Czech Experience in Dealing with Problem Banks with Focus on the Lender of Last Resort Activities*

Doświadczenie Czech w zakresie banków w sytuacji kryzysowej, ze szczególnym uwzględnieniem roli pożyczkodawcy ostatniej instancji

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Abstract

The promotion of the safety, stability and soundness of the banking system is one of the main goals of the banking regulation and supervision. This requires a system which would help problem banks to gain funds necessary to meet their liquidity needs. The lender of last resort meets the requirements of such a system. The role of the lender of last resort is usually assumed by the central bank, although the assistance may come from a special government institution or directly from the state. The existence of lender of last resort is based on the conviction that a bank failure might have a negative impact on other banks. Emergency loans can be granted only to illiquid but solvent banks. In the article related problems are discussed – systemic risk, too-big-to-fail doctrine, crisis management, main criteria for the central bank aid, and others. Problems are then analyzed in the context of the Czech banking system in the period since 1990.

Keywords: bank, central bank, credit, crisis, lender of last resort, monetary policy, regulation, supervision

JEL: E5, G2

Streszczenie

Jednym z głównych celów regulacji i nadzoru bankowego jest promowanie bezpieczeństwa, stabilności i dobrej kondycji systemu bankowego. Potrzebny jest w tym celu system, który pomoże bankom w sytuacji kryzysowej zdobyć fundusze niezbędne do zaspokojenia potrzeb w zakresie płynności. Rolę pożyczkodawcy ostatniej instancji przyjmuje na ogół bank centralny, jednak wsparcia może także udzielić specjalna instytucja szczebla centralnego lub bezpośrednio państwo. Istnienie pożyczkodawcy ostatniej instancji opiera się na przekonaniu, że upadłość banku może wywierać negatywny wpływ na inne banki. Pożyczki „awaryjne" mogą być udzielanie tylko bankom, które utraciły płynność, ale pozostają wypłacalne. W artykule omówiono związane z tym zagadnienia – ryzyko systemowe, zasadę „zbyt duży, żeby upaść", zarządzanie kryzysowe, podstawowe kryteria przyznawania pomocy przez bank centralny i inne. Problemy te są następnie analizowane w kontekście czeskiego systemu bankowego w okresie od 1990 r.

Słowa kluczowe: bank, bank centralny, kryzys, pożyczkodawca ostatniej instancji, regulacja, nadzór

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1. Introduction

The function of the bank of banks belongs to fundamental functions of a central bank in market economy. Central banks receive deposits from banks, grant loans to banks and they usually also provide interbank payments. In relation to banks they carry out some other transactions such as dealings in short-term securities.

One of these activities, i.e. granting loans to banks, may have two basic forms: loans providing current supply of liquidity and emergency loans to problem banks. Current supply of liquidity is part of the day-to-day regulation of bank reserves within the framework of monetary policy while emergency loans are connected with the potential role of central bank as a lender of last resort. In the article we discuss this role in a wider context and present the experience of the Czech Republic.

The fundamental theoretical framework of central bank's assistance as a lender of last resort to problem banks is analysed in a wider context in Part One. Problem bank is an illiquid and/or insolvent bank. Illiquid bank cannot meet its short-term (just matured) liabilities and thus needs a short-term loan. Such a loan may be granted by another bank on the interbank market. A loan or another form of short-term assistance may also be requestred from the central bank. Insolvent bank does not meet minimum capital requirements – technically speaking, an insolvent bank has no capital, but legal frameworks (or rules of central banks or other bank supervisors) of many countries usually specify what is "insolvent" bank. For example, a commercial bank in the USA is regarded as insolvent when its ratio of Tier 1 capital to total assets is below 2 %. In the Czech Republic, if a bank has Basel II capital requirement below one third of the stipulated minimum of 8%, it must be sent under conservatorship.

The terms *liquid/illiquid* and *solvent/insolvent* banks are quite complicated, and sometimes no strict boundaries between them can be delineated. Furthermore, an illiquid but solvent bank has "short-term" problems, but a bank may also be liquid and insolvent. A special issue connected with solvency is the proper valuation of bank assets in the time of problems.

Because of a wider approach to a theoretical analysis, crisis management and prevention are explained in Part 2 of the article.

Part 3 presents a brief description of the Czech banking system development since the banking reform and the beginning of economic transformation in 1990. Part 4 contains a compendious analysis of central bank's or government's approach to problems in the Czech banking system.

We present only indispensable data in the analysis of the Czech banking system development because a more detailed analysis would take more space than allowed herein. It should be emphasised that neither the problems of banks nor the methods of their solution used in the Czech Republic differ markedly from those faced by other transforming economies (e.g. the establishment of a specialised bank administering bad loans) or advanced market economies. The main specific feature of the Czech economy was the splitting of Czechoslovakia into two independent countries (1993), and the relatively positive price developments (low inflation) that did not lead to real depreciation of bad loans compared to the period before transformation.

2. Lender of last resort – theoretical framework

The support of bank safety, stability and soundness is among the main objectives of the system of bank regulation and supervision in any advanced market economy. The system, sometimes called *financial safety net*, is usually composed of four fundamental parts:

1. Conditions for the granting of a banking licence, i.e. conditions for the entry into the banking industry (minimum capital requirements, personal requirements for proposed members of bank management, shareholder structure, etc.; so called *common passport* is naturally applicable to the Czech Republic as a member of the European Union);

2. Basic rules of bank activities (capital requirements /Basel II/, liquidity rules, credit limits, rules of protection from money laundering, etc.);

3. Deposit insurance scheme (limits, rates, etc.);

4. Lender of last resort (in a wider sense the assistance, strictly supervised in the European Union, to problem banks provided by central bank and/or government).

All these components are comprised in the regulatory framework for banks in the Czech Republic, and are generally laid down by the Banking Act.

2.1 Last resort assistance

The Bank of England, which attempted to solve the crisis of the great discount-house Overend Gurney and Company at the end of the first half of the 19th century, is designated most frequently as the historically first lender of last resort.[1] Credit assistance was conditioned by a risk to the entire banking system and by the participation of other banks in such assistance. Later on, the foundations of the concept of lender of last resort were laid down by formulating the basic principles. In this context, the principles published by Walter Bagehot in 1873 are referred to most frequently.[2]

[1] Some elements of the lender of last resort are encountered in banking crises at the beginning of the 19th century, besides England mainly in the United States. For more details see Bordo, Wheelock (1998) and Velde (1998).

[2] Henry Thornton was the first to attempt to formulate such principles (1802).

2.1.1 Bagehot's principles

According to Walter Bagehot, the concept of lender of last resort was based on the following five principles:[3]

1. The central bank is the only lender of last resort in a monetary system. Currently, this principle is frequently broken in practice in advanced countries, mainly in the case of large banks, partly state-owned banks and a higher number of threatened banks.

2. To prevent illiquid banks from closing, the central bank should lend on any collateral that is marketable in the ordinary course of business when there is no panic. It should not restrict lending to a paper eligible for discount at the central bank in normal periods.

Currently, emergency loans are usually short-term and do not limit the adjustment discount loans. But the strict observance of sufficient collateral may restrict the extent of necessary assistance in the situation of a higher number of temporarily illiquid banks.[4] The securities that can be used must be a part of the assets of a threatened bank and they cannot be issued by this bank in the form of (hardly marketable) obligations.

3. Central bank loans should be made in large amounts, on demand, at a rate of interest above the market rate. This discourages borrowing by those who can obtain accommodation in the market. The principle is basically correct if banks are primarily (interbank) market– oriented. But the penalty rate potentially decreases the efficiency of central bank's credit assistance at the same time and therefore this rate should be considered very carefully.

4. The above three principles should be stated in advance and followed in a crisis. It has to be noted that the principles should be known in advance while respecting the above comments. Their strict abidance during a specific crisis may, however, seem controversial. On the other hand, changing the principles during a crisis renders the purpose of their definition doubtful.

5. Insolvent banks should be sold at the market price or liquidated if there are no bids for the firm. The losses should be borne primarily by owners of equity. In theory, it is a fully undisputable principle that is however often violated in practice, mainly in the case of large banks and/or partly state-owned banks. The most important objection is a problematic definition of the precise boundary between a still-solvent bank and a bank not solvent any longer.

[3] Free citation, see Fischer (1999, p. 27).

[4] Walter Bagehot defined the principles for *credit assistance* – its coverage was in the form of *collateral* of securities because central banks started to use reverse (repo) operations connected with *temporary purchase* much later. The use of *permanent purchase* of securities in outright open market operations is not any serious infringement of the principle. Cf. e.g. the so called market-led approach in the other part and footnote 6.

2.1.2 Constructive and destructive ambiguity

Bagehot's first principle comprises the institutional definition of the lender of last resort, which should be the central bank.[5] There arise questions whether *solely* the central bank and *which* central bank, particularly in systems of a monetary union.

The answers are based on the *principle of constructive ambiguity* that consists in the *exact determination* of the sole lender of last resort in the banking system concerned and in the fact that the assistance of this lender *is not sure in advance*. But this principle should not be connected exclusively with the credit form of aid.

To meet the principle it is essential to clearly define in advance who will play the role of the lender of last resort in a crisis. As a matter of fact, it could be central bank, but if the lender of last resort is another specialised institution (bank), the principle is not be broken.

If the requirement for the exact definition of the sole lender of last resort is not met, we can speak about *destructive ambiguity*. Currently, European Monetary Union is such an example because the position of the lender of last resort is not specified in greater detail in its framework.

The other requirement connected with constructive ambiguity, which lies in the necessary uncertainty of potential debtors and/or recipients of aid, may seem to be in contradiction with Bagehot's fourth principle. The rules may be laid down very transparently but in such a way that the banks will not be sure whether they will receive the assistance (the rules should be set down in such a way that the banks will be sure in what circumstances they *will not receive* the aid).

2.1.3 Obligation of defined rules

The rules should also create "a manoeuvring space" for lenders of last resort so that it will not be necessary to alter them in relation to specific cases of aid or to break them. The change of rules "in the course of game" is always undesirable. In a banking crisis such alterations lead to the moderation of rules. It will then be understood as a weakness of institutions defining the rules, and the banks (and their clients-depositors) will rely on it in future and will be willing to assume higher risks (the so called moral hazard). Another consequence of the change of rules may be a strong pressure on further alleviation with reference to the preceding approach.

No rules are rigid, so they can be altered – but only beforehand, not afterwards. It is also assumed that such rules should be set down that can be observed by the

[5] No other monetary authorities existed when the principles were formulated. Currently, it is possible to modify this principle stating that the main monetary authority should be the lender of last resort. Some systems, e.g. currency board (in its strict version), do not admit the existence of the lender of last resort

respective agents. As we are first of all interested in the lender of last resort, let us remind that the rules should be set down in agreement with Bagehot's principles (with a slight modification) and with the principle of constructive ambiguity. If the rules are violated by another agent (particularly by the government that will intervene to rescue of banks), it is someone else's problem and money. Of course, there may be so deep banking crises that the requirement not to alter the rules may be untenable.

2.1.4 Banking policy approach and market-led approach

The obligation to observe the rules of assistance and/or "the manoeuvring space" of the lender of last resort are also conected with the form of assistance.

Loans are the basic form of aid if a **banking-policy approach** (discount-window policy as a narrower conception) is applied. The conception of the rules is quite free and the lender of last resort has a relatively large space for decision-making. In banking crises the non-observance of the rules cannot occur. The main disadvantage is that the lender of last resort will also help insolvent banks for many reasons, which is in contradiction with Bagehot's principles. The banking-policy approach has been applied quite frequently, e.g. in the Czech Republic.

A **market-led approach** (market-operations approach as a narrower conception) is mainly connected with *non-credit assistance* in the form of liquidity supply to banks by the purchase of high-quality (government) securities, i.e. by means of outright open market operations (purchases) or reverse repo operations.[6] The rules of this approach are rather strict; the lender of last resort can decide e.g. on a wider range of acceptable securities or on the additional use of credit assistance in the form of collateral ("Lombard") loans or other loans. This approach, along with the observation of the rules, basically prevents the aid to be granted to an insolvent bank if the situation is not rather exceptional in that the bank is liquid and simultaneously insolvent. An elementary problem is that such an approach may hardly be applicable in deeper banking crises. The market-led approach of the lender of last resort is preferred e.g. in the United Kingdom (Barings Bank) or in Germany.

The suitability of both approaches is hard to assess. To provide the current supply of liquidity in the banking system, mainly to prevent any failures of the interbank payment system, assistance to banks may be based on the market-led approach (complemented by highly short-term and automatically granted loans for interbank payments). The banking-policy approach seems more suitable for crisis situations.

However, there exists no sharp boundary between the two approaches. Emergency or collateral loans are an example. In some countries *only those securities* are accepted for their coverage *that are used in outright open market operations* – i.e. only high-quality (government) securities. It can be seen as market-led approach complemented by some elements of the banking-policy approach. In other countries *securities other than used for open market operations* are accepted for loan coverage – it is to be expected that the lender of last resort will accept "lower-quality gilt-edged" securities. In this case, it would rather be the banking-policy approach. The importance of these loans in the framework of assistance granted by the lender of last resort is crucial – if they represent an insignificant additional assistance, the approach can be designated as the market-led approach. Reverse repo operations connected with *temporary* purchases of securities are responsible for a completely unclear boundary between the two approaches.

The *rate of interest* may be the most exact criterion to distinguish between the two approaches. In open market operations the "common" rate of interest is used while loans with penalty rate are to be expected in the banking-policy approach.

2.1.5 Theory and reality

Comparing the theoretical framework with the reality of the past and the present a conclusion is drawn that the reality is more multifarious from three aspects:

(a) central bank's assistance need not necessarily be in the form of loans (in addition to the above-mentioned purchase of securities it is e.g. assistance in the form of deposit guarantees or the purchase of bad assets, etc.);

(b) the government operates in the role of the lender of last resort (recapitalisation of banks, deposit guarantees, purchase of bad assets) either directly (state budget) or through the state-controlled specialised institutions (Czech Republic – Consolidation Bank (lately Czech Consolidation Agency), Czech Financial (Ceska financni), Konpo and some others, or, for example, the Consortium de Réalisation in France);

(c) economic criteria are "completed" by other criteria such as political aspect or the size of the bank.

In the next part we deal with economic and other criteria of central bank's credit assistance in greater detail.

2.2 Reasons for and against assistance granting

The existence of the lender of last resort is mainly based on the assumption that the bankruptcy of a bank may trigger chain bankruptcy in the banking sector and the total, country-wide collapse thereof, which will lead to a systemic risk (or a contagion risk or a domino effect)

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[6] Outright open market operations are represented by sales *or* purchases of securities, repo operations consist of *repos* (sale – purchase) and *reverse repos* (purchase – sale).

with which so called “too-big-to-fail” doctrine is closely connected.[7]

Systemic risk is taken to mean a threat to the liquidity of “sound banks” posed by the bankruptcy of another – rather large – bank. Potential losses of a bank going bankrupt may cause fears of non-bank depositors for their deposits in other banks. Afterwards, two situations may occur:

- “flight to currency” – mass withdrawals of deposits and their keeping outside the financial system, mainly holding money savings in cash. Certain modifications are possible in the form of holding money savings in non-bank institutions or, in the case of externally convertible currencies, transferring money savings to foreign banks. Data on advanced market economies do not currently document a higher probability of this phenomenon, mainly because there are compulsory deposit insurance schemes; the probability increases in deposits above the insurance limits (see the case for Northern Rock in UK, 2007);
- “flight to quality” – depositors buy securities using withdrawn deposits. Their positions are taken up by sellers who will usually transfer the money received for sold securities to other more trustworthy banks (it is to note that sellers have much better information on the banking system than ordinary depositors who are often prone to panics). In this way, the restructuring of deposits in the banking system takes place in favour of “better” banks, but no deposit outflows have occurred.[8] If these transfers are from smaller banks to larger ones, the measure of the banking system monopolisation increases and is accompanied by all other negative consequences: in this case we can speak of a “flight to quantity”. It is mainly deposit insurance that significantly diminishes the probability of such situations.

A greater threat of systemic risk is connected with sudden withdrawals by other banks or big investors. These agents have better information than small depositors, and the consequence of such withdrawals would be the restructuring of deposits among banks. The threatened bank could go bankrupt but the remaining banks should not “be afflicted by panic”. The central bank is “a warranty” that should reduce the risk of such situation by potential supply of liquidity to otherwise sound banks.

The problem of the too-big-to-fail is closely connected with systemic risk; as a doctrine, it may be understood as an unwritten rule when the central bank “cannot admit” the bankruptcy of a large banking institution. It is based on considerations that the larger the bank in question, the more serious the potential consequences of its bankruptcy for the entire banking system, and the higher the systemic risk. In spite of some exceptions the efforts to save threatened banks are related to the size of these banks in many economies (and also to the potential share of the state in the bank ownership). But the increased protection of large banks is apparently a discriminatory measure in the market environment in relation to small banks. Moreover, it may lead to the less prudent behaviour of large banks (disturbance of market discipline) and to transfers of deposits from small and unprotected banks to large and more or less protected ones.

A crucial question is whether other banks and/or the banking system as a whole must necessarily be threatened by the bankruptcy of a large bank. In addition to loans of central bank, there exist other barriers against this threat in banking systems of advanced market economies, particularly deposit insurance. The lender of last resort should grant loans to those banks whose liquidity has been threatened temporarily as a result of the bankruptcy of another bank, not to the bank that caused such a situation. Data e.g. from the United States document another fact – rescue operations in insolvent banks have often failed regardless of the bank size. The amount of resources expended quite in vain on the rescue of large banks was higher than expended on the rescue of small banks.

The problem of the too-big-to-fail may also be shifted to a political sphere, mainly if some politicians connect their political ambitions with an effort to save the bank in question “in the society’s interest”. In these circumstances the independence of central bank plays an important role; if its decision is enforced, we can expect the preference of political interests to economic ones or a higher probability of realisation of the too-big-to-fail doctrine.

The granting of loans by the lender of last resort may also increase moral hazard of banks, and finally of depositors, disturb the financial discipline (prudence) of banks, and if the volume of such loans is large, it may threaten the central bank’s intentions in monetary policy. A loan granted by the central bank increases the reserves of a debtor bank that will use these resources to meet its liabilities. Money gets into circulation as reserves of other banks and/or deposits or currency in non-bank institutions and households. The increased bank reserves may be multiplied with an adequate impact on money stock and aggregate price level.

2.3 Criteria for assistance decisions

If exclusively economic criteria were to be respected in decisions on assistance to banks, the central bank should take into account:

[7] The terms systemic risk, contagion risk and domino effect mean nearly the same. Contagion risk or domino effect, but not systemic risk, is also often used to designate a situation when the problems of a bank branch or subsidiary may lead to a decrease in the credibility of the bank as a whole. See also Kaufman (2000), and Kaufman, Seelig (2002).

[8] We leave out of consideration other effects, e.g. the growth in securities prices.

- **Danger of systemic risk:** this criterion should not be linked only to the size of the threatened bank. Systemic risk can be reduced not only by loans to the threatened bank but also by loans to other, healthy, banks. The assistance to banks can also have other forms, e.g. a reduction in central bank rates (cf. a reduction in discount rate in the USA in connection with a crisis on the mortgage market, autumn 2007);[9]
- **Costs of the rescuing of threatened banks**: the main requirement here is that costs be lower than incomes. The problem is seen mainly where the calculation of all direct and indirect costs and incomes is very complicated;
- **Liquidity and solvency of threatened banks**: now, let us suppose that we can relatively precisely decide whether a bank is or is not solvent.[10] In principle, only those banks that are temporarily illiquid but otherwise solvent should receive loans or other aid. The lender of last resort should not help insolvent banks, regardless of whether they are in a state of liquidity or not. From this we can see that if a bank which is 'too-big-to-fail' goes bust, the contagion effect trigerred by its failure can be restricted by providing assistance to healthy banks;
- **Reasons for problems of banks**: as far as fraud practices of the bank's leadership or owners are concerned, it is in the best interests of the bank to close the bank as soon as possible, or, to force its shareholders to sell out to other investors. If the main problem is, for instance, economic recession leading to the bank's low liquidity, the lender of last resort should replenish the missing liquidity.

2.4 Crisis management

The definition of the rules of credit and other aid, along with prevention and specific measures taken in banking crises and other elements of bank regulation and supervision, form an integral part of so called crisis management. Naturally, it is appropriate to speak about crisis management in situations when several banks or a large bank are in difficulties, and therefore an imminent threat arises to the banking system as a whole. And that is the danger of the above-mentioned systemic risk. Nevertheless, the knowledge given below may also be applied to particular cases of (smaller) banks.

[9] In crisis situations the credit assistance can be extended to non-bank institutions – at the slump of securities prices at the New York Stock Exchange the Federal Reserve System announced (October 20, 1987) that "...it was ready to supply necessary liquidity to support the economic and financial system".

[10] The failure of the largest Czech bank, Investment and Post Bank, in 2000, is a shining example of the problem of solvency determination. All valuations of the bank net worth done from that time to the moment of conservatorship imposition differ from each other in billions of euros, assuming both positive and negative values.

2.4.1 Lenders of penultimate and last resort

The rules respecting the constructive ambiguity, and so accepting the requirement of uncertain rescue of threatened banks, may be based on a certain *reduction of probability* of such assistance from the lender of last resort in order to enhance prudence and/or restrain tendencies to moral hazard of banks. The fundamental solution at hand is based on the existence of two "types of lenders":

- **Lenders of penultimate resort** – these are all banks that on the basis of (gentlemen's) agreement fixed in advance which is most frequently initiated by the central bank, or on the basis of the central bank's suasion are ready to grant credit aid to threatened banks if the defined rules are observed. These lenders are sometimes designated as the members of a "solidarity club". The central bank plays a key role as the *aid organiser* but loans are granted by other banks. Central banks use this method quite frequently, mainly in the United States of America, also when the aid is granted to *non-bank* institutions. We also speak about lenders of penultimate resort when:

– the central bank conditions its own credit assistance by the participation of other creditor banks: potential losses, when the rescue of the bank is not successful and the loan is not repaid, are shared by all creditors in this case;

– the central bank rescues a bank from liquidation by acquiring the bank and selling it to another buyer later on; this approach requires the participation of other banks in the payment of potential losses incurred due to a difference between the purchasing and selling price, etc. We usually speak about *lenders* also in this case although it is a non-credit form of assistance – nevertheless, a loan that might be granted to the buyer cannot be excluded;

– credit is granted by another specialised institution that will receive a loan from the central bank because of the lack of its own funds – Liquiditäts-Konsortialbank GmbH in Germany is the best-known example. A similar system based on non-credit assistance – purchase of non-valuable assets – has been directly connected with Czech economy (Consolidation Bank). Slight modifications exist e.g. in France and also in the Czech Republic (see part 2.1.5), where *non-bank* specialised institutions were founded. These institutions can be distinguished according to the following criteria: the origin of the resources for their foundation (*state-controlled* or *private* institutions) and eligibility to receive loans also from the lender of last resort in the case of the lack of funds;

– assistance in the form of prevention from bank panic is connected with institutions that insure deposits in banks. It is *non-credit* assistance again, and so the designation "lender" is not exact;

- **Lender of last resort** – usually it is the central bank. If the option of lenders of penultimate resort exists at the same time, the aid from the lender of last resort will be less probable than in the situation when no lenders of penultimate resort exist and/or when their assistance is not expected for different reasons.

2.4.2 Funds for the assistance to threatened banks

The crisis management system should be specified according to the funds that are used or may be used as assistance to threatened banks. We will not distinguish the lenders of penultimate and last resort and other institutions that can participate in rescue operations any longer. There exist three basic types of funds, in literature often called "money".

Private money is the "most market-compatible" solution.[11] These resources are provided by commercial and other banks or other market agents. Explicit advantages are: limitation of tendencies to moral hazard of banks and zero impact on budgetary expenditure and/or "taxpayers' money". The main problem of the *exclusive use* of these funds is that their amount need not be sufficient for rescue operations. With regard to information asymmetry it is suitable that the assistance based on private money should be coordinated by the central bank and/or by another banking supervision institution if it exists. The use of private money may also be refused by shareholders of the respective banks.[12]

State budget money – taxpayers' money is usually considered to be the least suitable resource regardless of whether banks are taken over by the government (i.e. mostly temporary nationalisation because the government will sell banks to other agents) or the assistance is based on the purchase of bad assets and/or other forms of assistance are used.

Let us mention the differences between government assistance and the aid granted by a state-controlled specialised institution. *Government assistance* is represented by budget expenditure in favour of particular banks. It is transparent and forms part of the state budget as a whole. Any expenditure of this type must be approved by legislative bodies or the total expenditure limit is approved and the specific expenditures lie within the competence of government or a special commission, etc.

The *assistance granted by a state owned specialised institution* is much more operative and potentially more qualified. Such an institution can manage the entrusted funds much more efficiently than the "anonymous" state. Basic disadvantages are higher operating costs (establishment of the institution, purchase or renting of a building, investments in the staff and equipment, etc.) and some non-transparency. The funds mainly come from the state budget whereas the loss incurred by the activity of this institution should also be settled by the state budget – but the institution is *outside* the state budget, which does not ostensibly worsen the balance of the state budget if a loss is incurred.[13]

Central bank money is basically an inexhaustible fund as the central bank creates it especially by the credit issue of new money. Of course, there exist economic limits in this area, mainly the objectives of monetary policy that must be met.

Another possibility of creating this money is specific reserves (for liabilities!) that are created by the central bank either from costs or from an income. In both cases this money assumes some features of state budget money in state owned central banks and partly in joint stock central banks with state share because the creation of reserves may be reflected in a decreased income tax of central bank paid to the state budget or in an increase in central bank's loss and so in a higher demand for budget money earmarked for the settlement of this loss.

Regardless of the mode of central bank's money creation it is always the issue of new money in its use – bank reserves increase and the process of multiplication with potential inflation impacts may follow.

In practice the above-mentioned funds may be combined, mainly the money of central bank with private money or state budget money. The combination of private and state budget money is less probable.

In connection with the fulfilment of the principle of constructive ambiguity the rules for the involvement of these sources should be defined explicitly and in advance so that the *last* resort, if any, may be identified.

2.4.3 Crisis management in a wider context

In addition to the mechanism of the assistance to threatened banks other components of the bank regulation and supervision system and monetary policy instruments may be included in crisis management.

Conditions for an entry into the banking industry should prevent the entry of highly risky entities – these conditions should restrain so called adverse selection.

Basic rules of bank activities, obviously complemented by high-quality supervision and drawing conclusions from default in obligations, may efficiently prevent the origination of banking crises. E.g. the capital adequacy rules force banks to create resources (capital) that can be used to cover potential losses.

Obligatory deposit insurance in banks diminishes the probability of sudden and unexpected withdrawals

[11] It is not "private money" in the already hypothetic system of "free banking".

[12] In strict terms the money of central bank (if its reserves are used) can also be considered as private money because as a joint-stock company it is owned by private owners. It would apply mainly to the U.S. Federal Reserve System, the shareholders of which are private, so called member banks. The common fund of large U.S. banks to finance problems on the mortgage market (envisaged at the time of writing this article) is the latest example of the use of private money. See also Poole (2005).

[13] The loss settlement – whether by direct payment to the debit of the state budget or by the issue of government securities or even by other methods – may become an object of very keen political clashes.

of deposits by depositors with the lowest-quality information on the safety and soundness of respective banks – i.e. small depositors. It also implies a lower probability of bank panic, one of the elements triggering the outbreak of banking crises. A crucial role is played by the limits of insured deposits, compensation rate and other terms connected with obligatory deposit insurance in banks.

The central bank can also use *monetary policy instruments*; in addition to the outright open market and reverse repo operations it may e.g. cut a discount rate.

All the above-mentioned modalities, along with the lender of last resort, can prevent the origination of banking crises relatively efficiently or markedly reduce the costs of rescue operations, diminish systemic risk and alleviate negative consequences of crises.

2.5 Preventive approach

The assistance of the lender of last resort is basically *ex post* assistance with a number of negative phenomena and consequences. Preventing the problems of banks and banking crises is a much more efficient approach consisting in timely measures taken when signals of potential *future* problems become clear. This prevention has many forms, e.g. a requisition to increase the capital or compulsory change of bank management.

A crucial issue is, however, the existence of sufficiently reliable methods of timely identification of potential problems. As these methods are not the subject of this article, we will only state that no such sufficiently reliable methods have been developed yet.[14] It is not only the problem of appropriate methods but also, in a wider context, of the methods of supervision (off-site and on-site examinations), audit, accounting standardisation, etc.

In some, very serious (!), cases we can speak about "shocks" on bank markets. If we leave disasters or terrorist attacks out of consideration, we can give an example of great problems of many foreign banks caused by the declaration of the Russian government's insolvency in August 1998, when, among other things, the market in *short-term* government securities – connected with the lowest risk in advanced economies – collapsed.

On the other hand, there are cases when many signals indicate the "oncoming" problems of a given bank but all preventive measures of the central bank (or the supervising institution) in the form of pressures to increase the bank's capital and "clean up the balance sheet" are inefficient. Of course, the costs of rescuing such a bank increase with the postponement of this measure. Unfortunately, one of the largest banks in the Czech Republic, Investment and Post Bank (Investicni a Postovni Banka), is an example when its conservatorship and subsequent sale to another bank in 2000 turned out to be an extremely costly solution. In addition, using the example of this bank it is possible to document difficulties with the reliability of problem signalling as different valuations of the bank carried out in subsequent years before the date of the conservatorship led to completely different results ranging from negative capital to sufficient capital adequacy (see footnote 10).

3. Development of Czech banking system since 1990

The new history of Czech (Czechoslovak by the end of 1992) banking system is connected with political and economic transformations that took place in November 1989. By a propitious coincidence, the banking reform had already been prepared earlier to be launched on 1 January 1990. The basic principle of the reform – the change of a one-tier banking system with a dominant position of central bank to a two-tier system where the central bank fulfils "only" the functions of central bank, and commercial and other banks behave mainly as business entities – was maintained and gradually adapted to market economy conditions.

The reform started by separating the activities of central bank, i.e. State Bank of Czechoslovakia (Statni Banka Ceskoslovenska), namely the activities of "a bank of issues" and "a commercial bank granting credits" (and/or "providing business banking"). Logically, the central bank remained as a bank of issues whereas credit granting and business activities were undertaken by the existing and newly established commercial banks.

Following the split of Czechoslovakia into two independent countries, the State Bank of Czechoslovakia was divided between the two countries, and Czech National Bank (Ceska Narodni Banka) was established on 1 January 1993 starting its activities in the territory of the Czech Republic. The final independence in the monetary area is connected with *currency separation* and introduction of the *Czech crown* (February 1993).

The banking reform and subsequent development in the Czech Republic in the first half of the 1990s of the 20^{th} century is characterised mainly by the following circumstances:

- abolishment of straight and directive management of commercial and other banks that acquired much greater freedom of their decision-making;
- central bank ceased to grant loans to businesses;
- monetary planning in its original form was abolished and was replaced by monetary policy carried out by means of the regulation of operational criteria and targets on the interbank market with an increasing significance of market instruments;
- business entities could obtain a banking licence if the conditions defined in advance were satisfied, see Table 1;

[14] A detailed description of methods and market indicators see e.g. King et al. (2006) or Furlong, Williams (2006).

Table 1. *Banks and banking licenses in the Czech Republic in 1990–2007*

Banks in the Czech Republic	1990	1991	1994	1997	2000	2003	2006	2007
State banking institutions *	4	4	1	1	1	0	0	0
State-owned banks **	1	1	4	6	4	2	2	2
Czech-controlled banks	4	15	28	15	8	7	7	6
Foreign-controlled banks	0	4	13	15	16	17	15	15
Foreign bank branches	0	0	8	9	10	9	13	14
Banks total	9	24	54	46	39	35	37	37
Banks under conservatorship	0	0	1	4	1	0	0	0
Unlicensed banks ***	0	0	2	11	24	30	31	32
Banking licenses total	9	24	57	61	64	65	68	69

*Banks established before the banking reform in 1990, lately transformed to joint-stock banks, and specialised Consolidation Bank (1991-2001).

**Joint-stock banks with state majority; four of them lately privatised.

***Unlicensed banks – reasons for withdrawal of license:
Liquidation or bankruptcy – 15
Merger with another bank – 11
Dissolution with liquidation – 3
Non-commencement of operation – 1
Transformation into a non-bank entity –1
Termination of activities – 1

Source: Czech National Bank

• banks began to behave as business entities in a market environment and started money dealings (we do not assess the efficiency of their business activities for the time being);

• the framework of banking business was defined by the rules of regulation and supervision on the part of central bank.

Transformation aimed at creating market environment has brought about a number of problems that were similar to problems emerging in other, originally non-market economies including e.g. Poland. Among them, the most serious problems in the Czech Republic were those related to loans:

(1) *granted by the "central bank" before the banking reform* – because of high indebtedness of the corporate sector dating back to the period of planned economy and due to a more or less "market behaviour" of commercial banks after 1989, state enterprises, with some exceptions, were not originally able to meet their commitments. The problem of these loans, which was a common feature of all transforming economies, was logically quite solved mainly by the government. For this purpose, several basic approaches were chosen:

– a state-controlled bank institution was established (Konsolidacni Banka – Consolidation Bank),

– amortisation of bank debts and recapitalisation of banks to which the loans were originally transferred,

– government's indirect assistance to banks, mainly from the privatisation fund National Property Fund, to cover interest differentials, losses from devaluation, etc.;

(2) *granted by commercial banks after 1989*, i.e. in conditions of economic transformation. The enumeration of the causes of problems with these loans is beyond the framework of the subject of this article, and therefore we will mention only several of them: lack of experience of new banks and the supervisory authority, political pressures to grant loans for the privatisation process, "unformed" business and legal environment, only gradual formulation of the rules of regulation of bank activities, and also various "subjective" causes on the part of creditors or debtors including unfair practices. It is to note that the problems of banks were simultaneously accompanied by very problematic development on the capital market, see Musílek (2003).

Loans granted in 1990–1992, i.e. when a number of regulatory rules especially in the area of loans had not been put in place yet, accounted for a major portion of the bad loans. Because of the fact that the current maturity of loans was not usually longer than four years, the problem accelerated in 1995-1996 and affected particularly small banks.

Large banks had identical problems, but their solution was postponed e.g. for political reasons, which inevitably led to another crisis (1998-2000).

Many data illustrate the extent of problems with loans. We mention the proportion of so called *classified loans* (31 days and more after the date of maturity) that amounted to about 30% of the total credit volume in 1996-2000. In addition, this proportion was artificially reduced by writes-off of irrecoverable loans and transfers of some bad loans to the Consolidation Bank and other specialised institutions. Since 2001 the proportion of classified loans has been decreasing to reach 3% (Q4 2007).

The potential role of the Czech National Bank as the lender of last resort could be carried out in the two above-mentioned crisis situations. The development of the Czech banking system after 2000 was much sounder, only two smaller banks got into difficulties. In both cases the Czech National Bank withdrew the licences and depositors were indemnified according to a deposit insurance scheme laid down by law.

4. Lender of last resort and other approaches to problem banks in the Czech banking system

In Part Three we discussed the main problems of Czech banks that were connected with two groups of loans: loans granted before 1990 and "new loans" granted since the beginning of banking reform.

The problem of loans of the first group was solved by the government (see Part 3). Problems of new bad loans are connected with various approaches to their solution. Four small banks were sent into receivership and subsequently the Czech National Bank withdrew their licences (in 1993-1995). The Czech National Bank fulfilled the role of the lender of last resort mainly in 1996 in the framework of so called Consolidation Programme II. Other problems of banks were connected with the Stabilisation Programme (1997) and with large banks (1998-2000).[15]

4.1 Consolidation Programme II

The programme was aimed at small banks that got into difficulties in 1995.[16] The banks that joined the programme could receive assistance from the lender of last resort, Czech National Bank, had to meet certain conditions. Among the conditions were, for example, higher participation of shareholders in the solution of problems or the acceptance of a higher capital adequacy ratio. The programme also involved a marked increase in the insurance protection of depositors (from the original 80% of the maximum amount 125,000 CZK to 100% of the amount up to 4,000,000 CZK – approx. 165,000 EUR today). Unfortunately, the increase in insurance protection above the original treshold resulted later in the same approach to almost all other banks on the basis of an *ad hoc* decision of the Parliament of the Czech Republic. It is a hazardous phenomenon when the legislative rule (currently 90% of the maximum amount of 27,777 EUR) is not basically observed because it has been modified by "creative" politicians.

Stricter conditions connected with the assistance of the lender of last resort finally appeared to be difficult to be satisfied by eight out of nine banks, and the banks either wound up or were taken over by other banks. Only one bank lasted throughout the programme and was saved by the financial support of its new owner.

In the same year a similar approach was applied to Agrobanka, a medium-sized bank: its "good portion" was sold to a foreign investor (General Electric) and its "bad portion" was taken over by the government.

4.2 Stabilisation Programme

The programme approved in 1997 was also aimed at small banks. It was based on the *temporary* purchase of poor-quality loans and other assets for available means in the form of bank reserves and treasury bills. These transactions enhanced liquidity and capital adequacy ratio considerably. Bad loans were purchased by the specialised institution *Czech Financial* while reverse repurchases were to be carried out within five or seven years. Losses from operations of the Czech Financial institution were settled by the National Property Fund.

The stabilisation programme markedly enhanced the influence of central bank on the behaviour and activity of the respective banks by strict and "non-standard" supervision and by defining rigorous conditions for the capital adequacy ratio (first 10%, later 12%).

[15] Full-scale analysis in Revenda (2001, chapter 27.2) (in Czech only) or Revenda (2004) (in English).

[16] We leave out of consideration Consolidation Programme I (1991-1994) because it was focused on problems with loans granted before the banking reform, and also the solution of insolvency of four small banks before the start of Consolidation Programme II (see Figure 1).

Figure 1. *Solving the banking problems in the Czech Republic: 1993-2007*

Receivership and withdrawal of licence, 1993-1995	• 4 small banks
Consolidation Programme II, 1996, smaller banks	• 9 banks • (Agrobanka - other solution)
Stabilisation Programme, 1997 (-2003), small banks	• 3 banks were excluded from the programme • 1 bank left the programme, bought by an investment group • 2 banks were sold to other banks
Solving the problems of large banks, 1998-2000	• Czech Savings Bank (state support and rescue; privatisation) • Commercial Bank (state support and rescue; privatisation) • Investment and Post Bank (sold to other bank)
Withdrawal of licence, 2003	• 2 small banks

Source: Revenda (2001, p. 593), actualised and adapted.

Figure 2. *Privatisation of banks in the Czech Republic*

Banks	Sold state share	Price (EUR M)*	Buyer
Investment and Post Bank (1998)	36.0%	84.18	Nomura International *(Japan)*
Czechoslovak Commercial Bank (1999)	65.7%	1,076.66	KBC Bank *(Belgium)*
Czech Savings Bank (2000)	52.0%	544.95	Erste Bank *(Austria)*
Commercial Bank (2001)	60.0%	1,187.42	Société Générale *(France)*

* Average exchange rate CZK/EUR at the month of sale, in IPB exchange rate as to 1.1.1999, rounded.

Source: Revenda (2001, p. 598), adapted.

Participation in the programme was offered to thirteen small banks but only six banks joined it. Later on, three banks were excluded from the programme and their banking licences were withdrawn; one bank withdrew from the programme after being taken over and the remaining two banks were sold to other owners. The programme was terminated on 30 June 2000, when the Czech Financial was sold to Consolidation Bank for a symbolic price of 1 CZK.

4.3 Large banks

In the 1990s of the 20th century the Czech banking system was dominated by four large commercial banks – Czech Savings Bank (Ceska Sporitelna), Commercial Bank (Komercni Banka), Czechoslovak Commercial Bank (Ceskoslovenska Obchodni Banka) and Investment and Post Bank. All of them were originally state-owned banks. Czechoslovak Commercial Bank, which specialised in foreign trade before the banking reform, was in the relatively best situation. Its irrecoverable loans granted in the former socialist bloc (Council for Mutual Economic Assistance) in the form of "socialist aid to friendly developing countries" were taken over by the government in the first half of the 1990s. After "the cleaning up of the balance sheet" the bank has not got into larger difficulties any more.

Czech Savings Bank and Investment and Post Bank did not have any problems with loans granted before the banking reform. Commercial Bank was founded just before the commencement of the banking reform. However, all three banks got into difficulties with loans granted in the 1990s. There are only speculations as to what extent the situation was influenced by the state ownership of banks and by their extensive granting of loans in the process of privatisation.

All four originally state-owned large banks were privatised (see Figure 2).[17] Investment and Post Bank was sold with all bad loans, at a relatively low price. Other two problem banks were sold after the government's massive assistance, at a markedly higher price. A higher price was also received from the sale of the sound Czechoslovak Commercial Bank.

4.3.1 Assistance to large banks

The problem of new bad loans culminated in three large banks at the end of the 1990s. The government granted assistance to two banks, and the third bank – the already privatised Investment and Post Bank – did not receive any support. None of these banks was granted aid by central bank as the lender of last resort.

Czech Savings Bank received four forms of assistance in 1998 and 1999. They included the long-term subordinated debt and purchase of bad assets (Consolidation Bank), and state guarantees for the payment of deposits and increase of capital (National Property Fund). In connection with the privatisation of this bank the government granted guarantees for bad loans to a new owner in 2000.

Commercial Bank received government assistance in 1999 and 2000 in the form of bad assets purchase (Consolidation Bank) and capital support (National Property Fund).

4.3.2 Private large bank

The privatisation of the large Investment and Post Bank at a low price because the buyer deliberately bought the bank with many unsolved problems was among the basic reasons for a different approach of the government (and central bank) to this bank. However, this approach finally turned out to be the most costly of all.

After the failure of the negotiations with the owners, conservatorship was imposed on this bank in June 2000. Compulsory sale of the bank to Czechoslovak Commercial Bank followed. Czech National Bank granted a guarantee for deposits. The government issued a guarantee to the central bank to settle some losses the central bank had incurred as a result of commitments to indemnify the taking-over of the Czechoslovak Commercial Bank.

[17] The fifth and last state-owned universal commercial bank in the Czech Republic was smaller Trade Bank (Zivnostenska Banka, currently UniCredit Bank). It was privatised in 1992 as the first bank in Central and Eastern Europe.

The case of Investment and Post Bank was very dramatic[18], was accompanied by many controversies between the government, original owners and the taking-over bank, and finally between the parliamentary political parties. Some legal disputes have not been settled until now. The present estimation of losses incurred by the state currently ranges between 4 and 5 billion EUR (!).[19]

4.4 Situation after 2000

The development of the Czech banking system has been more auspicious in the first decade of the 21st century. Two banks got into difficulties, and, being insolvent, banking licences were withdrawn from them. These were, however, smaller banks and the approach of the central bank (and government) was standard, completely in accordance with recommendations in Part 1.3.

4.4.1 Specific position of Czech central bank

In the Czech banking system there are no state-owned *commercial* banks any longer[20] and about 95% of bank assets are connected with foreign-controlled banks. It markedly diminishes a probability of various non-standard solutions on the part of central bank or government in the case of bank difficulties.

It is to note that the aid of the Czech National Bank as the lender of last resort has also been granted to *insolvent* banks in some cases. If its activity in this role has to be related only to loans granted for the current supply of liquidity, we must say that the Czech National Bank gradually got into a situation that is exceptional in advanced banking systems.

A stricter approach to problem banks, solution of problems of large banks by the government, marked slowdown of the growth rate of bank loans as a result of tighter regulatory rules, restrictive monetary policy and some other facts were reflected in a dramatic increase in bank reserves.

Free (excess) bank reserves currently exceed the required minimum reserves by nearly 10 times. The ratio of free reserves in the liabilities of the Czech National Bank ranges between 50% and 65%.[21] The Czech National Bank tries to neutralise potential monetary impacts by the sale of its own securities (repo operations: sale and then repurchase).

If we leave out of consideration the negative impact of interest costs of these dealings on the economics of the Czech National Bank, it is possible to completely exclude problems with liquidity in the banking system *as a whole*. In addition, the high level of free reserves allows each bank to obtain the necessary funds on the interbank market and/or in the form of overnight collateral loan from the central bank if it is short of liquidity.

The high level of free reserves markedly reduces the probability of the Czech National Bank's intervention as the lender of last resort in an illiquid bank.

4.4.2 Lender of last resort and the euro

After accession to the European Union, the Czech Republic has undertaken an obligation of joining the European Monetary Union and adopting the euro in the future. Owing to the fact that no obligatory date of joining the EMU has been fixed yet, the following remarks are not set into a time frame.

After having joined the European Monetary Union, the Czech Republic (like any other Member State) will abandon its independent monetary policy carried out by the national central bank. The common monetary policy of the European Central Bank excludes the possibility of the national central bank granting credit assistance as lender of last resort.

As the problem of the lender of last resort in the European Monetary Union has not been solved in a satisfactory way,[22] the potential role of the Czech central bank as lender of last resort after the adoption of the euro cannot be estimated either briefly or explicitly.

5. Conclusion

The banking system of the Czech Republic witnessed several very problematic situations in the 1990s. In fact, in two cases we can speak of banking crises. In 1996 the banking crisis was connected with bankruptcies of a large number of small banks while in 1998-2000 the crisis affected three large banks. In the first crisis the central bank granted aid to some smaller insolvent banks. The problems of large banks were not solved by the central bank, but were dealt with mainly by the government.

The solution of both crises was naturally connected with the costs of support granted to the banking system. However, it should be noted that these costs were incurred during the whole period, not only during banking crises. Not an insignificant part of the costs should be attributed to the situation in the period before the banking reform. Both crises are nearly connected with the transformation of Czech economy.

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18 Among other things, the conservator was accompanied to the bank by an armed police commando.

19 Taking into account some uncertainties connected mainly with the legal disputes in progress, the total direct and indirect costs of solving the problems of all banks in the Czech Republic are estimated to amount to 500–600 billion CZK (20–24 billion EUR), i.e. 15% – 18.5% of GDP in 2006; costs of bad loans granted before 1990 are included.

20 There are two exceptions – (not fully) state-owned but *specialised* Czech Export Bank and *specialised* Czech Guarantee and Development Bank.

21 Another specific feature is a more than 90% proportion of foreign exchange reserves in the assets of the Czech National Bank. In connection with a long-term trend of the crown appreciation this situation is reflected in the economics of central bank highly negatively.

22 For more details see Goodhart, Huang (1999).

The situation after 2000 has developed more positively; the banking system as a whole has had problems with surplus liquidity that must be withdrawn through repo operations by the central bank.

If our banking system does not get into a deep crisis requiring "non-standard solutions" and present legal rules are complied with, potential further assistance can be expected from the Czech National Bank as lender of last resort, i.e. in the form of temporary aid to illiquid banks while the systemic risk is considered. The central bank should not help insolvent banks. The joining of the European Monetary Union should markedly modify the position of the Czech central bank in its role of the lender of last resort.

References

Bordo M.D., Wheelock D.C. (1998), *Price Stability and Financial Stability: The Historical Record*, "Federal Reserve Bank of St. Louis Review", September, pp. 41–62.

Fischer S. (1999), *On the need for an international lender of last resort*, "Central Banking", No. 3, pp. 26–37.

Furlong F.T., Williams R. (2006), *Financial Market Signals and Banking Supervision: Are Current Practises Consistent with Research Findings?*, "Federal Reserve Bank of San Francisco Economic Review", pp. 17–29.

Goodhart C.A.E., Huang H. (1999), *A Model of the Lender of Last Resort*, Stanford University conference "Monetary Policy and Monetary Institutions", 5–6 March, Stanford.

Kaufman G.G. (2000), *Banking and currency crises and systemic risk: Lessons from recent events*, "Federal Reserve Bank of Chicago Economic Perspectives", No. 3, pp. 9–28.

Kaufman G.G., Seelig S.A. (2002), *Post-resolution treatment of depositors at failed banks: Implications for the severity of banking crises, systemic risk, and too big to fail*, "Federal Reserve Bank of Chicago Economic Perspectives", No. 2, pp. 27–41.

King T.B., Nuxoll D.A., Yeager T.J. (2006), *Are the cause of Bank Mistress Changing? Can Researchers Keep Up?*, "Federal Reserve Bank of St. Louis Review", No. 1, pp. 57–80.

Musílek P. (2003), *The Czech investment banking and regulation in the last decade*, "Transition Studies Review", Vol. 10, No. 1, pp. 52–55.

Poole W. (2005), *GSE Risks*, "Federal Reserve Bank of St. Louis Review", No. 2, Part 1, pp. 85–91.

Revenda Z. (2001), *Centralni bankovnictvi*, 2nd edition, Management Press, Praha.

Revenda Z. (2004), *Banking Crises in the Czech Republic*, "Transition Studies Review", No. 1, pp. 141–150.

Velde F.R. (1998), *Lessons from the history of money*, "Federal Reserve Bank of Chicago Economic Perspectives", Vol. 22, No. 1, pp. 2–16.