BASEL III: COUNTERCYCLICAL CAPITAL BUFFER PROPOSAL- THE CASE OF LATVIA

Ģirts Braslinš
University of Latvia, Aspazijas bulv. 5, Riga, LV-1050, Latvia
e-mail: girts.braslins@inbox.lv

Ilja Arefjevs
BA School of Business and Finance, K.Valdemara str.161, Riga, Latvia
e-mail: ilja.arefjevs@inbox.lv

Abstract

An objective of the countercyclical capital buffer is to encourage banks to build up buffers in good times that can be drawn down in bad times.

The purpose of the research presented in the paper is to assess countercyclical capital buffer implementation in the Latvian banking sector derived from two approaches, using credit-to-GDP ratio and using credit growth ratio.

Methodology. The countercyclical buffer approaches in use are the aggregate credit-to-GDP ratio and its trend as well as credit growth and its trend. The approaches are implemented for Latvia for the time period 2000-2012. The report compares two approaches and analyses their relevance to Latvia by testing the correlation between a growth in studied variables and a growth of corresponding gaps, which triggers decisions to establish a countercyclical capital buffer. Also, the impact of each approach on countercyclical capital buffers is assessed and two approaches are mutually compared. Methods used in the empirical part of the report are econometric analysis, including analysis of regression, as well as economic analysis, including main trend analysis, development indicators, relative and absolute indicators and other methods.

Results and findings. The research outcome is a comparison of two alternative approaches to establish or release a countercyclical capital buffer by banks and their implications for Latvia.

Originality. The research paper implements two alternative approaches recommended by the Basel Committee to establish or release a countercyclical capital buffer by banks in case of Latvia for the retrospective period 2000-2012.

Keywords: Basel III, countercyclical capital buffer, banks

1. INTRODUCTION

The first international capital standard, Basel I, was issued by Basel Committee on Banking Supervision (BCBS) in 1988, and was fully implemented in 1992 by the G-10 countries. The main objective was to secure the holdings of banks, so credit institutions would be capable to absorb losses from the crediting activity. This standard only addressed the exposure of banking institutions to credit risk, the amount of capital required to protect against losses by assuring that they hold a capital level of 8% of the total risk-weighted assets.

According to Balin (2008) after the issue of the first agreement, there was a positive development of methods and techniques of risk assessment and in 2004 Basel II was issued. Basel II offered banks the opportunity to design their own internal models to estimate risk, and at the same time conserving the 8% capital adequacy. To establish the total capital adequacy, credit institutions had to primary determine individual risk exposures to credit risk, market risk and operational risk, and finally add the individual exposures.

Between mid-2007 and end-2010, major global banking institutions reported cumulative write-downs to the tune of $1.3 trillion (BIS, 2010). Output declined dramatically. The cumulative impact over 2008–10 on economic activity in the harder-hit advanced economies exceeded 10 percent of their respective GDP, and average unemployment rates shot up from about 5 percent to nearly 9

percent. Between mid-2008 and mid-2009, world GDP contracted by 1.6 percent for the first time in recent memory (IMF World Economic Outlook, 2011). Unsurprisingly, the experience added impetus to policymakers' and academic economists' efforts to better understand the mechanisms that drive financial system procyclicality and to devise policy tools that can mitigate it (Kunghehian, 2011; Moody`s, 2011).

To address the market failures revealed by the crisis, a revised framework, Basel III, was proposed by BCBS, suggesting a more sensitive approach to the extreme and unforeseen changes in the market (King and Tarbert, 2011). These reforms are meant to strengthen the banking sector and raise the resilience of individual banking institutions to periods of stress. One of the Basel III objectives is to reduce procyclicality and promote countercyclical buffers. According to the Committee one of the most destabilizing elements of the crisis was the procyclical amplification of financial shocks throughout the banking system, financial markets and the economy (Basel III, 2011). As the amount of credits in the economy increased, which was followed by an increase in credit losses, banks have adopted a prudent position immediately, resulting in a restraining credit supply. Their actions intensified the initial crisis, pushing the economy into a deeper recession, with declining asset prices and rising level of unproductive loans (Kauko, 2012).

The purpose of the research is to assess countercyclical capital buffer implementation in the Latvian banking sector derived from two approaches, using credit-to-GDP ratio and using credit growth ratio.

The authors define the following objectives to achieve the purpose of the study: (1) To analyze all spectrum of different conditioning variables, which could be used to signal the time to build up and release capital buffer; (2) To model implementation of countercyclical capital buffer in Latvia, based on two most frequently recommended ratios in BCBS researches – credit-to-GDP ratio and credit growth ratio and using historical banking industry data from 2000-2012; (3) To identify most suitable variable for the Latvian banking sector; (4) To develop practical recommendations for the size of countercyclical capital buffer in the Latvian banking sector.

To achieve the purpose of the research, the authors used a logical and comparative analysis, analysis of statistical data and econometric analysis, including analysis of regression, main trend analysis, development indicators, relative and absolute indicators.

The paper consists of 4 sections. Section 1 focuses on the introduction and background of the research. Section 2 deals with the Basel 3 proposal of Countercyclical Capital Buffer, its methodology and implementation possibilities. Section 3 represents the authors' modeling results of Countercyclical Capital Buffer implementation in the Latvian banking sector. And, finally, section 4 presents the conclusions.

Limitation of the research: the modeling of Countercyclical Capital Buffer implementation in Latvia is executed only for two most frequently recommended variables - credit-to-GDP ratio and credit growth ratio.

2. COUNTERCYCLICAL CAPITAL BUFFER PROPOSAL AND METHODOLOGY

Countercyclical capital buffer is designed to ensure that the banking system has a buffer of capital to protect it against future potential losses when excess aggregate credit growth is judged to be associated with a build-up of system-wide risk. Credit institutions will have to conserve a countercyclical buffer that varies between zero and 2.5% to total risk weighted assets (Countercyclical capital buffer proposal, 2010).

Any countercyclical capital scheme will be an overlay over the minimum capital requirements. The cyclicality of the minimum is therefore an important element for the credibility of the overall scheme. Very sensitive point-in-time capital requirements could imply that in good economic time risk-weighted assets decrease by so much that only limited capital is built up relative to unweighted assets. Similarly, in bad times, a highly cyclical minimum could eat into the available capital

resources, as the increase in risk-weighted assets adds to the erosion associated with losses. However, it is less important whether the smoothing is achieved by adjusting inputs or outputs. In the absence of smoothing inputs, more of the work would have to be done by the adjustment factor to obtain the desired degree of capital in different stages of the cycle (Drehman and Gambacorta 2011)

Any scheme will need to involve two elements: (i) choosing a conditioning variable that signals the time to build up and release capital buffers; and (ii) choosing an adjustment factor that determines how changes in the conditioning variable map into capital requirements (Guidance for National Authorities Operating the Countercyclical Capital Buffer, 2010).

According to the Drehman (2010), key Characteristics of an Effective Instrument:

(i) It should signal the proper timing for the accumulation and release of the capital buffer. This means that it should identify good and bad times.

(ii) It should ensure that the size of the buffer built up in good times is sufficient to absorb subsequent losses, when these materialize, without triggering serious strains.

(iii) It should be robust to regulatory arbitrage. This includes being difficult to manipulate by individual institutions as well as being applicable to banking organizations that operate across borders.

(iv) It should be as rule based as possible, transparent, and cost effective.

A number of variables come to mind, such as measures of bank performance (eg earnings, losses or asset quality, such as non-performing loans), financial activity (eg credit), as well as the cost and availability of credit (e.g. credit spreads).

Borio and Drehmann (2009), Alessi and Detkens (2009) analysed the performance of different conditioning variables by visually inspecting their evolution around historical banking crises. They considered the variables measured as deviations from a long-term trend or average, in order to identify the cyclical component.

2.1. Macroeconomic variables

Real GDP growth: this is the most natural indicator of the aggregate business cycle for an economy. However, the business and the financial cycle, although intertwined, need not be fully synchronised at all points in time. In particular, financial strains do not arise with every recession.

Aggregate real credit growth: the cycle is often defined with reference to credit availability. Aggregate credit growth could be a natural measure of supply, in particular if not only bank credit but all other sources of credit are taken into account. As boom periods are characterised by rapid credit expansion and declines in overall credit are typically considered symptomatic of a credit crunch, deviations of credit growth from a trend could be an informative variable to use.

Credit-to-GDP ratio: The credit-to-GDP ratio provides a normalisation of the credit variable to take into account the fact that credit demand and supply grow in line with the size of the economy. In addition, there is a strong link, historically, between faster than average credit-to-GDP growth and banking crises.

Asset price growth: Financial assets and in particular property prices tend to show exceptionally strong growth in periods that precede systemic banking events. They fall precipitously during periods of financial stress. Similar to the credit-to-GDP ratio, we consider deviation of aggregate property prices from their long-term trend, where aggregate property prices are a value-weighted average of residential and commercial property prices.17

2.2. Banking sector activity variables

Bank credit growth (also normalised by GDP): Aggregate measures of bank activity tend to be coincident with the broader business and financial cycle. Linking the countercyclical instrument to the growth rate of lending or bank income can be motivated on the basis of attempting to smooth

the intermediation (credit) cycle measured more narrowly as in relation to banks as opposed to the financial sector at large.

Banking sector profits: This is a key indicator of performance for the sector. Earnings are high in good times and quickly reflect losses in times of stress. However, profit figures can be the subject of strategic management by banks that can distort their information content.

Aggregate losses: This indicator of performance focuses on the cost side (non-performing loans, provisions etc). The financial cycle is frequently identified by the rise and fall of the realised losses.

2.3. Cost of funding

Banking sector credit spreads (indices): These are indicators of vulnerabilities in the banking sector (in the sense of the market assessment of the risk of bank failures). By being closely tied to the financial condition of banks they may be subject to manipulation by them, a drawback mitigated by relying on broad indices where they exist. In the analysis we will look at the average of CDS spreads for the largest banks in each country.

Cost of liquidity: These are indicators of the average cost that the banking sector has to pay to raise short-term liquidity. They are closely linked to banks' health and the aggregate funding conditions in markets.

Corporate bond spreads (aggregate average): An indicator of credit quality for the economy at large and a point-in-time measure of (credit) risk. Periods of boom are typically characterised by spreads that are lower than their average levels, while periods of stress are often marked by rapidly widening spreads.

Drehmann (2010) analysis showed that the best variables to signal the pace and size of the build-up of the buffers differ from those that provide the best signals for their release. Credit, ensured by the deviation of the credit-to-GDP ratio from its trend, emerges as the best variable for the build-up phase, as it has the strongest leading indicator properties for financial system distress. A side benefit of using this variable as the anchor is that it could help to restrain the credit boom and hence risk taking to some extent.

For a top-down approach, the analysis shows that the best variables as signals for the pace and size of the accumulation of the buffers are not necessarily the best for the timing and intensity of the release. Credit seems to be preferable for the build-up phase. In particular when measured by the deviation of the credit-to-GDP ratio from its trend, it has proven leading indicator properties for financial distress. The corresponding data are also available in all jurisdictions, in contrast to other variables, such as CDS spreads.

According to Drehmann (2011), the variable that performs best as an indicator for the build-up phase is the gap between the ratio of credit to GDP and its long-term trend (the credit-to-GDP gap).

The credit-to-GDP gap, however, is not a reliable coincident indicator of systemic stress in the banking sector. In general, a prompt and sizable release of the buffer is desirable. Banks would then be free to use the capital to absorb write-downs.

Repullo and Saurina (2011) in their analysis also make clear that any operational framework would need to incorporate an element of judgment, especially in the release phase. As in other fields of economic policy, rules provide invaluable discipline but may not work well in all circumstances.

Given the relatively early stage in the economic analysis of the interactions between the real and financial sectors of the economy, it would be premature to claim that any rule can be sufficiently robust across countries and time. Moreover, the political economy of the design and application of macro prudential instruments, such as the countercyclical capital buffer, is a field in which much more analysis is needed.

The calculation methodology presented in the Credit/GDP guide includes the following steps to determine the credit-to-GDP ratio, its deviation from its long-term trend and the level of countercyclical capital buffer (Countercyclical capital buffer proposal, 2010):

1) Calculating the credit-to-GDP ratio

$$Ratio\ (t) = CREDIT\ (t)/GDP\ (t) \times 100\% \quad (1)$$

CREDI (t) is a broad measure of credit to the private, non-financial sector in period t, while represents the Gross Domestic Product. Both are defined in nominal terms for year t, and national authorities are advised to calculate this ratio on a quarterly basis.

2) Calculating the credit-to-GDP gap

In this phase the credit-to-GDP ratio is compared to its long term trend, this being equal to GAP. If there is a large positive gap, namely the credit-to-GDP ratio is significantly above its trend, this may denote that credit level in the economy may exceeded the economy's growth rate. The GAP (t) in period t for each country is calculated as the actual credit-to-GDP ratio, minus its long-term trend TREND(t):

$$GAP\ (t) = RATIO\ (t) - TREND\ (t) \quad (2)$$

Where TREND (t) is an approximation of the average of the credit-to-GDP ratio, based on the historical values of each economy. The Hodrick-Prescott filter was used to smooth the series, because it has the advantage that recent observations are given higher weights. The Hodrick-Prescott filter is a methodology of decomposing the observed series, to separate the cyclical component of a time series. It seeks to extract from the series, the trend τt, and its cyclical component, ct, ,$yt = \tau t + ct$, where the cyclical component is the difference between the original series and its trend, τt is a trend component that will minimize the expression:

$$\sum_{1}^{T} (y(t) - \tau(t))2 + \lambda \sum_{2}^{T-1} [(\tau(t+1) - \tau(t)) - (\tau(t) - \tau(t-1))]2 \quad (3)$$

The first term of the sum represents the y (t) squared deviations from trend τt. The second terms contains λ, and measures the sum of the squares of the trend component's second differences. This second term penalizes variations in the growth rate of the trend component. The larger the value of λ, the higher is the penalty. The Committee suggest a value for λ of 400,000, since they consider that this is an appropriate value to capture the long-term trend in the behaviour of the credit/GDP ratio.

3) Transforming the credit-to-GDP gap into the guide buffer add-on

According to BCBS, additional capital, or the buffer add-on (VBt), which is expressed in percent of risk-weighted assets, is zero, when is below a certain threshold, L. When thevaries between the minimum and the higher threshold, H, then it will be equal to its variation, and when exceeds H, the buffer will be equal with the maximum level, VBmax. So the lower and upper thresholds L and H represent the key point in determining the timing, and the speed of the adjustment of the buffer add-on. The Committee suggests L = 2 and H = 10, considering that these may represent an optimal level, even though they depend to some extent the choice of smoothing parameter (λ), the length of both series. A threshold of L-2 means:

$$((CREDIT\ (t)/GDP\ (t)) \times 100\%) \quad (TREND(t)) < 2\% \quad (4)$$

and the buffer add-on in this case will be zero, while a threshold of 10 means H:

((CREDIT (t)/GDP (t)) x 100%) – (TREND(t)) > 10% (5)

where the buffer add-on will be at its maximum level, namely 2.5% of risk-weighted assets.

According to Trenca (2011), BCBS points out that the credit-to-GDP ratio and its long-term trend are powerful signals of banking crises. The Committee therefore recommends that the authorities carefully choose thresholds, and the levels of L and H are only a recommendation. So L should be low enough, so that banks have time and the ability to build up capital before a potential crisis. As banks are given one year to raise additional capital, this means that the indicator should signalize the crisis at least 2-3 years before. At the same time L should be high enough, so that no additional capital is required during normal times. For H, at which point no additional capital would be required, even if the gap would continue to increase, should be low enough, so that the buffer would be at its maximum prior to major banking crises.

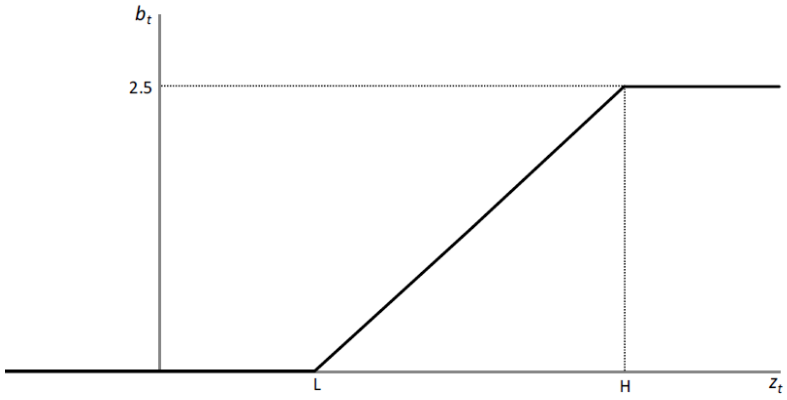

Figure 1. Relationship between the countercyclical capital buffer and credit-to-GDP gap
Source: Repullo (2011)

3. ANALYSIS OF THE COUNTERCYCLICAL CAPITAL BUFFER IN LATVIA

The methodology developed by Basel III and described above to mitigate the pro-cyclicality and minimize system wide risk by establishing a countercyclical capital buffer is applied to Latvia during the time period of 2000-2012. Even though the Basel Committee recommends using quarterly calculations, the derived numbers do not produce consistent results because of hyper fast growth and seasonal volatility of GDP. Therefore annual data of the Credit and GDP series are analyzed. As Figure 2 shows, with the assistance of the Hodrick-Prescott filter, it is possible to figure out the long-term trend of the Credit to GDP ratio. Anytime the actual ratio goes above the trend, a gap is identified, which is expected to trigger the start of establishment of the counter-cyclical capital buffer.

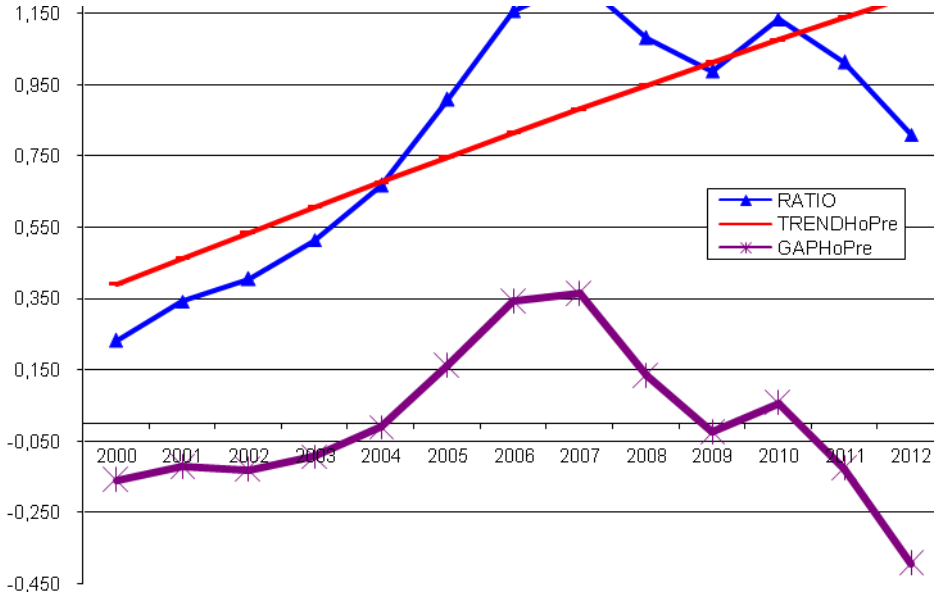

Figure 2. Credit to GDP ratio, long term trend and GAP for Latvia
Source: devised by the authors

However, as pointed out in the theoretical part of the paper, the credit growth can be a better alternative for estimating the amount of capital buffer needed than Credit to GDP ratio. The main difference between the two methods is that the credit growth method does not have any anchoring to the GDP, meaning that it takes into account only a relative year on year change of credits and their long-term trend. The findings are shown in Figure 3.

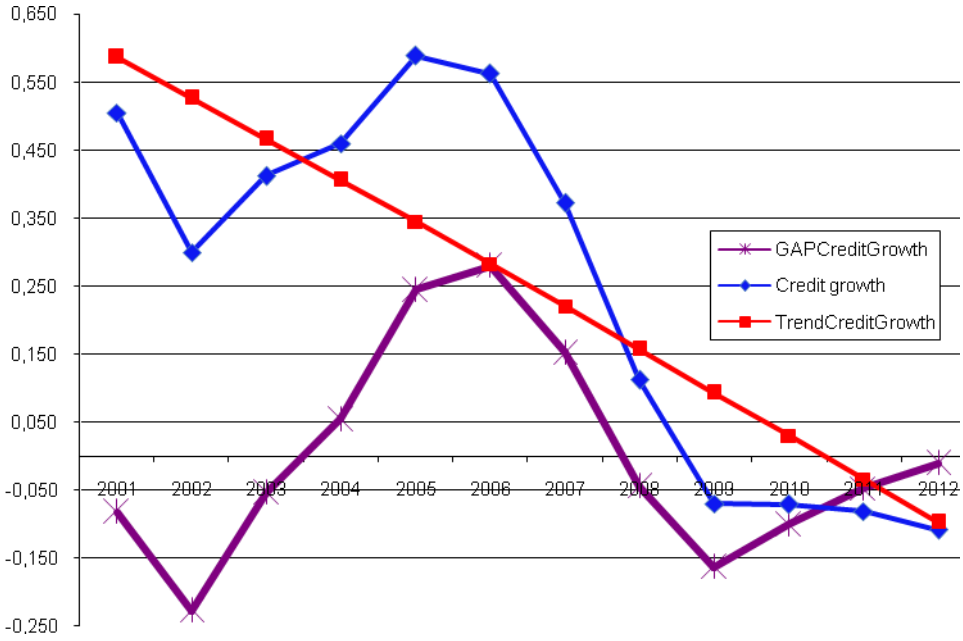

Figure 3. Credit growth, long term trend and GAP for Latvia
Source: devised by the authors

The differences between these two alternatives in relation to their impact on the amount of capital buffer are shown in Figure 4:

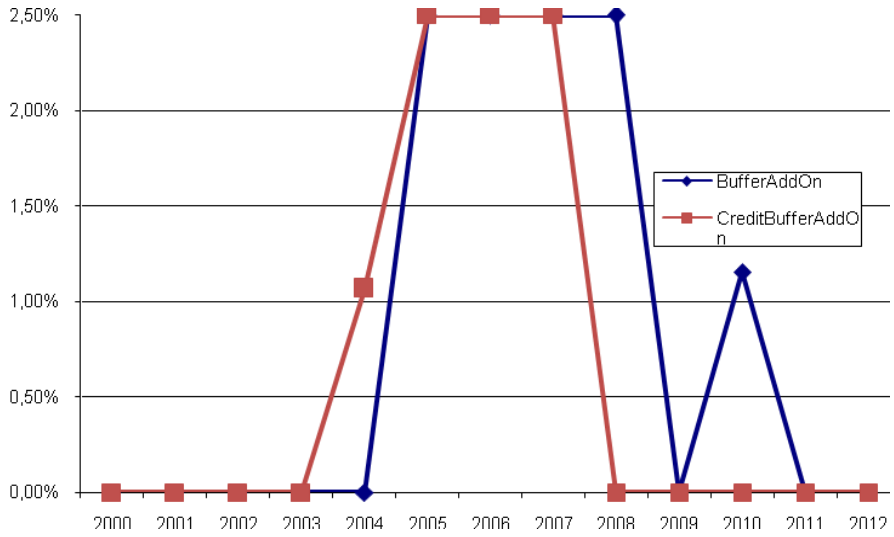

Figure 4. Credit to GDP and Credit growth buffer add on for Latvia
Source: devised by the authors

Obviously, in case of Latvia the Credit growth methodology leads to both establishment and release of the countercyclical buffer about one year earlier. Additionally, authors take into consideration the recommendation of the Basel Committee to establish a capital buffer within one year of first signals to do so while the capital buffer can be released immediately after receiving corresponding signals. These findings are incorporated in Figure 5.

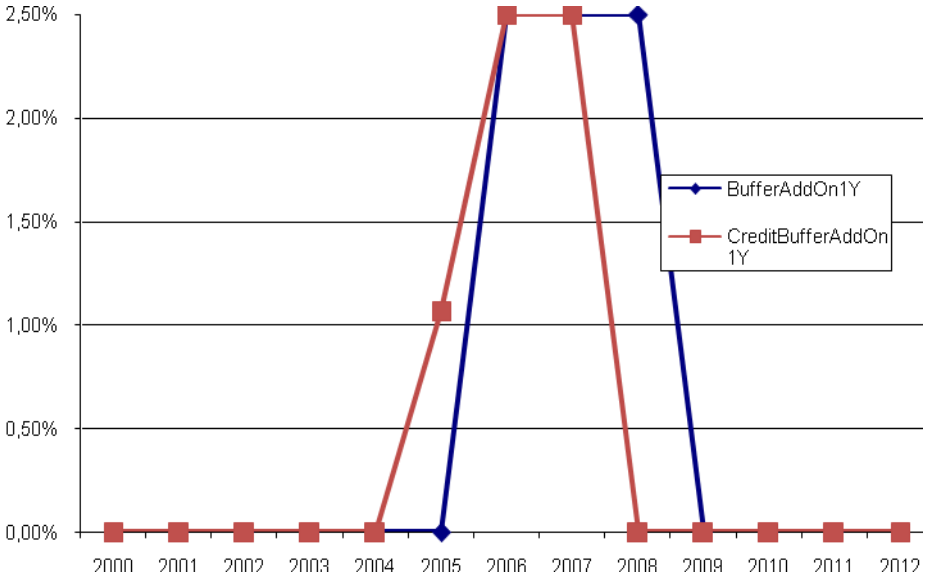

Figure 5. Credit to GDP and Credit growth buffer add on with one year delay for Latvia
Source: devised by the authors

Thus, by implementing the rule of one year delay in case of Latvia, the period of establishment of the capital buffer gets one year shorter and eliminates the necessity to establish a capital buffer in 2010 in accordance with the Credit to GDP methodology. The findings also suggest establishing the capital buffer exactly at the time when economy overheating risks were widely recognized in Latvia, but were not properly addressed. Provided that the Latvian GDP started to decline in 2009, the Credit growth methodology can be considered to be more appropriate for the case of Latvia, since it suggests releasing the buffer already in 2008, which potentially might have mitigated the

GDP decline.

As in cases described above, estimates derived from the Credit growth methodology lead to a faster capital buffer establishment and its faster release, thus outpacing hyper fast growth or contraction in the economy.

If a capital buffer establishment is allowed to be deferred by one year, the total period when such capital buffer is needed gets shorter. However, it was not the purpose of the analysis to find out the impact of such a condition on the economy.

The Credit growth method results in a faster establishment of the capital buffer compared to the Credit to GDP ratio because of a fast economic growth fuelled by credits.

The Credit growth method also results in a faster release of the buffer capital, thus in both terms outpacing the Credit to GDP method for the countries under the research. Intuitively, it might have had a better preventive impact on the economy of Latvia if compared to the Credits to GDP ratio method, which was proved to lag behind. Statistical findings for the GDP growth and the GDP growth gap and credit growth and the credit growth gap for Latvia are shown in Table 1:

Table 1

Correlation between credit growth, GDP growth and corresponding gaps for Latvia

No.	Correlation parameter	Latvia
1.	GDP growth and gap	0.45
2.	Credit growth and gap	0.57

Source: calculated by the authors

There is positive correlation found between GDP growth and GDP growth gap as well as credit growth and credit growth gap, which suggests that the methodology enables identifying a positive gap at good times and negative gap at bad times in case of Latvia. There is a stronger correlation between the credit growth and its gap compared to the one between GDP growth and its gap. Table 2 summarizes findings of the analysis of variances (ANOVA) for the credit-to-GDP method.

Table 2

ANOVA table for the Credit-to-GDP method

No	Type	df	SS	MS	F	Sign. F
1.	Regression	1	0.102	0.102	2.513	0.144
2.	Residual	10	0.405	0.041	-	-
3.	Total	11	0.507	-	-	-

Source: calculated by the authors

The same analysis was run for the Credit growth method and its findings are presented in Table 3.

Table 3

ANOVA table for the Credit growth method

No	Type	df	SS	MS	F	Sign. F
1.	Regression	1	0.088	0.088	4.897	0.051
2.	Residual	10	0.179	0.018	-	-
3.	Total	11	0.267	-	-	-

Source: calculated by the authors

The analysis confirms that the Credit growth method is more reliable than the Credit-to-GDP method since it has a significance of 0.051 versus 0.144 for it counterpart. Thus, it brings an implication that the credit growth methodology is capable of providing estimates, which can mitigate the credit cycle effects more efficiently than the GDP growth approach in case of Latvia.

Suggested proposals for further research include a comparison of the Credit growth and Credit to GDP ratio methodologies by studying other countries, figuring out an impact on the economy of a condition to defer an establishment of the capital buffer by one year and whether adjustments to methodologies are needed in case countries have substantially different credits to GDP ratio.

4. CONCLUSIONS

We have assessed the countercyclical capital buffer, focusing our discussion on its potential implementation in Latvian banking sector derived from two approaches, using credit-to-GDP ratio and using credit growth ratio.

According to both approaches, the pro-cyclical capital buffer was needed to be established during fast expansion of the national economy in 2003-2011. The amount of the capital buffer required the most of the time was at the upper limit of 2.5%. The Credit growth method results in a faster establishment of the capital buffer compared to the Credit to GDP ratio. The Credit growth method also results in a faster release of the buffer capital, thus in both terms outpacing the Credit to GDP method. Intuitively, it might have had a better preventive impact on the economy of Latvia if compared to the Credits to GDP ratio method, which was proved to lag behind.

There is positive correlation found between GDP growth and GDP growth gap as well as credit growth and credit growth gap, which suggest that the methodology enables identifying a positive gap at good times and negative gap at bad times in case of Latvia. There is somewhat stronger correlation between the credit growth and its gap (i.e. 0.57) compared to the one between GDP growth and its gap (i.e. 0.45).

Additionally, the analysis of variances proves that the Credit growth method is more reliable than the Credit-to-GDP method since it has a significance of 0.051 versus 0.144 for it counterpart. Thus, it brings an implication that the credit growth methodology is capable of providing estimates, which can mitigate the credit cycle effects more efficiently than the GDP growth approach in case of Latvia.

Suggested proposals for further research include a comparison of the Credit growth and Credit to GDP ratio methodologies by studying other countries, figuring out an impact on the economy of a condition to defer an establishment of the capital buffer by one year and whether adjustments to methodologies are needed in case countries have substantially different credits to GDP ratio.

REFERENCES

1. Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework. *–Bank for International Settlements, June 2006, article 211*.
2. Basel Committee on Banking Supervision (2009): "Strengthening the Resilience of the Banking Sector," *Consultative Document, Bank for International Settlements, Basel*.
3. Basel III: A global regulatory framework for more resilient banks and banking systems, Basel *Committee on Banking Supervision, December 2010 (rev June 2011)*
4. Countercyclical capital buffer proposal, Basel Committee on Banking Supervision (July 2010), *Available at: http://www.bis.org/publ/bcbs172.htm*
5. Basel Committee on Banking Supervision (2010c): "Guidance for National Authorities Operating the Countercyclical Capital Buffer," *Bank for International Settlements, Basel*.
6. Bank for International Settlements (2010): "80th Annual Report," *Bank for International Settlements, Basel.*
7. Alessi, L., and C. Detken. 2011. "Quasi Real Time Early Warning Indicators for Costly Asset Price Boom/Bust Cycles: A Role for Global Liquidity." *European Journal of Political Economy 27 (3):520–33.*
8. Balin Bryan J., "Basel I, Basel II, and Emerging Markets:A Nontechnical Analysis", *Submitted for review and approved 10 May 2008*
9. Basel III New Capital and Liquidity Standards – *FAQs, Moody`s analytics*

10. Borio, C., and M. Drehmann. 2009a. "Assessing the Risk of Banking Crises — Revisited." *BIS Quarterly Review (March): 29–46.*
11. Claessens S., M. A. Kose, and M. E.Terrones. 2011. "How Do Business and Financial Cycles Interact?" *IMF Working Paper No. 11/88*.
12. Drehmann M., Borio C. and Tsatsaronis K. "Anchoring Countercyclical Capital Buffers: The Role of Credit Aggregates" *Monetary and Economic Department, Bank for International Settlements, 2011*
13. Drehmann M., C.Borio, L. Gambacorta, G.Jiménez, C.Trucharte, „Countercyclical capital buffers: exploring options", *BIS Working Papers No 317 July 2010*
14. Drehmann, M., and L. Gambacorta. 2011. "The Effects of Countercyclical Capital Buffers on Bank Lending." *Forthcoming in Applied Economic Letters*.
15. Kauko, K., External deficits and non–performing loans in the recent financial crisis, *Economics Letters 115, 196–199, 2012*
16. King P.and Tarbert H., „Basel 3: An Overview", *Banking and Financial services, Volume, 30, May, 2011*.
17. Kunghehian N., "From Basel II to Basel III", *12thApril 2011, Moody`s analytics*
18. Repullo R., Saurina J. (2011), "The countercyclical capital buffer of Basel III. A critical assessment", Bank *of Spain. URL: ftp://ftp.cemfi.es/pdf/papers/repullo/Repullo-*
19. Repullo, R., and J. Suarez. 2009. "The Procyclical Effects of Bank Capital Regulation." Mimeo. Available at *http://www.cemfi.es/~repullo/papers.htm.*
20. Trenca I., Dezsi E., Petria N., "BASEL III: Countercyclical Capital Buffer proposal – the case of Romania", *Revistaeconomica No. 6 (59), Part II/2011*.