ISSN 1429-2939

2(39) 2009

BEZPIECZNY BANK

BFG

BANK GUARANTEE FUND

SAFE BANK a magazine published by Bank Guarantee Fund since 1997.
Mission of this magazine is to support development of researches and popularizing science of the deposit guarantee scheme, financial security of banks and stability of financial system.

All articles published in "SAFE BANK" are reviewed.

REVIEWERS:
Prof. dr hab. Jerzy Nowakowski
Prof. dr hab. Alfred Janc
Prof. dr hab. Andrzej Gospodarowicz

PROOF-READER:
Kalina Michalkiewicz

PUBLISHER:
Bank Guarantee Fund
ul. Ks. Ignacego Jana Skorupki 4
00-546 Warszawa

SECRETARY:
Robert Stasiak
Telefon: 0-prefiks-22-58-30-574
e-mail: Robert.Stasiak@bfg.pl

DOM WYDAWNICZY ELIPSA

Opracowanie komputerowe, druk i oprawa:
Dom Wydawniczy ELIPSA
ul. Inflancka 15/198, 00-189 Warszawa
tel./fax 0-22 635 03 01, 0-22 635 17 85
e-mail: elipsa@elipsa.pl, www.elipsa.pl

Contents

Bank Guarantee Fund Activity

Problems and opinions

BGF Activity

REPORT ON THE OPERATIONS OF THE BANK GUARANTEE FUND IN 2008 (SHORT FORM)

I. LEGAL BASIS, TASKS AND AUTHORITIES

1. Legal Basis

The Bank Guarantee Fund operates pursuant to the Bank Guarantee Fund Act of 14 December 1994 (Journal of Laws of 2007, No. 70, item 474, as amended). The solutions incorporated into that Act comply with the requirements of the Directive 94/19/EC of the European Parliament and of the Council of 30 May 1994 on deposit-guarantee schemes.

The Act specifies mechanisms of establishing and operations of the mandatory deposit-guarantee scheme, types of actions which can be taken in order to grant assistance to banks at risk of insolvency as well as the rules for collecting and using information on entities participating in the guarantee scheme.

The Bank Guarantee Fund is supervised by the Minister of Finance.

2. Tasks

The Bank Guarantee Fund along with the Ministry of Finance, the Financial Supervision Authority and the National Bank of Poland account for the national financial safety net. As a part of the safety net, the Fund is to perform certain statutory tasks. As regards the mandatory deposit-guarantee scheme those tasks include:

- specifying for a given year, in accordance with Article 25 of *the Bank Guarantee Fund Act*, a limit of sums set apart by entities participating in the guarantee scheme due to the obligation to create a fund for the protection of guaranteed deposits,
- performing obligations stemming from funds guarantees on the terms and conditions specified in the Bank Guarantee Fund Act,
- collecting and analysing information on entities participating in the guarantee scheme.

The Fund's statutory tasks with regard to granting assistance to entities participating in the guarantee scheme include:

- granting repayable financial assistance on terms and conditions specified in Article 19 and Article 20 of the Bank Guarantee Fund Act in the event of the risk of insolvency or for the purchase of banks' shares,
- acquiring receivables of the banks at risk of insolvency,
- controlling the entities' activities to ensure that the assistance granted is used in an appropriate way,
- specifying the amount of mandatory annual contributions, referred to in Article 13.1 and Article 14 of the Bank Guarantee Fund Act, payable to the Fund by entities participating in the guarantee scheme.

Moreover, pursuant to the Act concerning the operation of cooperative banks, their mergers and on the acquiring banks of 7 December 2000 (Journal of Laws No. 119, item 1252, as amended), the Fund may provide repayable financial assistance from the cooperative bank restructuring fund (the CBRF) to those cooperative banks that are not at risk of insolvency.

The Fund performs its tasks based on the adopted *Operational Plan* and *Financial Plan of the Bank Guarantee Fund.*

3. Authorities

The statutory authorities of the Bank Guarantee Fund are the Council (comprising eleven members) and the Management Board (comprising five members).

In 2008, the fourth-term Council was composed as follows:

Table 1. Composition of the fourth-term Council

Name and surname*	Position
1. Robert Jagiełło	Chairman
2. Agnieszka Alińska	Member
3. Wioletta Barwicka	Member
4. Janusz Czarzasty	Member
5. Alina Gużyńska	Member
6. Alfred Janc	Member
7. Andrzej Parafianowicz	Member
8. Krzysztof Pietraszkiewicz	Member
9. Piotr Piłat	Member
10. Bogdan Romaniuk	Member
11. Jan Szambelańczyk	Member

* In 2008, the Council of the BGF also included: Jacek Dominik (until 16 September 2008), Katarzyna Zajdel-Kurowska (until 30 May 2008) and Sławomir W. Zawadzki (until 30 October 2008).

- In the reporting period the Fund's fifth-term Management Board was composed as follows[1]: Management Board President – Małgorzata Zaleska,
- Acting Management Board Member – Jan Koleśnik[2],
- Management Board Member – Krystyna Majerczyk-Żabówka,
- Management Board Member – Adrian Markiewicz,
- Management Board Member – Marek Pyła.

II. GUARANTEE ACTIVITY

1. Financing Guarantee Activity

The primary source of financing the Fund's guarantee activity are the resources collected by banks in the form of funds for the protection of guaranteed deposits (FPGD). All banks participating in the Polish deposit guarantee scheme are obligated to establish these funds. The amount of funds is calculated as the

[1] Deputy-President, Joanna Wielgórska-Leszczyńska, was removed from her function in the Management Board as at 6 May 2008 by the BGF's Council.

[2] From 26 November 2008.

product of the sum of resources collected in the bank, which provide the basis for calculating the amount of obligatory reserve and the interest rate determined every year by the BGF's Council. The maximum interest rate in 2008 was[3] 0.4 percent. Taking into account the risks in the banking sector, the BGF Council in the resolution No. 20/2007 of 23 November 2007 determined the interest rate applicable to establishing the FPGD for 2008 at 0.26 percent for the sum of money collected in the bank in all accounts, which serves as the basis for calculating the obligatory reserve. In 2008, the funds for the protection of guaranteed deposits established by all banks and maintained in their assets (after the revaluation of 1 July 2008) amounted to PLN 1,416,682,700. These funds were not used in 2008 as no bank was declared bankrupt.

The method in which banks establish funds for the protection of guaranteed deposits does not affect their financial obligations. It only restricts their freedom in administering a small – compared to the balance sheet sum – portion of their financial resources (as at the end of December 2008, it was 0.23 percent of the net balance sheet sum of the banking sector). Resources used to cover these funds are kept in the form of treasury bills, the NBP money bills, bonds issued by the NBP or participation units of the money market funds, which brings banks income from interest rates. The participants of the scheme submit to the BGF appropriate amounts for the compensation payouts only after the court declares the insolvency of a bank. The compensation payouts may also be financed from the amounts obtained by the Fund from the banks' bankruptcy estates, collected in the form of a fund of sums obtained from the bankruptcy estates.

2. Liabilities Due to Compensation Payouts

As at 31 December 2008, the overall sum of the Fund's liabilities for unpaid compensation amounted to PLN 67,300. This amount comprised the receivables of forty-three depositors, whose claims were not subject to the statute of limitations on 11 February 2005 as the period of the validity of these claims was interrupted.

In 2008, no eligible parties requested payment of compensation.

3. Guarantee Activity to Date

From the commencement of its operations until the end of 2008, the BGF piad out compensation to the depositors of five commercial banks and eighty-nine cooperative banks.

[3] At the moment it is 0.3 percent.

Table 2. Bank bankruptcies in the years 1995–2008

Year	Commercial banks	Cooperative banks
1995*	2	48
1996	1	30
1997	–	6
1998	–	4
1999	1	–
2000	1	–
2001	–	1
2002–2008	–	–
Total	**5**	**89**

* From 17 February, i.e. from the date when the Bank Guarantee Fund Act came into force.

Compensation payouts made by the Bank Guarantee Fund amounted to PLN 814,400,000 and were provided to 318,800 of eligible depositors.

Table 3. Funds allocated to compensation payouts in the years 1995–2008

Year	Funds allocated to compensation payouts (in PLN million)				Percentage of utilisation of the FPGD	Number of depositors
	Total	including				
		from the FPGD	from liquidated bankruptcy estates	from the fund of resources obtained from bankruptcy estates		
1995	105.0	85.9	19.1	0	38.1	89 939
1996	50.8	47.3	3.1	0.4	14.9	59 420
1997	6.4	4.7	0.6	1.1	2.3	10 418
1998	8.2	4.1	1.8	2.3	3.2	6 775
1999	4.7	0	2.0	2.7	0	1 572
2000	626.0	484.1	141.9	0	48.4	147 739
2001	12.5	0	4.5	8.0	0	2 658
2002	0.1	0	0.1	0	0	46

Table 3. Continued

Year	Funds allocated to compensation payouts (in PLN million)				Percentage of utilisation of the FPGD	Number of depositors
	Total	including				
		from the FPGD	from liquidated bankruptcy estates	from the fund of resources obtained from bankruptcy estates		
2003	0.1	0	0.1	0	0	27
2004	0.4	0	0.4	0	0	124
2005	0.1	0	0.1	0	0	99
2006	0.1	0	0.1	0	0	5
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
Total	**814.4**	**626.1**	**173.8**	**14.5**	**6.15**	**318 822**

4. Funds Obtained from Banks' Bankruptcy Estates

The amounts provided to receivers for payment of compensation to depositors of bankrupt banks are claimed back from the banks' bankruptcy estates. Pursuant to the Bank Guarantee Fund Act, the amounts obtained are collected in the form of a fund of resources obtained from bankruptcy estates and may only be used to finance subsequent compensation payouts. As at 31 December 2008 a total value of the fund of resources obtained from bankruptcy estates amounted to PLN 52,854,400.

In 2008 the Bank Guarantee Fund obtained PLN 3,153,000 from receivables included in the banks' bankruptcy estates due to the fact that in the precedent years money was handed over for receivers to finance compensation payouts. That money was obtained from the bankruptcy estates of six banks.

During 2008 five bankruptcy proceedings of the banks being the Fund's debtors were completed. As at 31 December 2008, five proceedings were continued, with the claimed receivables amounting to PLN 5,066,400.

5. Other Activities

On 28 November 2008 the Act on the amendment of the Bank Guarantee Act and amendment of other acts of 23 October 2008 was announced (in Journal of Laws No. 209, item 1315), which made it necessary to change the former resolution of the BGF Management Board concerning a template of a list of depositors prepared by a receiver or a trustee of the bankruptcy estate. An appropriate resolution (No. 137/DPG/2008) specifying a new template of the list of depositors was adopted by the Fund's Management Board in December 2008.

In the reporting period the Fund provided all the interested parties, particularly banks' clients, with information concerning the mechanisms of the deposit guarantee scheme and participation of individual financial entities in the guarantee scheme. Requests directed to the Fund by telephone and mail (letters, e-mails) concerned mainly issues regarding potential bankruptcies of banks, including the mechanisms of executing the guarantee and the way and possibility of recovering the amounts deposited in banks if bankruptcy is declared. With respect to all issues the depositors received detailed replies to the questions raised. A major increase in the number of requests directed to the Fund by telephone and in writing was noted in October and November 2008, which was caused, among other factors, by the commenced legislative activity aimed at raising the guarantee limit up to EUR 50,000.

III. ASSISTANCE FUND

1. Purpose and Terms of Providing Assistance

The fundamental purpose of the Fund's assistance activity is to grant financial assistance to banks at risk of insolvency in order to enable them to undertake restructuring operations. The indirect purpose is to protect clients from the loss of financial resources entrusted to those banks. Pursuant to *the Bank Guarantee Fund Act*, the assistance may be granted in the form of loans, guarantees or sureties, as well as by acquiring banks' safe debts on more favourable terms than commonly accepted. Previously the Fund has granted assistance solely in the form of loans.

The assistance fund from which loans are financed is created from mandatory annual contributions paid by all the entities participating in the mandatory guarantee scheme. The contribution level applicable in a particular bank is calculated as the product of rates determined by the Fund's Council and the base set out in *the Bank Guarantee Fund Act*. In the resolution of 23 November 2007,

the Council of the Bank Guarantee Fund determined the rates of the mandatory annual contra payable by banks in 2008 at 0.045 percent for risk-weighted sum of balance sheet assets, guarantees and sureties and at 0.0225 percent for the sum of risk-weighted other off-balance sheet liabilities less promised credit lines.

In 2008, the banks remitted 50 percent of the mandatory contribution, with the remaining 50 percent being paid by the National Bank of Poland, i.e. PLN 101,651,900 each.

2. Terms and Conditions of Providing Assistance

Pursuant to Article 20 of *the Bank Guarantee Fund Act*, an entity is eligible for financial assistance upon meeting the specific requirements, in particular:

- the Fund's Management Board is to approve the results of the audit of financial statements concerning the operations of the bank requesting assistance, and when requesting assistance for the acquisition of a bank, a bank merger or the purchase of shares in another bank – the approval shall be obtained for the results of the audit of the financial statements of both banks,
- the bank is to present a recovery proceedings plan, which is to be approved by the Financial Supervision Authority and in the event of bank acquisition, merger or the purchase of shares in another bank, the Financial Supervision Authority's approval as to the viability of those actions is required,
- the entity is to demonstrate that the amount of the requested loan, guarantee or surety does not exceed the amount of guaranteed deposits in the depositors' accounts in that bank and when requesting financial assistance for the purpose of acquisition or merger with another bank, it must prove that the amount does not exceed the sum of the guaranteed deposits in the depositors' accounts in the acquired bank,
- the entity must evidence that it has used its own existing funds to cover the losses of the bank requesting assistance or the bank being acquired.

On the basis of the authorisation stipulated in Article 7.2.6 of *the Bank Guarantee Fund Act*, the Fund's Council set out the principles, form, conditions and manner of granting financial assistance to entities participating in the mandatory guaranteed sums scheme as well as the insolvency risk evaluation criteria.

In 2008, financial assistance in the form of loans could be granted on the terms and conditions presented in the Table 4.

Table 4. Terms and conditions of providing assistance in 2008

Terms and conditions of providing assistance	Purpose of the assistance	
	elimination of the risk of insolvency	
Annual interest rate on the loan	0.1–0.4 bill rediscount rate determined by the Monetary Policy Council	
Commission	for commercial banks	for cooperative banks
	0.3 percent of the loan amount, deducted from the loan amount	0.1 percent of the loan amount, deducted from the loan amount
Loan utilisation period	up to five years*	
Loan disbursement	once-off or in tranches	
Repayment of interest	once per quarter	
Repayment of principal	in quarterly or six-monthly instalments**	

* In reasonably justified cases this period could be extended to ten years.
** In particularly justified cases it was possible to apply a grace period in the repayment of principal.

In 2008, none of the banks participating in the guarantee scheme requested financial assistance from the Fund's assistance fund. No loan was disbursed. At the same time the Fund managed the loans extended in the previous years.

As at 1 January 2008, four banks were taking advantage of the assistance fund loans for a total debt of PLN 482,980,500.

By the end of the analysed period two banks fully repaid their loans. As at 31 December 2008, the debt outstanding from the other two banks amounted to PLN 452,590,000.

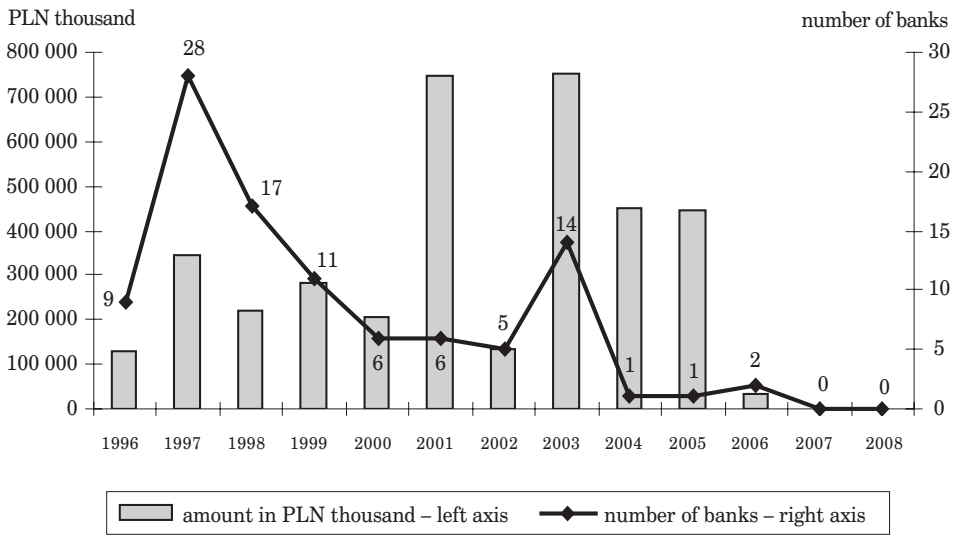
3. Assistance Activity to Date

From the commencement of the Fund's operations until the end of 2008, a hundred loans were granted from the assistance fund, of which forty-four were disbursed to commercial banks and fifty-six to cooperative banks, for a total of PLN 3,746,842,400.

The financial assistance granted by the BGF was allocated as follows:

- elimination of the risk of insolvency – PLN 2 249 050 000,
- acquisitions of banks at risk of insolvency – PLN 1 262 792 400,
- purchase of shares in banks at risk of insolvency by new shareholders – PLN 235 000 000.

Diagram 1. Disbursement of loans from the assistance fund in the years 1996*–2008



* The loan was granted in December 1995 and disbursed in January 1996

Table 5. Financial assistance granted by the BGF in the years 1995–2008

Type of banks and allocation of assistance	Loan disbursements	
	amount in PLN thousand	share percentage
Commercial*	**3 427 386.4**	**91.5**
– elimination of the risk of insolvency	2 066 000.0	55.1
– commercial bank acquisitions	981 906.4	26.2
– cooperative bank acquisitions	144 480.0	3.9
– share purchase	235 000.0	6.3
Cooperative	**319 456.0**	**8.5**
– elimination of the risk of insolvency	183 050.0	4.9
– merger processes	136 406.0	3.6
Total	**3 746 842.4**	**100.0**

* Together with banks that acquired the cooperative banks.

By preventing bank bankruptcies, the financial assistance provided by the Fund had a tangible financial and non-financial effect. It can be measured by:

- the amount of guaranteed deposits that the Fund would have had to pay if these banks went bankrupt (the total sum of deposits guaranteed at banks to which the Fund provided financial assistance in the years 1996–2008 was sixteen times higher than the amount of financial assistance granted to those banks),
- maintaining a network of banking units,
- saving a significant number of work places,
- keeping access to banking services,
- improved effectiveness of banking operations.

IV. COOPERATIVE BANK RESTRUCTURING FUND

1. Purpose and Terms of Providing Assistance

Pursuant to the Act concerning the operation of cooperative banks, their mergers and on the acquiring banks of 7 December 2000, in the reporting year the Bank Guarantee Fund provided financial assistance to support cooperative banks' merger processes from the Cooperative Bank Restructuring Fund (the CBRF)[4] established in 2001.

In accordance with the above act, the Fund received PLN 123,409,700 to be allocated to finance cooperative bank merger processes and related investments, and particularly to ensure unification of:

- IT software and hardware,
- banking technology,
- financial and accounting procedures,
- offers of banking products and services,

as well as to purchase the shares in the acquiring bank.

The financial assistance from the CBRF allocated to finance the above activities until 13 December 2008 could be granted only to those cooperative banks that merged with other banks after 28 January 1998 (i.e. 3 years before the effective date of the aforementioned Act) or purchased shares in acquiring banks before 28 January 2004 (i.e. within 3 years from the effective date of the Act) and to

[4] The fund is composed of resources with interests, from the following sources:
- liquidated Cooperative Bank Development Fund, previously administered by Bank Gospodarki Żywnościowej SA (on 6 April 2001 that funds amounting to PLN 4,031,800 were transferred to the BGF),
- transferred funds amounting to the funds obtained by banks from redeemed restructuring bonds of series D.

those which were not at risk of insolvency and were capable of repaying the loans taken out by them.

On 13 December 2008, the amended *Cooperative Bank Act* became effective. The amended provisions of this Act extended the scope as to both subject and object of the financial assistance provided under the CBRF. Under the provisions of the amended Act, financial assistance from the CBRF may be granted to a cooperative bank for the purpose of financing:

- ❖ the purchase of shares in the acquiring bank,
- ❖ completed or proposed investments related to cooperative bank mergers, aimed at enhancing the security of the funds accumulated or at improving or unifying customer service standards, in particular with respect to:
  - purchasing or modifying IT software or hardware,
  - developing or unifying banking technology,
  - modifying financial and accounting procedures,
  - developing or unifying banking products and services,
- ❖ proposed investments related to the above purposes.

2. Terms and Conditions of Providing Assistance

Table 6. The terms and conditions of providing financial assistance from the Cooperative Bank Restructuring Fund specified in the resolution No. 15/2001 of the Fund's Council – binding with reference to applications submitted before 13 December 2008

Terms and conditions of providing assistance	Purpose of the assistance	
	to support merger processes	to purchase the shares in the acquiring bank
Annual interest rate on the loan	0.1 bill rediscount rate determined by the Monetary Policy Council	0.05 bill rediscount rate determined by the Monetary Policy Council
Commission	0.1 percent of the loan amount, deducted from the loan amount	
Loan utilisation period	up to five years	
Grace period in the repayment of principal	up to two years	
Loan disbursement	once-off	
Repayment of interest	once per quarter	
Repayment of principal	in six-monthly instalments	

As a result of the amended provisions of the *Cooperative Bank Act* becoming effective, the Fund's Council adopted resolution No. 24/2008 concerning *the specification of the form, manner and detailed conditions for granting financial assistance from the Cooperative Bank Restructuring Fund*. The resolution adjusted the forms, manner and conditions for granting assistance from the CBRF to the scope extended by *the Cooperative Bank Act*, as to the subject and object of granting assistance. The changes were introduced in order to improve the process of application processing and granting assistance to banks, by fixing two application periods for banks requesting assistance as well as a grading system. In comparison with the previous conditions the grace period in the repayment of principal was shortened from two years to one year. In the event of assistance provided to support the merger processes and investments unconnected with mergers the loan may be disbursed once-off or in tranches. Moreover a limitation as to the amount of the financial assistance was introduced, restricting the aid that could be provided to a bank to no more than 30 percent of the bank's own funds, and specifying that the amount of all the banks' receivables towards the BGF due to the financial assistance could not exceed PLN 5,000,000 as at the date the aid is granted.

3. Requesting Loans from the Cooperative Bank Restructuring Fund

Cooperative banks' applications for assistance from the Cooperative Bank Restructuring Fund, submitted to the Fund in 2008, pertained exclusively to loans supporting merger processes and related investments.

In late 2007, five applications were being processed, and in the reporting year six more applications were submitted for loans for a total amount of PLN 51,458,000 to finance merger processes and one application for a PLN 30,000 loan for the purchase of shares in an acquiring bank. By the end of 2008 the Fund's Management Board adopted a resolution granting entities ten loans for a total amount of PLN 35,063,400:

- nine of which to support the merger process and investments of PLN 35,033,400,
- one loan for the purchase of shares in the acquiring bank for an amount of PLN 30,000.

In 2008 eleven loans were disbursed for a total of PLN 39,063,300[5]. In 2009 two applications submitted by banks in 2008 will be processed.

[5] Including one loan (PLN 4,000,000) extended pursuant to the resolution adopted in 2007.

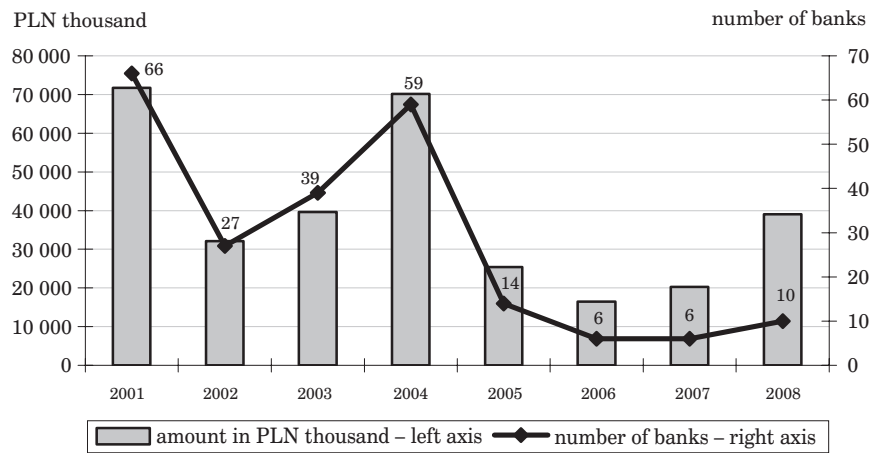
4. The CBRF Activity to Date

In 2008, banks repaid the principal in the amount of PLN 27,211,000. Twenty two banks fully paid off twenty seven loans, and three of them are still taking advantage of financial assistance.

As regards the repayments and disbursements of granted loans as at the end of 2008, forty four banks were taking advantage of the Cooperative Bank Restructuring Fund loans (fifty-eight loans) for a total debt of PLN 85,469,400.

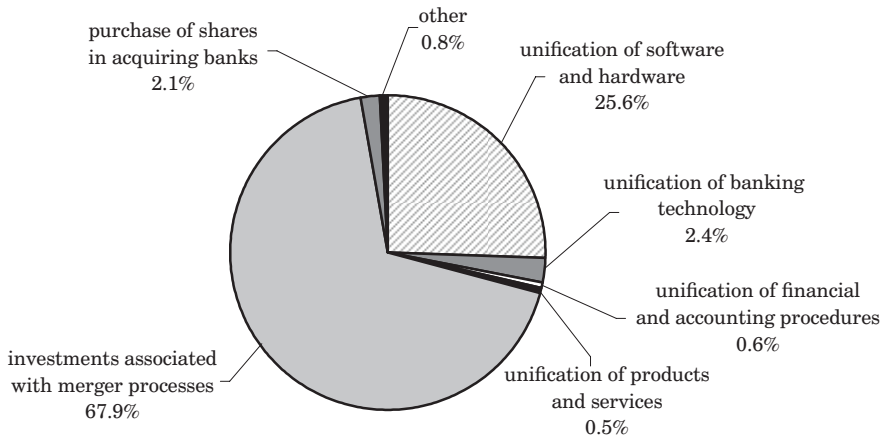
In the years 2001–2008, the Bank Guarantee Fund extended a total of one hundred and eighty-nine loans from the Cooperative Bank Restructuring Fund for a total of PLN 314,777,900, of which: PLN 308,096,400 were allocated to support merger processes and investments (i.e. 97 percent of the total values of extended loans) and PLN 6,681,500 to purchase shares in acquiring banks (i.e. 2.1 percent of the total value of extended loans). In that period the amount of the loans extended exceeded more than 2.5 times the value of the Cooperative Bank Restructuring Fund because the funds from the repayments were invested in further assistance activities (in none of the cases were there any problems with the repayment of the borrowed funds).

Diagram 2. Disbursement of loans from the CBRF in the years 2001–2008



The diagram 3 illustrates the allocation of loans granted from Cooperative Bank Restructuring Fund:

Diagram 3. Allocation of loans from the CBRF (in percent) in the years 2001–2008



V. CONTROL OF THE FINANCIAL ASSISTANCE USE

1. Direct Controls in Banks

In performing its statutory tasks set out in Article 4.2 of the Bank Guarantee Fund Act and in Article 36.3 of the Act concerning the operation of cooperative banks, their mergers and on the acquiring banks, the Fund – in accordance with the 2008 control schedule – carried out direct controls in seventeen banks utilising financial assistance from the BGF.

What is more, in the first quarter of 2008 one ad hoc control was carried out in the cooperative bank taking advantage of financial assistance from the Cooperative Bank Restructuring Fund due to its worse economic and financial standing as found during the monitoring process.

Table 7. The number of banks controlled in 2008

Banks taking advantage of the assistance	Number of banks controlled	
	from the assistance fund	from the Cooperative Bank Restructuring Fund
Commercial banks	1	–
Cooperative banks	1	16
Total	**2**	**16**

2. The Scope of Control

In each case the control covered as follows:

- ❖ in banks taking advantage of loans extended by the assistance fund – the evaluation of:
  - compliance of assistance funds utilisation with statutory objectives and objectives stipulated in loan agreements,
  - implementing the recovery proceedings plan,
  - effective utilisation of the assistance funds,
  - economic and financial standing of banks, including trends determining basic economic indices,
  - performance of obligations under loan agreements,
- ❖ in banks taking advantage of loans from the Cooperative Bank Restructuring Fund – the evaluation of:
  - compliance of utilisation of the financial assistance from the Fund with objectives specified in *the Cooperative Bank Act (…)*,
  - banks' solvency,
  - fulfilling the provisions of loan agreements, including the implementation of financial projections and securing the Fund's receivables,
  - fulfilling the requirements of *the Cooperative Bank Act (…)* as regards the distribution of balance surplus.

3. Results of Controls

It was deemed that in banks taking advantage of loans from the assistance fund, the granted funds were utilised and secured in accordance with contractual provisions. No objections were raised as to the performance of the remaining obligations under the loan agreements concluded with the BGF.

The results of controls confirmed that the financial support provided by the BGF, by assisting in the acquisition of banks at risk of insolvency, had served its purpose. The Fund's financial support allowed key objectives of the recovery proceedings plan to be met, while the restructuring of the credit portfolio of the acquired banks proceeded correctly. Thanks to the actions taken and the aid from the Bank Guarantee Fund it was possible to prevent the acquired banks from bankruptcy and avoid disbursing the guaranteed sums.

Planned controls conducted in the banks taking advantage of loans from the Cooperative Bank Restructuring Fund showed that:

- ❖ the BGF's financial assistance was utilised in accordance with the objectives specified in *the Cooperative Bank Act (…)*,

- banks were solvent and repayment of obligations towards the Fund was not threatened,
- the balance surplus was distributed in accordance with binding provisions of law and loan agreements,
- the implementation of the presented financial projections proceeded correctly,
- banks secured loans in accordance with the concluded agreements.

The conclusions stemming from the controls, cases of negligence identified during the control and Fund's stance were reflected in post-control statements, which were provided to the Management Boards and Councils of the banks and – in the event of cooperative banks – to relevant acquiring banks. In the case of three banks, the control results were also disclosed to the Financial Supervision Authority.

VI. THE TRUSTEE FUNCTION

In April 2008, the Bank Guarantee Fund completed its term as a trustee in the bank to which it granted financial assistance aimed at eliminating the risk of insolvency. The trustee's tasks were carried out by the trustee's authorised representative appointed by the Fund's Management Board.

Pursuant to the decision made by the Financial Supervision Authority, dated 17 April 2008, the Bank Guarantee Fund was recalled from the position of the trustee supervising the performance of the recovery proceedings plan for the bank and the Fund's Management Board recalled the trustee's authorised representative.

VII. COLLECTING AND ANALYSING INFORMATION ON BANKS

1. Updating and Developing Information Base

The primary sources of information on banks are their financial statements received by the Bank Guarantee Fund in 2008 from the National Bank of Poland pursuant to the *Bank Guarantee Fund Act* and the amended *Agreement concerning the subject, scope, manner and timeline for the National Bank of Poland when providing information to the Bank Guarantee Fund*, concluded on 27 December 2007.

On 25 April 2008, *the Agreement for the Use of the National Bank of Poland's Reporting Information System Website* was signed. The features of the Reporting Information System (RIS) website, developed by the National Bank of Poland for

the Fund, enable the user to download banks' financial statements using their individual taxonomies. The information from new reporting mechanisms, FINREP and COREP, are downloaded via the RIS website in XBRL taxonomy and identified in a comparable manner as in the NBP. The mechanisms of the WEBIS reporting mechanisms have not changed.

In 2008, the Fund continued design work regarding the implementation of the new reporting system – FINREP and COREP – and construction of the banks' new analytic database. The work in that respect was done with the use of the tool applications called *SIS Application*, developed by the Fund. A basic feature of that application is providing analysts with standardised, legible information structures allowing data to be processed for the purpose of analysis. They are generated in the form of reports with parameters fixed by analysts.

In addition to such reporting mechanisms as FINREP, COREP and WEBIS, a significant source of information is the data provided to the Fund directly by banks, pursuant to *Regulation No. 11/2006 of the President of the National Bank of Poland of 29 May 2006 concerning the scope, manner and timelines for the banks participating in the mandatory guarantee scheme to submit information to the Bank Guarantee Fund.* Pursuant to this regulation, banks submit information pertaining to the basis for calculating mandatory annual contributions and for establishing the fund for the protection of guaranteed deposits, as well as information concerning debt guaranteed by the Fund and the amount of funds guaranteed by the BGF. In 2008 the Fund for the first time obtained information relevant to the system, concerning an actual level of funds guaranteed in banks.

In 2008, as a consequence of the amended Bank Guarantee Fund Act, steps were undertaken to amend Regulation No. 11/2006 of the President of the National Bank of Poland of 29 May 2006 concerning the scope, manner and timelines for the banks participating in the mandatory guarantee scheme to submit information to the Bank Guarantee Fund. The amended Regulation takes account of changes in guarantee limits, in basis for calculating mandatory annual contributions, and stipulates extending and specifying the scope of information provided by banks.

On 12 June 2008, the Agreement concerning Cooperation and the Exchange of Information between the Financial Supervision Authority and the Bank Guarantee Fund was concluded. The agreement stipulates cooperation between the two institutions in order to perform their statutory tasks and to enable information exchange, in particular, to ensure the stability of the banking sector and the security of bank customers' deposits. Under this agreement signed with the Financial Supervision Authority, the Fund may gain access to supervisory information, required for correct identification of risks in the operations of each bank, as well as the situation in the industry.

2008 saw the beginning of work on the concept of System Controlling in the BGF, which comprised both operations of data warehouse – mainly for the purpose of analysing banks' operations and financial controlling covering monitoring of the organisations' own operations.

2. Bank Assessment Methodology

The Bank Guarantee Fund has its own methodology for the assessment of risks in the banking sector. By analysing the reporting and non-reporting factors, it assigns an individual risk rating to each bank. Depending on their ratings, banks are assigned to groups within the so called risk matrix.

These ratings and risk matrices are the basic source of information concerning each bank's standing. Banks identified to carry a higher risk undergo more thorough evaluation, aimed at identifying the source of the risk.

Table 8. Migration matrix for commercial and cooperative banks* in the period from 31 December 2007 to 31 December 2008

31.12.2008 / 31.12.2007	Very low	Low	Medium	High	Very high
Very low	**ComB – 20** **CoopB – 522**	ComB – 9 CooPB – 10	ComB – 1 CooPB – 0	ComB – 0 CooPB – 0	ComB – 0 CooPB – 0
Low	ComB – 1 CooPB – 22	ComB – 9 CooPB – 14	ComB – 1 CooPB – 0	ComB – 1 CooPB – 0	ComB – 2 CooPB – 0
Medium	ComB – 1 CooPB – 0	ComB – 0 CooPB – 1	ComB – 2 CooPB – 2	ComB – 1 CooPB – 1	ComB – 0 CooPB – 0
High	ComB – 0 CooPB – 0	ComB – 0 CooPB – 0	ComB – 0 CooPB – 2	ComB – 2 CooPB – 0	ComB – 0 CooPB – 0
Very high	ComB – 0 CooPB – 0	ComB – 0 CooPB – 1	ComB – 0 CooPB – 1	ComB – 0 CooPB – 1	ComB – 0 CooPB – 2

better rating
worse rating

* ComB – number of commercial banks, CoopB – number of cooperative banks.

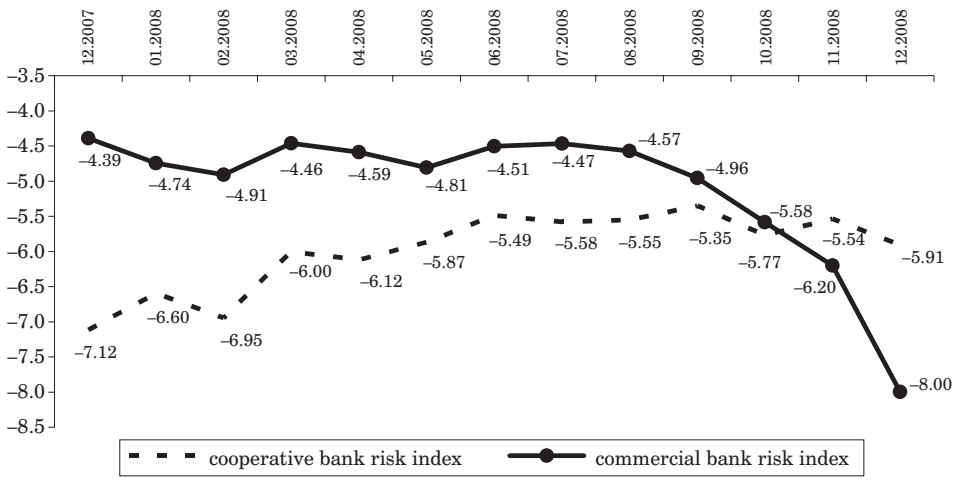
The bases for discussing risks in the entire banking sector are the so called migration matrices and risk indices. A migration matrix is used to observe the position of a bank in relation to the risk matrix in each reporting period. In 2008 the trends in banks' migration indicated that the situation in the banking sector

was going to improve. The Table 8 illustrates the migration matrix for commercial and cooperative banks in the period from 31 December 2007 to 31 December 2008.

In the period from the end of 2007 to 31 December 2008 in the case of thirty banks, improvement was reported, whereas in the case of twenty-six banks the situation in the field of risk rating deteriorated. As at the end of the analysed period two commercial banks and two cooperative banks were assigned to the high-risk category.

The risk index presents a combined, standardised assessment of the effectiveness, solvency, asset quality and the quality of off-balance sheet liabilities granted, weighted by each bank's share in the deposits of the banking sector. The risk index is calculated separately for commercial and cooperative banks. It is presented on a scale of 0 (no risk) to –100 points (highest risk). Variations in index levels reflect changes in the assessment of risk in the sector.

Diagram 4. Risk index in the banking sector



The diagram above presents the levels of risk indices in the banking sector. Risk index for the commercial bank sector deteriorated in 2008, while the index for the cooperative bank sector improved, remaining at a stable and relatively low level throughout the reference period.

In 2008 steps were taken to change the risk assessment methodology in the banking sector on the basis of new RIS reporting.

3. Analysing the Situation in the Banking Sector and Identifying Potential Risks

The analytical tasks of the Bank Guarantee Fund are performed due to the Fund's statutory authorisation to access information concerning banks, in other words the ability to be autonomous and independent in analysing banks' economic and financial standing and evaluating existing and potential risks to their operations.

Main functions of the BGF's analytical activity are: assessment of risks in the banking sector aimed at specifying the demand for funds from the deposit guarantee scheme, with the funds collected in banks in the form of the Fund for the Protection of Guaranteed Deposits in order to cover potential guarantee obligations, as well as early identification of the insolvency risk in banks, conditioning essential actions to be taken by the Fund in cooperation with the Financial Supervision Authority and other institutions forming a part of the financial safety net.

The systematic studies (monthly and quarterly) of the economic and financial situation in the banking sector, including the commercial and cooperative banking sector, were conducted, taking into account existing and potential risks. The Fund also regularly analysed the key macroeconomic data as well as structural and legal changes in the banking sector.

In 2008 in order to accurately assess the course and effects of the crisis on global financial markets, the information on incurred losses and deductions disclosed by subsequent financial institutions were updated and analysed. Special attention was devoted to financial institutions investing in banks operating in Poland.

In the reporting period projections concerning the level and structure of deposits, total capital requirements in the banking sector, as well as the value of BGF's guarantee obligations and demand for the assistance funds were prepared. When preparing the proposed mandatory annual contribution rates and the fees of the fund for the protection of guaranteed deposits for 2009, two crucial factors were taken into account: increasing the value of the guarantee to the PLN equivalent of EUR 50,000, as well as potential risks which may affect the stability of the Polish banking sector in connection with the global financial crisis. The proposed rates of the fund for the protection of guaranteed deposits and of the mandatory annual contributions for 2009 were submitted to the BGF's Council, which determined the value of rates, adopting resolutions on 19 and 26 November 2008, respectively.

4. Other Analytical Activities

In response to current problems and changes taking place in 2008 in the banking sector understood in its wider sense, a number of analytical activities were carried out concerning among other issues:

- the effect of changes on an interbank market caused by crisis on international financial markets (particularly concerning liquidity of Polish market) on the Fund's deposit and guarantee activity,
- deposit hybrid products in the context of the BGF's statutory tasks,
- the effect of deposit products on the risk of banks' reputation,
- the effect of introducing the Euro in Poland on the guarantee, assistance and investment operations of the Bank Guarantee Fund.

Moreover, due to anxiety on international financial markets, analysis was prepared in order to illustrate the changes in the deposit guarantee schemes in all the EU member states, introduced in response to the financial crisis, with special attention devoted to the increase in the guarantee limit.

5. Monitoring the Standing of Banks Taking Advantage of the Financial Assistance from the BGF

At the end of 2008 the Bank guarantee Fund monitored forty-six banks utilising financial assistance, with respect to their economic and financial standing and performance of obligations under the loan agreements.

Table 9. The number of banks monitored in 2008

Banks taking advantage of the assistance	Number of banks			
	1 January 2008		31 December 2008	
	from the assistance fund	from the Cooperative Bank Restructuring Fund	from the assistance fund	from the Cooperative Bank Restructuring Fund
Commercial banks	2	–	1	–
Cooperative banks	2	57	1	44
Total	**4**	**57**	**2**	**44**
	61		**46**	

In the analysed period five new banks which were granted aid by the Fund were included in the monitoring system and the monitoring ended in twenty banks (two banks taking advantage of loans from the assistance fund and eighteen banks taking advantage of loans from the Cooperative Bank Restructuring Fund, which paid up the financial assistance in full)[6].

All banks taking advantage of the financial assistance from the Fund were subject to the monitoring procedures specified by the BGF. The monitoring process involved, in particular, assessing the economic and financial standing and performance of obligations stipulated in loan agreements, as well as:

- ❖ in the case of banks taking advantage of loans extended by the assistance fund – the evaluation of:
  - implementation of the recovery proceedings plans,
  - effectiveness of the assistance provided,
- ❖ in the case of banks taking advantage of loans from the Cooperative Bank Restructuring Fund – the evaluation of:
  - implementation of financial projections,
  - solvency and ability to repay the extended loans.

None of the banks to which the Cooperative Bank Restructuring Fund provided assistance was found to be at risk of insolvency.

Moreover, in the case of banks which repaid the loans in full, the analysis was conducted covering:

- ❖ economic and financial standing and effectiveness of the financial assistance granted in the case of banks utilising loans from the assistance fund after the loan utilisation period has been completed,
- ❖ viability of extending and utilisation of loans, as well as performance of obligations under loan agreements as regards banks taking advantage of funds from the Cooperative Bank Restructuring Fund.

6. Other Activities

The Fund's conclusions stemming from the analysis of the WEBIS reporting and instances of an increased number of the investment funds participation units revealed in some banks taking advantage of the BGF loans were mentioned in letters sent to those banks. The Fund requested the data concerning the units held and method of their revaluation.

---

[6] Twenty-two banks repaid their debts, with eighteen banks repaying their financial obligations towards the BGF in full and four banks still taking advantage of the CBRS loans.

Since the new FINREP and COREP reporting is highly complex and the scope of information provided in reporting sheets differs from the one obtained to date, the Fund has identified a number of inaccuracies as to the preparation of COREP by banks, regarding among other things the presentation of internal capital evaluation and internal evaluation of internal capital needs. Taking into account the observed varied approaches to the presentation of those figures, the Fund requested the Financial Supervision Authority for explanations in this respect.

VIII. INVESTMENT ACTIVITY

Pursuant to *the Bank Guarantee Fund Act*, the Fund may purchase solely securities issued, endorsed or guaranteed by the State Treasury or the National Bank of Poland. Moreover, the Fund may purchase participation units of the money market funds and establish term deposits with the National Bank of Poland.

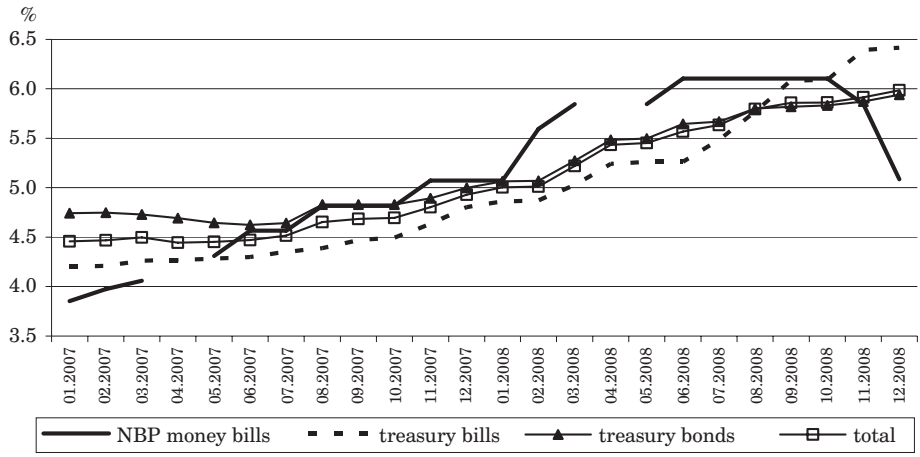
In 2008, the Fund carried out a total of one hundred and sixty two purchase transactions as part of its investment activity (including eighty-five transactions involving treasury bonds, twenty transactions involving treasury bills and fifty-seven transactions on NBP money bills) as well as thirteen sales transactions (including ten transactions involving treasury bonds, two transactions involving treasury bills and one transaction on NBP money bills).

The turnover volume, taking into account nominal values, for the purchase transactions amounted to PLN 4,880,433,000, including: PLN 3,627,063,000 for treasury bonds transactions, PLN 810,870,000 for the treasury bills transactions and PLN 442,500,000 for the NBP money bills transactions. For sales transactions, the turnover volume, taking into account nominal values, amounted to PLN 958,530,000.

Average profitability of securities purchased in the analysed period was 6.23 percent (with 6.24 percent for treasury bonds, 6.36 percent for treasury bills and 5.84 percent for NBP money bills respectively)[7]. No operations were conducted in the area of investment fund participation units of the money market or the allocation of assets in the form of NBP term deposits due to low profitability of these instruments.

[7] Average profitability of securities is provided on the basis of and 365-day period in order to facilitate the comparison.

Diagram 5. Profitability of securities in the BGF's portfolio (on the basis of a 365-day period) as at the end of each month



Income from securities in 2008 amounted to PLN 284,100,000[8], including:

- ❖ PLN 230,800,000 from treasury bonds,
- ❖ PLN 52,800,000 from treasury bills,
- ❖ PLN 5000,000 from NBP money bills.

In 2008, the BGF reported an increased share of treasury bonds in the total nominal value of the securities portfolio from 65.4 percent (as at the end of 2007) to 92.6 percent.

Table 10. Structure of the Fund's securities portfolio as at 31 December 2007 and 31 December 2008

Items	Structure		
	31 December 2007	31 December 2008	Change
	%		percentage points
NBP money bills	0.2	0.2	0.0
Treasury bills	34.4	7.2	–27.2
Treasury bonds	65.4	92.6	+27.2
Total	**100.0**	**100.0**	–

[8] The result has been calculated as follows:
a) for discount securities (i.e. NBP money bills, treasury bills and zero-coupon bonds) as the value of discount settled over time,
b) for coupon bonds as income from interest settled over time and value of premium/discount settled over time.

Diagram 6. Duration of individual securities in the GBF portfolio

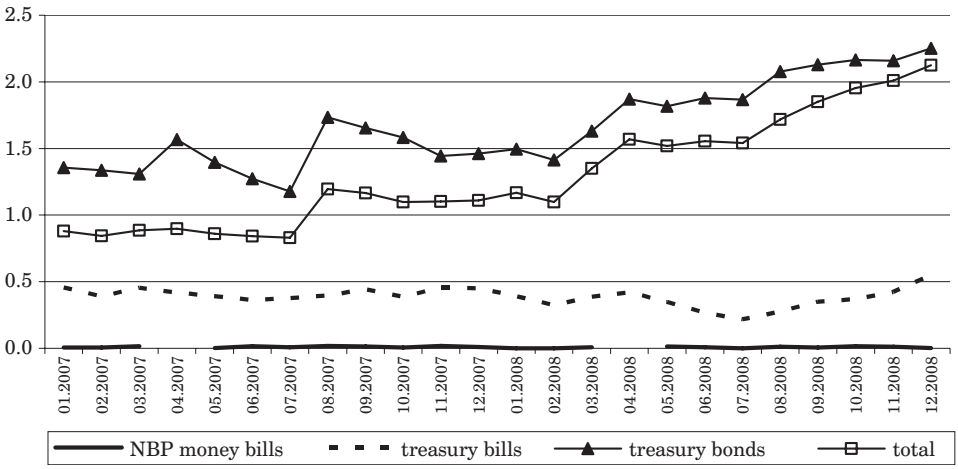
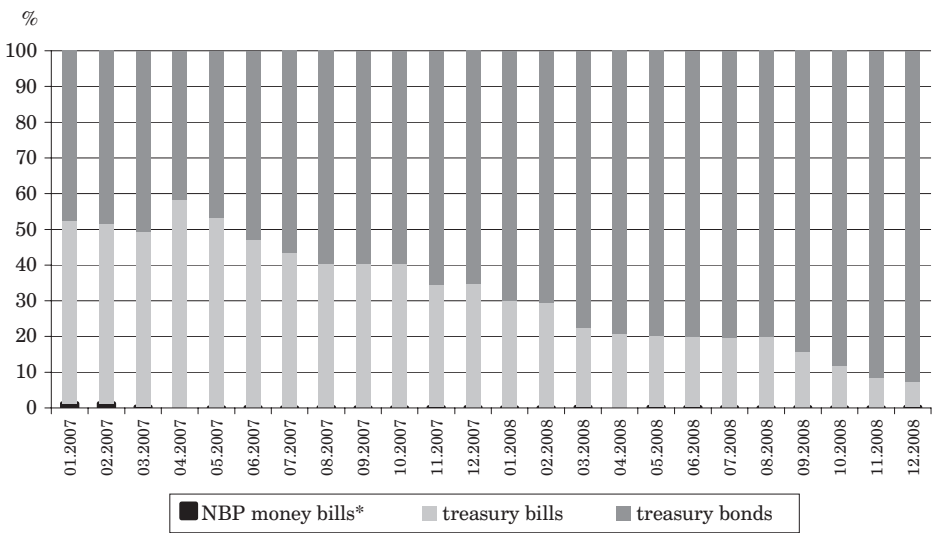


Diagram 7. Share of individual securities in the GBF portfolio



* In the analysed period the share of NBP money bills did not exceed 0.23 percent, therefore it is not clearly visible on a diagram.

The increased profitability of purchased securities allowed the profitability of the entire BGF securities portfolio to be increased from 4.94 percent (the state of the portfolio as at the end of 2007) to 5.99 percent (the state of the portfolio as at the end of 2008). In an analogous period the duration of the portfolio increased from 1.2 to 2.1 years.

As a part of the cooperation between the Fund and banks as regards investment activity, two new framework agreements were signed specifying the terms and conditions and way of concluding debt security transactions.

Moreover, in the fourth quarter of 2008, a document was adopted concerning the Fund's investment policy study accounting, among other issues, for the effect of the crisis on global financial markets on the Fund's liquidity and ability to fully perform its statutory (guarantee and assistance) obligations.

IX. FUNDS AND FINANCES

1. Sources of Financing and Funds

Among statutory sources of financing of the Bank Guarantee Fund's activity are:

- statutory fund,
- assistance fund,
- sums provided to the Fund by the banks – from funds for the protection of guaranteed deposits set up by the banks for depositors to be able to execute the guarantee,
- Cooperative Bank Restructuring Fund,
- reserve fund,
- funds obtained from bankruptcy estates,
- income from interest rate on loans extended to banks,
- income from securities and funds deposited in the Fund's accounts operated by the National Bank of Poland,
- funds obtained as non-repayable foreign financial assistance,
- State subsidies on terms stipulated in the public finance law, granted upon the Fund's request,
- funds from short-term credit facility extended by the National Bank of Poland,
- loans granted from the State budget,
- other income i.e. from lease of office space, parking spaces, sale of fixed assets.

The Bank Guarantee fund utilises the obtained funds to finance:

- tasks associated with guaranteeing deposits,
- tasks associated with granting aid to entities participating in the guarantee scheme,
- tasks associated with extending loans to cooperative banks in order to support the banks' merger processes,
- operating costs of the Fund's Office and authorities.

In 2008 the level of *statutory and reserve fund* of the Bank Guarantee Fund changed as a result of the resolution adopted by the Fund's Council on 19 November 2008, concerning *the distribution of balance surplus for 2007 and balance surplus for previous years.*

In accordance with the provisions of the amended Bank Guarantee Status, the fund for sums obtained from bankruptcy estates was established in the fourth quarter of 2008. The sums obtained from the bankruptcy estates as at the date of distribution of the BGF's balance surplus for 2007 and previous years as well as the sums obtained from bankruptcy estates in 2008 went towards that fund.

As at 31 December 2008 the value of the fund comprising sums obtained from bankruptcy estates amounted to PLN 52,854,400.

2. 2008 Financial Plan and its Implementation

The breakdowns presented below illustrate the degree to which the 2008 Financial Plan has been implemented.

Table 11. Profit and loss account

Revenues/costs	Plan for 2008 (amount in PLN thousand)	Implementation as at 31 December 2008 (amount in PLN thousand)	Plan implementation index (in %)
I. Total revenues	**275 534.0**	**289 216.0**	**105.0**
1. Revenues from interest rates and commissions on repayable financial assistance granted to banks	3 227.0	3 418.4	105.9
2. Revenues from securities traded in*	270 887.0	284 080.2	104.9

Table 11. Continued

Revenues/costs	Plan for 2008 (amount in PLN thousand)	Implementation as at 31 December 2008 (amount in PLN thousand)	Plan implementation index (in %)
3. Other revenues	1 420.0	1 717.4	120.9
II. Operating costs of the Fund's Office and authorities	**20 101.0**	**17 812.6**	**88.6**
1. Costs of remunerations with statutory liabilities	11 676.0	11 138.8	95.4
2. Outsourced services	2 502.0	2 361.3	94.1
3. Services associated with using and managing the building	1 141.0	1 085.7	95.2
4. Amortisation and depreciation	2 180.0	2 140.3	98.2
5. Other costs	2 602.0	1 086.5	42.0
III. Financial profit (loss)	**255 433.0**	**271 403.4**	**106.3**

* Pursuant to the BGF's special accounting rules applicable in the reporting period, debt securities are revaluated in accounting records according to current sale price, with the sale price being the purchase price corrected against interest calculated as at the balance sheet day or the part of discount as at that day.

Table 12. Balance sheet

Items	Plan for 2008 (amount in PLN thousand)	Implementation as at 31 December 2008 (amount in PLN thousand)	Plan implementation index (in %)
I. Assets	**6 016 601.0**	**6 072 593.0**	**100.9**
1. Loan receivables	546 711.0	538 660.9	98.5
2. Securities	5 405 470.0	5 470 714.8*	101.2
3. Tangible fixed assets and intangible assets	63 840.0	62 858.9	98.5%
4. Other assets	580.0	358.4	61.8
II. Liabilities	**6 016 601.0**	**6 072 593.0**	**100.9**
1. Statutory fund	1 625 826.0	1 637 025.5	100.7

Table 12. Continued

Items	Plan for 2008 (amount in PLN thousand)	Implementation as at 31 December 2008 (amount in PLN thousand)	Plan implementation index (in %)
2. Reserve fund	670 000.0	669 882.7	100.0
3. Funds obtained from bankruptcy estates	X.	52 854.4	X
4. Assistance fund:	3 288 044.0	3 314 038.0	100.8
a) used	452 589.0	452 590.0	100.0
b) to be used	2 835 455.0	2 861 448.0	100.9
5. Cooperative Bank Restructuring Fund:	123 410.0	123 409.7	100.0
a) used	94 122.0	85 469.4	90.8
b) to be used	29 288.0	37 940.3	129.5
6. Financial profit (loss)	255 433.0	271 403.4	106.3
7. Other liabilities	53 888.0	3 979.3	7.4
8. Profit(loss) from previous years	0.0	0.0	X.
III. Investment outlays	**720.0**	**518.0**	**71.9**
1. Building	0.0	32.0	X.
2. IT	720.0	449.7	62.5
3. Other outlays	0.0	36.3	X.

* Pursuant to the BGF's special accounting rules applicable in the reporting period, debt securities are revaluated in accounting records according to current sale price, with the sale price being the purchase price corrected against interest calculated as at the balance sheet day or the part of discount as at that day.

3. Other Activities

On 17 December 2008 the Bank Guarantee Fund's Council adopted a resolution concerning the *2009 Financial Plan of the Bank Guarantee Fund*, in line with which the Fund is to manage its finance in 2009.

In the analysed period, since the Bank Guarantee Fund Act, the BGF's Statute and BGF's special accounting rules were amended, steps were taken to amend the Fund's internal regulations concerning: Rules for managing finances, drafting, circulating and controlling financial and accounting documentation, accounting rules, an accounts plan and an inventory in the Bank Guarantee Fund.

X. ORGANIZATIONAL STRUCTURE AND HUMAN RESOURCES

1. Structure of the Fund's Office

In the period from 1 January to 31 December 2008 the Bank Guarantee Fund performed its statutory tasks through the following organisational units responsible for the tasks assigned to them:

- **Treasury and Analysis Department** – responsible for collecting and analysing information concerning the economy and especially the banking sector, preparing macroeconomic studies and projections as well as assessing the economic and financial standing of entities participating in the guarantee scheme, and conducting investment activity by investing the Fund's available financial resources,
- **Controlling, IT and Administration Department** – responsible for creating databases and disclosing information, as well as preparing reports essential for the Office's operations, providing IT and administrative assistance and maintaining the reliability of the technical infrastructure and the Fund's office security system,
- **Financial Assistance and Deposit Guarantee Department** – responsible for assisting banks at risk of insolvency, trading in debts acquired from these banks and providing assistance to banks from the cooperative bank restructuring fund in order to support merger processes in those banks, as well as performing tasks related to the Fund's duty to ensure compensation payouts to depositors,
- **Financial Department** – responsible for managing the Fund's finances and accounting,
- **Control and Monitoring Department** – responsible for supervising and monitoring the financial and economic standing of banks that have received assistance from the Fund, in terms of proper and suitable use of the financial assistance received and the implementation of corporate recovery or similar schemes as well as for monitoring the standing of the banks taking advantage of the Fund's assistance and serving as the trustee in these banks,
- **The President's Cabinet** – responsible for ensuring support for the Fund's authorities, legal assistance, workflow management and employee matters, as well as cultivating relationships with foreign deposit guarantee institutions and financial institutions, and providing public information and promotion of the Fund,
- **Internal Control Position** – responsible for evaluating the activity of the Fund's organisational units in terms of accuracy and compliance with applicable laws and the Fund's internal regulations.

Moreover, there are two permanent interdepartmental committees in the BGF:

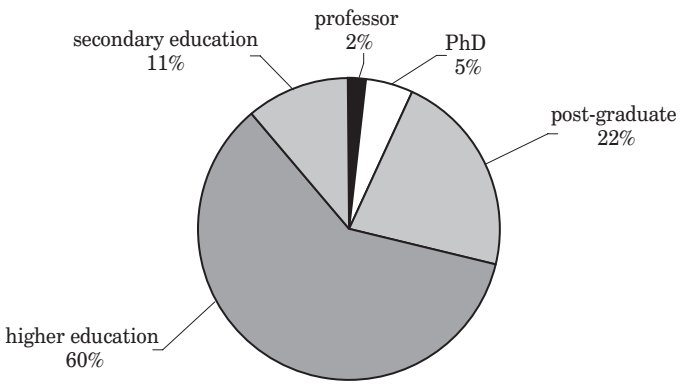
- Asset Management Committee, which determines the policy for investing the Fund's available financial resources,
- Committee for Assessment of Applications for Assistance, responsible for approving or rejecting the banks' applications for financial assistance from the assistance fund and for loans from the cooperative bank restructuring fund, prepared by the Assistance Activity and Deposit Guarantee Department.

The Management Board Members, in accordance with the competencies assigned to them in the BGF's Management Board By-laws, supervised the following organisational units:

- **President of the Management Board – Małgorzata Zaleska** – the President's Cabinet, Treasury and Analysis Department and Internal Control Position,
- **Acting Management Board Member – Jan Koleśnik** – Assistance Activity and Deposit Guarantee Department[9],
- **Management Board Member – Krystyna Majerczyk-Żabówka** – Control and Monitoring Department and Financial Department[10],
- **Management Board Member – Adrian Markiewicz** – Assistance Activity and Deposit Guarantee Department,
- **Management Board Member – Marek Pyła** – Controlling, IT and Administration Department.

2. Employment

Diagram 8. Level of education among the BGF employees



[9] From 26 November 2008.
[10] From 23 November 2007.

As at 1 January 2008, the Bank Guarantee Fund employed seventy people, while as at 31 December 2008 it employed sixty-five people. Fifty-eight, i.e. eighty-nine percent of the Fund employees are university graduates or higher. The average age of employees was 42 years.

3. Employees' Matters

Among the most important tasks performed in 2008 in terms of employee matters was drafting new *Work Regulations* introducing employer's obligations as to prevention of employment discrimination and mobbing and specifying obligations in connection with dealing with newcomers to the job.

Moreover, the following internal regulations governing employee issues were introduced:

- amendments to the Regulations concerning Remunerations for the Employees of the Bank Guarantee Fund Office,
- rules governing the recruitment of employees of the Bank Guarantee Fund Office,
- rules governing the circulation of documents associated with employment, change of the employment agreement provisions or termination of employment relationship.

The Fund carried out a student work placement programme for university and college students, mainly from economic faculties. Nine students who took part in the programme had a chance to see the Fund operating and performing its tasks.

In 2008 steps were taken to prepare and implement in the Fund the Employee Pension Scheme in the form of an agreement with the insurance company concerning group life insurance for employees. The scheme has been in force since October 2008, when it was registered by the Financial Supervision Authority. The Programme introduced is one of the tools used to manage personnel, aimed at attracting and keeping well qualified employees as well as motivating them to improve their performance at work.

4. Training Activity

Training policy implemented in 2008 was aimed at broadening the employees' expertise, indispensable for performing current tasks. The organised courses and trainings were aimed at complementing and developing employees' significant skills. The issues covered by trainings include:

- economic capital and ICAAP process in the bank,
- FINREP/COREP financial reporting and Reporting Information System,
- IFRS – new and changed standards,
- register of securities,
- Securities market (Study of Financial Market Brokers),
- requirements of MiFID and their effect on banks' operations,
- managing credit facility risk in times of crisis on financial markets,
- using applications of MS Office (MS Excel, MS Word, MS Access) – e-learning training completed by more than a half of the employees of the BGF's Office,
- principles of personal data protection.

In order to ensure that it will be possible to entrust the guarantee-related tasks to employees who normally deal with other issues within the Fund, the employees were trained in Procedures for disbursing guaranteed deposits. The training programme covered in particular: discussing the procedures for suspending bank's operations and afterwards declaring its bankruptcy, preparing and verifying a list of depositors, the procedures for disbursing of guaranteed deposits , also the ones executed directly by the BGF. The employees of all organisational units of the Fund's Office participated in the training.

Another project involving a cycle of training courses for management was started. The training is aimed at improving managerial qualifications. In line with the objectives worked out on the basis of identified needs, the purpose of the training was to develop interpersonal skills and strategic management ability indispensable for determining and performing tasks, as well as goals and skills of systemic management.

Another cycle of the trainings started is aimed at improving the ability to speak in public and teaching people the principles of proper articulation and comprehensible self-expression.

As part of improving individual qualifications and education level, the employees of the Fund's Office continued to study management, administration and risk management.

English courses at all levels were also continued.

What is more, the Fund's employees carried out seven trainings for circa three hundred bank employees (including the employees of cooperative banks which are shareholders of BPS SA) on the deposit guarantee scheme in Poland. As part of a cycle of trainings organised by the National Bank of Poland for cooperative banks, the BGF's representative explained how to prepare new FINREP reporting sheets concerning the Fund's operations.

5. IT and Administrative Activities

In 2008, the Fund implemented plans connected both with its current and long-term IT needs. They included design and software development as well as the service and maintenance of the ICT infrastructure, used hardware and software, system administration, ensuring integration of databases, protection, security and information archiving. The most important projects carried out in 2008 included the implementation of new reporting mechanisms FINREP and FINREP, including the preparation of:

- an application for the analysis of dependencies defined by the NBP for XBRL taxonomies,
- an application for the visualisation of the content of a database holding the SIS reporting data obtained through the SIS Portal,
- an application for creating flexible reports from the SIS databases,
- tools for creating report definitions, taking into account data hierarchy,
- software for editing and calculating SIS aggregates, essential for analytical purposes.

In the reporting period the Fund conducted works on the Integrated Information System having the function of a general ledger and subsidiary ledgers used to:

- register loans from the assistance fund and the Cooperative Bank Restructuring Fund,
- register and manage securities.

Moreover, the Fund reviewed the functionality and analysed the possibility of extending the Trustee programme used for the performance of the tasks connected with the execution of guarantees by the BGF. As a result of the amended Bank Guarantee Fund Act becoming effective, the above programme has been updated and its name changed to Depositor.

As part of its administrative activities, in 2008, the Fund completed a number of renovation and modernisation works, including:

- development of a system directly informing the Fire Service of any fire hazards,
- completion of the essential adaptation and renovation works connected with the rental of free space on the first and second floor and on the ground floor of the building.

In 2008, the Fund finalised agreements for the rental of free office space with, among other contractors, the National Centre for Research and Development.

6. Activities of the Fund's Management Board

In 2008, the Fund's Management Board completed the tasks resulting from the Bank Guarantee Fund Act, in particular the ones connected with:

- ensuring that the Fund will be able to execute guarantees,
- being ready to provide assistance if a bank is threatened with insolvency,
- providing assistance to cooperative banks pursuant to the provisions of the Cooperative Bank Act,
- managing the Fund's resources,
- collecting and analysing information on banks participating in the guarantee scheme.

In the analysed period, the BGF's Management Board held fifty-two meetings altogether, during which decisions referring to the following issues have been made:

- assistance activity,
- verifying whether banks properly use financial assistance provided by the Fund,
- monitoring the economic and financial standing of banks,
- analytic and investment activity,
- managing finances,
- internal legislation,
- managing the workflow of the Fund's Office.

Table 13. Meetings of the BGF's Management Board and resolutions adopted in 2008

Number of meetings held by the BGF's Management Board	**52**
Number of resolutions adopted by the BGF's Management Board, including resolutions regarding the following issues:	138
assistance activity and execution of guarantees	29
verifying the use of financial assistance and monitoring	26
analytic as well as investment and deposit activity	12
activity related to the preparation of information and reports essential for the Office's operations, provision of IT, technical and administrative assistance	10
legislative activity, working with foreign deposit guarantee institutions, employee matters, providing information, promotion, managing workflow and providing support for the BGF's authorities	42
other areas of activity: managing BGF's finances, evaluating the activity of the Fund's organisational units	19

7. Activity of the Fund's Council

In performing the tasks provided for in the Bank Guarantee Fund Act and Statute, in 2008, the Fund's Council held 15 meetings, during which it adopted 25 resolutions and examined or became familiar with the motions and information submitted by the Fund's Management Board pursuant to the Council's work schedule or following the Management Board's own initiative.

In exercising its rights to introduce new regulations, the Council adopted the following resolutions:

- concerning:
  - the interest rate for 2009, determining the amount of funds for the protection of guaranteed deposits set up by the entities participating by the mandatory guarantee scheme,
  - the interest rate of the mandatory annual contribution for 2009 – paid to the Bank Guarantee Fund by the entities participating in the mandatory guarantee scheme – as well as determining the date as at which the total amount of the capital requirements due to individual types of risk and capital requirements due to exceeding the limits and violating other norms provided for in the Banking Law multiplied by 12.5 constitutes the basis for calculating the annual contribution and determining the deadline for making the payment,
- determining the methods, manner and detailed requirements for granting repayable financial assistance to cooperative banks from the Cooperative Bank Restructuring Fund.

Pursuant to its control and supervisory powers, the Council:

- presented its opinions regarding proposals to grant loans to banks from the Cooperative Bank Restructuring Fund,
- once per quarter examined the results of the Fund monitoring and performing control tasks with respect to banks utilising BGF's loans and the Fund serving as a trustee supervising the performance of the bank's recovery proceedings plan,
- examined quarterly reports on the Fund's activity prepared by the Management Board,
- evaluated the implementation of the BGF's operational plan for 2008,
- distributed the balance surplus for 2007 and the balance surplus for previous years,
- adopted *The BGF's Operational Plan* and *Financial Plan for 2009*.

The Council performed its control and supervisory functions with respect to the Management Board and the Fund's Office through permanent problem teams (Legal and Organisational Team, Financial Management Team, Assistance Activity Team, Deposit Guarantee Team), which are composed of delegated Council members. The above teams evaluated task performance by providing their opinions

regarding the Management Board's quarterly reports on the Fund's activity and prepared opinions and statements before the Council reached decisions regarding key issues lying within its competence.

On 6 May 2008, following the recommendation of the Legal and Organisational Team, the Council decided to recall Mrs. Joanna Wielgórska-Leszczyńska from the function of the Vice-President of the Management Board.

Mrs. Joanna Wielgórska-Leszczyńska was suspended in her duties as the Vice-President of the Management Board from 23 November 2007. It must be emphasised that the BGF finance management tasks provided for in the operational plan were fulfilled in 2008, despite the fact that for several months the Management Board consisted of only four members.

As a result of this decision, the Fund commenced a recruitment procedure for the position of a Management Board member responsible for financial supervision. It was agreed that the institutions which had their representatives on the Council, i.e. Ministry of Finance, the National Bank of Poland and the Polish Bank Association, will present candidates, who – after having their qualifications verified by the Legal and Organisational Team which will also check whether the candidates fulfil all formal requirements – will recommend to the Council the candidates that they have chosen for further recruitment. In 2008, the process of selecting a member of the Fund's Management Board responsible for financial supervision continued.

The Assistance Activity Team conducted a complex control of assistance and deposit guarantee operations as of supervising the works of the Assistance Activity and Deposit Guarantee Department. Main reservations concerned delays in the implementation of internal legal acts regulating issues connected with the provision of assistance and execution of guarantees as well as lengthy processing of applications submitted by banks requesting financial assistance. On 26 November 2008, the Council decided that there was a need to change the person responsible for supervising the Fund's activity connected with assistance and deposit guarantee and decided to release Mr. Adrian Markiewicz from the duty of supervising the Assistance Activity and Deposit Guarantee Department and delegate the related tasks to Mr. Jan Koleśnik who was also appointed a member of the Fund's Management Board.

In connection with the situation on global financial markets occurring in the second half of 2008, the Fund's Council devoted special attention to the possible consequences of the global crisis for the Polish market and analysed the risk of it spreading to the Polish financial market. As every month, the Management Board provided information on the situation on global markets and the national market together with projections as to their development, on the basis of which the Council analysed the possible sources of problems faced by international financial institutions as well as the reasons behind the changing situation of the Polish banking sector and the direction of such changes. At the same time, the Council

considered the best way to utilise resources available to the Fund – taking into account any additional sources of financing – in order to ensure stability of the sector and security of the funds deposited in the banking system. The Council also considered the relations between banks and other entities offering financial services, including operational services, in the context of the development of the so-called structured products market and the scope of guarantee connected with such products offered by the Bank Guarantee Fund. The analyses were based on materials prepared by the Fund's employees on the basis of available macroeconomic data, bank reports and information about specific entities participating in the guarantee scheme. As part of the quarterly evaluation of the financial situation of the banking sector, the Council devoted special attention to the analysis of the situation of endangered banks and banks benefiting from the Fund's financial assistance. In connection with the ongoing debate on the future shape of the compensation scheme and the possibility of integrating guarantee activity within the banking and capital markets, the Council examined analytical and conceptual materials as well as proposals of directional legislative changes connected with the idea of entrusting the Fund with certain tasks related to the management of the investor compensation scheme.

Acknowledging the necessity to intensify cooperation between institutions responsible for the financial sector and being aware of the need to introduce legislative solutions which would ensure ongoing exchange of information – also at the level of direct contacts between the representatives of such institutions – the Council of the Fund submitted a request to the Minister of Finance asking him to consider the following issues when preparing new legislation:

- the need to reinforce the BGF's statutory right to obtain information on entities offering banking services,
- the justifiability of restoring the President of the BGF's Management Board to a position on a banking supervisory body,
- the need to ensure that the Fund participates in the works of the Financial Stability Committee.

The Council examined information concerning legislative works commenced in connection with the Government's plans to amend the provisions regulating the operation of the Bank Guarantee Fund.

In view of the financial markets' downturn and the fact that Polish economy is threatened by the financial crisis, the Fund's Council emphasised the necessity to ensure good cooperation between the BGF and the Office of the Polish Financial Supervision Authority, and especially the efficient flow of information relating to supervisory issues essential for the performance of the Fund's statutory tasks. This matter is of primary importance in planning the Fund's activities and for the functioning of the entire financial safety net. The Council expressed its position by asking the Chairman of the Polish Financial Supervision Authority to tighten

cooperation between the two institutions and requesting the Polish Financial Supervision Authority to more readily satisfy the Fund's needs regarding requests for information on banks participating in the statutory guarantee scheme.

XI. NATIONAL AND INTERNATIONAL COOPERATION

1. National Cooperation

1.1. Cooperation regarding banking sector

On 24 October 2008, the President of the Fund's Management Board was invited by the President of the Republic of Poland to participate in a meeting held by the President with representatives of economic and financial institutions, devoted to current issues faced in the wake of the crisis on global financial markets and its potential effect on Poland's economy.

The BGF worked with the Ministry of Finance primarily on regulatory matters or approving or rejecting draft legislation pertaining to the Bank Guarantee Fund (in particular the Regulation amending the BGF's Statute and the Regulation on special accounting rules to be followed by the BGF) or other financial market institutions. The representatives of the Fund and the Ministry of Finance presented their positions, opinions and proposals both in writing, during conferences held in order to reach an agreement, and as part of their working relationships. The Fund participated in preparing positions regarding the documents of the European Commission which referred to issued connected with deposit guarantee.

In 2008, the Fund continued to participate in the initiatives of the Financial Market Development Council operating within the Ministry of Finance. The representatives of the BGF participated in the Council's meetings during which the parties discussed the crucial issues concerning the Polish financial market.

2008 saw the conclusion of the discussions, commenced the year before, between the Bank Guarantee Fund and the Financial Supervision Authority with regard to regulating the principles of their cooperation. An agreement, specifying the terms of cooperation and exchange of information between the two institutions was signed on 12 June 2008.

The Fund continued to work together with the National Bank of Poland, primarily towards obtaining information on the banking sector, required by the Fund for the performance of its statutory tasks.

To promote cooperation with the banking sector, a meeting was held between the Fund and the representatives of the banking sector in order to negotiate the annual contribution amounts and the guaranteed sums protection fund for 2009.

In addition, discussions were held with representatives of banks that acquired cooperative banks with respect to the assumptions of the proposed resolution of the BGF's Council, which stipulated the form, manner and detailed conditions of providing financial assistance from the Cooperative Bank Restructuring Fund.

Moreover, during the period covered by the report, the Fund initiated a meeting with the Management Board Presidents of Revision Committees, aimed at facilitating the exchange of information and experiences with respect to reviewing and assessing the condition of cooperative banks, including the findings of the audit of the banks' financial statements.

The Fund remained in contact with the acquiring banks informing them, among other matters, about the Management Board's decisions regarding the provision of financial assistance to cooperative banks being acquired.

1.2. Cooperation regarding national legislation

In 2008, the BGF employees participated in conferences devoted to discussing draft amendments to the Bank Guarantee Fund Act and other acts, and maintained regular working relationships with the Ministry of Finance employees responsible for financial institution legislation. As a result, numerous proposals, opinions and statements were drafted and submitted, pertaining to the directions of the necessary amendments and to specific, detailed measures to be implemented.

The Bank Guarantee Fund participated in legislative processes connected with preparing the following draft acts:

- amendment of the Bank Guarantee Fund Act,
- the Act amending the Bank Guarantee Fund Act and Other Acts (the Banking Law, the Cooperative Bank Act, the National Bank of Poland Act, the Supreme Audit Chamber Act),
- the Act concerning the Establishment of the Financial Stability Committee,
- the Act Amending the National Bank of Poland Act,
- the Act concerning the Support for Financial Institutions provided by the State Treasury,
- the Regulation of the Council of Ministers amending the BGF's Statute,
- the Regulation of the Minister of Finance concerning special accounting rules to be followed by the BGF.

The representatives of the BGF also participated in the meetings of parliamentary committees and subcommittees, including:

- the Sejm Public Finances Committee and the permanent financial institutions subcommittee – in connection with the preparation of draft acts amending the Bank Guarantee Fund Act,

- ❖ the permanent financial institutions subcommittee of the Sejm Public Finances Committee – meeting held in connection with the situation on financial markets,
- ❖ the Senate Budget and Public Finances Committee – in connection with a draft amendment to the Bank Guarantee Fund Act.

As a result of a legislative process, the following legal acts concerning the Fund have been issued:

- ❖ the Act Amending the Bank Guarantee Fund Act of 3 October 2008 – amending the basis for calculating the annual contribution and the maximum rate (amendment entered into effect on 3 November 2008);
- ❖ the Act Amending the Bank Guarantee Fund Act and of Other Acts of 23 October 2008, implementing or amending provisions concerning:
  - increasing the limit of guaranteed deposits to the PLN equivalent of EUR 50 000 – by 100%, together with authorising the Council of Ministers to temporarily increase the amount and percentage of guaranteed deposits,
  - the definition of the depositor,
  - the Fund's authorities,
  - the option of financing the BGF from the State budget (via subsidies and loans),
  - the option for the Fund to take out a short-term loan from the NBP.
  - the BGF's terms of cooperation with the PFSA and the NBP regarding the provision of information on the situation of the entities participating in the guarantee scheme.

In order to continue the analytic and design efforts commenced in 2007, the Fund developed the assumptions for the concept of broadening the responsibilities of the Bank Guarantee Fund by including the task of managing the investor compensation scheme. The Fund prepared a proposal of legislative changes and materials containing a comparative study of the deposit guarantee scheme and the investor compensation scheme, together with foreign experience, and characterised potential risks involved for the Bank Guarantee Fund in taking over the compensation scheme, as well as the costs of operating the consolidated schemes.

1.2.1. Litigation Proceedings

As in 2007 Bank Handlowy w Warszawie SA did not settle the treasury bonds transaction and as the BGF became entitled to a contractual penalty, the Fund lodged a payment claim with the Court of Arbitration operating under the auspices of the Polish Bank Association. As at the end of 2008, a verdict has not been reached.

1.3. Participation in Conferences and Seminars

In 2008, the Members of the Management Board and employees of the BGF participated, also as speakers, in professional, free of charge seminars and conferences devoted to economic and financial, including:

- a series of academic seminars organized by the National Bank of Poland entitled: Risk and Stability of the Financial System – Evaluation and Management, Temptation to Misappropriate as the Reason for and Result of Financial Instability, Inflation on Polish and International Markets, Macro- and Microeconomic Implications of Globalisation for the Polish Economy, Effect of Euro Implementation on Price Transparency and Inflation and Bayesian Comparison of Econometric Models and Knowledge Combination (basic information and areas of application),
- academic conference entitled Common Currency and its Future: Lessons for the New Member States – organised by the National Bank of Poland,
- conference entitled Influence of the American Crisis on the Security and Stability of Financial Markets in the EU and in Poland – organised by the Senate of the Republic of Poland,
- panel discussion with prof. dr hab. Andrzej Sławiński on the perspectives of inflation and monetary policy development in Poland,
- lecture of Edward C. Prescott – Nobel laureate in Economy,
- conference entitled *Integrated Supervision – Chances and Challenges* – organised by the Polish Financial Supervision Authority,
- conference Innovations on Financial Markets 2008 – organised by the National Depository for Securities,
- Bank Forum 2008, which focused on the following issues: *Conclusions Drawn from Polish and Foreign Experience for the Development of the Baking Sector in Poland* – organized by the Polish Bank Association,
- meeting entitled Role of the Banking Sector in the Development of Polish Economy and intercommunity discussion – organized by the Management Board of the Polish Bank Association as part of the 19th General Meeting of the PBA,
- Banking Top Management Forum entitled Stability of the Banking System in the Era of the Subprime Crisis,
- special conference entitled Is the Polish economy threatened by the financial markets crisis? organised by the **Polish Confederation of Private Employers Lewiatan**,
- various conferences focusing on financial markets, European integration and retail banking organised by academic institutions such as the Maria Curie-Skłodowska University in Lublin, Rzeszów University of Technology, Wrocław University of Economics, Gdańsk Academy of Banking, Warsaw School

of Economics and the University of Warsaw in cooperation with the Credit Information Bureau (Biuro Informacji Kredytowej), including in particular:

- 8th National Polish Academic Conference entitled Financial Market. European Integration as a Source of Inspiration – organised by the Maria Curie-Skłodowska University in Lublin,
- conference of Finance Departments 2008 entitled *Contemporary Finances, Condition and Perspectives*,
- conference entitled WROFin 2008 – Standards, Models and Mechanisms of Retail Banking – organised by the Wrocław University of Economics,
- Retail Banking Congress – organised by the Gdańsk Academy of Banking.

Together with the Polish Financial Supervision Authority and the Polish Bank Association, the Fund was awarded patronage over the 3rd Bank Risk Congress entitled Implementation of Advanced Methods of Bank Risk Evaluation organised by the Credit Information Bureau on 20 October 2008. During the Congress, the BGF's Management Board President gave a presentation entitled Experience of the Bank Guarantee Fund Connected with the Methodology of Identifying Threats in Banks Participating in the Mandatory Deposit Guarantee Scheme. The Fund's representatives also gave a presentation on the most important changes in the cooperative bank sector which took place between the end of 1996 and end of June 2008 as well as the effect of such changes on the stability of the banking system in Poland.

2. International Cooperation

2.1. Cooperation with International Organisations

On 14 February 2008, the Fund joined the International Association of Deposit Insurers (IADI), whose primary objective is to work towards the stability of financial systems by promoting international cooperation with respect to deposit insurance and by cultivating relations with foreign deposit insurers and other institutions. By the end of 2008, the IADI covered 52 deposit guarantee schemes from around the world.

In 2008, the Fund cooperated with deposit insuring institutions, for instance within the European Forum of Deposit Insurers (EFDI) and the IADI, by presenting its experiences in the field and learning about the accomplishments of other institutions.

In 2008, the Members of the Management Board and the Fund's employees participated, also as speakers, in the following meetings:

- meeting of the representatives of the European Commission, EFDI and Joint Research Centre (JRC) held on 10 and 11 April 2008 during which the participants discussed the results of the review of Directive 94/19/EC and draft reports prepared for the European Commission by working groups appointed by the EFDI,
- seminar organised by the IADI on 27 and 28 May 2008, with the participation of the representatives of deposit guarantee schemes from 22 countries, the Management Board of the EFDI and experts of the International Monetary Fund. The seminar focused on the analysis of the risk involved in the operations of deposit guarantee schemes, ways of evaluating the ability to satisfy claims and methods of determining contribution levels,
- management training organised by the IADI and the Central Deposit Insurance Corporation (CDIC) between 1 and 4 September 2008,
- EFDI Annual General Meeting combined with the first joint international conference of the EFDI and Federal Deposit Insurance Corporation (FDIC) entitled "Financial Integration and the Safety Net" held on 22 and 23 September 2008,
- IADI Annual General Meeting combined with an international conference "Financial Stability and Economic Inclusion", held between 29 and 31 October 2008.

During the EFDI Annual General Meeting, the Fund's Management Board President was unanimously appointed by the EFDI Management Board the chairperson of the EFDI's permanent Research Working Group, responsible for preparing analyses of the effectiveness of the banking sector safety net in EU Member States, in particular for the purpose of cooperating with the European Commission and the IADI. The following issues, among other matters, were discussed during the conference: differences between the banking market in the European Union and the United States and their consequences for the deposit guarantee schemes, cross-border banking in the context of national supervisory institutions and deposit guarantee schemes, as well as the plans of the European Commission concerning amendments to Directive 94/19/EC in the face of the turbulences in financial markets.

As part of its activity in the EFDI, the Fund led a working group which focused on the preparation of a report for the European Commission concerning the possibility of improving the scope and quality of informing consumers about the terms and conditions of deposit guarantee and on the preparation of the best practices model of informing depositors about deposit guarantee schemes. As the result of the group's efforts a draft report was prepared and agreed on, and subsequently presented to the European Commission.

During the IADI Annual General Meeting, the Fund's Management Board President was unanimously appointed the Member of the Management Board by

the representatives of deposit guarantee institutions from more than forty-five countries. The Annual General Meeting was accompanied by a conference, which, among other issues, covered the following topics: the role of deposit guarantee schemes at a time of crisis, challenges posed by the present financial market and their implications for financial institutions, the methods of measuring the level of economic integration, forms of its promotion and international financial education initiatives.

To promote cooperation with the IADI and the Canadian Insurance Deposit Corporation (CIDC), the Fund took part in an analytical study which focused on fourteen selected areas of the operation of deposit guarantee schemes, including relationships between the participants of a safety net, scope of rights, scheme membership, level and scope of coverage, organisation of payouts to depositors and information policy.

Moreover, the Fund took part in a study prepared by the International Monetary Fund (IMF), which was aimed at updating the data on the principles of the functioning of foreign deposit guarantee schemes. The study focused on eight selected areas of the operation of guarantee institutions, including scope of rights, level of coverage, financing and payout procedure.

The Fund has actively participated in the preparation of Poland's position pertaining to the suggested directional changes to the EU law aimed at increasing the effectiveness of the banking sector safety net which were described in the documents discussed during the meetings of:

- the EU Financial Services Committee (FSC),
- the European Banking Committee (EBC).

2.2. Amendment of Directive 94/19/EC on Deposit Guarantee Schemes

The Fund participated in discussions concerning the amendments to Directive 94/19/EC of the European Parliament and of the Council on deposit guarantee schemes, proposed by the European Commission as a result of the developments on international financial markets that occurred in the second half of 2008. In connection with determining and approving amendments to the Directive, on 27 October 2008, a meeting of the Deposit-Guarantee Schemes Working Group within the European Commission was held, in which the Fund's representative also participated. The amendments proposed by the Commission were designed to restore trust in the banking sector and to ensure a high level of convergence of the mechanisms of deposit guarantee schemes, in particular with respect to increasing the minimum coverage level, abolishing co-insurance, and shortening the deadline for the compensation payouts.

2.3. Cooperation with Foreign Deposit Guarantee Institutions

As a result of a Polish bank's decision to open a branch office in the Czech Republic, the Czech Deposit Guarantee Fund offered to work together and sign an agreement with the Bank Guarantee Fund. Moreover, the parties commenced drafting an agreement which would regulate increase in the level of coverage for the customers of the Polish bank's branch office, operating in Slovakia, up to the amount offered by the Slovak scheme.

The Fund continued work on the analysis of system solutions regarding deposit guarantee in the Member States of the European Union. Basing on source data, materials presenting the deposit guarantee scheme in Luxembourg and Great Britain were prepared.

In addition, an analysis of the organisation of the investor compensation schemes functioning in selected countries was conducted, also taking into account their relation to deposit guarantee schemes.

On 11 December 2008, a delegation of Ph.D. students from the Banking University of the National Bank of Ukraine visited the Fund's office. During the meeting, the BGF's employees presented the main areas of the Fund's activity, devoting special attention to Polish experience in the field of guarantee and assistance activity.

3. The BGF's International Conference

On 15 and 16 September 2008, the Bank Guarantee Fund organized in Warsaw a conference entitled "Deposit Guarantee Schemes Facing Integration of Financial Markets". The purpose of the conference was to facilitate the exchange of experiences regarding the conditions for the development of deposit guarantee schemes in the light of current challenges on global financial markets. The conference brought together more than 120 representatives of financial institutions from seventeen countries, including the Chairman of the European Forum of Deposit Insurers and members of the governing bodies of the International Association of Deposit Insurers. Also present at the conference were representatives of the Ministry of Finance, the National Bank of Poland, the Financial Supervision Authority and the governing bodies of Polish banks.

The agenda of the conference comprised three sessions devoted to the following topics:

- Influence of fiancial market's turbulance on the deposit safety and on DIS operations,
- Principles of deposit protection for credit unions in the EU,

- ❖ Model of financial instruments insurance system – integration of the deposit and investor protection.

Lectures were given by representatives of foreign deposit insurers, renowned financial institution experts and noted Polish academics.

XII. INFORMATION AND PROMOTION ACTIVITY

In 2008, due to the crisis on international financial markets, the Fund's information and promotion activity became particularly important. Therefore, the Fund intensified its efforts aimed at extending information concerning the guarantee scheme both to the clients of the banking sector and to bank employees, who service such schemes. The strategy adopted by the Fund involved numerous initiatives aimed to build widespread trust in the banking system and to teach people the principles of managing their finances.

One of the Fund's main efforts focused on developing Best Practices for Notifying Customers of their Bank's Participation in the Mandatory Guarantee Scheme and Best Banking Practices for Informing the Customers of their Bank's Economic and Financial Standing. The main objective in drafting Best Practices was to unify the standards for banks participating in the mandatory guarantee scheme to ensure they provide reliable and accurate information to their customers. This document facilitates the performance of banks' obligations stipulated in Article 38 b of the Bank Guarantee Fund Act.

Drafting these Best Practices is part of global efforts in this respect as deposit insurers participating in the IADI and EFDI consistently strive to devise a set of best practices for the banking sector.

The model suggested by the Fund was officially approved by six financial market institutions such as the National Bank of Poland, National Depository for Securities and the Insurance Guarantee Fund.

In 2008, banks commenced the implementation of the Fund's recommendations and by the end of 2008, sixteen of them declared their willingness to accept Best Practices as their official model for preparing information provided to their customers.

Another one of the Fund's efforts involved drafting Educational Materials, which consist of three banking system presentations together with a script, which have been approved by the reviewers appointed by the Ministry of National Education and entered on the list of educational resources recommended for teaching Business Basics in schools.

In order to evaluate the effectiveness of the completed and proposed promotion activity in 2008, a survey was conducted to assess the customers' and bank

employees' knowledge of the mechanisms of the deposit guarantee scheme. In June and July 2008, Pentor Research International completed the following modules of its quantitative survey:

- surveying the opinions of individual bank customers via face-to-face interviews,
- surveying microbusiness owners via telephone interviews,
- surveying bank and credit institution employees via mystery shopping (secret customer – direct survey),
- surveying bank branch employees, call centre employees and non-bank institution employees (credit unions) via mystery calling (secret customer – telephone survey).

In addition, a qualitative survey of the Fund's website was conducted, in the form of a webclinic. The report that followed the survey then served as a reference for creating a new website of the Fund.

Taking into account the results of the survey conducted by Pentor RI and the developments on global markets, in September 2008, the Fund offered to organise seminars for bank employees who deal with customers directly in order to broaden their knowledge of the Polish deposit guarantee scheme.

In connection with the amendment of the Bank Guarantee Fund Act, new informational materials on the deposit guarantee scheme were drafted and provided to banks, with separate sets addressed to customers and bank employees.

Two subsequent issues of the Safe Bank magazine and the BGF Bulletin were published and distributed to all commercial and cooperative banks in Poland, to selected Polish universities and to libraries across Poland. The Minister of Science and Higher Education awarded the Fund two points for getting published in the Safe Bank magazine, which enhanced this periodical's respectability on the market and among students and professors.

Moreover, the Fund once again selected a bachelor's, master's and doctoral dissertation that best covered the issues of the BGF's operations, deposit guarantee scheme and the financial safety of the banking sector, at the same time promoting this contest among students and professors. Employees of the Bank Guarantee Fund participated in conferences and meetings organised by academic institutions and circles.

Information and promotion an activity also included the publication of the Annual Report of the Bank Guarantee Fund for 2007 in Polish and English, which was sent to banks and financial institutions operating in Poland as well as the representatives of foreign guarantee institutions. The report together with other materials was also presented on an information and promotion stand during the General Meeting of IADI Members, combined with an international conference: Financial Stability and Economic Inclusion which was held in Arlington (USA) in October 2008.

The Fund also worked on developing its relationships with the media, including the publishers of such newspapers as: Bank, Gazeta Bankowa, Forbes, Finansowanie Nieruchomości, Rzeczpospolita, Gazeta Prawna, magazines published by cooperative banks, with student portals and television and radio stations such as: TVN CNBC Business, Polsat, Radio PIN. As a result of its cooperation with the press, the BGF was featured in numerous articles discussing the banking system and the principles of the deposit guarantee scheme, as well as the role of the Bank Guarantee Fund itself. Moreover, due to a number of queries received by the Fund in the context of the developments on international financial markets and the amendment of the provisions of the Bank Guarantee Fund Act, the Fund's representative made more than thirty official statements aimed at being published in the media (newspapers, magazines, websites). In addition, the Fund's Management Board President was featured in a number of press, television and radio interviews.

The effectiveness of the information and promotion activity undertaken by the Fund was evidenced, among other things, by the results of public opinion polls conducted by the Pentor RI Institute in November 2008. According to the respondents, the Bank Guarantee Fund was the highest rated institution and its efforts to mitigate the effects of the global financial crisis on the Polish economy were well received, as compared to other institutions ranked in the survey.

Problems and opinions

Alfred Janc

CREDIBILITY VS. RISK IN CONTEMPORARY CREDIT INSTITUTIONS IN THE CONTEXT OF THE SAFETY NET SOLUTIONS

(Paper presented at the Bank Guarantee Fund International Conference on Deposit Guarantee Schemes facing integration of financial markets, 15–16 September 2008, Marriott Hotel, Warsaw, Poland)

A credit institution is a unique element of business landscape. On the one hand, a bank acts and performs activities on its own account, on the other – its activities affect the entire financial system. If anything fails in its own commercial performance (forgetting for a while the cause of the failure), it influences both other credit institutions, and many organizations that operate in the financial system to fulfill the sector's effectiveness and above all safety. That impact can be pertinent to other segments of economy as well as can have repercussions on cross-border scale. In literature hypotheses are formulated about the lack of adequacy between present solutions in the financial services market security and the scope of potential dangers that result from transsectoral and cross-border integration (Cf. P. Artus, Financial intermediation and transfers of default risks: macro- and microeconomic efficiency, in: The New Banking Economics, ed. by O. Pastre, E. Jeffers, H. Blommestein, G. de Pontbriand, Edward Elgar, Cheltenham – Northhampton 2007; M. Iwanicz-Drozdowska, Bezpieczeństwo usług finansowych. Perspektywa Unii Europejskiej, SGH w Warszawie, Warszawa 2008).

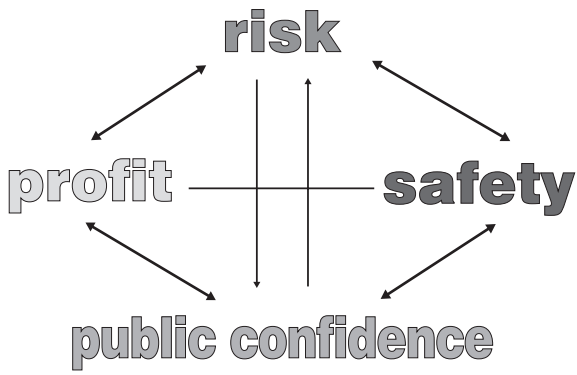
This paradigm contains a particular reference to macro-responsibilities of a contemporary credit institution. Differing from a micro-responsibility that can be defined as striving at such a functioning due to which business goals are achieved in the best possible manner, macro-responsibility means an effective, efficient and safe performance within the net created by other credit institutions and organizations that exist in the banking system. Micro-responsibility calls for attention paid to commercial measures and indices such as sales growth dynamics, market share, shareholder's value increase, etc. Many authors also point out in this respect the importance of the corporate governance. Hence, the questions of the role of minority shareholders, full disclosure and transparency, prudent risk management and the role of the board of directors, is undergoing a thorough discussion (Recent Financial Crises. Analysis, Challenges and Implications, ed. by L. R. Klein and T. Shabbir, Edward Elgar, Cheltenham – Northhampton 2006). On the other hand, macro-responsibility concentrates on the specific role of banks in the economy. Consequently, both systemic results of an individual failure, and its cost for the economy have to be taken into account.

Both types of a responsibility overlap with each other and their differentiation in this paper not necessarily corresponds with practical demand if banking managers in boards and committees act in an effective, efficient, and safe manner. However, at least three points can be risen as a proof for a somewhat different situation. Firstly, crises in banking systems, including the one of 2007. Secondly, conferences devoted to real problems of the banking sector, like this one organized by the Polish Banking Guarantee Fund. And thirdly, opinions already voiced and planned to be formulated during such meetings and conferences (e.g. L. Pawłowicz, Kto zapłaci za kryzys bankowy na europejskim rynku finansowym? Propozycje rozwiązań, Warszawa 2007).

It becomes crucially important to properly identify the role and scope of responsibilities of various institutions of the financial system, like the central bank, financial supervisory boards, rating agencies, credit agencies, and guarantee funds, etc., when facing real instability having its internal or external origin. The significance of debate (and of solutions) concerning the safety net respectively increases. Within or without the framework of such a net, however inside institutions and agencies which are supposed to be its elements, since mid 2007 a thorough observation of the subprime problem in the American financial system is taking place. In Poland and in neighbouring countries discussion on a possibility of occurrence of second- or third-round effects of American problems has been risen up on many occasions. And though there was no real danger of a direct impact of the crisis on credit institutions being active in Poland it is still very comforting to be able to read comments like that one of J. Wancer's (SE, September 8, 2008) about a hurricane that missed our heads leaving however few clouds over Poland.

The debate on real or unreal dangers for activities of a modern credit institution should start nevertheless with the problem of micro-responsibility. The trade-off between crucial notions of risk, credibility, and public confidence, on the one hand, and financial results, on the other, is inseparably connected with banks' commercial activities and its expansion. The nature of relationships between those fundamental notions is shown in Figure 1.

Figure 1. Trade-offs in banking



It is important to examine trade-offs inside a contemporary firm. We have been knowing since ages that all the notions are very important and have to co-exist in reasonable proportions but… the world is changing. Additionally, practical consequences of adopted solutions are very important inside a credit institution but at the same time they radiate at the environment causing consequences for the entire financial system (on risk and the position of banks in society see essays of G. de Pontbriand, Long live risk!, and of D. Plihon, When banks transfer risks to investors, in: The New Banking Economics, ed. by O. Pastre, E. Jeffers, H. Blommestein, G. de Pontbriand, Edward Elgar, Cheltenham – Northhampton 2007). This observation have been valid especially in past few decades when changes in the intermediation world caused rearrangements both in the set-up of credit institutions and in their surroundings i.e. among their competitors and in the official sector. Those changes opened the banking sector to a lot of unorthodox instruments and untypical phenomena. Globalization additionally widened the margin for the "evil". In her book on Fragile Finance, A. Nesvetailova (London 2007, Palgrave/Macmillan) confronts three notions: debt, speculation, and… crisis, typical for the age of global credit. And Arnone and Gambini add: "Over the past three decades the financial landscape has been radically transformed by three

main driving forces: globalization, liberalization, and technical innovation. This has resulted in heightened capital market integration, and in a greater role in resource allocation for the financial sector than before. The growing role and size of the financial sector has generated advantages such as a broader, cheaper and more accessible range of financial services, wider distribution channels, and higher efficiency in terms of resource allocation. However, these benefits have not come without cost. The experience of the past decades provides good evidence that moving from a tightly controlled financial system to a much more competitive one has exposed the banking system to an increased risk of a systemic failure and has been associated with frequent and costly periods of financial turmoil" (See: M. Arnone, A. Gambini, Architecture of Supervisory Authorities and Banking Supervision, in: Designing Financial Supervision Institutions. Independence, Accountability and Governance, ed. by D. Masciandaro, M. Quintyn, Edward Elgar, Cheltenham – Northhampton 2007).

Inevitably, faced with dramatically deep changes in the banking sector and with real and potential dangers of financial breakdown, one has to resort to untypical and even outdated rescue measures. *There is even an appropriate saying in Polish: a drowning man catches the razor knife…* The recent nationalization of Freddie Mac and Fannie Mae may serve as an example. Billions of dollars and pounds flowing from tax-payers pockets to treasuries of market giants deemed to be Too Big To Fail show the border-line of intervention of a modern state on the marketplace which no longer is a market that can function flawlessly at no cost. Simultaneously, international repercussions of the recent financial market turbulence show how important it is to contemplate some safety net arrangements on a larger scale. The benign risk environment some international banks used to enjoy before the crisis of 2007 can hardly be duplicated in the future[1]. The debate on systemic solutions concerning the safety net is bothering bankers not only during this conference but it is hard to conclude that general and practical global or European solutions have been clearly defined and accepted. Some regulatory initiative has been however shown and is waiting for further discussion and – keeping the fingers crossed – implementation.

---

[1] As a risk manager at a large global bank explained: "(…) It was hard to see where the problems would come from. Four years of falling credit spreads, low interest rates, virtually no defaults in our loan portfolio and historically low volatility levels: it was the most benign risk environment we had seen in 20 years. (…) was always a topic high on our list but we could only see more liquidity coming into the market–not going out of it. Institutional investors, hedge funds, private-equity firms and sovereign-wealth funds were all looking to invest in assets. This was why credit spreads were narrowing, especially in emerging markets, and debt-to-earnings ratios on private-equity financings were increasing. "Where is the liquidity crisis supposed to come from?" somebody asked in the meeting. No one could give a good answer." (The Economist, Aug 7th 2008).

However, before the cross-border initiative will materialize there is certain space for interim solutions. And no wonder, such solutions have to concentrate on best practices within the sector. Once again, a credit institution needs to reconsider its approach to a credibility vs. risk dilemma, and bankers have to stick to the best business practices. Once again, then, we have to count on a proper approach to business and on a corresponding micro-responsibility in firms of the financial sector which will translate itself into an adequate macro-credibility, stability and high efficiency of the sector.

In this context, recommendations of many financial authorities addressed to credit institutions are of special interest. In July 2008 the Institute of International Finance published draft on principles of conduct and best practice recommendations. The Report, subtitled as Financial Services Industry Response to the Market Turmoil of 2007–2008, concludes that "the end of the financial market turbulence is not yet in sight, with a global economic slowdown and inflationary pressures stemming from oil and food prices weighing heavily on market sentiment. How soon this turbulence will end depends in large part on the continued attentive policies of major central banks, regulators, and, critically, on determined efforts by financial firms to strengthen their business practices (…)". The Report sets out recommendations understood as such industry standards, that can help to identify and accelerate the spread of best practices.

Addressed to the Institute's member firms The Final Report is of much greater significance. Prepared by the IIF's Committee on Market Best Practices sought both to state general principles for the industry as a whole and to provide benchmarks to many specifics that firms should use in refining their internal practices, thus seeking ways the industry could improve its overall performance and enhance the resilience of international markets. The authors of the report attach fundamental importance to risk management by observing that "Failures in risk management policies, procedures, and techniques were evident at a number of firms – in particular, the lack of a comprehensive approach to firm-wide risk management often meant that key risks were not identified or effectively managed.".

The principles of conduct, best practice recommendations, and considerations for the official sector were presented in six sections in the Report:

I. Risk Management,
II. Compensation Policies,
III. Liquidity Risk, Conduit, and Securitization Issues,
IV. Valuation Issues,
V. Credit Underwriting, Ratings, and Investors Due Diligence in Securitization Markets,
VI. Transparency and Disclosure Issues.

In its careful consideration of risk management issues the IFF Report points out that in the run-up to the U.S. subprime crisis, a buoyant environment of ample liquidity and strong economic growth provided the groundwork for a very competitive market for financial firms. In this environment, which was also marked by significant disintermediation, some firms overestimated the market capacity to absorb risk. Failures in risk management policies, procedures, and techniques were evident at a number of firms – in particular, the lack of a comprehensive approach to firm-wide risk management often meant that key risks were not identified or effectively managed. As a result, recommendations were summarized under the headings of governance and culture, risk appetite, role of the Chief Risk Officer, risk models and integration of risk-management areas, securitization and complex structured products, and stress testing.

As it has also been stressed in the Report, it is critical for governance to embed a firm-wide focus on risk. The market turbulence of 2007–2008 has provided clear evidence that effective cultivation of a consistent "risk culture" throughout firms is the main enabling tool in risk management. Each firm should:

- make sure that senior management, in particular the CEO, is responsible for risk management,
- establish the Board's essential oversight role in risk management,
- develop a robust risk culture that is embedded in the way the firm operates, covering all areas and activities, with accountability for risk management being a priority for the whole institution.

The firm's risk appetite should be articulated within a solid risk management framework, as a key part of an effective risk culture. Firms should:

- set basic goals for risk appetite and strategy and monitor how performance against such strategy evolves over time,
- consider all types of risk when defining risk appetite, including risks arising from the firm's relationship to off-balance-sheet vehicles,
- involve finance and treasury functions as well as risk in monitoring the overall risk of the firm.

Risk-management organizational structures need to be strengthened with an important role attributed to the Chief Risk Officer. As a result, firms should:

- assign responsibility for risk management to an officer at a senior level, in most cases a Chief Risk Officer (CRO) who should have sufficient seniority, voice, and independence from line business management to have a meaningful impact on decisions,
- ensure that the CRO has the ability to influence key decision-makers in the firm, with the mandate to:
  a) ascertain that the firm's risk level is consistent with its risk appetite, providing a thoughtful, integrated view of the overall riska the firm faces,

b) support senior management by identifying developing risks, concentrations, and other situations that need to be examined via stress testing and other techniques,
c) assess and control the firm-wide risk level; the CRO should compromise a number of advice, control, management, and technical oversight functions, including analysis of new-product development.

In a market environment that can produce unprecedented price moves and significant tail risks, seemingly robust risk-management tools and frameworks can prove inadequate. Hence, firms should:

- ensure that risk management does not rely on a single risk methodology, and analyze group-wide risks on an aggregate basis,
- ensure that metrics are calibrated appropriately to risk appetite horizons,
- take into account the technical limitations of risk metrics, models, and techniques (such as Value at Risk),
- eschew the "silo" approach toward risk management and take a comprehensive approach to risk, integrating strands such as credit, market, operational, liquidity, and reputational risk,
- ensure that the appropriate governance structure that has been adopted is actually implemented in managing day-to-day business.

During the recent stressed market conditions, a number of firms experienced losses in their activities related to securitization and complex structured products far in excess of what their models would have predicted. This underscores that firms should:

- take an integrated approach to risk management when dealing with complex structured products,
- ensure that risk models "look through" the direct risk and capture the market sensitivities of underlying exposures (e.g., mortgages),
- identify and manage risk concentrations–all sources of risk (including off-balance-sheet risks) should be effectively captured.

During the market turbulence, the magnitude of losses at many firms made it clear that their stress testing methodologies needed refinement–stress testing was not consistently applied, too rigidly defined, or inadequately developed. To help alleviate these problems, firms should:

- ensure that methodologies identify and take into account firm-wide risk concentrations, and integrate these methodologies into the overall risk-management infrastructure,
- ensure that stress testing includes pipeline and warehousing risks (e.g., with respect to securitizations and leveraged loans) where the firm accumulates positions for subsequent distribution, incorporating events that might delay or prevent such distribution,

- ❖ take account of the effect of stresses on exposures to leveraged counterparties–including potential cross-correlation of the creditworthiness of such counterparties with the risk of the assets being hedged,
- ❖ take an analytical and exploratory approach to stress testing. Its results should be taken into account in decision making, but such output should be used with an appropriate degree of judgment and not made automatic.

In their book on a history of financial crises, Charles P. Kindleberger and Robert Z. Aliber wrote: "The monetary history of the last four hundred years has been replete with financial crises. The pattern was that investor optimism increased as economies expanded, the rate of growth of credit increased and economic growth accelerated, and an increasing number of individuals began to invest for short-term capital gains rather than for the returns associated with the productivity of the assets they were acquiring. The increase in the supply of credit and more buoyant economic outlook often led to economic booms as investment spending increased in response to the more optimistic outlook and the greater availability of credit, and as household spending increased as personal wealth surged." (Ch. P. Kindleberger, R. Z. Aliber, Manias, Panics and Crashes, Palgrave/MacMillan, 5th edition, 2005).

History tends to repeat itself. Once again, in the mid of the second half of the first decade of the 21st century we participate in the financial tumult with – as the sign of the times – international repercussions. It started with an appetite for "subprime" lending and – via various vehicles – led to low market confidence. The trade-off between risk and public confidence comes into play (Fig. 1). New solutions are proposed for supervision and deposit insurance schemes (See: R. A. Eisenbeis, Agency Problems in Banking Supervision, in: Designing Financial Supervision Institutions. Independence, Accountability and Governance, ed. by D. Masciandaro, M. Quintyn, Edward Elgar, Cheltenham – Northhampton 2007; also L. Pawłowicz, Kto zapłaci za kryzys bankowy na europejskim rynku finansowym? Propozycje rozwiązań, Warszawa 2007).

Whatever the solutions of regulators and the resulting new or modified effective and efficient regulatory framework, adjusted as deemed necessary by the official sector within the safety net, to rebuild market confidence, maintaining high standards and best practices in the banking industry is a major issue. A contemporary credit institution must carefully evaluate its credibility / risk situation, and though aware of being a part only of the entire financial system it has to act adequately to accommodate its stakeholders' interests. Whatever the future solutions in the national or international institutional and regulatory framework, with higher and higher standards, and with rating agencies, supervision committees, and deposit guarantee funds, lower appetite for risk is highly recommended. Naturally, a contemporary banker doing business in an intrinsic international environment will "never be left alone" due to well developed regulatory and institutional framework but at the end it is him or her who will be responsible for the fiasco.

Bibliography

Arnone M., Gambini A., *Architecture of Supervisory Authorities and Banking Supervision*, [in:] *Designing Financial Supervision Institutions. Independence, Accountability and Governance*, ed. by D. Masciandaro, M. Quintyn, Edward Elgar, Cheltenham – Northhampton 2007.

Designing Financial Supervision Institutions. Independence, Accountability and Governance, ed. by D. Masciandaro, M. Quintyn, Edward Elgar, Cheltenham – Northhampton 2007.

Eisenbeis R. A., *Agency Problems in Banking Supervision*, [in:] *Designing Financial Supervision Institutions. Independence, Accountability and Governance*, ed. by D. Masciandaro, M. Quintyn, Edward Elgar, Cheltenham – Northhampton 2007.

Final Report of the IIF Committee on Market Best Practices: Principles of Conduct and Best Practice Recommendations (Financial Services Industry Report to the Market Turmoil of 2007–2008), Institute of International Finance, July 2008.

Iwanicz-Drozdowska M., *Financial Services Safety. EU perspective*, Warsaw School of Economics, Warsaw 2008.

Kindleberger Ch. P., Aliber R. Z., Manias, *Panics and Crashes*, Palgrave/MacMillan, 5th edition, 2005.

Nesvetailova A., *Fragile Finance, A*, Palgrave/Macmillan, London 2007.

Pawłowicz L., *Who will pay for banking crisis on the European financial market. Possible solutions*, Warsaw 2007.

Plihon D., *When banks transfer risks to investors*, [in:] *The New Banking Economics*, ed. by O. Pastre, E. Jeffers, H. Blommestein, G. de Pontbriand, Edward Elgar, Cheltenham – Northhampton 2007.

Pontbriand de, G., *Long live risk!*, [in:] *The New Banking Economics*, ed. by O. Pastre, E. Jeffers, H. Blommestein, G. de Pontbriand, Edward Elgar, Cheltenham – Northhampton 2007.

Recent Financial Crises. Analysis, Challenges and Implications, ed. by L. R. Klein and T. Shabbir, Edward Elgar, Cheltenham – Northhampton 2006.

The New Banking Economics, ed. by O. Pastre, E. Jeffers, H. Blommestein, G. de Pontbriand, Edward Elgar, Cheltenham – Northhampton 2007.

Leszek Pawłowicz

CHALLENGES FOR STABILITY POLICY[1] IN TERMS OF FINANCIAL MARKETS INTEGRATION

(Paper presented at the Bank Guarantee Fund International Conference on Deposit Guarantee Schemes facing integration of financial markets, 15–16 September 2008, Marriott Hotel, Warsaw, Poland)

Introduction

The depth and size of the crisis lasting for at least a year on international financial markets made it clear that present architecture of financial security system is very fragile. Globalization and integration of financial markets is accompanied by their constant national institutional order and national responsibility for financial stability policy as well, despite of attempted cross-border coordination. New supranational caution regulations (mostly *Basel II*) are implemented by national institutional structures. It gives rise to hybrid solutions (i.e. *home and host country supervision*), which cause separation of regulating and supervising competence from their responsibility. It is worth mentioning that sources of contemporary crisis are separated from their expensive consequences as far as particular institutions are concerned and financial markets sectors and countries as well. Does observation

[1] By financial stability policy I mean the whole of activities and regulations conducted in order to even out system risk.

of the crisis on integrated financial markets lead to any conclusions for stability policy (financial security) in host countries such as Poland?

Contemporary crisis on international financial markets has some features and mechanisms due to development tendencies of global financial markets that were never found before or were never of any significance. This crisis is different – states Alan Greenspan, former president of Federal Reserve. "It is not similar to previous episodes destabilizing economy which temporarily frosted liquidity. (...) Once or twice in the century there is an event that has its source in fears of solvency of general financial institutions"[2]. Present crisis is also record expensive for tax payers. The authors of UBS report estimate that American taxpayers had to pay 945 billion USD for helping bank groups. The support of the US government amounted 6.9% of GDP and for comparison the support during the Great Depression reached 2% of GDP, and during the crisis of savings and loan funds in the eighties – 3% of GDP. The support is over 300 billion USD larger then the help of Japanese government during banking crisis in the nineties[3].

The depth, size and spreading mechanism of the crisis make us wonder what the difference is between the present situation and classical banking crisis because only the correct diagnose allows taking adequate precautions. It seems proper to point out a few issues:

1. Expanding definition of system risk.
2. Unreliability of contemporary risk managing models.
3. Methods of avoiding risk.
4. Crisis spreading methods.
5. Stipulated politician and regulator reactions.

1. Expanding Definition of System Risk

Traditional, classical understanding of system risk[4] that was connected mostly with credibility loss of banking system for deponents got significantly expanded. The deposits are no longer main source of banks activities financing. Safe bank

---

[2] A. Greenspan, *It is not possible to allow limiting competitive markets*, "Financial Times" of August 5th, 2008, [in:] http://ft.onet.pl/11,13182,nie_mozna_pozwolic_na_ograniczenie_konkurencyjnych_rynkow,artykul.html.

[3] P. Craig, H. Wilson, Costs of crisis in the US *reach billions of dollars*, "The Wall Street Journal" [in:] "The Wall Street Journal Poland. Financial Daily" of August 6th, 2008, p. 10.

[4] "There was system risk in traditional commercial banking whenever panic paralyzed normal activity of credit institutions. At the same time many deponents requesting the bank to make a payment of funds caused emptying the volt and the loss of liquidity of the bank. (...) As far as traditional central banking is concerned the system risk regards the breaking of calculation and accounting system." J. K. Solarz, *Financial system risk management*, PWN, Warsaw 2008, p. 46, 47.

functioning depends not only on the trust of deponents. More and more it requires credibility on widely interpreted market of capital acquisition. Liquidity of banks depends on their credibility on financial market. Meanwhile through the global market of derivative credit instruments the credit crisis spreaded over to insurance institutions, investment funds, investment banks and other institutions that are not professionals in credit risk managing but are capital providers for banking sector. The loss of liquidity or solvency of capital providers of credit institutions due to radical decrease of their assets value causes enlarging system risk and can lead financial system break. Decrease of investing attractiveness of investment funds makes the financial market repelling for savings and enlarges problems. Investment funds only temporarily transfer the entire risk to investors. They play so important role in financing other institutions that loss of their attractiveness for investors creates a significant system risk. Investors by searching for alternative methods for investing their savings additionally stimulate increase of prices of raw materials and energy on futures exchange. As a result system risk was begun to be generated by institutions that traditionally were never interesting to central banks. Central banks have to support liquidity on financial markets in order not to transform financial crisis into general economic crisis[5]. They prevent from bankruptcy not only banks but also other financial institutions. As a result financial institutions become more and more depending on central banks. Many banks exchange mortgage loans into commercial papers in order to use them as collaterals for financial acquisitions from ECB and Fed[6]. Not only natural integration procedures especially mergers and acquisitions cause increase in the number of institutions creating system risk. Also inadequate tendency of central banks to intervene incl. in preventing relatively small institutions form bankruptcy[7] expands definition of system risk and causes too big involvement of central banks in market procedures and also creates moral gambling. Furthermore it stimulates system risk increase. Therefore central banks indirectly contribute to system risk increase.

Northern Rock – one of the biggest mortgage banks was nationalized not only because it had "bad" assets, but also because nobody was willing to lend money for current activity. Decreasing trust of lenders to financial sector is accompanied by

---

[5] "Subprime crisis at the moment of bursting was perceived as the most dangerous financial crisis since the thirties. It was critical to prevent political mistakes that used to transfer crisis into macroeconomy catastrophy. The lesson of it was that it is important to prevent too much binding in monetary policy." *Fed can learn on history mistakes.* "Financial Times" of August 19th, 2008 [in:] http://ft.onet.pl/11,13671,fed_moze_sie_uczyc_na_bledach_historii,artykul.html.

[6] Compare to C. Mollenkamp, *Banks facing new financial crisis*, "The Wall Street Journal" [in:] "The Wall Street Journal Poland. Financial Daily" of August 28th, 2008.

[7] Roskilde Bank can be given as an example. Roskilde Bank is an 8th biggest bank in Danmark with 24 branches and 100.000 clients taken over by Central Bank of Danmark in August 2008.

decrease in investment attractiveness. Estimated value of European and American financial institutions (banks, insurance companies and assets managers) lowered significantly – by 2,7 trillion USD which is a year GDP of Great Britain – because of credit crisis.

Table 1. Decrease in market value of stocks of financial institutions (difference from their stock exchange record till the end of July, 2008 in billions of USD)

European banks **(33)**	**–1 457**
American universal banks **(5)**	**–463,9**
European insurance companies/asset managing **(27)**	**–336,4**
American investment banks **(6)**	**–220,8**
American insurance companies/asset managing **(19)**	**–194,4**
Stock exchange companies managing alternative assets **(13)**	**–38,0**
In parentheses there is the number of institutions	

Source: P. Craig, H. Wilson, Costs of crisis in the US *reach billions of dollars*, "The Wall Street Journal" [in:] "The Wall Street Journal Poland. Financial Daily" of August 6th, 2008, p. 10.

Decrease in values of financial companies was twice as big compared to the decrease in general stock exchange index (Index Standard&Poor's loses 18%, while American investment banks 57%), which means that decreasing trust to supervised institutions governed by precautions regulations was much bigger then to unsupervised companies. The faith of investors in supervisors' effectiveness has significantly weakened. The risk of losing reputation was considerable for all market participants:

- loaners that lost credibility to repay of liabilities,
- lenders that seemed to transfer credit risk to capital market,
- credit rating agencies which ratings turned out to be useless,
- supervisors and regulators that were not able to take preacautions in proper time,
- investment funds that "guaranteed" investors the loss of capital,
- financial institutions managers that destroyed value for shareholders.

System risk is generated by deepening loss of trust of potential investors to many financial market participants and that is the reason why the crisis was not terminated by world central banks providing enlarging liquidity in short period of time. Not until private banks (Northern Rock, Bear Stearns) and credit institutions such as Fannie Mae and Freddie Mac were granted government

guarantees the market seemed to stabilize. Banks dependence on liquidity of financial market caused system risk to bind tighter and even identify as reputation loss risk on the market of capital acquisition by financial institutions, not only the banks.

2. Unreliability of Contemporary Risk Managing Models

What seems the most surpising is the fact that the crisis occurs in time of the banks setting new models of risk managing basing on IT and telecommunications technologies that were only dreamt of a few years ago. "The revolution of last few years as far as risk managing is concerned was all about spreading derivative instruments and methods of estimating the number of potential losses. (...) The possibility of estimating potential losses makes it possible for certain financial institution to distinguish eventual risk in order to prevent shortness in capital to cover potential losses"[8]. Furthermore the banks that were set as an example of proper activities in terms of risk managing have serious financial difficulties and claim losses of billions. It is worth reminding that some of such banks initiated many financial regulations including Basel II. The models of risk managing consisted in Basel II are identical with the ones used in previous years by the largest banks of the world presently claiming giant losses. Contemporary concepts of risk managing are usually a part of larger system – system of managing values for shareholders. The clue of such system is to reach the maximum risk adjusted rate of returning self capital (RAMP, RAROC, RARORAC, etc.) Basing on such criteria the capital is allocated. The subject of analysis is how banks self capital differs from estimated economical capital necessary for covering undertaken or planned risk. Ideal is the situation when estimated economical capital is identical with regulative capital required by external supervising institutions. If the self capital overwhelms estimated economical capital it is interpreted as non-used capital of shareholders. In other words the surplus of self capital over estimated capital necessary for covering potential losses is taken for "disability measure" of capital used by bank management. In general implementing such concept in banks is to be evaluated positively. It is worth noticing though that risk managing and economical capital estimating are on one side under pressure of returning rate for shareholders which package of shares in bank capitals are relatively small, on the other side occur in the environment of "abuse temptation" due to increasing predictability of central banks in situations of financial liquidity crisis. Such situation makes it less cautious to perform activities at the risk of taxpayer. It encourages financial market participants to underestimate risk.

[8] A. Slawinski, *Financial markets*, PWE, Warsaw 2006, p. 196.

Present system of risk estimating especially determining capital adequacy shall require comprehensive supervision in terms of previous experience. New international regulative agreement so called Basel II shall probably require improvement. In Alan Greenspan's opinion imperfection of the latest models of risk management is due among others to the fact that they are based on time sequence of data taken from expansion periods as well as periods of recession. In the last 50 years American economy was in recession only for 1/7 of the time. "But just for this 1/7 risk management shall be most properly prepared"[9]. The strategy of diversification of portfolio based on negative bindings of various types of assets during expansion period can be disappointing in time of crisis when prices of all assets fall down. Some experts describe such risk as model risk or accounting risk due to theoretical model inconsistencies performed in the real world or too optimistic view of financial situation of economic entities in financial reports. They give "creative accounting" of Enron holding[10] as an example. Some take such risk for kind of executive risk. Anyway, no matter how it is classified it is obvious that there is conflict of interests between motivation systems orientated towards short terms increase of value for shareholders and stabilized development of financial institutions[11]. And as such, for example whenever 30 year credit decision is being made usually 3 year management contracts are signed. Implementing more and more complex formal procedures is to eliminate such conflict. Bankers are thus constantly under huge pressure of results and effectiveness of formal procedures being lower then expected[12]. Present motivation system especially the system of remuneration in financial institutions is a source of too big expansion.

3. Methods of Avoiding Risk

It is very typical for present procedure of loaning to prevent credit risk by most of financial market participants. From the point of view of single entity it is a value added for the owners but in terms of overall activity it leads inevidibly to catastrophy. Enlarging competition encourages lenders to offer mortgage loans without proper credit collateral such as those exceeding the sale value of real

[9] A. Greenspan, *We will never have a perfect model of risk,* "Financial Times" of March 17th, 2008, [in:] http://ft.onet.pl/11,7690,nie_ma_doskonalego_modelu_ryzyka,artykul.html.

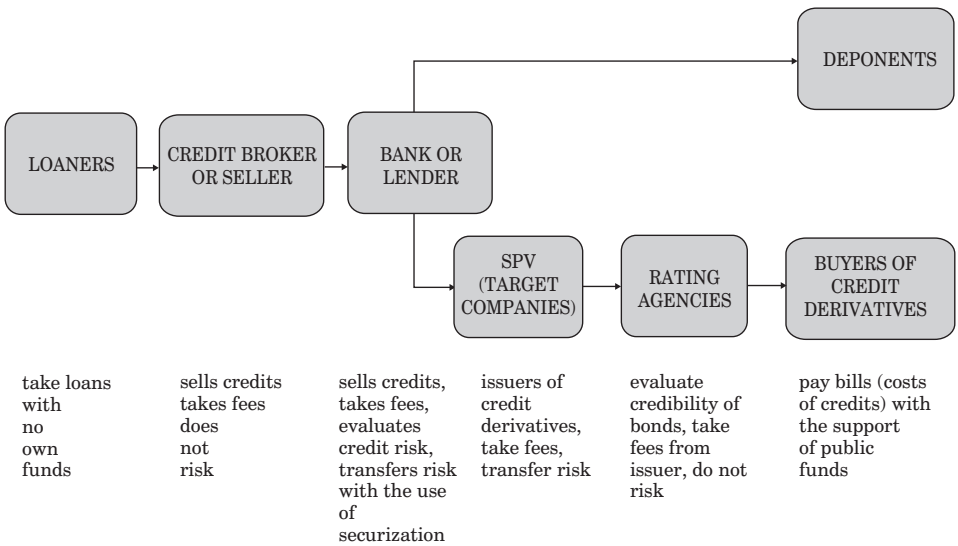
[10] K. Jajuga, *Theoretical basis of risk management,* [in:] *Risk management*, ed. by K. Jajuga, PWN, Warsaw 2007, p. 25.

[11] Ackermann J., *How can banks regain trust*, "Financial Times" of July 31st, 2008, [in:] http://ft.onet.pl/11,13059,jak_banki_moga_odzyskac_zaufanie,artykul.html.

[12] Compare to H. Simonian, *The management of UBS was aware of law breaks,* "Financial Times" of August 13th, 2008, [in:] http://ft.onet.pl/11,13562,kierownictwo_ubs_wiedzialo_o_lamaniu_prawa,artykul.html.

estate. The loaner at the moment of taking a loan without so called own funds does it with no risk. The loan seller like the broker or banker is remunerated usually by progressive accord (the more loans are sold the higher commission is taken). It is also performed with no credit risk. Credit risk is all on lender and potential insurer. The lenders in more and more cases transfer risk to other market participants with the use of securitization. In the process of transferring risk the fees are payed to the order of target companies, rating agencies and investment banks, but they prevent risk as well. As a result the costs of credit risk are taken on investors that purchased derivative credits and in case of lack of securitization on banks and deponents. Such process is illustrated by Figure 1.

Figure 1. Share of certain financial market participants in credit risk



Source: Self prepared.

In such process there are at least three elements generating crisis situations.

First of all, at the moment of making credit decision it is very easy to cumulate recklessness of the loaner and impunity of the seller or broker.

Secondly, as a result of securitization it is possible to not only transfer credit risk to institutions not prepared for credit risk managing but also to cause decrease in banks interest in long terms credit policy, credit administration, credit vindication and potential restructuring.

Thirdly, the conflict of interests in rating agencies remunerating by issuers and lack of clearness and supervision enlarge the risk of loss of trust among credit market participants.

As a result in the entire chain of acquisition capital for crediting activity the consequences are focused in its last link, but there is system risk generated and is ultimately to be beared by all participants also as far as public funds are concerned.

4. Crisis Spreading

It turned out to be surprising that securitization of banks assets generated crisis while it was perceived as system risk reduction measure.

The present crisis showed that securitization of banks assets generates some situations contrary to what is expected.

First of all, securitization of mortgage loans has become the major channel of spreading crisis among lenders and loaners. It has made the system risk of financial markets enlarge instead of diminish.

Secondly, the transfer of credit risk from credit institutions to MBS buyers i.e. mainly investment funds and insurance companies makes banks that are already free from risk stopped caring for quality of credit portfolio. The risk is spread among investors all over the world and banks along with eliminating credit risk carelessly begun to stipulate sales of credits with no own funds and without reliable evaluating loan credibility. It is estimated that such risky credits stand for over a half of all mortgage loans in the US through years 2005–2007.

Thirdly, securitization of mortgage loans has become an encouragement for moral gambling, as a result of which there has been created the whole chain of agents profiting from fees and not taking any risk (compare Figure 1). Credit brokers and multibrokers just like banks try to maximize income by selling more and more credit products and consecutively banks transform them into securities guaranteed by mortgage loans. Furthermore investment banks take fees transforming mortgage obligations into collateralized debt obligations (*CDO)*. Moreover there is conflict of interests in rating agencies because they take fees from the managements of the companies transferring credit risk. Investors observing increase in real estate prices buy MBS and CDO believing disappointing ratings, despite of the obvious of the fact that correct evaluation of complex inliquid measures is almost impossible.

Fourthly, securitization has lowered financial market transparency because the structure of buyers of mortgage collateralized securities and their market value are unknown. As a result when nobody knows what the other has credibility of partners decreases and it leads to lending money difficulties that is to the crisis.

The largest danger to Polish financial market stability is thus the mechanism of credit expansion identical with the one in the countries that are presently living through credit crisis. In such mechanism fast growth of mortgage loans is encouraged by cheap, easily accessible credit.

Banks create credit money faster then the value of real estate offered for sale increases. On the real estate market there is typical demand inflation being noticed (accompanied by credit) Real estate prices are not "included" in an index of product and consumer services price (CPI) that is a most popular measure of inflation and it does not influence directly an evaluation of realizing inflation aim in terms of monetary policy.

Leaving academic discussion on the side whether an apartment is a consumer good or investment capital, it is worth mentioning that real estate market inflation generated by a mechanism of too large credit expansion is increasing powerly. Such situation occurred in many countries, Poland as well. As a result of powerly inflation on real estate market loaners get bigger and bigger loans even balancing on the edge of their financial credibility.

Loaners' monthly burdens of credit installments change slower then apartment prices because credit period is prolonging sometimes to eternity and banks under pressure of enlarging competition make their offers attractive for loaners at the beginning in terms of credit products. As a result the process of credit expansion characterizes of powerly increase to the extent of crisis.

Rate of increase of credit expansion and related powerly inflation on real estate market sooner or later lead to the situation of the loaners not being able to repay installments. The mechanism of credit expansion is at the moment out of control and changes into the mechanism of crisis. Since that moment financial system stability loss protection requires very expensive interventions of central bank. The costs of crisis management are incomparably higher the costs of preventing actions.

5. Stipulated Politician and Regulator Reactions

For national regulators and supervisors the clue is an answer to the question: whether or not and how to intervene in credit expansion mechanism?

Is uncontrolled, powerly growth of mortgage loans accompanied by increasing inflation on real estate market supposed to be regulated with monetary policy instruments or with precautious and supervising measures?

Up to now experience of countries going to credit crisis shows that there is according precaution missing there. The fact that market participants used moral gambling does not seem surprising because such activities are generated by credit expansion mechanism. As a result there is a situation when central banks in

countries with the crisis by implementing financial liquidity into banking system create certain value for shareholders because they do not let the share values of such institutions drop adequately to undertaken risk. They lower percentage rates in spite of inflation risk because they would not let the prices on the real estate market fall because they are collateralizations of mortgage loans. In fear of triggering off the crisis mechanism they allow inflation growth. We observe the results and activities contrary to what we expected.

Poland is at the beginning stage of mortgage loans expansion[13]. It seems that presently it is enough to undertake moderate precautious and supervising measures in order to prevent serious problems. Such activities shall be synchronized with economical and social policy and shall be focused on determining prices on real estate market.

The prices of real estates are a significant element of credit expansion mechanism as well as the crisis mechanism. It is a radical price drop that causes market value of mortgage loans collateralizations to become delusive what is a direct reason of transferring credit expansion mechanism into the mechanism of crisis. Decreasing prices of real estates lead to demand fall of mortgage loans on one side and aggravating of banks' credit policy on the other. What happens is the loan demand falls down as a result of aggravated credit policy. Furthermore if the price of credit increases meanwhile due to for example percentage rates increase or currency risk growth the fall of demand of real estates and drop in prices is more radical what makes crisis costs grow. The crisis of contemporary loss of liquidity transforms into the crisis of solvency of financial institution and this causes not only the loss of reputation of single banks but also serious loss of trust on the entire financial market endangering its stability.

The previous source of crisis is stil mortgage loans expansion mechanism generating false assumptions of risk management mostly as a result of revaluating collaterals due to uncontrolled real estate prices increase. Such situation occurs presently in the United States. In Alan Greenspan's opinion "the solvency crisis is going to end as soon as the prices of houses in the US begin to get stabilized and it

[13] The share of Poland in European mortgage loans market is not adequate neither to demographic potential of Poland nor to economical potential. As such, the share of Poland in EU-25 is described as follows:
– 8.3% in population
– 7.0% in employment
– 2.4% in GDP
– 0.4% in mortgage loans.
The number of sold mortgage loans in the European Union has exceeded 6 trillion euro in 2007. It is about 40% less then in the United States. The ratio of sold mortgage loans to GDP is in the European Union about 50%, in Poland about 10%.

would be possible to determine their real value that shall be an ultimate collateral of most of mortgage securities of the financial world"[14].

The more significant role is played by mortgage loans in terms of financing people and corporations and the larger is the scope of refinancing banks on financial market the bigger crisis is to be expected.

We try to find it reassuring that there are no issuers of credit derivatives in Poland and there are no investors interested to buy them. We also try to find it reassuring that there are no *subprime* credits in Poland because the loans of the population is relatively low and the sector of mortgage loans loaners consists in families relatively richer. It is worth noticing though that the definition of *subprime* credits is verified not until in the stage of crisis on the real estate market. How many loaners will stop repaying installments in case of percentage rates increase, we are able to evaluate. But how many of them will stop repaying installments of mortgage loans in case of the prices drop for example by 25%, not because they cannot afford to repay but because they will find repaying installments unprofitable, we are not able to evaluate. Sometimes it is determined by consequences of negative value of collaterals. No own funds of the loaner will encourage such activities. Research[15] show that financial morality of Polish people is low as for example only almost 50% radically states that not repaying loans is reprehensible and that installments shall be definitely repayed.

Reseach conducted by the Institute of Market Economy Research in April 2008 (in seven commercial banks of which accommodation loans have share of 60% in total number of accommodation loans) point out that crediting practice of banks in terms of loans should be more cautious. It referres especially to:

- Calculating minimum costs of family support (many banks offer credits of a single installment exceeding safe lavel of 50% PTI, do not consider percentage rate of risk while calculating credibility and the funds left after repaying installment are below social minimum);

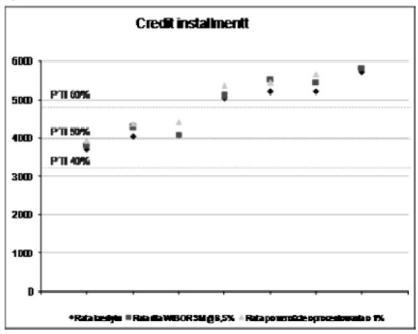
[14] A. Greenspan, *It is not possible to allow limiting competitive markets*, op. cit.

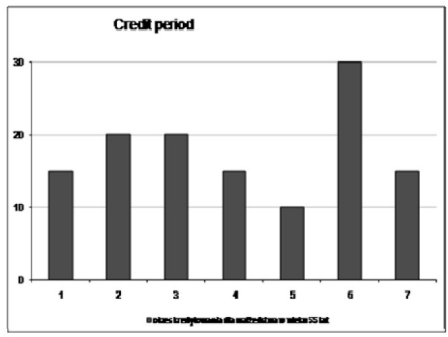
[15] A. Roter, *Deserved dynamics and financial morality of Polish people*, Forum of Banking 2008, Warsaw March 12th, 2008.

Loans for the elderly

Banks' offers for couples at the age of 55 with monthly net income of 8.000 PLN*

*Introductory results of a survey of IMER of April 2008.



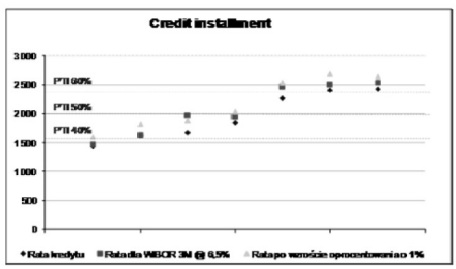


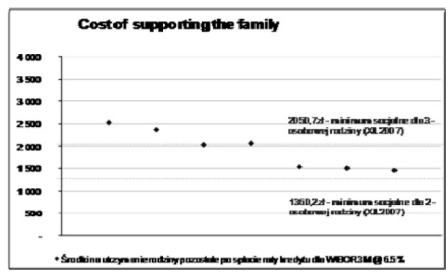
- Many banks offer loans of single installment over 60% PTI
- No surveyed bank considers the possibility of lowering income on pension
- Only one bank considers the maximum period of crediting until the loaners turning 65.

Loans for young couples (just married)

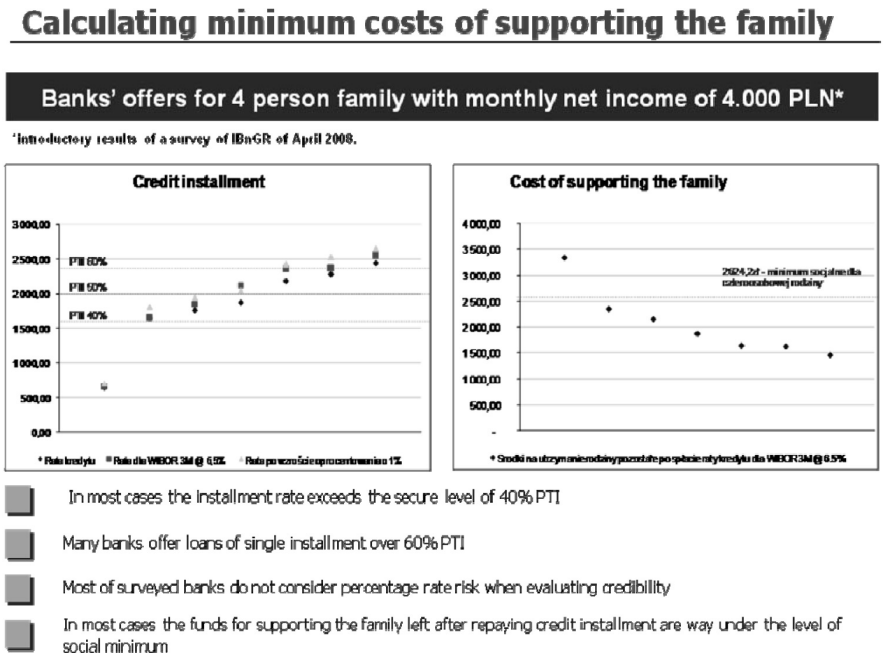
Banks' offers for just married couples with no children with monthly net income of 4.000 PLN*

*Introductory results of a survey of IBnGR of April 2008.





- Many banks offer loans of single installment over 60% PTI
- The funds for supporting the family left after repaying credit installment are over the level of social minimum for 2 person family
- No surveyed bank considers in the procedure of evaluating credibility the possibility of lowering income and enlarging life expenses after having a child



Source: A. Saniewski, *The rules of responsible crediting*, conference materials of Gdanskiej Academy of Banking "Financial institutions value management", Gdansk April 24th, 2008.

❖ Selling credits with no own funds of the loaner (LTV ≥ 100%).

Up to now point of view can lead to creating Polish *subprime* market in the next couple of years in spite of contemporarily good quality of mortgage loans portfolio.

In half of 2008 the value of irregular mortgage loans was in Poland 1.25% (compare to Spain 0.5%). Anyway these are "new" credits, 1 or 2 year. As experience shows the quality of mortgage loans decreases after 5 or 6 years. There are relatively many "new" accommodation loans also because since the end of 2007 there is a big sale of apartments on second hand market, apartments bought exclusively for later sale. The seller repays the installments and the buyer undertakes new loan. The range of such activity is determined by the fact that in the first six years of 2008 the sale of accommodation loans was about 36 billion PLN, and increase of loan debts only 20 billion PLN.

Present mechanism of mortgage loans expansion generates such dangers; credit expansion occurs in terms of preventing credit risk by the loaners, credit sellers

and agents and is based on according motivation systems as the ones in the United States. Bussiness cycle in scope of mortgage loans is long and complex. Present high dynamics of banks' assets is not a serious danger to the stability of banking sector in Poland but the lack of proper caution and too liberal crediting policy unnecessarily generate crisis risk.

Present situation on mortgage loans market in Poland, which goes through the first stage of growth, enables effective preventing activities that can eliminate crisis risk. They require reducing inflation on the real estate market to one digit level. Too radical regulations or activities can cause market break as a result of radical collaterals value drop and triggering crisis mechanism. That is why the whole system of factors influencing real estate prices in Poland has to be taken under consideration. The prices are however a little bit different then in countries like the US, Germany or Spain. Next to the major causes of credit demand growth like the ones in EU such as low percentage rates, liberalization of crediting policy and expected prices increase on the real estate market, there are Polish specific factors. These are fundamental factors regarding unfulfilled basic accommodation needs. For example the number of apartments in Poland calculated for 1000 citizens is over 30% lower then in the UE and eliminating such deficit requires about 12 to 15 yeras. On the other hand the prices of apartments "are increased" by limitations in supply due to administrative reasons: lack of spatial development plans, developed areas and also long lasting construction procedures that make it possible to procede with the investment in not less then a year. The difficulties limiting real estate market supply are also due to the lack of immigration policy in terms of big employment emigration of Polish people that would eliminate the problem of no employees.

As a result the price movement on Polish realestate market is caused by the demand change due to cheap and easy to get loan and supply limitations. It all allows so called bubbles in the business cycle. Additionally the more and more important role is begun to be played by foreign demand.

In such situation further slowing demand by percentage rates increase would have to be an ultimate solution in case previous precautious or supervising measures have been impossible or ineffective. Monetary Policy Council will soon be in a peculiar position. Caring for realizing inflation aim especially while oil prices grow as well as the prices of food and remunerations the Council would be willing to increase percentage rates. On the other hand increasing percentage rates will generate risk of losing financial stability as a result of growing risk of real estate prices drop that furthermore can trigger crisis mechanism.

In other words further increasing rates can cause deflation on real estate market along with all the negative side effects, as much as decreasing the rates is one of the most important factor of triggering mechanism of too big credit expansion and powerly inflation on real estate market.

The answer to the question what level of percentage rates will equal the risk of inflation growth and the risk of losing stability is very difficult. On one side we expect effects to the reaction to monetary policy of the mechanism generating inflation on the market of consumer goods, on the other hand the reaction to crisis mechanism (deflation) on real estate market.

Presently in Poland growing percentage rates on national interbanking market cause limited effects as far as slowing down demand for mortgage loan is concerned. Most loaners calculate their credits in currency of Swiss Francs with the use of maintaining appreciation of Polish zloty. Increase of percentage rates in zlotys causes intensified substitution between mortgage debts in zlotys and swiss francs. Increase of percentage rates can be "unpunished" for a short period of time in terms of influencing real estate prices and growth of risk of triggering crisis mechanism. Present rate of 5–10% correction of prices on Polish real estate market is due to natural limitation of accommodation demand due to too big burden of home budgets with installments and resulting from growth of prices in 2006 and 2007, not from the limitation of credit supply though. It does not seem dangerous if it does not deepen by unreliable policy. Supervising activities could be limited to the restriction of selling mortgage loans with no minimum own funds for example on the level of 10% of market value of the real estate.It is also worth considering to implement the duty of insuring credits by banks if for example LTV is higher then 0.8. It would cause better market evaluation of credit risk. Such situation occurs among others in Canada which in spite of tight bindings with the US market eliminated credit risk[16]. At the same time successively but not suddenly the administrative limitations should be unlocked. It does not seem right though to continue initiatives regarding dotations to mortgage loans from public funds which stipulate additional credit expansion of the banks. The most risky scenario would be too big accumulation of activities limiting the growth of real estate prices or too radical actions, which by decrease in real estate prices would trigger crisis mechanism. Maintaining financial system stability in Poland and maintaining high rate of growth requires coordinating not only monetary policy and precautious and supervising actions but also policies economical and social.

For Poland it is crucial to learn from present crisis on American market and distinguish the necessity of participating in costs of credit risk by all participants of credit market that initiate crediting process i.e. loaners, brokers, agents, credit sellers. It results directly from the conclusion of American supervision due to the effect of analysis of the sources of present crisis[17].

---

[16] More B. Lepczynski, M. Litkiewicz, M. Penczar, *Implementing in Poland insurance such as Mortgage Insurance – profits for banks and Polish banking system*, IBnGR, Gdansk 2008, copied typescript.

[17] Compare to G. N. Gardineer, *Residential Mortgage Lending: Lessons from the Current Crisis*, seminar materials of Polish Banks Association, Warsaw, November 6th, 2007.

In case of loaners it would mean the lack of possibilities to take loans with no own funds. In case of brokers and sellers it would be connected with the necessity of using remunerating systems based on so called commission banks. Commission bank (part of a deposit of remuneration for seller or broker) makes it possible to contemporarily secure the lender against the risk of unreliably sold credits. Experience of other countries shows the huge meaning of good practice codes in limiting risk of losing reputation by credit agents and banks.

The debth and characteristics of present crisis on financial markets caused politicians' reaction. They are under the pressure of higher and higher estimations of present crisis costs[18]. It has become obvious that actual architecture of financial security system *(safety net)* is unadequate to contemporary financial crisis challenges in the United States as well as in the European Union. In 2008 there are supposed to be expected initiatives which will try to solve the problem in the scope of Europe. They will not be of no meaning for long terms stability of Polish financial system. It seems that two of them can turn out to be extremely important.

First of all, the connection with proposed amendment of directives based on Basel II weakening the temptation of banks to reduce capital and requesting the banks to be in disposal of significant additional self capital not determined by risk[19].

Secondly, the connection with centralizing supervision of cross-border banks submitted in first quarter of 2008 by prime ministers of Italy and Hungary.

Generally speaking it is not possible to moderate European security system thoroughly without previous agreements as far as paying for the cross-border crisis costs is concerned. That is why the negotiations will be long lasting. It is also obvious that the European Union is not properly prepared for the crisis of even one cross-border bank. It seems enough to think what would happen if Northern Rock had branches and subsidiaries for example on Poland and in Lithuania. What would be the reaction of the Bank of England, and what would be the reaction of National Bank of Poland?

It does not change the fact that we are able to generate our own crisis for ourselves.

Present architecture of financial security system in Poland does not provide system stability in case of a little bigger difficulty. Furthermore the architecture of financial security system on so called homogeneous financial market of the

[18] Compare to M. Wolf, *The auction of terryfing scenarios*, "Financial Times" of March 12th, 2008, [in:] http://ft.onet.pl/11,7577,licytacja_przerazajacych_scenariuszy,artykul.html.

[19] Compare to H. Benink, G. Kaufmann, *The crisis uncovers failures of Basel II*, "Financial Times" of February 28th, 2008, [in:] http://ft.onet.pl/11,6997,kryzys_odkrywa_wady_basel_ii,artykul.html.

European Union is presently under constructions and it does not dispose of measures nor possibilities of eliminating results of medium cross-border crisis.

In time of crisis supervisors of home countries which in terms of implemented regulations supervise in a consolidated manner cross-borders financial groups are in a situation of classical conflict of interest: whether or not to act for the stability of financial system of the country of headquarters or to defend security of subsidiaries of the holding seated in other countries. Such situation is really uncomfortable for so called host countries consisted in most of new participants of the European Union including Poland.

The larger is the danger the deeper are the crisis on international financial markets. Presently there are no assumptions to think that crisis has been eliminated, it is more possible to expect crisis spreading. That is the reason why it is necessary to strengthen financial security system in Poland.

Regardless, Poland should actively cooperate in building new architecture of financial security system in European Union. Considering deep conflicts of interests it is going to be a long lasting process, at least couple of years long.

The directions of actions limiting the danger should refer to internal national possibilities and cooperation with other countries in terms of financial security in EU.

Active participation of Poland in building new architecture of financial security system in European Union should focus especially on:

- Acting for integrated financial supervision over cross-border financial groups being an alternative for present system of *home – host country supervision*,
- Acting for transferring material liability for the effects of cross-border crisis into federal level,
- Acting for enlarging costs participation in financial security system through cross-border financial groups.

Present crisis on international financial markets caused the situation when presumed dangers have become real.

Bibliography

Ackermann J., *How can banks regain trust*, "Financial Times" of July 31st, 2008, [in:] http://ft.onet.pl/11,13059,jak_banki_moga_odzyskac_zaufanie,artykul.html

Benink H., Kaufmann G., *The crisis uncovers failures of Basel II*, "Financial Times" of February 28th, 2008, [in:] http://ft.onet.pl/11,6997,kryzys_odkrywa_wady_basel_ii, artykul.html

Craig P., Wilson H., Costs of crisis in the US *reach billions of dollars*, "The Wall Street Journal" [in:] "The Wall Street Journal Poland. Financial Daily" of August 6th, 2008, p. 10.

Fed can learn on history mistakes. "Financial Times" of August 19th, 2008, [in:] http://ft.onet.pl/11,13671,fed_moze_sie_uczyc_na_bledach_historii,artykul.html

Gardineer G. N., *Residential Mortgage Lending: Lessons from the Current Crisis*, seminar materials of Polish Banks Association, Warsaw November 6th, 2007.

Greenspan A., *We will never have a perfect model of risk,* "Financial Times" of March 17th, 2008, [in:] http://ft.onet.pl/11,7690,nie_ma_doskonalego_modelu_ryzyka,artykul.html

A. Greenspan, *It is not possible to allow limiting competitive markets*, "Financial Times" of August 5th, 2008, [in:] http://ft.onet.pl/11,13182,nie_mozna_pozwolic_na_ograniczenie_ konkurencyjnych_rynkow,artykul.html

K. Jajuga, *Theoretical basis of risk management,* [in:] *Risk management*, ed. by K. Jajuga, PWN, Warsaw 2007.

Lepczynski B., Litkiewicz M., Penczar M., *Implementing in Poland insurance such as Mortgage Insurance – profits for banks and Polish banking system*, IBnGR, Gdansk 2008, copied typescript.

Mollenkamp C., *Banks facing new financial crisis*, "The Wall Street Journal" [in:] "The Wall Street Journal Poland. Financial Daily" of August 28th, 2008.

Roter A., *Deserved dynamics and financial morality of Polish people*, Forum of Banking 2008, Warsaw March 12th, 2008.

Saniewski A., *The rules of responsible crediting*, conference materials of Gdanskiej Academy of Banking "Financial institutions value management", Gdansk April 24th, 2008.

Simonian H., *The management of UBS was aware of law breaks,* "Financial Times" of August 13th, 2008, [in:] http://ft.onet.pl/11,13562,kierownictwo_ubs_wiedzialo_o_lamaniu_prawa,artykul.html

Slawinski A., *Financial markets*, PWE, Warsaw 2006.

Solarz J.K., *Financial system risk management*, PWN, Warsaw 2008.

Compare to M. Wolf, *The auction of terryfing scenarios*, "Financial Times" of March 12th, 2008, [in:] http://ft.onet.pl/11,7577,licytacja_przerazajacych_scenariuszy,artykul.html

Paweł Niedziółka

FLUCTUATIONS IN BANKING SECTOR LIQUIDITY AS A SYMPTOM OF FINANCIAL INSTABILITY – SELECTED CONCLUSIONS BASED ON AN ANALYSIS OF THE BANKING SECTOR IN POLAND

1. Introduction

A bank's liquidity may be defined as "its ability to settle its liabilities in a timely manner and to obtain funds to finance an unexpected withdrawal of deposits, and its ability to generate a positive cash flow in a specified time horizon"[1]. This definition concentrates on the concept of current liquidity, but touches only indirectly on the problem of the term structure of assets and liabilities, the relationship between which affects funding liquidity, which is also defined as structural liquidity. This second kind of liquidity appears to be as important as the ability to settle current liabilities without disruption, because it is *de facto* what guarantees a bank's continuing activity. The liquidity problems of an individual financial institution and the liquidity of the market are intermingled, since market shallowness limits the possibility of selling assets in a relatively short time at a price that can be considered fair value. Markets are liquid if transactions undertaken by a given institution do

[1] Recommendation P on Monitoring Banks' Financial Liquidity, National Bank of Poland, Commission for Banking Supervision, Warsaw 2002.

not have a significant effect on the present and future price of an instrument[2]. The difficulty in realising assets and securing deposits from non-financial entities pushes banks towards the interbank market – the ability to secure funds there is associated with funding risk. The purpose of this article is to present the conditions in which liquidity is managed at the level of an individual bank, and the mutual relations between individual liquidity and the liquidity of financial markets. It also aims to demonstrate that fluctuations in the liquidity of financial markets are among the most important symptoms and consequences of financial instability. The background to the observations, which relate for the most part to the situation on the Polish interbank market, is the events in financial markets in the second half of 2008, resulting out of the subprime crisis on the American market. The article has been structured to achieve the objectives set out above. The starting point for these considerations is a definition of financial stability, emphasising individual and systemic liquidity as a condition of its preservation. The subsequent section is devoted to individual liquidity and its management, and then a section looking at the Polish market, presenting determinants of the liquidity of the banking sector and the role of the central bank in building confidence and liquidity.

2. Financial Liquidity as a *sine qua non* of Financial Stability

When applying a definition of functional financial stability, a financial system can be deemed stable if "it properly performs its basic functions, which means that it assures:

- an efficient flow of funds between its participants,
- the correct valuation of assets, and
- safe and efficient payments"[3].

Financial stability is listed among the objectives of the National Bank of Poland, which is charged with securing the liquidity, efficiency and safety of the payment system in the course of performing its regulatory, supervisory and operational functions[4]. This approach lies within the second part of the definition of financial

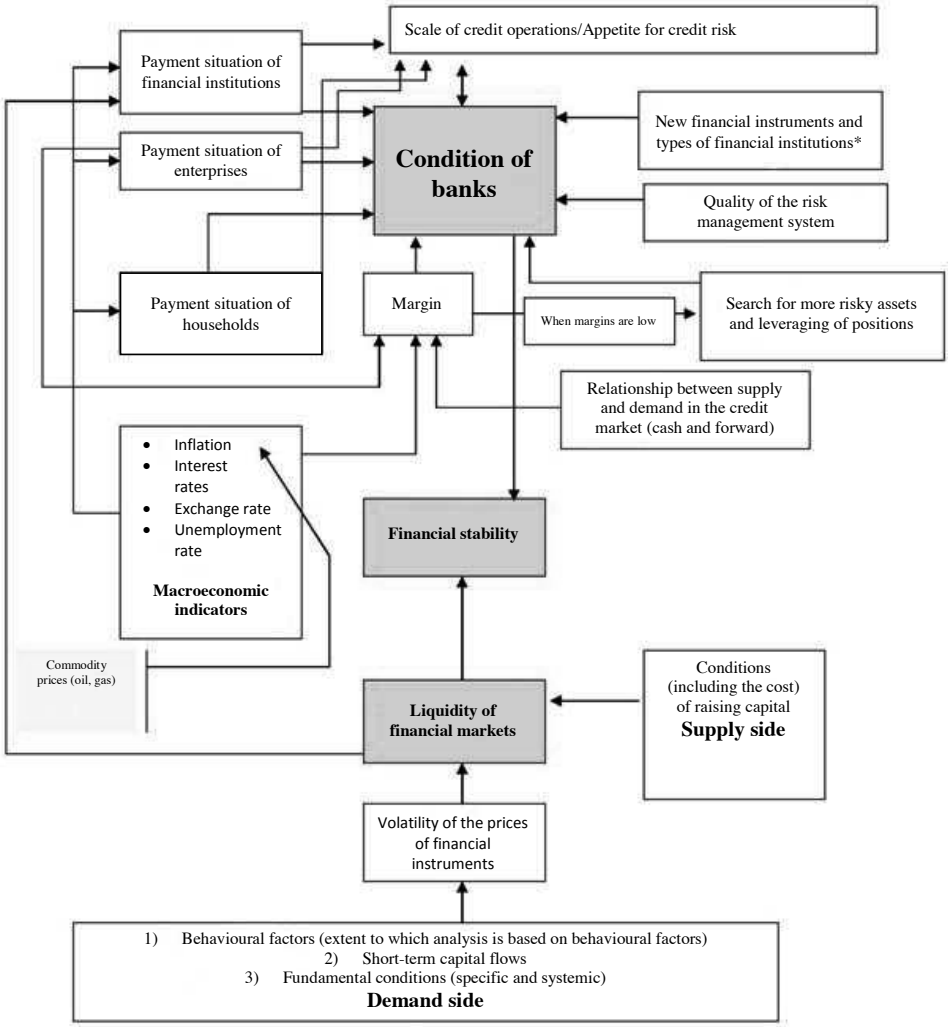
---

[2] G. Hałaj, *A Survey of Methods of Researching Banks' Liquidity*, "Bank i Kredyt" No. 07/2008, p. 16.

[3] O. Szczepańska, P. Sotomska-Krzysztofik, M. Pawliszyn and A. Pawlikowski, *Institutional Conditions for Financial Stability on the Basis of Examples from Selected Countries*, NBP Materials and Studies, Workbook No. 173, Warsaw, April 2004, p. 84.

[4] National Bank of Poland Operational Plan for 2007–2009, National Bank of Poland, Warsaw, January 2007, p. 7.

Figure 1. Interactions between the condition of the banking sector and the liquidity of financial markets and financial stability – potential sources of danger



* In particular this applies to hedge funds and to threats to financial stability arising from their redistribution of the credit risk Source: Own findings on the basis of Financial Stability Review, European Central Bank, December 2006.

stability, which is defined by an institutional-infrastructural concept in light of which the financial system is stable if the following conditions are met:[5]

- the key institutions of the financial system are stable,
- the financial infrastructure operates without disturbance,
- the key markets are stable, which means that transactions can be concluded in them at prices reflecting fundamental factors.

Both the functional and the institutional-infrastructural definitions stress the liquidity of individual financial institutions and of financial markets as necessary conditions of financial stability – without liquidity it is difficult to talk of the correct valuation of assets, the good condition of the banking sector or the effective allocation of resources. Figure 1 presents the interdependence between the economic-financial condition of the banking sector, its liquidity, and financial stability.

3. Management of a Bank's Liquidity – a Microeconomic Approach

Adequate liquidity is undoubtedly necessary for the correct and safe functioning of a bank, but unconditionally maximising it cannot be an objective. Liquidity stands in opposition to profitability, which is a function of banking risk, including liquidity risk. The essence of a bank's mission is the transformation of maturities. It is thanks to banks that it is possible to achieve contradictory purposes: the priorities of depositors, who are generally unwilling to deposit funds for long periods (and at any time have the option of breaking a deposit) and the purposes of borrowers, who feel a need for permanent financing by credit on a part of working capital, and also present a demand for the long-term financing of investments from external funds. It is thanks to the transformation described above and to the limitation of credit risk that banks earn their income – this is greater the longer funds are invested, which leads headlong into an conflict between the pressure to maximise liquidity and an orientation towards maximising income. The process of managing a bank's liquidity is similar in its sequence of mechanisms to the management of other risks. One may distinguish:

- the identification of the liquidity risk (definition of liquidity and of threats that may make it insufficient),
- the quantification of liquidity at various time horizons,

[5] G. Bardsen, K-G. Lindquist and D.P. Tsomocos, *Evaluation of Macroeconomic Models for Financial Stability Analysis*, Norges Bank, 14 February 2006, p. 6.

- ❖ the management of liquidity using external methods (taking into account precautionary supervisory norms) and internal methods (remedial, adapted to the specific ways in which each institution functions),
- ❖ monitoring the process and updating tools for quantifying and managing liquidity.

Liquidity is bound up with the ability to undertake transactions on an ongoing basis on a market in which there are at least several competing market makers who quote two-way prices for customarily accepted nominal amounts[6]. From the point of view of an individual bank, the greatest threats to liquidity are:[7]

- ❖ the drawdown of loans under unconditional credit lines and dynamic growth in credit operations,
- ❖ the withdrawal of deposits by the largest depositors and/or inadequate growth in deposits,
- ❖ a run on the banks,
- ❖ the exercise of bank guarantees,
- ❖ a fall in the value of the flow of funds from maturing assets,
- ❖ a growth in expenses unrelated to credit operations (growth in the bank's own costs, in the payment of dividends, etc.),
- ❖ insufficient inflow of deposits from transactions with clients that provide security for the settlement of interbank back-to-back transactions on a *mark-to-market* basis,
- ❖ a fall in demand for debt securities issued in the process of securitisation and/or limitation of access to funding from the interbank market, for exogenous or endogenous reasons.

Liquidity is a dynamic category, which means that its measurement should have a dual character – on the one hand it should concentrate on the most up-to-date financial statements, and on the other it should include scenario analysis, which gives answers to questions about the risks of the loss of liquidity in the future, taking into account the potential behaviour of third parties and structural changes that are reflected in the functioning of financial markets.[8] One can distinguish between measures of liquidity using three main criteria:

- ❖ the criterion of the time horizon: payment (immediate), current (seven-day), short-term (30-day), medium-term (one- to 12-month) and long-term (over 12-month) liquidity,[9]

---

6 T. Weithers, *Credit Derivatives, Macro Risks and Systemic Risks*, University of Chicago, 20 April 2007, p. 37.

7 Recommendation P..., op. cit.

8 Ibidem.

9 Cf. Resolution No. 9/2007 of the Commission for Banking Supervision of 13 March 2007 on Establishing Binding Norms for Banks' Liquidity.

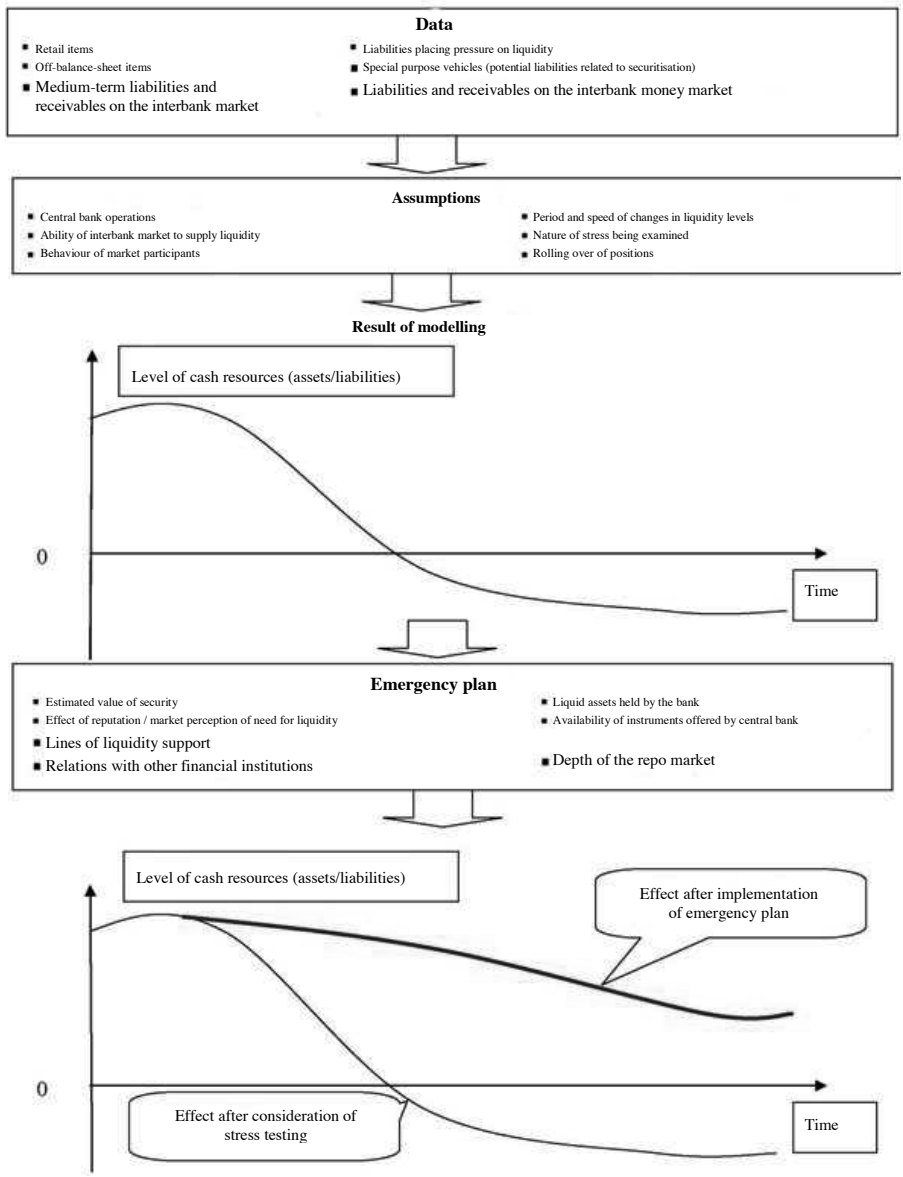
- the criterion of the source of data that are the basis for drawing conclusions about liquidity: indicative tools based on financial statements (static liquidity – an ex post depiction) and stress testing, the liquidity gap and analysis of cash flows (dynamic liquidity aimed at identifying future liquidity deficiencies – an ex ante depiction),
- the parametric criterion, including: a) measures of mismatching: of liquid resources (absolute liquidity, expressed in monetary units as a surplus or deficiency – e.g. a balance of flows, a liquidity gap) and of time (the time of survival without access to sources of liquidity, the $DCtD_{\alpha}$ day count to default), b) relative measures (percentage divergence between the volume of assets and liabilities that determine liquidity – e.g. the indicator of position in the financial sector, the indicator of the proportion of liquid assets in the balance sheet total, the indicator of the coverage of credits by deposits) and c) measures of threats (*LaR*, Liquidity at Risk)[10].

Forecasting future liquidity on the basis of the analysis of extreme conditions (stress testing) is of particular importance. *Stress testing* usually makes use of the liquidity gap method (the difference between assets and liabilities that mature in specified time periods), making extremely unfavourable but possible assumptions regarding the behaviour of depositors, access to sources of funding, possibilities of selling shares (by estimating *haircuts,* i.e. indicators of adjustments to the prices that may be obtained if demand is insufficient) and the repayability of outstanding claims. The result of the test of extreme conditions is compared with the liquidity buffer, i.e. total assets that can be turned into cash without substantial losses. Stress testing is also based on an attempt to estimate the consequences of a major participant's withdrawal from the market. *Stress testing* should also include events that are related to the specific nature of the bank in question's functioning (idiosyncratic factors), as well as changes in the overall market situation that have a negative effect on liquidity. *Stress tests* that are co-ordinated by central banks are particularly important since they make it possible to estimate the systemic effect of fluctuations in liquidity[11]. An example of an algorithm for analysis of extreme conditions is presented in Figure 2.

[10] For a broader description of methods of quantifying financial liquidity risks see M. Zaleska, *Assessment of a Bank's Economic-Financial Situation*, [in:] M. Zaleska (ed.), *Contemporary Banking*, Volume I, Difin, Warsaw 2007, p. 606 and G. Hałaj, op. cit., pp. 18–19.

[11] Ibidem, pp. 18–19.

Figure 2. Algorithm for an analysis of extreme conditions in the process of managing liquidity



Source: M. Hoccom, The Liquidity Crunch. Causes and Consequences, Lloyds TSB Corporate Markets, 10 June 2008, pp. 19–21.

Quantitative norms for the management of a bank's liquidity should correspond to qualitative solutions – including those to be found in the Commission for Banking Supervision's resolution on establishing binding norms for banks' liquidity,[12] which include:

- the obligation of the bank to examine and confirm the bases on which it manages liquidity at least once a year,
- the need to prepare forecasts of cash inflows and outflows so as to identify their effect on the bank's liquidity at selected time horizons,
- the need to prepare an analysis of the effect of entities related to the bank on the level of the bank's payment liquidity.

The process of limiting liquidity risk based of the result of measuring it must be associated with concrete objectives, which in traditional deposit-credit banking are specified by liquidity rules. Modern banking, thanks to empirical research confirming the stability of certain deposits, the possibility of financing assets not from non-financial sector deposits alone, and the need to meet demand for relatively long-term finance, has systematically liberalised 19th-century liquidity norms. Liquidity management concepts (beginning with the most conservative) include:[13]

- the banking golden rule (there is no transformation of maturities – the period at which liabilities fall due are to correspond to those at which assets mature),
- the core demand deposits rule (abiding by the banking golden rule, apart from the assumption that there are core demand deposits, i.e. that certain deposits are stable and the maturity of liabilities is partially prolonged),
- the movements in assets rule (defining the quantity of assets that could be sold at any time without substantial losses, so as to maintain liquidity),
- the maximum liability rule (abiding by the principle that maturing liabilities should be covered by liquid assets, while potential losses from the premature sale of assets should be limited to the amount of the bank's own funds).

Limits are tools that are largely ancillary to the principles identified above, or to others (defined by a particular bank). In this area, Recommendation P proposes such limits as: on mismatching (with a possible distinction of ranges), on dependence on large deposits, and on deposits received from other banks and deposits made in them[14]. In practice, reaching goals in the form of achieving a specified relationship between assets and liabilities, as well as taking their maturities into account, makes it necessary to operate simultaneously on bank liquidity in four areas, as presented in Table 1.

---

12 Resolution No. 9/2007 …, op. cit.

13 E. Kania and P. Rosiński, *Risk in Banking Operations*, [in:] K. Jajuga (ed.), *Risk Management*, Wydawnictwo Naukowe PWN, Warsaw 2007, pp. 196–197.

14 Recommendation P …, op. cit.

Table 1. Management of bank liquidity – balance sheet perspective

	Asset side of balance sheet	Liability side of balance sheet
Area of the bank's individual policies	• Possibility of financing by shareholders, • Limitation of scale of financing by introducing limits on the growth of credit operations and redefining the guidelines for credit policy (e.g. by excluding specified branches, reducing the investment horizon, reducing the maximum size of an individual loan, specifying more conservative marginal conditions for financing in such forms as a contribution from own funds and the method of estimating the financial surplus), • Non-renewal of existing financing arrangements insofar as borrowers are in a position to repay them or find refinancing, • Increase in the price of financing, • Pressure for securing with cash client transactions in derivatives in accordance with the *mark-to-market* principle, • Preference for products of the *unfunded risk participation* type	• General application in credit agreements of a covenant that obliges corporate clients to undertake a certain minimum level of turnover in their accounts in the bank, • Increasing the profitability of deposit products, • Introducing new deposit products, including more flexible ones that allow their liquidation without substantial losses before the agreed maturity date, but also favour long-term forms of saving, • Preferential treatment of deposit clients (giving priority to instructions lodged by them, lower servicing costs, non-standard products, etc.)
Area of market conditions	• Possibility of selling assets at a fair price, • Seeking ways of securitising assets	• Reserve sources of financing (e.g. bilateral agreements covering the risk of being cut off from financial markets), • Seeking to improve market image (improvement in rating, *public relations*) so as to achieve greater confidence among market participants, • Seeking instruments that provide support for interbank loans (e.g. government guarantees).

Source: Own findings.

4. Channels by Which the American Crisis Affected Banking Sector Liquidity

One of the direct reasons (apart from an excessively liberal credit policy) for the American crisis was an increase in interest rates, which caused a significant reduction in the quality of housing credits and problems with rolling-over funding for that portfolio. After taking that into account, banks decided to tighten their credit policies, which in turn caused a reduction in people's disposable income, which (through its effect on consumption) affected the real economy. The restriction of credit operations also caused a fall in the money supply, which contributed to liquidity shocks in the banking sector (the liquidity crunch). A sign of the beginning of the process set out above was the reduction in the tempo of credit operations. Another indication of the danger that liquidity problems might appear in the banking sector was the scale of operations to boost liquidity undertaken by the central bank. The volume of liquidity-supporting operations is determined by the level of the central bank's base rate – the desire to maintain it at a required level (and not at a lower one, for example because of a monetary target) is a factor that limits the supply of liquidity. One example is the United States – the growth rate of the 'Fed balance' (Fed Credit), which reflects the process of adding liquidity to the banking sector, fell consistently during 2007 as a result of the intention to maintain the Fed Funds Target Rate at the level of 5.25%[15]. Banks' liquidity problems, which were a consequence of the American crisis, were related directly to such processes as:[16]

- in view of the difficulty in placing new issues, the need to give liquidity support to special purpose vehicles established to undertake securitisation transactions,
- the need to purchase from special purpose vehicles the highest risk tranche of debt securities (the capital tranche) issued in securitisation transactions,
- excessive absorption of exposures related to financing the housing sector as a result of difficulties in transferring this risk (or exposure) to investors,
- discharging obligations relating to the supply of liquidity to hedge funds and other financial institutions,
- the need to assign resources to providing security for positions in derivatives (which were larger than usual because of increased market volatility),
- the worsening quality of the credit portfolio (reduced repayment rates),
- a lack of confidence in the interbank market,
- uncertainty in relation to future liquidity requirements.

---

[15] F. Shostak, *What Caused the Liquidity Crunch*, Ludwig von Mises Institute, 31.07.2007, www.mises.org, pp. 3–4 (10.11.2008).

[16] N. Frank and B. Gonzalez-Hermosillo, H. Hesse, *Transmission of Liquidity Shocks: Evidence from the 2007 Subprime Crisis*, IMF Working Paper No 08/200, August 2008, p. 6.

The liquidity of particular banks is a necessary condition, but insufficient in itself for the liquidity and stability of the banking sector – mutual confidence among banks is of fundamental importance and determines the scale of turnover in the interbank market, the spread and the maximum period of funding available[17]. A systematic approach to the liquidity problem points to two main areas where threats to the liquidity of individual banks arise. The first relates to "runs" on banks, namely to mass and largely psychologically-driven withdrawals of deposits from banks. The second is identified with the domino effect of a lack of liquidity or contagion by a lack of liquidity (the liquidity problems of a particular bank cause insufficient liquidity among some of its counterparties, etc.). This dependency demonstrates the bidirectional connections between bank liquidity and the liquidity of the system. The first case shows that causes may, but do not have to, arise outside the banking system and then, through the banking system, have an effect on an individual entity. The second case in turn confirms that the problems of an individual bank (liquidity, portfolio quality, solvency) can be transferred to its counterparties (the banking system)[18]. The definition of a liquid market requires that it is simultaneously:[19]

- tight, which means that it is sufficiently competitive to exert pressure for the reduction of transaction costs,
- immediate, which means that a given transaction can be undertaken at any selected time,
- deep, which means that incoming offers to buy and sell at prices that are close to current transaction prices produce balance in volume terms between supply and demand,
- broad, which means that a relatively large number of transactions of substantial size are concluded, without these operations significantly affecting market prices in the transactions that follow them,
- resilient, which means that, in the event of prices diverging from the equilibrium level derived from fundamental factors, offers appear that are directed at restoring equilibrium prices.

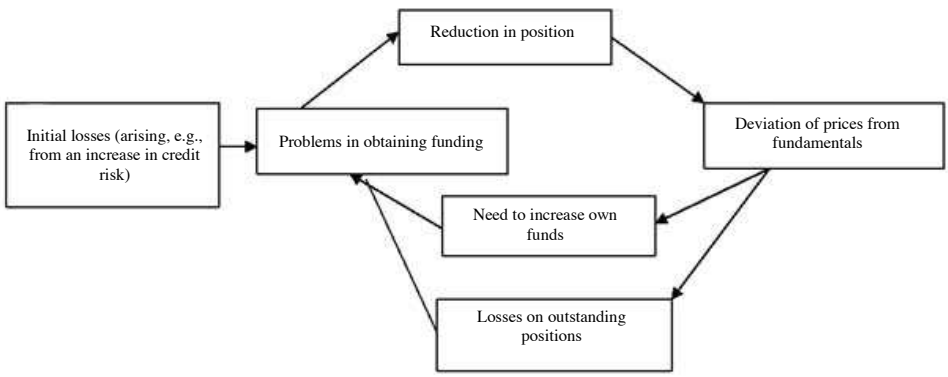
The risk of banking sector liquidity can be divided into market liquidity risk and funding liquidity risk. The liquidity of the market is determined by the degree of its completeness and symmetry of information, the quality of sales mechanisms (including the frequency and objectivity of valuations, the operation of a settlement institution as an intermediary, the market makers' ability to absorb business, the depth of the secondary market, etc.) Funding liquidity risk, meanwhile, is

---

17 Recommendation P …, op. cit.
18 G. Halaj, op. cit, p. 22–23.
19 A. Sarr and T. Lybek, *Measuring Liquidity in Financial Markets*, "Working Paper" No. 02/232,/ IMF, Washington D.C. – cited by G. Hałaj, op. cit., p. 16–17, 24.

associated with a given financial institution's ability to obtain funding so that it is in a position to meet its payment obligations. Market liquidity risk grows into funding liquidity risk since banks have to cover losses related to securitisation transactions by obtaining funding. At the same time, irregular turnover and an inefficient "price discovery" process leads to an increase in asset price volatility, which stimulates stronger calls for increases in own funds and the strengthening of security, and hence for a reduction in the level of leveraging and limitations on the possibility of obtaining funds. On the other hand, funding liquidity risk can lead to market liquidity risk, since an inability to obtain funds in the market creates a need to realise assets rapidly (usually at prices that are significantly lower than fundamentals suggest – known as a fire sale), which produces a further reduction in leveraging, and in the possibility of obtaining funding supported by security[20]. The increasingly close relationship between market liquidity risk and funding liquidity risk arises from the fact that an increasing number of financial institutions are looking for funds from financial markets rather than making use of their own deposit base or own funds[21]. The process of converging market liquidity risk and funding liquidity risk leads to the appearance of the phenomenon that is referred to in the literature as a liquidity spiral.

Figure 3. The liquidity spiral – a spiral of losses and a spiral of calls for the replenishment of own funds



Source: M. Brunnermeier, Deciphering the 2007–2008 Liquidity and Credit Crunch, Journal of Economic Perspectives (forthcoming), draft as of 19 May 2008, p. 25.

[20] N. Frank, op. cit., p. 5–8.

[21] Speech by Jose Manuel Gonzalez-Paramo, Member of the Executive Board of the ECB, 2nd Spanish Capital Markets Forum, Madrid, 30 September 2008, www.mataf.net (04.11.2008).

5. The Actual and Potential Consequences of the American Crisis for Banking Sector Liquidity in Poland

The interbank market and shareholders funds are of ever-increasing importance in the funding of banks in Poland. In the face of pressure to obtain sources of funding for credit operations, of a reduction in the volume of resources corresponding to a negative funding gap that could be borrowed in the interbank market, and of the limited possibility of acquiring funds by issuing bonds, deposits from non-financial entities have become of greater importance, and their proportion has grown significantly in the course of the last year. At the same time, the interbank market has experienced a sudden reduction in liquidity caused by a collapse of the banks' confidence in each other, which was justified in relation to banks registered in Poland insofar as they have low financial strength ratings and a low level of mutual knowledge about competitors' portfolios. This is confirmed by the high level of implied credit spreads for Polish banks' issues in the Euromarket, which grew between July 2007 and October 2008 by about 150 basis points, i.e. from 2.5 times for 10-year papers to seven times for 2-year issues. The growing liquidity risk is also indicated by the fact that in the first half of 2008 the short-term liquidity gap increased (this tendency halted in the third quarter of 2008), principally as a result of expansion in the market for long-term bank credits. It should be added, however, that almost all large and medium-sized banks covered this gap with a portfolio of government debt. Smaller banks (in total accounting for about 12% of the sector's assets), meanwhile, conducted a policy of maintaining a liquidity gap that was high relative to bank size, without substantial coverage by government debt, which meant de facto significant dependence on the functioning of the interbank market[22]. These changes should be considered in terms of the consequences of the American crisis, which caused a decline in financial institutions' confidence in each other and gave rise to the process that has been characterised as *a* flight to liquidity and quality, which meant, among other things, an outflow of speculative capital from emerging markets, including Poland. In the context of the American crisis, the following factors appear to have affected banking sector liquidity in Poland:

- the potential to transfer liquid financial assets to parent banks,
- the fall in banks' confidence in each other, which was manifested in a fall in liquidity, a rise in the cost of funding and a shortening of its horizon,
- a reduction in the availability of non-resident banks' credit limits for banks registered in Poland, a result of which was a reduction in resident banks' limits for each other,

[22] *Survey of Financial System Stability – October 2008*, National Bank of Poland, Warsaw, October 2008, pp. 30–34.

- high volatility in exchange rates, which made it necessary to tighten the credit policy in the area of foreign currency funding, and to reassess exposure to clients who were subject to an exchange rate risk,
- expectations of weakening economic activity, necessitating a review of portfolios with a view to limiting the risk associated with them.

In view of the liquidity problems experienced by some banks owning financial institutions in Poland, the question arises as to the possibility of liquid financial assets being transferred by banks registered in Poland. In accordance with Polish Financial Supervision Authority guidelines, all transfers of liquid financial assets abroad should be preceded by appropriate information being filed with the Authority; this also covers potential transfers related to securing foreign liabilities. The information requirement also applies to fluctuations in liquidity, the level of which banks are meant to report to the supervisor daily. The risk of transfer is considered to be slight because of the relatively small size of Polish banks and, therefore their limited ability to help in relation to a parent bank's reputational risk (information on a parent bank turning to a subsidiary company in Poland for assistance could deepen the problems of the parent institution). Another factor that reduces the risk of transfer is that, if a Polish management board transferred funds abroad, it would be acting to the detriment of the institution it manages. There also remains the possibility of sanctions being imposed by the NBP (in accordance with a possible suggestion from the supervisor) in the form of cutting off central bank funding to a bank that transfers funds to its parent bank. Apart from the possibilities indicated above of limiting the scale of any transfer of liquidity, additional safeguards against uncontrolled transfers of liquidity are expected to be introduced, these being reflected, among other things, in a new definition of the coefficient of concentration[23]. One of the results of the American crisis for banks in Poland has been a reduction in the availability of funding in certain foreign currencies, and a rise in the cost of funding[24]. The lengthening absence of mutual confidence from the interbank market may have long-term negative consequences – enterprises deprived of funding will initially make use of their deposits, further reducing bank liquidity, and will then revise investment programmes, the effect of which may be to worsen the competitiveness of the economy and to increase unemployment, thus reducing consumption[25]. One consequence of the crisis is, as Hungary exemplifies, a reduction in the forecast rate of GNP growth, an increase

---

[23] Ł. Wilkowicz, *The Risk of Transferring Cash Abroad from Poland is Very Small. A Discussion with Stanisław Kluza, Chair of the Polish Financial Supervision Authority*, "Rzeczpospolita" 22.10.2008.

[24] Ibidem.

[25] Cf. Piotr Czarnecki's Comments contained in: E. Twaróg, *Prime Minister! The Banks are Only Begging for a Gesture*, "Puls Biznesu", 22.10.2008, p. 6.

in public-sector indebtedness and the discouragement of planned tax reductions[26]. A specific reason for the growth in the liquidity risk of some banks in Poland has turned out to be the establishment of treasury limits on transactions that give protection against changes in exchange rates. Banks registered in Poland most frequently make use of relatively small credit limits extended by the investment banks that operate the market in over-the-counter derivatives – the reasons for this are:

- country risk, which limits the scale of potential operations by investment banks,
- continuing lack of pressure on banks in Poland to increase limits (as the scale of operations and the range of banks with which banks in Poland could co-operate largely corresponds to the existing limits),
- the pressure for liquidity in the American banking sector, which caused reduction (or withdrawal) of limits,
- the fall in confidence in emerging markets,
- the bankruptcy or financial problems of some investment banks.

The reduction in the availability of limits extended by organisers of the market in over-the-counter derivatives, which is related to the effect of back-to-back proceedings (most client transactions are "closed" on the interbank market to restrict the bank's exposure to market risk), means de facto that it is necessary to settle transactions on the interbank market on a mark-to-market basis, while in the case of many corporate clients, banks have not been able to enforce the security deposits required. Therefore, the need to settle deposit liabilities to counterparties on the market in over-the-counter derivatives (for the most part global investment banks) in the face of an insufficient inflow of deposits from clients who were placing funds in treasury instruments (in September and October 2008 this concerned exporters), gave rise to unfavourable fluctuations in the liquidity of banks registered in Poland.

6. The Central Bank's Actions to Affect Banking Sector Liquidity in Poland

The central bank's actions to affect banking sector liquidity should be based on a diagnosis of the current state of liquidity – five different positions can be distinguished in this regard:[27]

[26] H. Koziel, *The Crisis is Haunting Eastern Europe*, "Parkiet" 18.10.2008.
[27] G. Pietrzyk, *Banking Sector Liquidity*, "Gazeta Bankowa" No. 6 (954), 5–11 February 2007, p. 16.

- structural insufficiency of liquidity – the central bank is a net creditor of the banking sector (a condition that is inseparably related to an operational insufficiency of liquidity),
- operational insufficiency of liquidity – in successive compulsory reserve maintenance periods, after previously absorbing all surpluses in bank funds through long-term operations, the central bank conducts operations that supply liquidity to the banking sector,
- structural excess of liquidity – the central bank is a net debtor of the banking sector (this may be accompanied by an operational insufficiency of liquidity),
- operational excess of liquidity – the part of excess liquidity that is absorbed by the central bank in operations with an initial maturity shorter than the period for the maintenance of compulsory reserves,
- operational liquidity balance – a transitional phase between operational excess and insufficiency of liquidity.

A measure of the liquidity of the interbank market is the spread between short-term interest rates and overnight index swap contracts. In the middle of October 2008, the WIBOR-OIS spread reached a record level of 110 basis points. In the case of West European countries and the United States, analogous spreads reached an even higher level – in some cases oscillating around 300 basis points. Substantial spreads between interbank rates were one of the reasons for the adoption of a series of initiatives (including international initiatives) aimed at restoring confidence in the interbank market.[28] These initiatives were concerned principally with guaranteeing transactions on the interbank market and rescuing banks (by nationalisation or by recapitalisation through purchases of preference shares and purchases of bonds with maturities of up to five years) and were in many cases the consequences of agreements reached by the leaders of Euroland (the Eurogroup) and the United Kingdom and Slovakia during their Paris summit on 13 October 2008. They also included the "Confidence Package" announced by the NBP, which contained a series of measures aimed at rebuilding confidence, and therefore liquidity, on the interbank market, as well as individual liquidity. The implementation of the "Confidence Package" meant *de facto* acceptance by the NBP of the role of leader of the interbank market charged with the task of rebuilding the złoty and the foreign currency interbank market[29]. The "Confidence Package" included:[30]

---

[28] Ł. Wilkowicz, *The NBP and the Government Are Trying to Maintain Stability*, "Parkiet" 14.10.2008.

[29] R. Grzyb, *Guarantees Cover Most Deposits*, "Gazeta Prawna" 15.10.2008 and Ł. Wilkowicz, *The NBP*..., op. cit.

[30] Ł. Wilkowicz, *The Risk*..., op. cit., R. Grzyb, *The NBP Confidence Package is Sufficient if the Situation in the West Calms Down*, "Gazeta Prawna" 16.10.2008 and Euromoney Polska SA (17.10.2008).

- the introduction of currency swaps and the announcement on 24 October 2008 of a calendar for these operations in the period from 27 October 2008 to 31 December 2008,
- the introduction of three-month open market supply operations (extending the period of repo transactions),
- the introduction of foreign currency deposits as security for refinancing credits,
- the expansion of the list of assets securing credits taken by commercial banks from the NBP (to include, among other assets, shares quoted on the Warsaw Stock Exchange),
- the introduction of modifications to the operating system for Lombard credits (reduction in the *haircut* for security),
- the continued issue of seven-day money bills as the principal instrument sterilising an excess of liquidity,
- the introduction (as required) of greater frequency of open market operations so as to react to changes in liquidity and to stabilise the POLONIA rate around the reference rate.

Open market operations are of particular significance. Their implementation in accordance with the results of empirical research substantially reduces the inefficiency that results from an inability to obtain protection against idiosyncratic risk and aggregate uncertainty relating to the demand for liquidity. It also improves the efficiency of the allocation of funds within the financial system. The temptation for misuse and problems related to negative selection restrain the central bank's application of the open market operations policy to restore the liquidity and efficiency of the interbank market (by neutralising idiosyncratic and aggregate uncertainty). As Bhattachararya and Gale[31] have demonstrated in regard to these limitations, the central bank supplies the sector with liquidity to an inadequate extent[32]. A problem that many economists feel was not sufficiently identified in the "Confidence Package" is banks' liquidity in relation to the CHF (the NBP offered currency swaps only in relation to two currency pairs, EUR/PLN and USD/PLN), one of the consequences of which has been a limitation in the availability of housing loans in that currency, which in turn has translated into reduced average credit capacity and which may give rise to a deepening stagnation in the

[31] S. Bhattacharya and D. Gale, *Preference Shocks, Liquidity and Central Bank Policy*, [in:] W. Barnett, K. Singleton (eds.), *New Approaches to Monetary Economics*, Cambridge University Press, 1987, pp. 69–88.

[32] F. Allen, E. Carletti and D. Gale, Interbank Market Liquidity and Central Bank Intervention, document prepared for presentation at the Public Policy Conference in November 2008 and published in the Carnegie – Rochester Series, 9 June 2008, pp. 2, 4.

construction sector[33]. The supply of CHF liquidity other than through a CHF/PLN currency swap is possible through the NBP adopting the position of intermediary between foreign commercial banks and Polish institutions, and also through the agreement with the Swiss National Bank (SNB) on EUR/CHF swaps[34] which was finally concluded on 7 November 2008. Since 17 November 2008, the NBP has participated in weekly currency swap operations of the SNB and the Eurosystem. The agreement provides for the SNB to supply the NBP with CHF in return for EUR, while the NBP supplies its counterparties with CHF in return for PLN[35].

Another measure that could rebuild confidence between banks and which is worth considering is a temporary guarantee for loans on the interbank market. The addition of this instrument to the palette used by the NBP requires, however, rapid legislative changes, and appears to be necessary, unlike the prerogatives that central banks have in some European countries in the area of recapitalisation of banks. However, the dominant view in this question is that such an instrument could not function without an element of co-insurance, meaning at least the partial liability of banks that take part in interbank transactions. In many bankers' opinion, temporarily guaranteeing interbank liabilities (this relates particularly to Euromarket issues by banks registered in Poland and to their rollover risk in the context of guarantees extended by the governments of other countries whose banks have found themselves in a worse economic-financial position than banks in Poland), even if the banks have to bear the cost of the guarantee,[36] is a necessary condition and may suffice in rebuilding confidence in the banking sector.[37]

Other measures that could stimulate the interbank market are:

- a system of incentives for banks that are active in this market, consisting of preferential access to particular kinds of transactions,[38] and
- a reduction in the level of compulsory reserves[39].

---

33 E. Więcław, *The NBP is Not Selling Francs*, "Rzeczpospolita" 18.10.2008 and Ł. Wilkowicz, *The Risk*..., op. cit.

34 P. Rutkowski, Ł. Wilkowicz, M. Kowalczyk and H. Kozieł, *The World's Financial System Needs Repair*, "Parkiet" 16.10.2008.

35 www.nbp.pl (10 November 2008).

36 This is justifiable, since the cost would be borne principally by banks that have not adapted their liabilities to match the structure of their assets, creating systemic risk.

37 Cf. Piotr Czarnecki's Comments..., op. cit, p. 6 and R. Grzyb, *Guarantees Cover* ..., op. cit.

38 E. Więcław, *Polish Banks: Get Ready for Worse Times. A Discussion with Andrzej Stopczyński, Managing Director of the Bank Supervision Department in the Polish Financial Supervisory Authority*, "Rzeczpospolita" 22.10.2008.

39 P. Rutkowski, Ł. Wilkowicz, M. Kowalczyk and H. Kozieł, op. cit.

6. Final Conclusions

The analysis undertaken in this article demonstrates the strong and reciprocal relationships between individual liquidity and banking sector liquidity, as well as the mutual dependence of market liquidity risk and funding risk, which are components of banking sector liquidity risk. In turn, fluctuations and the insufficiency of banking sector liquidity can be identified as a symptom of a lack of financial stability – liquidity is thus a *sine qua non* of financial stability. The American crisis shows a further connection: individual liquidity and banking system liquidity in a given country are a function of the liquidity of other national banking systems, because of dynamic globalisation and the integration of finances and of banks' growing dependence on funding from financial markets rather than from their traditional deposit base of individuals and non-financial institutions. As a result, stable economic fundamentals (the real sphere), individual and sectoral liquidity and banks' solvency, arising from such things as the application of conservative supervisory regulations, do not in today's world constitute a guarantee of effective immunisation against the financial crisis. To put it briefly, the global crisis that is "infecting" successive economies and institutions requires global, i.e. co-ordinated, intervention by central banks and governments. In the long term, the conclusion that losses (liquidity problems, solvency problems, etc.) are to be internationalised has, however, a demotivating undertone for those who recognised the priority of safety at the cost of lower competitiveness when they established principles for the functioning of national banking systems. That conclusion is also in a way an "incentive" to undertake actions that can lead to abuse. It seems that change in the global financial system is unavoidable. Various concepts are being considered, including that recommended by J.C. Trichet, President of the European Central Bank, of a return to the Bretton Woods system. The Bretton Woods system, in Trichet's opinion, is a system of macroeconomic, monetary and market discipline. The establishment of new exchange rate regimes will, however, not suffice. An increase is postulated in the role of the state in financial markets through broadening the range of instruments used in interventions, aimed on the one hand at defending an exchange rate, and on the other at improving liquidity. Another initiative is the establishment of international supervisory institutions – the expansion of the role of the IMF has been mentioned in this regard. Apart from aid to countries threatened by crisis (or undergoing a crisis) the active monitoring of economies from the point of view of the quality of supervision and of excessive escalation of credit operations is recommended. The Fund would act in this case as an early warning institution. Making supervision international might also mean establishing supervision for the 30 largest European banks; such an initiative has

been supported by J.M. Barroso, President of the European Commission and by Gordon Brown, the Prime Minister of the United Kingdom.[40]

Bibliography

Allen F., Carletti E. and Gale D., Interbank Market Liquidity and Central Bank Intervention, document prepared for presentation at the Public Policy Conference in November 2008 and published in the Carnegie – Rochester Series, 9 June 2008, pp. 2, 4.

Bardsen G., Lindquist K-G. and Tsomocos D-P., *Evaluation of Macroeconomic Models for Financial Stability Analysis*, Norges Bank, 14 February 2006.

Bhattacharya S. and Gale D., *Preference Shocks, Liquidity and Central Bank Policy*, [in:] Barnett W. and Singleton K. (eds.), *New Approaches to Monetary Economics*, Cambridge University Press, 1987.

Brunnermeier M., *Deciphering the 2007–2008 Liquidity and Credit Crunch*, Journal of Economic Perspectives (forthcoming), draft as of 19 May 2008.

Financial Stability Review, European Central Bank, December 2006.

Frank N., Gonzalez-Hermosillo B. and Hesse H., *Transmission of Liquidity Shocks: Evidence from the 2007 Subprime Crisis*, IMF Working Paper No 08/200, August 2008.

Grzyb R., *Guarantees Cover Most Deposits*, "Gazeta Prawna" 15.10.2008.

Grzyb R., *The NBP Confidence Package is Sufficient if the Situation in the West Calms Down*, "Gazeta Prawna" 16.10.2008.

Hałaj G., *A Survey of Methods of Investigating Banks' Liquidity*, "Bank i Kredyt" No. 07/2008.

Hoccom M., *The Liquidity Crunch. Causes and Consequences*, Lloyds TSB Corporate Markets, 10 June 2008.

Kania E. and Rosiński P., *Risk in Banking Operations*, [in:] Jajuga K. (ed.), *Risk Management*, Wydawnictwo Naukowe PWN, Warsaw 2007.

Koziel H., *The Crisis is Haunting Eastern Europe*, "Parkiet" 18.10.2008.

National Bank of Poland Operational Plan for 2007–2009, National Bank of Poland, Warsaw, January 2007.

Pietrzyk G., *Płynność sektora bankowego* [Banking Sector Liquidity], "Gazeta Bankowa" No. 6 (954), 5–11 February 2007.

Recommendation P on the Monitoring of Banks' Financial Liquidity, National Bank of Poland, Commission for Banking Supervision, Warsaw 2002.

[40] Ibidem.

Resolution No. 9/2007 of the Commission for Banking Supervision of 13 March 2007 on establishing binding norms for banks' liquidity.

Rutkowski P., Wilkowicz Ł., Kowalczyk M.and Kozieł H., *The World's Financial System Needs Repair*, "Parkiet" 16.10.2008.

Sarr A. and Lybek T., *Measuring Liquidity in Financial Markets*, Working Paper No. 02/232,/IMF, Washington D.C., 2002.

Shostak F., *What Caused the Liquidity Crunch*, Ludwig von Mises Institute, 31.07.2007, www.mises.org

Speech by Jose Manuel Gonzalez-Paramo, Member of the Executive Board of the ECB, 2nd Spanish Capital Markets Forum, Madrid, 30 September 2008, www.mataf.net

Survey of Financial System Stability – October 2008, National Bank of Poland, Warsaw, October 2008.

Szczepańska O., Sotomska-Krzysztofik P., Pawliszyn M. and Pawlikowski A., *Institutional Conditions for Financial Stability on the Basis of Examples from Selected Countries*, NBP Materials and Studies, Workbook No. 173, Warsaw, April 2004.

Twaróg E., *Prime Minister! The Banks are Only Begging for a Gesture*, "Puls Biznesu", 22.10.2008.

Weithers T., *Credit Derivatives, Macro Risks and Systemic Risks*, University of Chicago, 20 April 2007.

Więcław E., *The NBP is Not Selling Francs*, "Rzeczpospolita" 18 October 2008.

Więcław E., *Polish Banks: Get Ready for Worse Times. A Discussion with Andrzej Stopczyński, Managing Director of the Bank Supervision Department in the Polish Financial Supervisory Authority*, "Rzeczpospolita" 22 October 2008.

Wilkowicz Ł., *The NBP and the Government Are Trying to Maintain Stability*, "Parkiet" 14 October 2008.

Wilkowicz Ł., *The Risk of Transfer of Cash Abroad from Poland is Very Small. A Discussion with Stanisław Kluza, Chair of the Polish Financial Supervision Authority*, "Rzeczpospolita" 22 October 2008.

www.nbp.pl

Zaleska M., *Assessment of a Bank's Economic-Financial Situation*, [in:] Zaleska M. (ed.), *Contemporary Banking*, Volume I, Difin, Warsaw 2007.

Izabela Pruchnicka-Grabias

DYNAMIC HEDGING STRATEGIES APPLIED BY BANKS FOR SHORT POSITIONS IN CURRENCY OPTIONS

Introduction

The majority of options sold by banks operating on the Polish financial market are mainly currency options. The most popular currency pairs are: EUR/USD, USD/PLN, and EUR/PLN. For speculation sometimes options on USD/YEN are used. Options on such currency rates as EUR/YEN, GBP/USD or GBP/EUR are less important for the market. Options on Swiss Franc, Canadian Dollar, Austrian Shilling or Scandinavian currencies are sold only for a special demand of a customer. That is why the author chooses for the analysis hedging strategies for currency options on USD/PLN.

On the Polish market there are two ways of hedging short option positions by banks, that is taking the opposite position in a similar option or a so called delta-hedging which means buying the appropriate amount of the underlying asset. The first one is the example of the static hedging, so it will not be discussed in the paper. The most popular way of hedging short option positions is delta-hedging. It was proposed by Fisher Black and Myron Scholes. It is based on the construction of the risk-free portfolio that consists of an option and the proper amount of an underlying asset that will compensate for losses generated on the option.

Delta and Factors Influencing It

Generally speaking, option positions are difficult to hedge because of many factors influencing the value of these instruments. These are: the underlying asset value, volatility of the underlying instrument, risk-free interest rate, and the exercise price of an option as well as time to maturity. The influence of the above mentioned factors on the option price is described by so called Greek letters and it is non linear, which makes risk management to be especially complex. In this paper it is delta to be the base for the hedging strategy. It is defined as option's price sensitivity to the underlying asset changes:[1]

$$\Delta = \frac{\partial V}{\partial S}$$

For a call option it can be calculated as:[2]

$$\Delta = N(d_1)$$

whereas for a put option:

$$\Delta = N(d_1) - 1$$

Where:
$N(d_1)$ – the cumulative normal distribution function for d_1 defined as:[3]

$$d_1 = \frac{\ln\left(\frac{S}{X}\right) + \left(r + \frac{\sigma^2}{2}\right)T}{\sigma\sqrt{T}} \qquad (1)$$

where:
σ – volatility of an underlying asset,
X – exercise price of an option,
V – option's price,
r – risk-free interest rate,
T – time to maturity.

---

1 F. Black, M. Scholes, *The pricing of options and corporate liabilities*, Journal of Political Economy 1973, No. 87, May/June, 1973, p. 637–659.
2 Ibidem.
3 Ibidem.

Delta must be monitored for the whole hedging period and changes in the risk-free portfolio must be made, which is both time and costs-consuming. In the Black-Scholes environment there are no transaction costs, which makes the delta-hedging less complex.

In the world where transaction costs exist, frequent trading may make a hedging strategy to be more expensive than real advantages that derive from it. As H. E. Leland[4] emphasizes, transactions costs associated with replicating strategies are path-dependent: they depend not only on the initial and final stock prices, but also on the entire sequence of stock prices in between. Computation of the maximum transaction costs is a nontrivial problem. Rare trading can reduce costs, however it maximizes the hedging error.

The hedging error, defined as the difference between the return to the portfolio value and the return to the riskless asset over the rebalancing (rehedging) interval, depends on the length of the interval. When rebalancing intervals are relatively small and thus trading takes place very frequently, then the expected hedging error may be relatively small[5].

The Range of Examinations

In the paper the author assumed that transaction costs exist (contrary to the Black and Scholes assumptions) because in fact they play an important role on the financial market, so not taking them into consideration may lead to wrong conclusions. The point of the paper is to show to what extent they can be reduced thanks to different modifications of the delta-hedging strategy. The paper deals with hedging in the presence of transaction costs for the following hedging strategies:

- Every day delta-hedging,
- Delta hedging at fixed period of time (every 2, 3, 5, 10 days),
- The delta tolerance strategy,
- Hedging to a fixed bandwidth,
- The underlying asset tolerance strategy.

The examinations were made for the put currency option on USD/PLN. Currency rates between 01.10.2007 and 28.12.2007 were taken into consideration. Examinations were made under the following assumptions:

---

[4] H. E. Leland, *Option Pricing and Replication with Transactions Costs*, The Journal of Finance, vol. XL, No. 5, December 1985, p. 1284.

[5] M. Mastinsek, *Discrete-time delta hedging and the Black-Scholes model with transaction costs*, Mathematical Methods of Operations Research, nr 64, 2006, p. 227–228.

- Domestic risk free interest rate is 5%;
- One option contract refers to 100 000USD;
- Foreign risk free interest rate is 3.75%;
- Standard deviation of the USD/PLN rate is 51% (counted by the author for a six month period between April and September 2007). It is assumed that volatility is constant during option's life;
- Exercise price of the option is 2,2500;
- Transaction costs are equal to 0.3% and they are proportional, which means that there is no minimum or maximum value;
- Option's time to maturity is 90 days;
- Stock prices' rates of return are normally distributed;
- Stock prices follow the random walk:

$$dX(t) = \mu X dt + \sigma X dB(t),$$

provided that:

$$\mu(X,t) = \mu X \text{ and } \sigma(X,t) = \sigma X$$

where:
μ – the constant rate of the underlying asset's price increase,
σ – asset price volatility,
B – Brownian motion,
X – random variable,
t – time.

The Black Scholes Continuous Delta Hedging vs Delta Hedging at Fixed Period of Time

As mentioned above, Black and Scholes assumed that transaction costs are zero. Under such assumptions rehedging to a perfect position can be done continuously. In the real world where transaction costs exist and what's more they play a significant role (especially in emerging markets where they are the highest and besides the lack of liquidity lowers the efficiency of the discussed dynamic hedging strategies), different methods of reducing costs of hedging can be applied. The simplest one is to change the hedge position not continuously but once a day. Such an every day delta hedge lets keep costs much lower than the continuous hedging. Costs can be reduced even more if a hedger rebalances his portfolio every few days. It can be done for instance every 2, 3, 5 or 10 days. The number of days depends for example on the risk tolerance of a hedger. The higher his risk aversion is the more frequent changes in a portfolio must be made. However, it is not only the risk tolerance to

be taken into consideration. Other economic factors as for instance the volatility of the underlying instrument are also important. The higher it is the more frequent changes should be made.

Tables 1, 2 and 3 depict currency rates[6] used for calculations, as well as data calculated by the author, i.e. delta and its one day changes, as well as costs of every day hedging for the examined options.

Table 1. Costs of delta-hedging in October 2007 for every day changes in a zero-risk portfolio

Quotation date	USD/PLN currency rate (average)	Delta	Delta change during one day	Costs of delta-hedging for one put option on 100000 USD (in USD)
10.01.2007	2,6445	–0,21665	–	64,99
10.02.2007	2,6630	–0,20869	0,007961	2,39
10.03.2007	2,6646	–0,20801	0,000678	0,20
10.04.2007	2,6656	–0,20759	0,000423	0,13
10.05.2007	2,6563	–0,21155	–0,00396	1,1871
10.08.2007	2,6662	–0,20734	0,00421	1,26
10.09.2007	2,6575	–0,21103	–0,0037	1,11
10.10.2007	2,6476	–0,2153	–0,00427	1,28
10.11.2007	2,6204	–0,22737	–0,01207	3,62
10.12.2007	2,6281	–0,2239	0,003466	1,04
10.15.2007	2,6133	–0,2306	–0,0067	2,01
10.16.2007	2,6205	–0,22732	0,003277	0,98
10.17.2007	2,6115	–0,23142	–0,0041	1,23
10.18.2007	2,5813	–0,24559	–0,01417	4,25
10.19.2007	2,5891	–0,24187	0,003719	1,11
10.22.2007	2,5794	–0,2465	–0,00463	1,39
10.23.2007	2,5730	–0,24959	–0,00309	0,93
10.24.2007	2,5719	–0,25013	–0,00053	0,16
10.25.2007	2,5371	–0,26745	–0,01733	5,20
10.26.2007	2,5142	–0,27931	–0,01186	3,56

[6] Extracted from the web page www.akcje.net, 5.12.2008.

Table 1. Continued

10.29.2007	2,5126	–0,28015	–0,00084	0,25
10.30.2007	2,5173	–0,27768	0,002468	0,74
10.31.2007	2,5080	–0,28258	–0,0049	1,47

Source: Author's own calculations.

Table 2. Costs of delta-hedging in November 2007 for every day changes in a zero-risk portfolio

Quotation date	USD/PLN curency rate (average)	Delta	Delta change during one day	Costs of delta-hedging for one put option on 100000 USD (in USD)
11.02.2007	2,5136	–0,27962	0,002956	0,89
11.05.2007	2,5179	–0,27737	0,002256	0,68
11.06.2007	2,4955	–0,28926	–0,01189	3,57
11.07.2007	2,4826	–0,29626	–0,007	2,10
11.08.2007	2,4692	–0,30365	–0,00739	2,22
11.09.2007	2,483	–0,29604	0,007611	2,28
11.12.2007	2,5051	–0,28412	0,011919	3,57
11.13.2007	2,4945	–0,28979	–0,00567	1,70
11.14.2007	2,4866	–0,29407	–0,00428	1,28
11.15.2007	2,4992	–0,28727	0,006806	2,04
11.16.2007	2,5119	–0,28052	0,006749	2,02
11.19.2007	2,5125	–0,2802	0,000316	0,09
11.20.2007	2,4821	–0,29653	–0,01633	4,90
11.21.2007	2,4869	–0,29391	0,00262	0,79
11.22.2007	2,4808	–0,29724	–0,00333	1,00
11.23.2007	2,4848	–0,29506	0,002188	0,66
11.26.2007	2,4837	–0,29566	–0,0006	0,18
11.27.2007	2,4812	–0,29702	–0,00137	0,41
11.28.2007	2,466	–0,30543	–0,00841	2,52
11.29.2007	2,4627	–0,30728	–0,00185	0,55
11.30.2007	2,4568	–0,3106	–0,00332	0,99

Source: Author's own calculations.

Table 3. Costs of delta-hedging in December 2007 for every day changes in a zero-risk portfolio

Quotation date	USD/PLN curency rate (average)	Delta	Delta change during one day	Costs of delta-hedging for one put option on 100000 USD (in USD)
12.03.2007	2,4613	–0,30806	0,002533	0,7599
12.04.2007	2,4482	–0,31548	–0,00741	2,2239
12.05.2007	2,4445	–0,31759	–0,00211	0,6345
12.06.2007	2,451	–0,31388	0,003709	1,1127
12.07.2007	2,4394	–0,32052	–0,00664	1,9917
12.10.2007	2,4234	–0,32982	–0,0093	2,7906
12.11.2007	2,4274	–0,32748	0,002341	0,7023
12.12.2007	2,4312	–0,32527	0,002215	0,6645
12.13.2007	2,4671	–0,30482	0,02045	6,135
12.14.2007	2,4983	–0,28775	0,017067	5,1201
12.17.2007	2,5215	–0,27549	0,012261	3,6783
12.18.2007	2,5111	–0,28094	–0,00545	1,6353
12.19.2007	2,5179	–0,27737	0,003573	1,0719
12.20.2007	2,5202	–0,27617	0,001201	0,3603
12.21.2007	2,5184	–0,27711	–0,00094	0,282
12.27.2007	2,4696	–0,30343	–0,02632	7,8957
12.28.2007	2,4465	–0,31645	–0,01302	3,9066

Source: Author's own calculations.

Table 4. Total costs of delta hedging for a put option on USD/PLN

Total costs of delta-hedging	For one put option on 100000 USD (in USD)	% of costs reduction in comparison to every day changes
For every day changes	175,92	–
For every 2 days changes	144,54	17.84
For every 3 days changes	144,30	17.97
For every 5 days changes	128,45	26.98
For every 10 days changes	101,55	42.27

Source: Author's own calculations.

Costs of delta-hedge modified every day are equal to 175,92 USD (see Table 4). They can be reduced thanks to making changes in the portfolio less often. As data depicted in Table 4 show, changes made every two or three days let reduce costs by about 18%, whereas changes made every 5 days by almost 27% and changes made every 10 days by about 42% in comparison to every day changes. It proves that increasing time intervals of modification of a risk-free portfolio lets reduce costs by substantial amount. Of course, it influences the efficiency of the strategy, however it is not analysed in this paper. The frequency of changes in the portfolio should be assessed depending on the future volatility of the underlying asset market. As it is emphasized by A. Gupta[7], for every derivative there is an optimal frequency of reconstructing a risk free portfolio and it depends on forecasts of the underlying asset market.

Changes made every few days are not a flexible method of hedging because it may happen that the difference between the present market portfolio and the risk-free portfolio is extremely high earlier than changes are planned. It is possible when the volatility suddenly changes dramatically, which is probable because this parameter is not constant. So, if a hedger assumed some level of underlying asset volatility and decided for the certain length of time intervals for some period of time, if volatility changed, the strategy should be reconstructed, which means that time intervals between portfolio changes should be modified to assure the maximum efficiency possible for this kind of the hedging strategy. The result of costs reduction can be also obtained when portfolio modifications are made according to delta or underlying asset changes, which seems to be more flexible. These methods are discussed beneath.

The Delta Tolerance Strategy

This method of hedging was suggested by Whalley and Wilmott[8]. It means changes in a hedging position when delta moves by the earlier stated value from the perfect position. Mathematically it is presented as:[9]

$$\tau_1 = t, \tau_{i+1} = \inf\left\{\tau_1 < \tau < T: \left| \Delta - \frac{\partial V}{\partial S} \right| > H\right\}, i = 1, 2\ldots,$$

[7] See further: A. Gupta, *On neutral ground*, Risk, vol. 10, nr 7, 1997, p. 41.
[8] A. E. Whalley, P. Wilmott, *Counting the Costs*, Risk nr 6, 1993, p. 59–66.
[9] Ibidem.

where:

$\frac{\partial V}{\partial S}$ – the Black-Scholes hedge,

S – the underlying asset value,
V – the option value,
H – is a given constant tolerance defined by Whalley and Wilmott as:

$H = \frac{h}{S}$ (h = const.).

However, Zakamouline[10] states that simulations show that the strategy with a constant bandwidth H and the strategy with a bandtwidth given by $H = \frac{h}{S}$ have practically similar empirical performances.

Table 5. Total costs of the delta tolerance strategy for the examined option [USD]

	Costs of delta hedging with changes at				
	0.02	**0.03**	**0.04**	**0.05**	**0.06**
USD/PLN option	111.03	103.71	93.18	80.24	64.99
	% of costs reduction in comparison to every day changes				
	36.89	41.05	47.03	54.39	63.06

Source: Author's own calculations.

The tolerance value depends on the level of risk tolerance of a hedger. Calculations were conducted for the most typical values of H, that is 0.02; 0.03; 0.04; 0.05; 0.06. The higher the tolerance level is, the lower costs of hedging are. To be exact, costs of hedging with changes of delta by at least 0.02 are equal to 111.03 USD which is about 9% more than for every 10 days changes, 13% less than for every 5 days changes and 37% less than for every day changes (see Tables 4 and 5). When changes are made at delta moving by at least 0.03, costs of hedging can be reduced by 7% in comparison to changes at 0.02. However, it is still more than costs of delta hedge for every 10 days changes but 41% less than for every day changes.

[10] V. I. Zakamouline, *Dynamic Hedging of Complex Option Positions with Transaction Costs*, Working Paper, Agder University College, February 2006, p. 8.

For changes at 0.05, costs are 80.24 USD that is 14% less than for 0.04, 26% less than for every 10 days changes and 54% less than for every day changes, whereas for modifications at 0.06 costs are 64.99 USD that is 23% lower than for 0.05, 56% lower than for every 10 days changes and 63% lower than for daily portfolio reconstructions.

Hedging to a Fixed Bandwidth

This method is similar to the delta tolerance strategy. The only difference is that changes in a hedging position are made only to the earlier stated boundary, not to achieve a risk-free portfolio again. The strategy was proposed by Martellini and Priaulet[11]. Mathematically it can be expressed as:[12]

$$\Delta = \frac{\partial V}{\partial S} \pm H$$

where:

$\frac{\partial V}{\partial S}$ – the Black-Scholes hedge,

V – option's price,
H – an earlier assumed constant which depends on the hedger's tolerance towards risk. The higher risk tolerance the higher value of H.

Changes to the boundary instead of creation of the risk free portfolio every time allow the hedger to reduce costs more than the delta tolerance strategy presented above.

The Underlying Asset Tolerance Strategy

The strategy, which was proposed by Henrotte, prescribes rehedging to the Black-Scholes delta when the percentage change in the value of the underlying asset exceeds the prescribed tolerance:[13]

---

11 See further: L. Martellini, P. Priaulet, *Competing Methods for Option Hedging in the Presence of Transaction Costs*, Journal of Derivatives 2002, 9(3), p. 26–38 and V. I. Zakamouline, *Dynamic Hedging*..., op. cit., p. 10.

12 V. I. Zakamouline, *Dynamic Hedging*..., op. cit., p. 10.

13 See: P. Henrotte, *Transaction Costs and Duplication Strategies*, Working Paper, Stanford University and HEC, 1993 and V. I. Zakamouline, *Dynamic Hedging*..., op. cit., p. 9.

$$\tau_1 = t, \tau_{i+1} = \inf\left\{\tau_1 < \tau < T: \left| \frac{S(\tau)-S(\tau_1)}{S(\tau_1)} \right| > h\right\}, i = 1,2,\ldots,$$

where:
h – a given constant percentage.

The higher is the risk tolerance, the higher is h.

Table 6. Total costs of the underlying asset tolerance strategy for the examined option [USD]

	Costs of delta hedging with changes by				
	1%	**2%**	**3%**	**4%**	**5%**
USD/PLN option	84.62	77.30	72.41	70.11	64.99
	% of costs reduction in comparison to every day changes				
	51.90	56.06	58.84	60.15	63.06

Source: Author's own calculations.

The analysis of the underlying asset tolerance strategy was done by the most typical values of the underlying asset change i.e. 1%,2%,3%,4% and 5%. Data depicted in Tables 4 and 6 show that costs of delta hedging modified at a 1% underlying instrument change are 84.62 USD which is 17% lower than for every 10 days changes and 52% lower than for every day modifications of the risk-free portfolio. If changes are made when the underlying asset moves by at least 2%, costs are equal to 77.30 USD that is 24% lower than for every 10 days changes and 56% lower than for daily portfolio reconstruction. For a 3% change costs are reduced by almost 59%, for a 4% change by 60%, whereas for a 5% change by 63%. It is worth emphasizing that the amount of costs reduction is the same for a 5% change of the underlying asset as for a 0.06 change of the delta. It would be interesting to examine the efficiency of the hedging strategy at these two levels. It will be the subject of the author's research in the nearest future.

Final Conclusions

The analysis shows that banks have a wide range of possibilities of reducing costs of hedging strategies. Choosing the correct method and its parameters should be preceded with deep examinations of both the underlying asset market

and the whole economic situation. The important factor that must be taken into consideration is the risk tolerance of a bank.

Examinations were conducted on EUR/PLN options because these are one of the most frequently sold options on the Polish financial market. However conclusions could be applied to other kinds of options when they start to be widely traded in Poland.

Bibliography

Black F., Scholes M., *The pricing of options and corporate liabilities*, „Journal of Political Economy" 1973, No. 87, May/June, 1973.

Gupta A., *On neutral ground*, Risk, vol. 10, nr 7, 1997.

Henrotte P., *Transaction Costs and Duplication Strategies*, Working Paper, Stanford University and HEC, 1993.

Leland H. E., *Option Pricing and Replication with Transactions Costs*, The Journal of Finance, vol. XL, No. 5, December 1985.

Martellini L., Priaulet P., *Competing Methods for Option Hedging in the Presence of Transaction Costs*, Journal of Derivatives 2002, 9(3).

Mastinsek M., *Discrete-time delta hedging and the Black-Scholes model with transaction costs*, Mathematical Methods of Operations Research, nr 64, 2006.

Whalley A. E., Wilmott P., *Counting the Costs*, Risk, nr 6, 1993.

Zakamouline V. I., *Dynamic Hedging of Complex Option Positions with Transaction Costs*, Working Paper, Agder University College, February 2006.

Data from the internet page: www.akcje.net