposals was issued already in June 1999 as the first Consultative Paper (CP1). It was followed by the second Consultative Paper in January 2001 and CP3 in April 2003. The final version was published in June 2004 and its revised version in June 2006.

2.1. Structure of Basel II

The New Basel Capital Accord, as the Basel II framework is also called, is based on three pillars as depicted in Figure 1. First pillar deals with the minimum capital requirements; second pillar concentrates on the supervisory review process while the third pillar handles the agenda of market discipline.

Figure 1: Structure of Basel II



Source: Teplý et. al (2007)

2. 1. 1 Pillar I

The first pillar of the New Basel Accord presents rules for risk management and the calculation of minimum capital requirements which are supposed to serve as a buffer in case of

unexpected losses. The minimal required capital is calculated by means of eligible regulatory capital and risk-weighted assets (RWA, see Equation 1) and it is set at the value of 8 %.

$$capital\ ratio = \frac{eligible\ regulatory\ capital}{RWA_C + RWA_M + RWA_O} \geq 8\% \quad (1)$$

Where:

RWAC … risk-weighted assets related to credit risk,
RWAM … risk-weighted assets related to market risk,
RWAO … risk-weighted assets related to operational risk.

As we can see on the Figure 1 Basel II takes into account credit risk, market risk and operational risk. All the three risks must be taken into account when calculating RWA.

Credit risk refers to a risk of borrower entering into default and not being able to repay the loan. Its management is based on the solvency ratio of the 1988 Basel Capital Accord, however, upgraded significantly. The improvement enhances flexibility and offers banks more possibilities for determining capital requirements based on their risk and other characteristics. In addition to the standardized approach to capital requirements Basel II namely allows the use of internal ratings of the banks. As these ratings sometimes lead to lower capital requirements there is a motivation element built in Basel II for banks to upgrade their internal risk management systems.

The standardized approach derives the risk weights from ratings provided by independent institutions which have to be approved by regulators. Such institutions are either export credit agencies (ECAs) or external credit assessment institutions (ECAIs). There are two approaches based on internal ratings of banks. It is the Internal Rating Based Foundation Approach (IRBFA) and the Internal Rating Based Advanced Approach (IRBAA). Both approaches replace the external ratings of clients by credit risk models where the certain parameters are estimated by the bank itself. The extent of such parameters depends on the level of approach chosen and on the type of risk exposure (divided according to the class of assets into corporate, sovereign, bank, and equity and retail exposure). In general the foundation IRB approach allows banks to estimate only the probability of default (PD) while under more advanced approach banks may use their own estimation of other risk characteristics such as loss given default (LGD), exposure at default (EAD) and own calculation of maturity (M). There are, however, criteria the estimations must meet and the use of internal based approaches has to be approved by regulators. Appropriate risk weights are calculated with Basel capital formula, which is a function of just the latter mentioned variables; PD, LGD, EAD and M.

The treatment of market risk under Basel II is based on the 1996 Amendment to the Capital Accord to Incorporate Market Risk (BCBS, 1996). By definition market risk is the risk of losses due to movement in market prices. This includes interest rates risk, exchange rate risk and risk in trading books (that means collections of financial instruments and commodities which are held either to be traded or to be used for hedging). Except for interest rate risk the treatment of market risk remained unchanged offering two approaches: Standardized Approach (SA) and Internal Models Approach (IMA). SA works with general and specific risk, differentiating RWAs based on type and maturity while IMA allows banks to use their own models of estimation of Value at Risk (VaR) when meeting certain conditions.

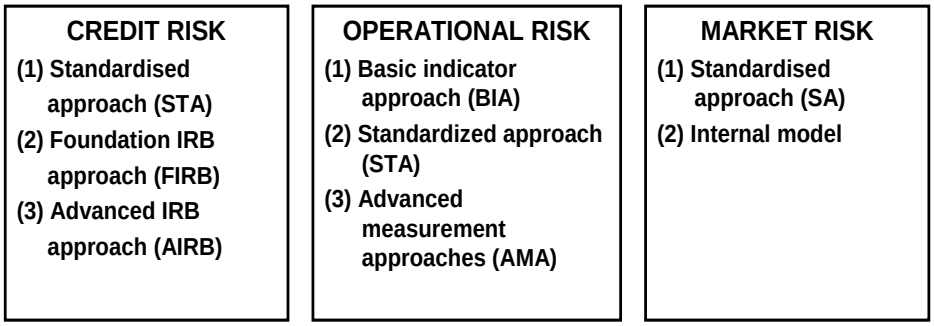
At the first time of publishing Basel II (in 2004) there were still some open issues, including the trading activities and the treatment of double default. Therefore in July 2005 the BCBS issued complementary paper, The Application of Basel II to Trading Activities and the Treatment of Double Default Effects (BCBS, 2005), that was fully incorporated into the revised vision of Basel II from 2006.

Operational risk, which represents the possibility of losses due to inadequate or failed internal processes can again be measured by three methodologies: the basic indicator approach (BIA), standardized approach (SA) or advanced measurement approaches (AMA). All three methods as well as the inclusion of operational risk into calculation of capital adequacy in general are one of the major improvements included in Basel II. Under the BIA banks are obliged to hold capital amounting to 15 % of average annual gross income from the last three years. The SA works on similar basis but divides the activities of banks into business lines where every business line has different percentage of

annual gross income assigned. And finally AMA takes advantage of banks own internal systems of operational risk measurement. Banks have to meet certain criteria to be allowed to use more sophisticated approaches and at the same time cannot switch to a simpler approach without permission of a supervisory authority.

It is obvious that Basel II widely concentrates on risk management giving the banks options for measurement of capital requirements and at the same time providing incentives for banks to enhance and use their own internal systems of risk measurement and use their capital more effectively. Figure 2 summarizes the approaches offered under each kind of risk included in the Pillar 1 of New Basel Accord.

Figure 2: Options for calculation of capital requirements under Basel II



Source: Teplý (2010)

2.1.2 Pillar II

The principles of supervisory review process are the most general part of Basel II. It is regulators task to review banks capital adequacy in the context of all the risks a bank faces and it is the banks responsibility to have such internal processes that are able to identify all risks and reflect them in the size of capital. As every bank faces different risk profile, it is difficult to list precisely all the risks concerned. However, as (Balthazar, 2006) points out the second pillar does not even specify the right amount of capital needed to cover such risks. In this context Balthazar refers to a PwC study on impacts of Basel II proposal (PricewaterhouseCoopers, 2003) which questioned bankers and found out that the bankers think Supervisory Review Process being inefficient and regulators not to have enough skills and resources to implement it effectively.

The goal of Pillar 2 is to ensure that banks have enough capital to cover all the risks which are divided into three areas: risks that are considered but not fully captured under Pillar 1 (e.g. credit concentration risk); risks not covered by Pillar 1 at all (e.g. interest rate risk in the banking book) and risks external to the bank (e.g. effects of business cycle). For setting adequate level of capital coverage banks must develop Internal Capital Adequacy Assessment Process (ICAAP). The target capital level obtained through ICAAP is subject to review by supervisor and can be changed in case the supervisor finds it inadequate to the banks risk profile. In general capital adequacy of 8 % represents minimum and banks are expected to hold capital reserves of higher share.

The whole second pillar can be summarized under four key principles which the supervisory review process is built upon. There are as follows:

1. Banks should have a process for assessing their overall capital adequacy in relation to their risk profile and strategy for maintaining their capital levels.

2. Supervisors should review and evaluate internal capital adequacy assessments and strategies of banks as well as their ability to monitor and ensure their compliance with regulatory capital ratios. Supervisors should take appropriate action if they are not satisfied with the result of this process.

3. Supervisors should expect banks to operate above the minimum regulatory capital ratios and should have the ability to require banks to hold capital in excess of the minimum.

4. Supervisors should seek to intervene at an early stage to prevent capital from falling below the minimum levels required to support the risk characteristics of a particular bank and should require rapid remedial action if capital is not maintained or restored.

2.1.3 Pillar III

Third pillar of Basel II complements minimum capital requirements and supervisory review process with market discipline. Under Pillar 1 banks are obliged to assess and cover risks originating from their activities, Pillar 2 concentrates on supervisors task to assess the adequacy of actions taken by banks to cover the risks and Pillar 3 focuses on market participants and enables them further supervision by forcing the banks to disclose all relevant information on the scope of application, on capital, risk exposures and risk assessment processes and therefore enhances the market discipline.

It is up to the supervisors to set which information a bank should disclose. The extent of publicly available information varies for every bank and is dependent on national regulations as well as on the complexity of methods used to set appropriate capital adequacy under Pillar 1. There is, however, a list of general disclosures mandatory for all banks.

2.2 Bank Capital Management

Pillar 1 sets the rules for capital which banks are required to hold adequately to their portfolio. Changes in the required capital throughout business cycle influence resources available to the bank when providing for credits. Degree of availability of credits in banking system in different stages of business cycle can accentuate the swings of the cycle and therefore cause procyclicality. However, Pillar 3 has to be kept in mind as well as it is the source of information about banking sector for the public. There is, however, an important distinction between capital considered under Pillar 1 and Pillar 3. When managing their capital, banks care for risk-based capital, which is the real appropriate amount of capital necessary to cover all risks and ensure solvency of the bank and its survival in case of large unexpected losses. In financial literature the term economic capital is used for such kind. All the requirements for minimum capital under Basel Accords, however, refer to regulatory capital which represents the amount of capital legally required by regulators to cover such losses. There is a slight difference in the definition but there can be a big difference in the actual amounts of both capitals. This is due to different approaches to its calculation (there are predefined approaches to calculate regulatory capital while it is up to every bank which method it uses for its own calculation of economic capital).

The difference between regulatory and economic capital used to be even bigger under the first Basel Accord with its simpler and less flexible calculation of capital adequacy. It is one of the biggest contributions of Basel II to the bank capital management that it decreases the difference between both types of capital. Basel II brings regulatory capital closer to the economic one especially by increasing its risk sensitivity. Adding supervisory review process and market discipline also contributes to the reduction of existing gap.

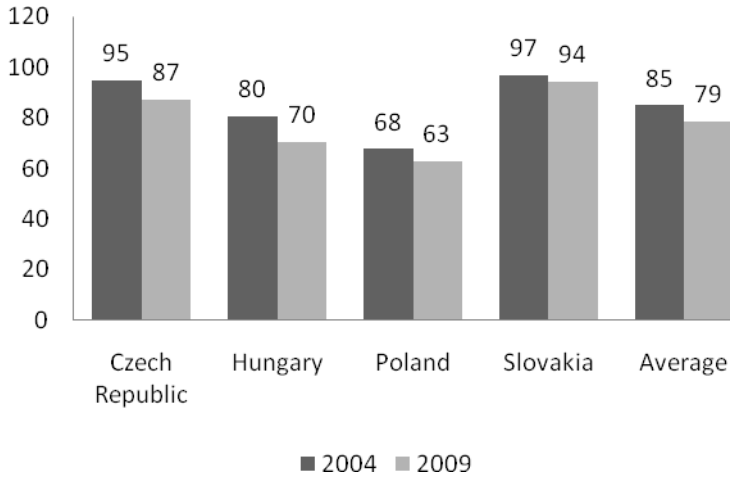
3. Banks´ Performance during the Financial Crisis

Before introducing new rules proposed under the Basel III framework we take a short look on performance of banks during the crisis. Problems of banks during the financial turmoil were the main factor shaping the new regulatory and supervisory framework. Banks all over the world have experienced problems and many studies claim that increased risk sensitivity of Basel II rules has its share in the depth of the crisis.

This paper concentrates on banking sector of the countries of Visegrád Group, namely on the Czech Republic, Slovakia, Poland and Hungary. This sector is characterized by high intermediation as well as very high share of foreign investors, visible on the Figure 3. As we can see, the percentage of foreign owned banks is in some countries almost 100 % and has not been very affected by the crisis. This offers to certain extent a shield to local subsidiaries of the banks, which can turn to their international parent company as to the lender of last resort. Dominating international groups are:

- KBC Group including ČSOB in Czech Republic and Slovakia, K&H in Hungary and Kredyt Bank in Poland;
- Unicredit, operating through Bank Pekao in Poland;
- Erste Group, covering Česká Spořitelna in the Czech Republic and Slovenská Sporiteľňa in Slovakia and not operating in Poland;
- Raiffeisen Bank, operating through Tatra Banka in Slovakia;
- Societe Generale, covering Komerční Banka in Czech Republic and Eurobank in Poland, not operating in Slovakia and Hungary.

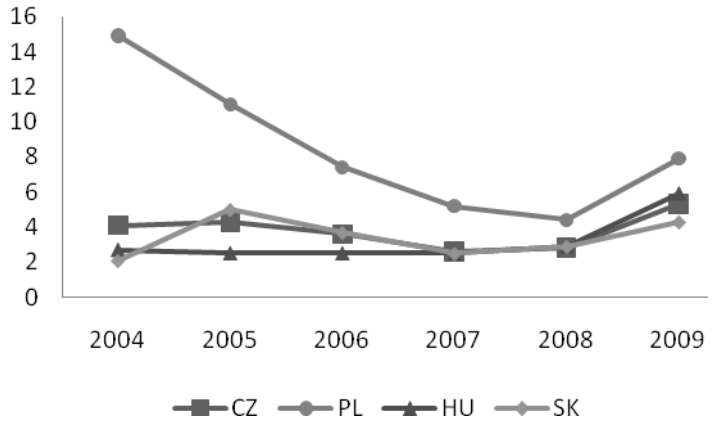
Figure 3: Share of foreign banks the total number of institutions in the banking sector (in %)



Source: IMF (2010)

Banking sector of the region was not immediately affected by the crisis. During the whole year 2007 it displayed outstanding growth. However, the US mortgage crisis spilled over to other parts of the Central European economies and contagion effect ultimately hit the banking sector as well. The growth ratios of the first months of 2008 were lower but the sector was still thriving. Because of liquidity contraction banks concentrated mainly on deposits. They also had to cope with large financial instrument portfolios, which were dominated by debt instruments. This was a result of high profitability of the last years. If 2007 was a good year for Central European banking sector then situation changed markedly in September 2008 with the bankruptcy of Lehman Brothers. Financial panics spread through the whole financial world leaving its impact on the banks of the CE region as well. Investments decreased immediately and the whole sector became more risk averse. For banks this meant decrease in liquidity and increase of non-performing loans (see Figure 4).

Figure 4: Development of non-performing loans (NPL) 2004-2009 (% of total loans)



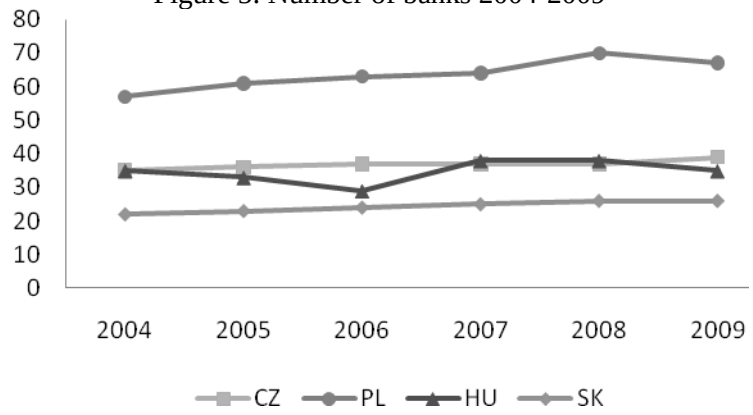
Source: IMF (2010)

Banks introduced stricter credit policies and shifted their scope more on deposits. Deleveraging, efficiency and cost cutting became the mottos of the period. In November 2008 Hungary became one of the first countries from the whole region of Central and Eastern Europe to ask the International Monetary Fund for financial help. It was granted a rescue package worth €20 billion.

Confidence in banking sector improved partially in April 2009 after the G-20 summit in London which guaranteed assurance that no country of the region will be left to bankruptcy. The scope shifted from liquidity problems to the quality of assets and credit. Deterioration of asset quality meant also higher risk cost. This was accompanied by further increase in NPLs as we can see on the Figure 4 above.

Although banking sector of Central Europe has definitely conceived implications of global financial crisis, it has not been hit so severely as some other countries. Figure 5 reflects the resiliency of the CE banking sector in the sense of more or less stable number of market players throughout the whole period of crisis.

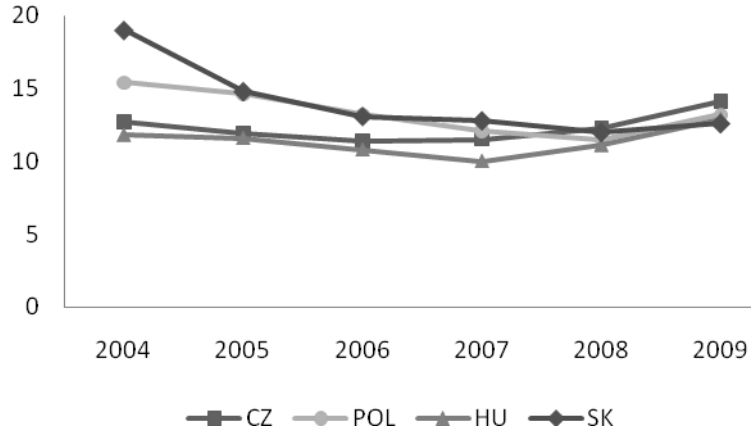
Figure 5: Number of banks 2004-2009



Source: IMF (2010)

Banks in the whole region also managed to hold appropriate level of capital adequacy throughout the crisis as we can see on Figure 6.

Figure 6: Capital Adequacy (% of RWA)



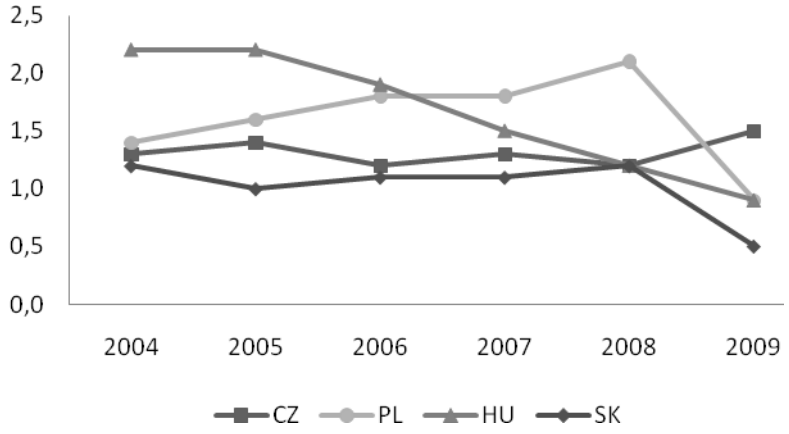
Source: IMF (2010)

Rising levels of capital adequacy ratio after 2008 clearly demonstrate the risk sensitivity of Basel II framework. Banks of the region adopted the new Basel II rules shortly before the crisis and were now required to increase the holdings of capital in response to increased risk of economy.

Another factor, the attempt of the banks to secure themselves in financially critical times, also added to increased capital ratios and may have added to the procyclicality.

Important sign of bank performance is profitability of the banking sector. This can be measured by two ratios, Return on Assets (ROA) defined as a proportion of earnings to total assets and Return on Equity (ROE) which is measured as the share of earnings to stockholders equity. Development of both ratios is depicted in Figure 7 and Figure 8 respectively. Both charts show the same pattern with Czech Republic being the only country showing profitability of banks in 2009. This corresponds with the results of banking study published by Raiffeisen Bank in 2010. This study observed 11 international banking groups and their profitability. In 2008 only one bank (in Poland) was in red numbers while in 2009 there was substantial increase in banks with negative profitability totaling to 10 banks. Only one of them was in the Czech Republic.

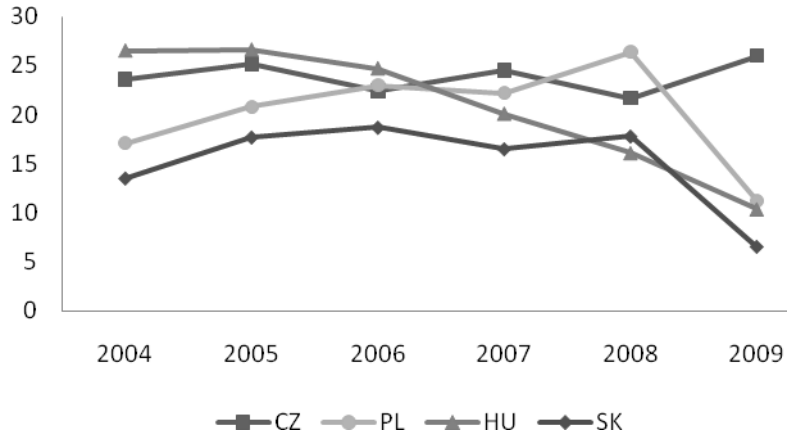
Figure 7: Return on Assets (ROA) 2004-2009



Source: IMF (2010)

On the profitability charts we can also clearly follow the development of single countries. Except for 2009, Poland is the most growing country in the region. Due to robust banking sector Poland was the only country with positive growth ratios and demonstrated almost no signs of crisis although the Polish currency zloty was the worst hit currency from the whole CEE at the end of 2008. Hungary, on the other hand, experienced problems even before the crisis fully hit the region. Even with the financial support from the IMF, the EU and the World Bank in November 2008 the country had to face loss of confidence in banking sector which they tried to boost with guarantees declaration. In order to meet its budget target, Hungary also became the first country to propose tax on banks in the amount of 0.5% of banking assets, which is extremely high. Czech Republic remained quite liquid and stable throughout the whole period. Despite facing contraction of lending growth it retained the lowest loan-deposit ratio in the region (under 80 %). Slovakia demonstrated strong dynamics caused by euro adoption but the banking sector had to face two challenges at once: transition to Euro as well as the financial crisis.

Figure 8: Return on equity (ROE) 2004-2008



Source: IMF (2010)

Although not supported by data in this study, 2010 brought increase in profitability for the banking sector while Poland remaining the strongest country. The dominating topic of the year was regulatory regime with BCBS proposing new regulatory framework, Basel III.

4. Basel III

4.1 From Basel II revisions to Basel III proposal

As we evidenced on the Central European data, financial crisis hit the banking sector severely. That of course influenced the perception of Basel II, which was in the middle of implementation period when the financial crisis started. During 2008 the banking world witnessed many discussions on the topic of how much would the banking sector be hit if the regulatory rules proposed by Basel II would already have been fully in force. Prevailing was the opinion that rules of Basel II are not sufficient and that the financial crisis has revealed many shortcomings which should be corrected as soon as possible. Besides its tendency to procyclicality which might be even amplifying the crisis, Basel II was criticized especially for its low orientation on liquidity and high reliance on credit rating agencies which were losing creditworthiness (Economist, 2008). It was argued that better approach should be designed, rather principles based than rules based. The banking sector was also dissatisfied with the course of implementation process, especially because of problems with implementation in the US which meant different regulation for banks worldwide, problems for subsidies and their supervisors and time lag in implementation of new rules (Economist, 2006).

The Committee started revising the newly established Framework almost immediately. Already in September 2008 the document Principles for Sound Liquidity Risk Management and Supervision was published. This was the first reaction to one of the main shortcomings of Basel II which is insufficient treatment of the liquidity risk and risk management. The Committee introduced liquidity risk management tools (for example comprehensive cash flow forecasting limits or liquidity scenario stress testing) and suggested banks should maintain sufficient reserve of high-quality liquid assets to be able to meet their liquidity needs together with developing more elaborate funding plans. The document also introduced more substantial board and senior management oversight.

In July 2009 BCBS published the final version of its mending efforts, a document called Revisions to the Basel II Market Risk Framework. It included tools to promote capital buffers for periods of stress, to improve the quality of bank capital and it also introduced a leverage ratio. In this revised framework each of the three pillars underwent improvement. The upgrades in Pillar 1 (Minimum Capital Requirements) focused on securitization and (in order to capture its risk better) it assigned higher risk weights for securitization and re-securitization exposures and ordered banks to implement more rigorous credit analysis for securitization exposures that are rated externally. Under Pillar 2 (The Supervisory Review Process) the Revision Framework provided supplemental guidance for risk management practices which revealed many insufficiencies during the crisis. The FSF Principles for Sound Compensation Practices, issued in April 2009 by the Financial Stability Forum,

were incorporated in the second pillar as well. Regarding Pillar 3 (Market Discipline) the upgraded Framework introduced enhancements to disclosure requirements in order to reduce uncertainties of market participants. Pillar 1 and Pillar 3 enhancements should have been implemented until the end of 2010 while Pillar 2 upgrade came into force immediately in July 2009.

However, during autumn 2009 the tendencies moved from revisions of Basel II towards compilation of new framework and first consultative proposals for Basel III were introduced. There were two main documents: Strengthening the Resilience of the Banking Sector coped with the capital adequacy and risk coverage while International Framework for Liquidity Risk Measurement, Standards and Monitoring covered solely proposals to enhance liquidity. The key areas on which Basel III proposals focused were:

1. Higher quality, transparency and consistency of the capital base with stricter criteria for Tier 1 capital.
2. Stronger risk coverage through trading book and securitization reforms and stronger requirements for counterparty credit risk.
3. Extra layer of protection in form of Leverage Ratio as a supplement to the risk-based capital requirements.
4. Introduction of minimum liquidity standards with short-term and long-term requirements. And from the point of view of this paper especially.
5. Measures promoting the build-up of capital buffers, reserves built in times of prosperity and available for use in times of crisis including measures that reduce procyclicality of the framework.

After their introduction both documents were subject to analysis within the whole financial sector and periods of consultation and calibration followed together with studies assessing possible economic and financial impacts of proposed framework. On December 17, 2010 the Final Report on the Assessment of the Macroeconomic Impact of the Transition to Stronger Capital and Liquidity Requirements was published together with (as of today) final version of Basel III framework.

4.2 Basel III framework

In the same manner as the proposal from December 2009 the final version of Basel III is divided into two documents. Those are

1. Basel III: A global regulatory framework for more resilient banks and banking systems and
2. Basel III: International framework for liquidity risk measurement, standards and monitoring.

4.2.1 The Global Regulatory Framework

The main reason for replacing Basel II with new framework was to respond to the financial crisis with tightening regulatory and supervisory rules. The BCBS developed the new framework to improve the ability of banking sector to absorb shocks and to reduce spillovers as well as to address lessons of the financial crisis. According to the Committee the crisis was caused by deterioration of capital base both in quantity and quality, by insufficient liquidity buffers and excessive leverage and by procyclicality of the deleveraging process. The institutions in banking sector are tightly interconnected and when the market lost confidence in banking sector, liquidity and credit availability contraction inevitably followed.

The new framework is therefore built on fundamental reforms aimed to address those failures. It works on both micro- and macro-prudential level. On micro-prudential level it strives for higher resilience of individual banks while from macro-prudential point of view the focus is on system-wide risks. The framework is based on the three pillars introduced in Basel II but strengthened. It addresses the key areas that were first introduced under the 2009 proposal document Strengthening the Resilience of the Banking Sector.

First key area amounts higher quality, consistency and transparency of capital base. Capital under Basel II consisted of Tier 1, Tier 2 and Tier 3 part. Basel III redefines Tier 1 capital, harmonizes Tier 2 and completely eliminates Tier 3. The dominant part of Tier 1 should be common equity consisting of common shares and retained earnings and there are conditions for additional Tier 1

capital. Basel III also sets more restrictions of both categories of capital towards risk-weighted assets. Total capital requirements remain unchanged at 8 % but Tier 1 ratio has increased under Basel III from 4% to 6% and the ratio for Common Equity Tier 1 from 2% to 4.5%. We can see the transitional arrangements for incremental increase as well as the final values in the Figure 9.

Figure 9: Transitional arrangements for capital requirements under Basel III (in %)

	Common Equity Tier 1	Tier 1 Capital	Total Capital
currently	2.0	4.0	
2013	3.5	4.5	
2014	4.0	5.5	8.0
2015	4.5	6.0	

Source: BCBS (2010)

Higher risk coverage is the second key area of Basel III. This area has already been discussed in reforms of July 2009. The new framework includes more explicit requirements for banks which use internal model methods as well as stronger requirements regarding counterparty credit exposures (arising for example from derivatives or repo operations). As a consequence of credibility loss during the crisis Basel III also lowers possible reliance on external ratings. Here the Committee has incorporated Code of Conduct Fundamentals for Credit Rating Agencies compiled by International Organization of Securities Commissions (IOSCO), the BCBS partner in the Joint Forum of financial regulators. Supervisors should refer to this document when testing the criteria for using data from external credit rating agencies.

The third key area is the capital conservation buffer. The main idea is to motivate banks to build up enough capital reserves in times of prosperity which can then be used in times of crisis. The minimum limit for capital conservation buffer is 2.5% of Tier 1 capital. This percentage cannot however be counted into regulatory minimum capital. Banks first have to keep 6% of Tier 1 and 8% of total capital adequacy and only then can use the excessive capital to build the conservation buffer.

There is also a second type of buffer defined under Basel III. It is a countercyclical buffer, extension to the capital conservation type. The buffer was designed with the aim to reduce procyclicality. As we have already discussed the financial crisis has revealed the effect of procyclical amplification supported among others through accounting standards and handling of leverage. Therefore Basel III developed countercyclical measures to enhance shock absorption instead of transmission and amplification. It serves also as a tool against the trade-off between risk sensitivity and cyclicality. As we know the more the regulation is risk sensitive the higher is the procyclicality effect. This trade-off was already known when developing Basel II framework but the measures taken to deal with were not sufficient. This may be due to one of the main criticisms of Basel II. It was developed in times of prosperity and the rules were not adequate for crisis times. Now BCBS suggests stronger provisioning, further conservation of capital which can be used in times of crisis and mechanisms which would adjust capital buffer when signs of excessive credit growth would be identified.

As the Basel III guidance for operating the countercyclical buffer claims, the aim of the buffer is not solely to ensure solvency of individual banks. The countercyclical buffer aims on building up resources which would protect banking sector in aggregate against economic cycles. The decision making will be, however, transferred onto national jurisdictions. Entrusted national authorities will be monitoring credit growth and they will be responsible for deciding when the buffer should be imposed, when it should be released and how it should be adjusted over time. The buffer can range between 0% and 2.5% of RWA dependent on the level of systemic-wide risk and every revision has to be

preannounced 12 months prior to the change so that banks have enough time to adjust their capital levels.

Although the power of decision-making lies in the hands of national authorities, there is a common reference guide which provides principles for the treatment of capital buffers. Buffers should be imposed in times of excess credit growth which might increase the systemic-wide risk. Such credit growth will be monitored via the credit-to-GDP ratio. Credit-to-GDP guide is, however, just a common reference point. It can work differently in diverse jurisdictions and therefore national authority always has to use its own judgment. Credit-to-GDP ratio even does not need to be the dominant information used; the authorities are free to use other indicators competent to assess systemic-wide risk as long as they supplement it with acceptable explanation. Basel III framework draws to attention many factors that could distort the information provided by credit-to-GDP ratio. Regulators should take into account various asset prices, funding spreads and CDS spreads, credit conditions or real GDP growth. The authority also has to decide, whether it is better to release the buffer gradually or promptly. This depends on the type of recession the economy is in. For mildly proceeding downturns gradual release of buffers might be sufficient, however many crises call for an immediate release.

Basel III sets the rules for each bank on how to set the buffer with respect to their jurisdiction. For internationally active banks the principle of juridical reciprocity applies. This means that a bank has to obey the decisions of an authority of the country where the bank operates. Banks should subsequently calculate weighted average of buffers of all jurisdictions, where they file credit exposure.

The responsibility of home authority of an internationally active bank is to ensure that bank calculates the buffer correctly. Home authority can further increase the buffer if it considers current level insufficient or set the buffer entirely when host authority does not do so.

Most of the key areas of Basel III put requirements on Tier 1 as well as on total capital. For better orientation BCBS (2010) sets the adequacy ratio for total capital remained unchanged at 8%. However, when adding the requirement for conservation buffer (consisting purely from common equity Tier 1 capital) the total capital requirements rise to 10.5%. New component of the Basel framework is the leverage ratio. It offers an extra layer of protection and supplements the risk-based capital requirements. The aim is to limit built up leverage because subsequent deleveraging process destabilizes the economy. The Tier 1 leverage ratio has been set to 3 % in the December 2010 final version of Basel III but it will be subject to testing during the parallel period from January 2011 to January 2017 and possible changes in its level may occur. In fact, we strongly believe that these ratios will be more relaxed during the transition period because of the market pressure and strong lobby from banks. Basel III also addresses systemic risk and interconnectedness of financial institutions trying to reduce spillover effects and developing approaches that will identify systemically important banks and adjust their loss absorbing capacities accordingly.

4.2.2 The framework concerning liquidity

For better coping with shocks and reducing the spillovers the BCBS introduced new liquidity requirements. Liquidity was namely realized as a serious problem during the financial crisis as banks experienced serious difficulties despite maintaining adequate capital levels. Here again one of the main shortcomings of Basel II appears, the old framework was namely designed in relatively trouble free times and liquidity requirements were therefore not incorporated. But, as the crisis has shown, banks failed basic principles of liquidity risk management. Therefore in 2008 the Committee issued Principles for Sound Liquidity Risk Management and Supervision (also known just as "Sound Principles") and required their full implementation by banks. With Basel III further strengthening of the rules came and liquidity issue earned its own document in the new regulatory framework: Basel III: International framework for liquidity risk measurement, standards and monitoring.

The liquidity framework concentrates on two complementary objectives differing in time frame. Short term resilience is covered by the Liquidity Coverage Ratio (LCR) and medium to long term resilience by the Net Stable Funding Ratio (NSFR). The minimum levels of liquidity for internationally active banks are based on specific, internationally harmonized parameters but regulators are free to set the ratios higher if they consider it necessary. LCR, the short term ratio, was

designed to instruct banks to keep adequate level of assets which can be turned into cash to cover liquidity needs for one month under the worst stress scenario. The ratio is defined in Equation 2.

$$\frac{high-quality\ liquid\ assets}{total\ net\ cash\ outflows\ over\ the\ next\ 30\ days} \geq 100\% \quad (2)$$

i.e. stock of liquid assets should be equal or higher than the cash outflows expected under the stress scenario. The stress scenario has to be set by supervisors and has to fulfill specific condition where many of them have been experienced during recent crisis. There are of course requirements which stock of high quality liquid assets has to fulfill. It should have low credit and market risk and low correlation with risky assets, it should be easy to evaluate and listed on developed exchange markets. Similarly as Tier 1 capital high quality liquid assets are divided into two groups, Level 1 and Level 2 assets. Under Level 1 comes for example cash, marketable securities or reserves of central bank. Level 2 assets are limited to 40 % of the total stock of high quality liquid assets.

Total net cash outflows, the denominator of Liquidity Coverage Ratio, is defined according to the Equation 3.

$$Total\ net\ cash\ outflows\ over\ the\ next\ 30\ days = outflows - Min\{inflows; 75\%\ of\ outflows\} \quad (3)$$

The total outflows are calculated by taking the outstanding balances of different liability types and multiplying them by rates at which they are estimated to be drawn down. Cash inflows use the same approach, multiplying the receivables by rates at which they are expected to flow in but, as we can see, there is a cap of 75 % of outflows for the total cash inflows.

It is necessary to point out that the level of LCR set by Basel III is the minimal level. Banks are expected to do their own stress testing and calculate levels of LCR suitable for their institutions specifically. NSFR covers the long term resilience with the aim to motivate banks to use more stable sources of funding. It is defined in the time horizon of one year. To ensure medium and long term funding the ratio, defined as proportion of available amount of stable funding to required amount of stable funding, should be bigger than 1 (as defined in Equation 4).

$$\frac{Available\ amount\ of\ stable\ funding}{Required\ amount\ of\ stable\ funding} > 100\% \quad (4)$$

Sources available must be higher than sources required to limit the over-reliance on short term sources of financing. The methods for calculating both amounts of stable funding are based on net liquid assets and cash capital methodologies used by banks worldwide. Available stable funding consists mainly of capital, preferred stock and liabilities with maturity over 1 year.

Regarding the implementation of Basel III the observation period starts in January 2011. By the end of the year all countries of G20 should commit to adopting rules of Basel III. By 2015 the Liquidity Coverage Ratio should be implemented and in 2018 the Net Stable Funding Ratio should follow. Similarly as for Basel II countries of G20 are expected to follow the rules set by the new framework while other countries worldwide are strongly encouraged to do so as well.

4. Basel III in the Czech Banking Sector

Basel III will affect the Czech banking sector. We can distinguish it into two main groups – direct effects and indirect effects. Direct effects mainly contain: higher liquidity requirements, higher capital requirements for counterparty risk and higher capital requirements for trade finance products. Indirect effects encompass lower bank`s profitability due to expected lower growth of the Czech economy and uncertain reaction on regulatory proposals of foreign parent banks.

Higher liquidity requirements imply that banks will need to hold higher amount of liquid assets which could lead to credit restriction. Also it means decrease of bank`s earnings because of

lower return on liquid assets and necessity of more expensive long-term deposits. Furthermore, the Net Stable Funding Ratio (NSFR) requires a bank to fund the illiquid portion of its asset book with funding of more than one year residual maturity. Stable funding is required to finance illiquid assets (not liquidated within 12 months). The observation period is planned for years 2012-2017 and it could be in force from 2018 (recalibration of some parameters can be expected). Czech banks have strong liquidity position but unfavorable financing structure, however. While O/N deposits represents 31% of liabilities in the Czech Republic, in the EMU this ratio represents reaches 11% (CBA, 2010).

Higher capital requirements for counterparty risk represent risk weightings for derivative and securities financing exposures and include (ICC, 2010):

- requirement on counterparty risk modeling (both default and deterioration in counterparty's credit);
- requirement on identification of legal connection between an exposure and related credit risk hedging instruments ("specific wrong way risk");
- requirement on higher risk weights for over the counter market transactions;
- requirement on a small risk charge (1 – 3%) in respect of position and collateral exposures to central counterparties (CCPs).

The Czech Republic is an open economy with high levels of hedging, what implies high engagement of Czech banks on over-the-counter (OTC) markets. Further 80 % of off-balance sheet assets of Czech banks are receivables from futures, forwards and swaps (CBA, 2010). As a result, the foregoing regulation might affect Czech banks that would likely need higher capital requirements and reduction of liquidity of the OTC market and higher transaction costs and risks. However, higher capital requirements do not mean for Czech banks such a significant impact and changes for bank`s management. It is due to two reasons: firstly, a conservative approach of Czech banks and their parent banks in the past; secondly, big Czech banks were bail-outed in late 1990s (Mejstřík et al, 2008). The new definition of Tier 1 will not mean more noticeable changes and cancellation of Tier 3 will not have any impact, because Tier 3 is not used in Czech banks. Hence we assume that the Czech banking sector would have any problems to meet new capital requirements.

Before we describe main impacts of Basel III to trade finance products, we have to define essence and content of trade finance. Trade finance products are short-term cost-effective sources of financing, which function is filling the time lag between the production of goods and receipt of payments. From banks point of view these products are off-balance sheet item. These bank`s products underpin around 30% of world trade (ICC, 2010). Trade finance facilities provided by banks to importers and exporters can include:

- commitments such as opening letters-of-credit ("LCs"); accepting and confirming LCs; and issuing performance guarantees, bid bonds and standby letters of credit;
- financing such as negotiation and discounting of export bills, pre-export financing, post-export financing and import financing.

Trade finance has historically maintained a low risk profile in comparison with other financial instruments: firstly, the fixed, short-term maturity of trade finance products; secondly, exposures are liquidated by cash upon maturity; thirdly, the transactional nature of trade financing allows banks to carefully manage exposures.

ICC (2010) provided an empirical analysis based on 5.22 million trade finance transactions conducted around the world by nine international banks over the past five years. It shows that the total default rate was 0.02% (i.e. only 1,140 defaults) while the average duration of a trade finance deal amounted 115 days. These facts might be regarded as an evidence of low risk profile of trade finance products.

However, the Basel III proposals are based on the following questionable ideas:

- all off balance sheet items are a significant source of leverage within the financial system and
- the failure to include off balance sheet items in the measure of exposure creates an incentive to shift items off the balance sheet to avoid the leverage ratio constraint.

A credit conversion factor of 100 % is assumed. As a result, banks would be required to hold capital against the entire value of a trade finance lending commitment (up from 20 % under Basel II and of 10 % from Basel I). ICC (2010) estimates that the impacts of Basel III on trade finance might

cause a $270bn (1.8 %) reduction in international trade flows and 0.5 % reduction in GDP. In addition, the regulation might lead to 6 % reduction in global trade finance capacity, as well as an increase in pricing of as much as 40 %.

5. Conclusion

The global crisis has revealed weaknesses of Basel II. As a result, new Basel III regulation rules were proposed in late 2010. However, we are skeptical about expected positive outcome of Basel III. We believe that the regulators intend to create an illusion that the bank sector would be safer after the introduction of Basel III. When looking at failed Basel I and Basel II, we believe that Basel III will not protect the financial system before the next crises, however. Basel III proposals may not hit banks in the Czech Republic significantly because these banks report high capital ratios and liquidity buffers already. However, some negative impacts might be expected. In this paper we discussed expected direct and indirect impacts of Basel III on the Czech banking sector. The most significant direct impacts encompass newly-introduced liquidity requirements, higher capital requirements for counterparty risk and higher capital requirements for trade finance products. The indirect impacts include lower banks´ profitability due to expected lower growth of the Czech economy (resulted from Basel III implementation in Western Europe) and uncertain reaction on regulatory proposals of foreign parent banks that own a vast majority of banks operating in the Czech Republic

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