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Loan loss provisioning - a case study of Romanian system smoothing pro-cyclicality

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Abstract

Loan loss provisioning is an objective of both accounting standard and prudential bank regulation. Still, depending on the perspective, accounting or prudential wise, this objective can be debated between the two, at least from the pro-cyclical effect that may encumber. Local regulators, along with policy makers, argued that the incurred loss model as base of loan loss accounting should be changed in order to incorporate a more forward looking approach in setting loan loss provisions and therefore reduce pro-cyclicality. In this paper we explore the perspective of the Romanian Regulator in order to smoothen the effect of the loan loss provision changes following the transit to the full IFRS provisioning policy on the Romanian banking system.

1. Introduction

The cyclicality feature of the bank lending activity, by exacerbating the business cycle at macroeconomic level, can generate negative consequences at national level, as well as increasing systemic risk, as stated and demonstrated by the authors Berger and Udell, (2004).

The theories of the bank behaviour underline the role of the banks in the pro-cyclical effect of the loan lending activity with strong effects upon financial stability at macroeconomic level.

The theory of disaster myopia presented by Guttentag and Herring, (1986), explaining the systematic tendency to underestimate shock probabilities and the theory of herd behaviour that is more prevalent when the regulatory supervision is somehow lax, explained by Rajan, (1994), are relevant for underlying the pro-cyclicality effect that

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the banking behaviour can have.

The empirical evidences provided by Asea and Blomberg, 1998, and Lown and Morgan, (2006), show that the changes in the bank behaviour related to the lending activity lead to amplified business cycles.

2. Literature Review

One of the main factors, having the power to influence and amplify the cyclicality of bank lending activity is represented by the provisioning practices in the banking activity.

We consider for analysis in this paper three models residing from the provisioning rules and practices in the banking system: the backward looking provision system, the forward looking provision system and the capital buffer system. The pro-cyclicality of the accounting provisioning system was studies from the empirical point of view and its impact on the cyclicality of the banking lending activity, by Borio et al., (2001), Clerc et al., (2001), Bikker and Metzemakers, (2005), Bouvatier and Lepetit, (2008, 2010, 2012).

Furthermore, (Saurina, Jimenez, 2006) pointed out the existence of a positive and quite lagged connection between fast credit growth and future level of the nonperforming loans and a direct relation between the phase of the lending cycle and the quality of the loans granted. During booms, the credit standards and collaterals requirements are lower, which will be reflected in a lower quality of the loans portfolio and a higher level of risk, thus constituting the premises of the high losses occurrence during boost periods. Furthermore, the authors propose the development of a loan loss provision tool, according to which banks should provision during boom periods for the increasing risk from the future, which will impact the loan portfolio with a lag. During decline periods, banks could use the capital accumulated during boom periods, in order to cover the loan losses that appear, but that impact the portfolio, due to past activities characterized by less caution.

Accounting regulations usually did not allow for countercyclical provisioning, therefore it might be possible to transform the former countercyclical provision into a capital requirement based on a stress test included in Pillar 2 of Basel II. Moreover, another research performed by Gauri, et al, (2013) has examined credit risk modelling techniques used for banks' loan Loss Provision and loan origination procyclicality processes. The authors highlighted the statistical analysis based on historical data, by using relevant financial variables and performance statuses and stress testing of credit losses from possible adverse future events, that can generate extreme market conditions. The statistical analysis is expected to have positive effects, reflected by the improvement of banks' loan origination and loan loss provisions (LLPs) for homogeneous loans during sharp economic decline, when stress tests are primordial.

The model of provisioning system based on incurred losses was promoted as accounting reference by the IAS 39 Financial instruments: recognition and evaluation. This system of loan loss provisioning was adopted gradually by international banking system, depending also on the national policies and regulations in this respect.

The IAS 39 provisioning model based on incurred losses has a strong backward looking perspective, providing coverage increase with specific provision when loans start deteriorating and become nonperforming. According to authors Bouvatier, Lepetit, ("Provisioning rules and bank lending: A theoretical model", 2012) a backward looking provisioning system "represents an unsatisfactory institutional arrangement over a business cycle because expected loan losses are inadequately taken into account".

By using the IFRS methodology of incurred loss for determining the loan loss provisions, the banks provide a for rather low coverage with provisions in the periods of business and economic upswings and therefore the cost of loans is underestimated, and the lending standards become less restrictive. This approach gives even more incentive to growth in the lending activity with the effect of exacerbating the boost. During the downturn periods, the loan portfolio start showing signs of impairment and, since no reserves of provisions were built during the upswing, the loan loss provision coverage will suddenly increase. As a consequence, the banks will impose more restrictive rules in the lending activity and also the downturn period and its effects will be amplified.

Baring in mind these aspects, banks have to "evaluate the latent risk over a whole business cycle of their loan portfolio" (Bouvatier, Lepetit, 2012) and to recognize it also from accounting perspective, in order to adequately take into consideration the expected losses related to a loan portfolio.

Moreover, Ashraf, A., et al, 2014 highlighted the banks regulators' tendency to substitute traditional pro-cyclical prudential regime with a dynamic forward looking framework. Under these conditions, a suitable technique for determining capital requirements is LLPs technique.

Although from a supervisory point of view, the gap between the loan loss provisions and the expected losses is recognized by the Basel model for capital requirements under the internal rating based approach, this gap is not taken into consideration from the accounting point of view. Accounting wise, this gap is not affecting the profit and loss account and the financial statements of the banks.

On the contrary, a dynamic or statistical provisioning system could provide a forward looking perspective from this point of view. The statistical approach is designed to cover the expected losses, and IFRS 9 release in June 2014 is taking over and elaborating this concept from accounting perspective.

Based on this approach, during the upswings, the banks can built up reserves of provisions, that can be used in the downturn periods, having a smoothening effect both in the individual evidences at bank level, as well as on the overall business cycle.

As a general conclusion the expected loss model can offset the cyclical evolution of the provisions based on incurred losses model. All these evidences constitute the base of the recent evolutions in the Basel Committee work and regulations, as well as the fundamentals for the recent release of the IFRS 9.

In Europe, the provisioning system is backward looking, based on the IAS 39 requirements. Still, the national banking authorities, having in mind a prudential banking supervision, can impose additional requirements in order to offset the pro-cyclical effect of the incurred model of loan loss provisions.

The pro-cyclical effect on the lending process of the backward looking provisioning system can be offset, from a supervisory point of view, also by additional capital buffer system, with an impact on the equity. This being the practice used in the case of the internal rating based models, under the standardized approach, this topic is not normally regulated from the Basel supervisory point of view.

3. The case of Romanian Banking System

The current paper addresses the methodology of determining the loan loss provision in Romania, considering the IFRS accounting perspective introduced starting 01.01.2012 as mandatory accounting reference, on one side, and, on the other side, the system of prudential adjustments used in order to smoothen the pro-cyclical effect of the loan loss provisions determined under the IFRS framework, by the means of a prudential filter acting as a capital buffer.

According to the evidences provided by Vincent Bouvatiera and Laetitia Lepetit in their work "Provisioning rules and bank lending: A theoretical model" (2012), it is acknowledged that "a backward-looking provisioning system amplifiesthe effect of the business cycle on the loan market", while "the provisioning rules do not amplify the effect of thebusiness cycle on the loan market in a forward-looking provisioning system."

Related to the third possible model to be used for provisioning, the same authors have proved that the capital buffer and the loan loss reserves can be mixed in order to obtain a full coverage of the expected losses, if the bank accumulates the capital buffer in the period of economic upswing, "the use of a capital buffer to cover the expected losses offsets the effect of the business cycle on provisions".

Majnoni and Laeven (2002), concluded that the banks' tendency is to delay provisioning for bad loans until too late, when cyclical downturns have already set in, possibly amplifying the impact of the economic cycle on banks' income and capital.

In the view of the Romanian regulator, namely National Bank of Romania, the system of prudential adjustment represents a sound proxy for the concept of expected losses. This system is meant to be used by the banks applying Basel Standardized approach in order to be aligned to the concept of comparison between the loan loss provisions and the expected loss perspective. In this way, a prudential capital buffers created.

The system of the prudential adjustments applied by the National Bank of Romania is based on the financial performance/rating class of the debtor and the number of days past due, and provides for a fixed coverage with provisions based on the classification of the debtor. The classification of the loans is based on 5 classes and the coverage rate is establish in such a manner as to cover the full cycle of life of the loan.

Further on, our objective is to provide empirical evidences on the Romanian banking system and the positive effect of the approach of the National Bank of Romania on smoothening the trend of the loan loss provisions, in a period when the NPL rate was on an increasing trend.

Data used for this purpose refer mainly to the NPL rate and the NPL volume registered in Romania in the period 2009-2014, as well as the provision coverage of this portfolio under the IFRS incurred loss model and under the prudential system imposed by the National Bank of Romania, as an expected loss model. This period is characterized by an ascending trend of the NPL rate, reaching its peak at the end of 2013, with an NPL rate around

22% from the total loan portfolio, amounting in the peak 45 billion RON, as shown in the figure no.1.

For the case of Romania, during the period 2008-2011, in order to quantify the NPL coverage was used the indicator calculated as the ratio between total prudential provisions and gross exposure related to outstanding and interest with overdue more than 90 days and/or for which were initiated legal proceedings (in accordance with prudential and accounting regulations in force during that period, the banks were obliged to register in accounting prudential provisions). Beginning with 2012, the banks from Romania apply IFRS standards, as the basis of accounting. Therefore, from the same date, in order to assess the level of provisioning, the banks have used the indicator NPL coverage with IFRS provisions related to this category.
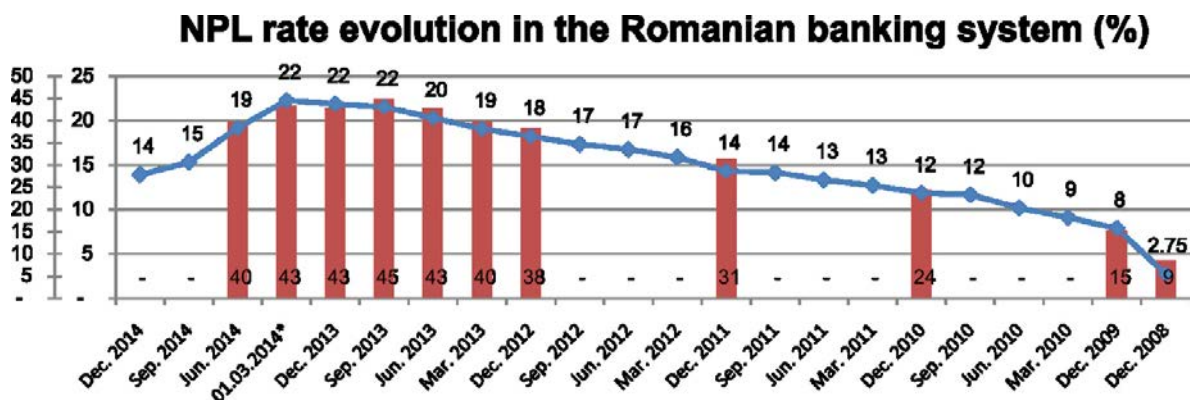

Fig. 1 NPL evolution in the Romanian banking system (Source: www.bnro.ro)

Until 01 January 2012, at the Romanian banking system, accounting wise, the system was based on the local accounting standard, and the loan loss provision system was based on the prudential system described above. These provisions were recognized also in the accounting, in the profit and loss account, having a direct impact in the financial statements and the prudential indicators of the banks.

Once the system has passed to the IFRS accounting principles, also the provision system has been replaced with the incurred loss model provided by the IAS 39. This methodology of recognizing the credit losses takes into consideration only the past events already recorded and the current status of the loan portfolio. In the opinion of the National Bank of Romania, this approach causes a delay in the recognition of the credit losses compared to the local prudential system of provisioning.

As observedin the figure no. 2, the coverage of the NPL portfolio based on the prudential approach starts around 85% according to the specific requirements, and has reached around 98% at the end of 2011. Thus, the system built sound loan loss reserves, considering the evolution of the NPL portfolio in the timeframe between 2008-2011.

Still, at the moment of 01 January 2012, marked by the first mandatory adoption of the IFRS accounting system in Romania, the NPL was on a continuous ascending trend. Nevertheless, the incurred loss model provided a coverage with IFRS adjustments of 61% of the exposure, generating a material gap between the total amounts of the two systems (it can be observed in figure no. 2).

This was the moment when a prudential decision was needed in order to protect the banking system.
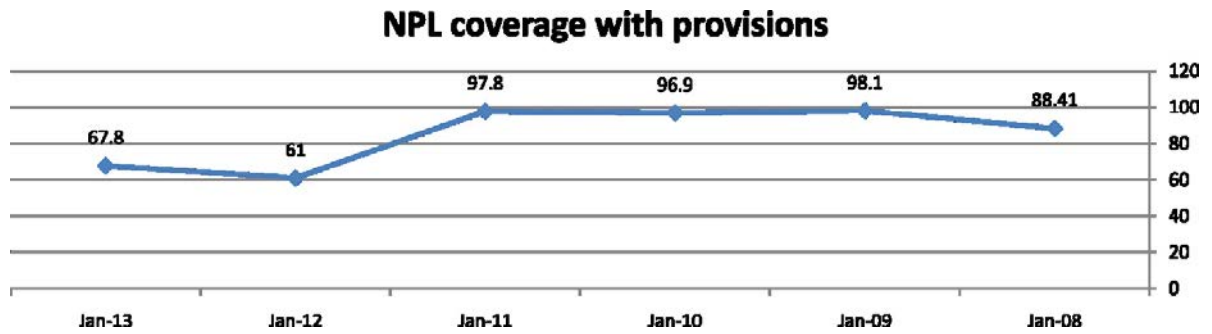
NPL coverage with provisions

Fig. 2 NPL coverage with provisions (Source: www.bnro.ro)

At this point, the local regulator, considering the prudential objective of avoiding the exacerbation of the loan cycles in the national market, has applied a capital buffer like methodology also for the banks using the Standardized approach for credit risk capital requirements.

The system of prudential provisioning was kept and recorded in the off balance sheet of the banks in order to allow the calculation and the used of the so called "prudential filter". The "prudential filter" represents the positive difference between the total prudential adjustments value and the total impairment adjustments under the IFRS framework, and is meant to decrease the supervisory Own Funds, thus, having the role of an additional capital buffer.

The prudential filter is based on the difference between the provisions in the forward looking approach (at national level recognized as the prudential adjustments) and the backward looking approach (the IAS 39 impairment adjustments), in the same way as the capital buffer:

$$TK = K + {}^{n}(AF - AB)$$

A fraction $n \in [0;1]$ of the difference between the two approaches, forward looking (AF) and backward looking (AB), is added as prudential filter (PF) to the standard capital (K) in order to achieve a total capital (TK).

In order to better observe the relationship between the variables, we have considered for this exercise the period between 2009-2014 at the level of the Romanian banking system, the following indicators:

- Tier 1 capital at the level of the banking system
- Nonperforming loan ratio (NPL ratio)
- NPL coverage with provisions under the forward looking approach - in our case the local prudential system
- NPL coverage with provisions under the backward looking approach - in our case the IFRS system

In the analysed period, the missing data related to NPL coverage was extrapolated and estimated by the authors in order to create quarterly data series. This aspect is an important model constraint, residing in the fact that before 01 January 2012 there is no data available for the IFRS provision coverage, due to the fact that this system, previously, was not mandatory in Romania.

The results of the models applied can be observed in the Table no. 1, where examining the model no. 5 we can conclude that there is a relationship between the capital and the difference between the two provision approaches: forward looking and backward looking.

Future analysis is needed, once the data available will be extended, in order to confirm or not the effect of the prudential filter adopted by the National Bank of Romania for countercyclical purposes.

Table no. 1 Calculation based on own extrapolation and estimation of raw data

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Capital Tier 1	11,088***	9.608***	6,918***	8,898***	9,575***
NPL ratio	-0,174***				0,009*
NPL Coverage forward looking (NPL forward)				0,012***	
NPL Coverage backward looking (NPL backward)			0,048***		
NPL Coverage forward looking-NPL Coverage backward looking		0,015***			0,013***
$Adj. R^2$	0,614	0,859	0,195	0,936	0,888

***statistically significant at 1%, **statistically significant at 5%, *statistically significant at 10%

The regressions used in the calculations are described below:

Model 1: Equity/Assets = c + $\alpha \times NPL\ ratio + \varepsilon_t$
Model 2: Tier 1 = c + $\alpha \times (NPL\ forward - NPL\ backward) + \varepsilon_t$
Model 3: Tier 1 = c + $\alpha \times NPL\ backward + \varepsilon_t$
Model 4: Tier 1= c + $\alpha \times NPL\ forward + \varepsilon_t$
Model 5: Tier 1= c + $\alpha \times (NPL\ forward - NPL\ backward) + \beta \times NPL\ ratio + \varepsilon_t$

4. Conclusions

Considering that there is a positive relationship between the credit growth in the upswing period and the future nonperforming loans, and also the quality and the standards of the loans granted depend on the lending cycle (Jesus, Saurina, and Jimenez Gabriel, "Credit cycles, credit risk, and prudential regulation" 2006), both banks and regulators are shifting from the traditional pro-cyclical provisioning approach to a dynamic forward looking one.

In this approach, the banks should provision additionally during good times for the increasing risk that is entering their portfolios and will be disclosed only after a period of time, with a lag. Thus, during downturns, the banks could use the reserves accumulated during the boom periods to cover the loan losses that now appear, but have entered the portfolio in the previous periods.

From the accounting point of view, currently under the IAS 39 principles, the forward looking approach is not used, and therefore the loan loss provisions recognized accounting wise are based on the back ward looking approach.

As from the prudential supervision point of view, as well as the pro-cyclical effect, the incurred loss method has proven not to be enough, the recent IFRS 9 Financial instruments approaches the expected loss methodology.

Local regulators, like National Bank of Romania, have decided to apply, for prudential purposes and capital adequacy indicators, either the forward looking method of provisionii, beside the accounting methodology, or approaches based on the concept of capital buffer.

In order to align the two perspectives, the accounting and the regulatory one, it is expected to continue the work of further harmonizing the methodology in the expected losses under Basel III framework and the principles of expected losses described by the IFRS 9 Financial instruments in order to converge towards a one unique approach applicable for all perspectives.

Using the data available at the Romanian banking system, a relationship between the capital and the local prudential filter considered as the difference between the forward looking provisioning system and the backward looking one, can be observed.

Due to the constraints on the input data: missing data for the backward looking approach before 2012 and the authors' estimation and extrapolation, further analysis should be made in order to confirm the importance of the capital buffer approach and its effect as a countercyclical method in the Romanian banking system.

References

Asea, P. K., & Blomberg, B. (1998). Lending cycles. *Journal of Econometrics*,*83*(1), 89-128.doi:10.1016/S0304-4076(97)00066-3
Ashraf, A., Hassan, M. K., & Putnam, K. (2014). THE EFFECTS OF PRUDENTIAL REGULATORY REGIMES AND ACCOUNTING STANDARDS ON EARNINGS MANAGEMENT OF LOAN LOSS PROVISIONS IN THE BANKING INDUSTRY. *Cell*, *301*, 338-0934.
Berger, A. N., & Udell, G. F. (2004). The institutional memory hypothesis and the procyclicality of bank lending behavior. *Journal of financial intermediation*,*13*(4), 458-495. doi:10.1016/j.jfi.2004.06.006
Bongini, P., Laeven, L., & Majnoni, G. (2002). How good is the market at assessing bank fragility? A horse race between different indicators. *Journal of Banking & Finance*, *26*(5), 1011-1028.doi:10.1016/S0378-4266(01)00264-3
Bouvatier, V., & Lepetit, L. (2012). Provisioning rules and bank lending: A theoretical model. *Journal of Financial Stability*, *8*(1), 25-31.doi:10.1016/j.jfs.2011.04.001
Bhat, G., Ryan, S. G., & Vyas, D. (2013). The Implications of Credit Risk Modeling for Banks' Loan Loss Provision Timeliness and Loan Origination Procyclicality. *Available at SSRN 1978409*.
Raducanescu, V., Dima, V. (2011) „Provocarile trecerii la IFRS in planul supravegherii prudentiale a institutiilor de credit", *Revista Audit Financiar*, no.11, pp.18-26
Rajan, R. G. (1994). Why bank credit policies fluctuate: A theory and some evidence. *The Quarterly Journal of Economics*, 399-441.
Saurina, J., Jimenez, G. (2006). Credit cycles, credit risk, and prudential regulation. Available on: Online at http://mpra.ub.uni-muenchen.de/718/, Working Paper 718, pp. 65-98.
IAS 39: Financial instruments: recognition and measurement
IFRS 9: Financial instruments issued in July 2014
National Bank of Romania, Regulation no. 16/ 2012 on classification of loans and investments, as well as the establishment and use of prudential

value adjustments, [Online], Available on http://www.bnro.ro/apage.aspx?pid=404&actId=325616.
National Bank of Romania, Order no. 9/2010 on application of International Financial Reporting Standards by credit institutions, [Online],
    Available on: http://www.bnro.ro/apage.aspx?pid=404&actId=323609.
Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms (CRR)