“The mechanism of currency self-regulation in Ukraine based on Basel standards”

AUTHORS	Ganna Veriga

ARTICLE INFO	Ganna Veriga (2013). The mechanism of currency self-regulation in Ukraine based on Basel standards. *Public and Municipal Finance*, *2*(2)
RELEASED ON	Friday, 27 December 2013
JOURNAL	"Public and Municipal Finance"
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES **0**

NUMBER OF FIGURES **0**

NUMBER OF TABLES **0**

© The author(s) 2026. This publication is an open access article.

Ganna Veriga (Ukraine)

The mechanism of currency self-regulation in Ukraine based on Basel standards

Abstract

The principles of Basel standards concerning the mechanisms of currency risks self-regulation were systematized within the framework of: standardized approach which is based on external assessments of rating agencies; the approach based on the evaluation of credit risks by internal rating systems; frame securitization approach. It was shown that a standardized approach is based on: conversion of off-sheet currency assets into credit risks by means of credit conversion coefficients; the use of currency risk discount in case of discrepancy between credit requirements and provisions. It proved that the mechanisms of currency self-regulation based on the internal rating approach are based on the evaluation of unexpected and predictable losses, determination of secured and unsecured credit risks, consideration of the partial provision or inconsistency of currencies during the formation of reserves for active transactions. It was proved that the mechanisms of currency self-regulation are based on the usage of securitization requirements represented by the following instruments: securities secured by assets or mortgage; additional credit security; liquidity instruments; interest or currency swaps; credit or currency derivatives; tranche coverage. It was concluded that Basel standards are partly used in Ukraine, particularly through the discount for reducing currency risks if credit protection is nominated in other currency than credit requirement and secured by property rights on deposits, real estate, mortgage bonds and mortgage certificates. The proposed approach determines the cost of collateral for the calculation of the pure credit risk of government securities, private securities, property rights on real estate, movable property and other property rights.

Keywords: currency self-regulation, mechanisms, Basel standards.
JEL Classification: E50, E58, E59, G21

Introduction

The global financial crisis demonstrated insufficient efficiencyofthe Basel II standards, therefore they are being improved by regulators according to the new requirements. The final version of Basel III framework was published in December 2010. It included the list of suggestions (Vasyurenko, 2011): improvement of the capital quality, transparency and stability while limiting the tier one capital and introducing a new term of "root tier one capital"; strengthening the requirements for covering risks by capital; introduction of the leverage indicator and minimal levels of liquidity with short- and long-term requirements; creation of capital buffers to form reserve capitals to be used during the crisis. Researchers who assess Basel standards focus primarily on capital instruments and capital adequacy ratio (Mishchenko, 2011). Some publications analyze the Basel committee requirements to currency risk management and its role in determining the capital adequacy ratio for Ukrainian banks (Marinich, 2009) as well as the methods concerning the structural currency position (Kutcenko, 1999) etc. On the other hand, the mechanisms of banks' self-regulation are not researched deep enough. They arise from the internal philosophy of the Basel standards that induce banks to exercisemarket self-discipline and use internal ratings.

Problem. The purpose of the article is to adopt Basel standards to self-regulation of foreign exchange transactions at Ukrainian banks.

1. Results

The Basel standards have three approaches to bank regulation: (1) standardized approach, (2) internal rating systems of risks evaluation and (3) securitization. The standardized approach is based on external assessments of rating agencies. An alternative methodology, that has to be approved by the banking supervision authorities, allows banks to use their own internal rating systems of credit risks evaluation (Popov, 2011).

Off-balance sheet currency assets, according to the standardized approach, are converted into credit risks using the credit conversion factor (CCF). Weight coefficients for the risks on operations with foreign exchange derivatives do not have a predetermined upper limit. Obligations with the initial validity up to one year and more will get a CCF of 20% and 15% accordingly. However any commitments that can be cancelled by a bank at any time without a previous warning or which have to be automatically cancelled in the case of a debtor's solvency decrease are to get a CCF of 0%. During the transactions with securities and foreign currencies which were not calculated banks are exposed to the counterparty credit risk beginning from the date of conclusion of the agreement regardless of the accounting date. The postponement in the determination of exact capital requirements is unrelated to transactions with securities and currencies with unfulfilled obligations. Banks must carefully track such transactions since the obligations weren't fulfilled. National supervisory authorities have to require adequate capital allocations for losses from

[1] Ganna Veriga, 2013.

unfulfilled commitments by counterparties, taking into consideration all features of interbank systems and the need to maintain the national market stability (Basel committee, 2004). The ratings of requirements in local and foreign currencies are determined in the following way: if unrated requirements receive weighted risk coefficients based on similar requirements of the same borrower, the ratings of requirements in foreign currency to the requirements in foreign currency are used. The ratings of requirements in local currency, if there are any, are to be used only for the appropriation of weighted risk coefficients to the requirements in local currency. Moreover, if requirements and obligations are nominated in different currencies an additional reduction coefficient must be applied to the sum of the obligation, adjusted by volatility for future possible fluctuations of exchange rates. A bank must calculate its RWAs as a difference of sums multiplied by counterparty's weighted risk if the liability sum adjusted by volatility is bigger than the commitment sum adjusted by volatility (including any other currency risk adjustments).

Value at risk, considering its reduction factors, is calculated according to the next formula:

$$B_p = B * (1 - d_{кв}) - З * (1 - d_з - d_в),$$

where B_p is a value at risk with its reduction factors; B is a current cost of credit requirement; $d_{кв}$ is a discount applied to credit requirement; З is a current cost of security; $d_з$ is a discount applied to security; $d_в$ is a discount that combines the disparity between the currencies of liabilities and credit requirement.

The size of credit requirements after the consideration of factors that lower risks would be multiplied by counterparty's weighted risk coefficient in order to get a risk weighted asset cost in regard to secured transactions. A standard discount for currency risks recommended by supervision authorities if risks and commitments are nominated in different currencies, is 8% (in terms of 10-day-term of ownership and daily market revaluation).

The time factor must be considered when determining the cost of risk. The discount should be corrected towards its increase by using the square root time formula, depending on the frequency of credit protection revaluation:

$$d_в = d_{вм}\sqrt{\frac{N_r + (T_M - 1)}{T_M}},$$

where $d_{вм}$ is a discount with the minimal term of ownership; T_M is a minimal ownership term of the given transaction type; N_r is a quantity of working days between the margin changes for transactions on the capital market or revaluations of secured transactions.

Supervision authorities may allow banks to calculate the discount by using internal ratings of the volatility of the market prices and foreign exchange rates. Supervision authorities may allow banks to calculate the rate of volatility of each category of securities if debt securities are rated BBB-/A-3 or above. The authorities should consider (a) the type of securities issuer, (b) its rating, (c) its residual maturity date, and (d) its altered duration while determining the corresponding categories.

Banks should evaluate the volatility of mortgage instruments or currency disparity separately; the volatility evaluation for each transaction should not include the correlation between unsecured risks, obligations and exchange rates.

Banks must consider the illiquidity of low-quality assets. An ownership term should be corrected towards its increase when it doesn't correspond to the level of the obligation's liquidity. Banks also have to determine the cases when historical data may lower the potential volatility, for example, for the pegged currency exchange rates. Such cases should be considered with the use of stress-testing.

The purpose is to get a net risk amount (netting of credit commitments and requirements) and an additional amount that reflects all possible price changes of securities and monetary risks. Net debts or short-term positions for each of securities included into the netting agreement are to be multiplied by the corresponding discount.

Transactions with OTC derivatives, which are subject to a daily market revaluation, are secured by financial resources and get a weightedrisk coefficient of 0% if there is no currency disparity. Those transactions are secured by state securities or PSE (public sector enterprises) securities with a weightedrisk coefficient of 10%.

Following the minimal requirements on information disclosure, banks, which received the permission of supervision authorities to use the IRB (internal rating) approach, can rely on their own internal assessments of risk components while calculating the coverage of certain risks. Risk components include the probability of default (PD), loss given default (LGD), exposure at default (EAD) and effective maturities (M). In some cases banks have to use the data provided by supervision authorities for one or more components of risk. IRB approach is used for the calculation of unexpected losses (UL) and expected losses (EL). The functions of weighted risk coefficients determine the capital requirements to UL. Risk is to be divided into secured and unse-

cured parts. The balance netting of credits and deposits is to be acknowledged if the same requirements as applied to the standardized approach are used.

The risk of currency, interest, share, credit and goods derivatives within the IRB approach is calculated according to the rules of credit equivalent calculation based on compensation costs and premiums for future potential risks for different types of goods and maturities. Regarding the currency and interest liabilities in the retail banking portfolio, banks can not use their internal ratings of credit equivalent sums to carry out the calculations according to the IRB approach.

Instead, the rules of standardized approach are to be used. The accepted IRB rating system should have two separate dimensions: (1) debtor's default risk, (2) factors typical for this transaction. The first dimension is focused on a debtor's default risk. Different requirements to the same debtor must have the same rating. Any disparity of currencies in which the requirements and liabilities are nominated should be considered and interpreted during LGD evaluation.

Banks can use the frame approach to securitization while determining requirements to the risks covering regulatory capital, that arise as a result of traditional and synthetic securitizations or similar structures that contain features, common for both types of securitization. Securitization requirements are represented by the following instruments: securities secured by assets or mortgage, credit enhancements, liquidity instruments, interest or currency swaps, credit derivatives and tranche coverage.

If the main requirement of the traditional or synthetic securitization is not rated, a bank that guarantees such requirement can determine a weighted risk coefficient by using the so-called "look-through" approach if the content of the corresponding pool is known. Banks are not obliged to consider either interest or currency swaps while determining the main requirement of the securitization.

The size of interest or currency swaps can be measured by calculating their current value. If the current value of an instrument is negative the requirement must be calculated by using the present value plus additional surcharge. If the current value is negative, the requirement has to be calculated by using a potential future risk only.

The component "Market discipline" completes the minimal capital requirements and the observation process. The committee strives to stimulate market discipline by developing a complex of requirements to information disclosure that would allow market participants to evaluate the main data concerning the capital, risk propensity, risk estimation processes, and the sufficiency of the institution's capital.

Banks that use the standardized approach have to disclose their capital requirements to cover the following risks: interest, capital share, currency and goods. Banks that use the internal rating approach have to disclose information concerning the increase (decrease) of either profits or economic value if the balance between the increasing and decreasing interest rates shocks divided by currency types is disturbed.

Let us analyze the methodical approaches that are used by Ukrainian banks in terms of their compliance with the Basel standards.

According to the previous Provision on the formation and use of reserves to compensate possible losses from banks' credit transactions, approved by the resolution of the National Bank of Ukraine of 06.07.2000 №279, the formation of reserves for credit risks fromforeign currencies transactions conducted on the interbank market, were carried out according to the reserve coefficients of 1%, 5%, 20%, 50%, 100% in accordance with the category of each transaction without any additional assessment of the debtor's income in foreign currency (NBU resolution, 2000).

Previously banks calculated their credit reserves in foreign currency given to the debtors – economic entities based on 2%, 7%, 25%, 60%, 100% reserve coefficients, depending on the category of each transaction, without the assessment of the foreign currency sources if the credit was given to the debtor for the production of goods, jobs and services, which are subject for governmental control of prices and tariffs, which are approved at least once a month according to the official UAH exchange rate set by the National Bank of Ukraine on the date of price and/or tariff approval (NBU resolution, 2000).

During the calculation of a net credit risk on loans given under the pledge of property rights on debtor's or guarantor's monetary deposits, the cost of the pledge was calculated in the amount of: 100% when the currency was freely converted or corresponded to the currency of the given loan; 90% when the currency differed from the currency of the given loan. The interest on the cost of the pledge used for the calculation of a net credit risk on a separate loan transaction ensured by real estate, mortgage bonds and certificates, was set according to the categories of quality of credit transactions: standard, controlled, substandard, dubious – 70%, 70%, 50%, 30% on loans in the national currency and 50%, 50%, 40%, 20% in foreign currency respectively.

Under the acting Provision on the order of formation and use of reserves for the compensation of possible losses from banks' active transactions, approved by the resolution of the National Bank of Ukraine of 25.01.2012 №23, bank calculates the size of credit reserves on an individual basis as a sum exceeding the balance value of the loan (not including the sum of the previously formed reserves) over the current value of the previously assessed future monetary flows on the given loan. A bank determines the risk index according to the categories of the loan quality considering the value of collateral (NBU resolution, 2012). However, the provision of loan in foreign currency influences a debtor's class definition and a category of the quality of loan transaction. A bank, particularly, classifies a credit given in foreign currency to non-resident not higher than III quality category. This standard doesn't apply to transactions conducted by foreign branches of Ukrainian banks.

A bank determines a debtor's class – a legal entity not higher than 8 if the loan is given to a debtor – a legal entity who has no documental proof of expected earnings, which sufficient to pay off the debt off until the expiration of the agreement.

The earnings are considered sufficient if all of the following requirements are met:

- A volume of debtor's expected earnings on the date of calculation of reserves is higher than his liabilities taking into account the terms of their realization and a risk of currencies'conversion.
- The bank controls the shape of the debtor's earnings according to the concluded agreements, which determine the sufficiency of the currency earnings.
- The bank has documentarily proven results concerning its positive experience (for the last 12 months before the date when the earnings were declared sufficient) of the currency earnings of the debtor according to its accounts in different banks.

The bank classifies a debtor – an individual as a G class if a debtor – an individual, who was given a credit in foreign currency with the documentarily proven expected earnings in foreign currency sufficient to cover the debt until the expiration of the agreement.

Conclusions

The mechanism of currency self-regulation based on the Basel standards was systematized in the paper in the framework of three approaches: standardized approach, approach based on external ratings; internal rating systems of credit risks evaluation; securitization frame approach.

1. The mechanism of currency self-regulation on the basis of a standardized approach is based on the currency risk discount: in case of the currency disparity between the credit requirement and risk provisions. The discount recommended by the supervision authorities is 8% considering a 10-day ownership term that increases according to the frequency of market revaluations.
2. The mechanism of currency self-regulation according to internal ratings is based on the assessment of unexpected (UL) and expected losses (EL), division of risks into secured and unsecured, consideration of partial security and currencies' disparity.
3. The mechanism of currency self-regulation on the basis of securitization is based on the hedging of currency risks by using the following instruments: securities secured by assets or mortgage, liquidity instruments, interests or currency swaps, credit or currency derivatives, tranche coverage.
4. For an objective assessment of currency risks and their insurance Ukrainian banks are advised to use the Basel standards in the application of a discount for the reduction of currency risks if credit protection is nominated in a currency that is different from the currency of credit requirements.

References

1. Kutcenko O. Do Ukrainian banks need a structured currency position? // *NBU Bulletin*, 1999. – No.10. – pp. 55-59.
2. Marinich T.O. Evolution of currency risk management in banks in the frames of Basel II // *Problems and perspectives of development of the banking system in Ukraine: collection of scientific papers*. – Sumy: SHEE "NBU banking academy of Ukraine", 2009. – No. 25. – pp. 180-186.
3. Mishchenko V. Basel III: new approaches for the bank sector management // *NBU Bulletin*, 2011. – No. 1. – pp. 4-9.
4. *New approaches to international convergence of capital standards and measurement*, 2004, Basel committee for bank supervision, Bank of international calculations, viewed 15 November 2013. Available at <http://www.cbr.ru/today/ms/bn/bz_1.pdf>
5. Popov K.O., We do not hurry to predict consequences of Basel III…, *Internal control in a credit organization*, 2011. – No. 4, Viewed 4 October 2013, <http://www.reglament.net/bank/control/2011_4_article.htm>
6. Vasyurenko O.V. Modern concepts of credit risk management as main components of the process of bank loan risk management // *Actual Economic Problems,* 2011. – No.1 (115). – pp. 170-177.

7. Provision about the order of forming and using of the reserve for reimbursement of possible losses on banks' credit transactions, approved by NBU resolution from 06.07.2000 № 279 (previously valid), viewed 23 November 2013, <http://zakon2.rada.gov.ua/laws/show?nreg=z047400&find=1&text= %B3 %EF %EE %F2 %E5&x=13&y=14>.
8. Provision on the order of forming and using of the reserve for reimbursement of possible losses on banks' active transactions, approved by NBU resolution from 25.01.2012 № 23, viewed 23 November 2013, <http://zakon0.rada.gov.ua/laws/show/z0231-12/print1379066186028757>.