

*Tomislav Galac*

Results of the Third CNB  
Bank Survey:  
Croatian Banking in the  
Consolidation and Market  
Positioning Stage, 2000 – 2002





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The opinions presented in this paper are those of the author and are not necessarily identical to those officially held by the Croatian National Bank.



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# Results of the Third CNB Bank Survey: Croatian Banking in the Consolidation and Market Positioning Stage, 2000 – 2002

Tomislav Galac

## Summary

In April 2002, the Croatian National Bank conducted the third survey of banks operating in Croatia. Assessed was the quality of projections given in the second survey (conducted two years ago) that referred to banking system consolidation, the continuance of bank competition and stronger impact of foreign capital entry in the Croatian banking system. This paper compares the bankers' estimates and views on the situation and trends in Croatian banking and its environment in early 2002 with estimates derived from CNB statistics. The main conclusion of the analysis is that a short but turbulent stage of consolidation and market positioning of banks has almost ended. Its positive effects have been reflected in a strong decline in interest rates, increased household lending and more favourable long-term corporate lending. On the other hand, numerous challenges are still waiting on the development path of the Croatian banking system, among which are better and faster legal protection of creditors, more sincere relationship between banks and the central bank, and harmonisation of banks' risk management systems and processes with new international standards.

**JEL:** D21, G21, G34, P34

**Key words:** consolidation, Croatia, banking, banks

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## 1 Introduction<sup>1</sup>

The Croatian National Bank carried out the first bank survey in late 1997 and early 1998 to analyse the lending policies of Croatian banks (Kraft et al., 1998). At the time, the Croatian banking sector, though unprepared, was cast in a double role; on the one hand, it served as an investment wheel of the speedy post-war reconstruction wagon, and on the other, it fed loans to the starving private sector (especially households) in the transition from an anaemic planned economy towards a market consumer-oriented economy. In retrospect, CNB researchers at the time were excessively restrained in judging that non-market lending policies of banks, i.e. *de facto* non-existence of lending policies in the modern sense of the term, posed the main threat for the young and weak, and yet explosively growing banking sector.

In 1998 and 1999, several Croatian banks faced major problems, which have since then been labelled “the second banking crisis” (Kraft, 1999). These problems were mainly the result of inappropriate lending policies (Jankov, 2000). Hence, the subject chosen for the first CNB bank survey proved to be “right on target”, despite indicators that some other factors (e.g. inappropriate privatisation of banks and their immature supervision together with lax licensing requirements), besides insufficient or non-existing lending policies, also contributed to the breakout of the second banking crisis (Šonje and Vujčić, 2000). Overall, lending policies development of banks in transition was in itself an extremely important phenomenon. Hence, it was also chosen as the subject of the second bank survey, which CNB researchers conducted in February and March 2000.

With regard to the lending policies of Croatian banks, the results of the second survey were much more optimistic than that of the first: a positive impact of banking sector difficulties was reflected (via provisions of the December 1998 Banking Act) in the formation of written lending policies in all banks and, much more important, in more consistent practical implementation of these policies (Kraft et al., 2001). However, the second bank survey disclosed also a number of obstacles and challenges which had to be faced by banks that survived the second banking crisis.

The main obstacle to safety and price efficiency of lending, as the basic bank activity, the bankers themselves saw in the slowness of the courts in large communities, “loopholes” in laws that enable endless delays in legal proceedings and the pro-debtor culture in smaller communities. In addition to these problems associated with the judicial aspect of banking, CNB researchers singled out as main problems: unavailability of historical data on potential debtors’ quality and the

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1 The author would like to thank his colleagues Hrvoje Dolenc, Vedran Šošić and Mladen Duliba who participated in the preparation and implementation of the third CNB bank survey. The author would particularly like to thank Ivica Prević who processed the questionnaires, Lana Dukić who prepared figures and tables, and Tihomir Stučka and Evan Kraft who made useful remarks and comments on the first draft of this report.

non-existence or out-of-datedness of credit scoring systems in many banks. They indicated the issues related to size, specialisation and competitiveness as the main strategic challenges facing banks in the forthcoming period.

The second bank survey of 2000 also dealt with the characteristics of the “first stage” of foreign bank entry into the Croatian financial market, as the most significant and frequently debated process in Croatian banking over the last 6-7 years. An analysis of foreign banks’ impact on the Croatian banking system in the first stage of their entry (Galac and Kraft, 2001) showed that in that period foreign banks provided additional, longer-term and cheaper funding for household sector lending and ensured necessary additional liquidity to banks during the second banking crisis. On the basis of their analysis’ results and additional statistical data, the researchers concluded that the first stage of foreign bank entry had mostly a positive impact on the Croatian banking system, although this impact was not as strong as was predicted in theoretical papers of experts who were more optimistic and prone to foreign investment.

Finally, in April 2002, the Croatian National Bank conducted the third survey of banks operating on the territory of the Republic of Croatia, which has traditionally been conducted in two-year cycles. Assessed was the quality of predictions from the second survey regarding banking system consolidation, the continuance of bank competition and stronger impact of foreign capital entry in the Croatian banking system, i.e. majority foreign ownership of Croatian banks – this impact, due to its significance, is analysed in detail in a separate report (Kraft, 2002). Also, estimates and views of eminent Croatian bankers regarding the current situation and trends in banking and its environment, which were also gathered, were compared with estimates derived from CNB statistics. Thus obtained was a balanced mix of subjective and objective evaluations of the situation in Croatian banking, and a forecast of developments in banking and its environment in the short period from 2002 to 2003. This report for the first time provides comprehensive results of the described analysis.

## 2 Consolidation and Market Positioning of Banks from 2000 to 2002

2000 saw the end of the banking system “cleansing” from banks engulfed by the wave of financial institutions failures in 1998 and 1999, and the start of the period of important changes in bank ownership structures. The end of the system’s cleanup was reflected in a considerable decline in the total number of banks: from 53 to 43, which remained unchanged in 2001. The start of the process of changes in the ownership structure was reflected in the fall of the number of domestic state-owned banks: from 10 to 3, and the number of domestic privately owned banks: from 30 to 20, whereas the number of foreign-owned banks grew strongly: from 13 to 20. The falling trend in the number of domestic privately-owned banks continued in the next year, 2001, with a parallel increase in the number of

foreign-owned banks. The first half of 2002 was characterised by a jump in the number of domestic privately-owned banks: from 16 at end-2001 to 23 at end-June 2002.

**Table 1** Number of Banks

	Domestic state-owned banks	Domestic privately-owned banks	Foreign banks	Total
1993	25	18	0	43
1994	26	23	1	50
1995	14	39	1	54
1996	10	43	5	58
1997	7	46	7	60
1998	8	42	10	60
1999	10	30	13	53
2000	3	20	20	43
2001	3	16	24	43
June 2002	2	23	22	47

Source: CNB.

The described changes in the number and ownership structure of banks (Table 1) over the last two and a half years were due to a simultaneous impact of several forces that have strongly determined the present development course of Croatian banking. First, the fall in the number of domestic state-owned banks and a parallel rise in the number of foreign banks in 2000 resulted from the fact that an irresistible financial need of the government to privatise banks in its ownership coincided with a desire of many foreign investors (above all, but not exclusively, banks) to enter the Croatian market in the “second wave”. Second, the 2001 rise in the number of foreign banks and an equal decline in the number of domestic privately-owned banks were due to the sale of banks in domestic private ownership, which felt the need for support from a strong strategic partner, to Croatian banks that were already in foreign ownership but desired to additionally grow to attain a better market position. Finally, the 2002 rise in the number of domestic privately-owned banks was directly induced by the Croatian National Bank’s decision prescribing that by end-2001 savings banks had to increase their assets and become banks, close, or be transformed into savings and loan associations. This resulted in the emergence of a group of 8 new banks (one of which appeared already at end-2001) established on the basis of former savings banks, which increased the total number of banks.

Even more important than the described changes in the number of banks in particular segments of ownership structure have been the changes in the ownership structure of total bank assets in the last two years. Over the entire period between 1 January 1996 and 31 December 1998, over 40% of total bank assets were in domestic state ownership, over 20% were in domestic private ownership, and

less than 10% were in foreign ownership. However, the privatisation of the largest domestic state-owned bank at end-1999 initiated the already mentioned second wave of foreign capital entry into the Croatian banking system, during which (almost) all the biggest banks became foreign ownership. Thus, as early as end-2000, the share of bank assets in foreign ownership went up to a high 84%, compared with other transition countries. Finally, after two and a half years of the second wave of foreign capital entry into the Croatian banking system, 90% of bank assets were in foreign ownership, and only 6% and 4% respectively were in domestic private and domestic state ownership at end-June 2002.

**Table 2** Ownership Structure of the Banking System (as % of total assets)

	1996	1997	1998	1999	2000	2001	June 2002
Domestic banks in state ownership (%)	78.4	41.9	43.1	45.6	5.7	5.0	4.0
Domestic banks in private ownership (%)	20.7	54.1	50.3	14.5	10.2	5.6	6.1
Foreign banks (%)	1.0	4.0	6.7	39.9	84.1	89.3	90.0
Total assets (HRK billion)	73,783	88,871	96,777	93,523	111,838	148,428	153,679

Source: CNB.

As indicated when discussing the changes in the number of banks on the market, the presented transfer (Table 2) of the major share in Croatian bank assets into the hands of foreign owners from 2000 up to the present has not been entirely determined by the privatisation strategy of Croatian authorities. The sale of the two largest banks to foreign owners that had not been formerly present in the Croatian market created an urgent need of small banks in foreign ownership (mainly those from the first wave of entry) to diminish the difference in their size and the size of the two stated largest banks, and thus strengthen their market position. Hence, in the last two years, the banks from the first wave have pursued one of the two usual strategies to increase a market share: some rapidly increased their balance sheet total through aggressive credit growth, and others bought and merged (or are to merge) some of the remaining banks available for sale. The most prominent by-product of this bank competition concerning size has been a steady two-year moderate falling trend of the market concentration in the banking sector, notwithstanding a parallel decline in the total number of banks, to the detriment of smaller banks (Table 3).

Briefly said, the period from early 2000 to the time of writing this report in mid-2002 was marked by: 1) a fall in the total number of banks, 2) disappearance of a whole class of deposit institutions (savings banks), 3) almost complete disappearance of banks in domestic state ownership, 4) foreign capital seizure of a dominant position in the Croatian banking system, and 5) gradual decrease in banking sector concentration due to growth of medium-sized banks. Hence, this development stage of the Croatian banking system, which began in 2000 and has not yet finished, can rightly be called the consolidation and market positioning stage.

**Table 3** Market Concentration in the Banking Sector

	Asset share of two largest banks in total bank assets (%)	Asset share of four largest banks in total bank assets (%)	Number of banks with assets below HRK 500m	Number of banks with assets over HRK 500m
1995	53.7	68.2	35	18
1996	46.3	60.1	36	21
1997	40.3	53.1	32	28
1998	40.5	53.3	29	31
1999	43.6	58.1	27	26
2000	48.1	62.0	18	27
2001	46.3	60.0	16	28
June 2002	45.4	58.8	21	26

Source: CNB.

The importance of the consolidation and market positioning stage for the development of the country's entire financial system is unquestionable; all experts agree that this stage in the banking system development brought about its extremely swift transformation from a socialistic, supply determined system, into a capitalistic, demand driven system. At the same time, economists, and politicians even more so, provide different answers to the question of whether this necessary banking transformation could have been achieved without selling almost the entire national banking system to foreign owners.

The conducted bank survey aimed to answer which concrete steps have been taken in Croatian banking development over the last two years in order to confirm or dispute the stated unanimous positive evaluation of banking system's transformation in the studied period. In addition, the survey tried to answer the question of the form and strength of impact of foreign owners' entry into domestic banks on the banking system as a whole so as to answer the debates about the necessity of that entry for the achieved bank transformation. Due to the comprehensiveness of these two subjects, foreign capital impact on Croatian banking is discussed in a separate report (Kraft, 2002).

This report presents subjective assessments of the consolidation and positioning stage, which were provided by the Croatian bankers who participated in the survey, and compares them with objective evaluations based on publicly available statistical and other data. The first, shortest section describes the methodology used in survey data gathering and processing. It is followed by an analysis of the survey results, i.e. we compare bankers' answers to survey questions with answers from other sources. Follow the author's views on the course of main banking system developments in the immediate future, which are based on bankers' plans and predictions for the next short period through end-2003. Finally, the conclusion provides an overall assessment of the significance of banking system transformation over the last two years and a reference to unrealised possibilities and objective obstacles to its further development.

### 3 Bank Survey: Methodology

All Croatian banks first received a request to participate in the survey and a written part of the questionnaire, after which interviews of approximately an hour and 45 minutes were conducted with representatives of banks that agreed to participate in the survey. During the interviews, the bankers were asked 18 questions from the oral part of the questionnaire, which they were not given beforehand. The final survey results were obtained by combining mostly quantitative answers from the first part of the questionnaire with mostly qualitative answers from its second part.

The questions in the second part of the survey covered almost all important areas of banking (lending policy, risk management, market strategy and plans, etc.), as well as conditions of bank operations that are subject to external factors (competition, monetary policy, access to international money and capital markets, etc.). The interviews were mostly conducted with management board members and executive directors in charge of retail and corporate lending, risk management and treasury operations.

We persisted in getting concrete answers and encouraged bankers to also discuss the major topics in Croatian banking today and in the following mid-term period. The objective was to discover bankers' views on achieved breakthroughs in Croatian banking development, current problems in banking and its environment and dangers threatening Croatian banks in the near future.

The survey results presented herein are based on written answers and interviews with representatives of almost all banks that operated in Croatia at that time. The only banks that did not participate in the survey were two small banks which at that time were preoccupied with the process of transferring the smaller bank's portfolio into the larger bank and the planned gradual liquidation of the smaller bank. Thus, 40 out of 42 banks participated in the survey, i.e. the sample was almost identical to the target population, which considerably simplified the processing of gathered data. Also, this, already traditional, favourable response of banks to CNB's invitations to participate in its biannual surveys additionally confirms the reference value of bankers' evaluations, attitudes and views presented and assessed in this report.

### 4 Bank Survey: Results

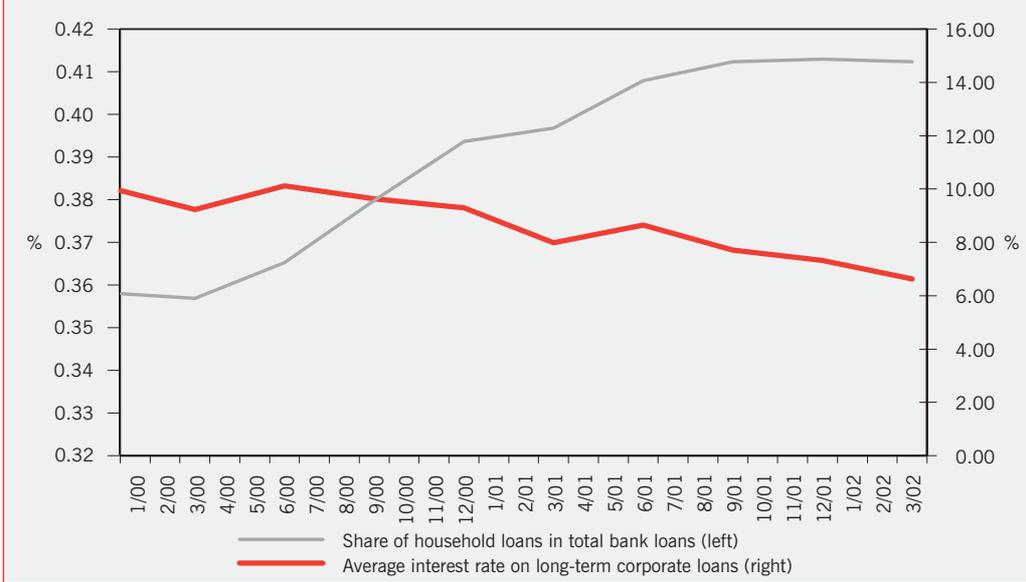
#### 4.1 Lending Policies and Loan Supply of Banks Operating in Croatia

Banks operating on the territory of the Republic of Croatia have mostly retained the same lending policies in the last two years, i.e. since our last bank survey. The most recent major changes, which were made by 2000, were a response to banking sector problems in 1998 and 1999. These changes referred primarily to more precise loan approval procedures, more objective assessment of clients'

creditworthiness (Tables 1 a) and 1 b) in the Appendix) and a formal separation of the function in charge of credit risk assessment from that in charge of advertising and sale of banking products.

Although lending policies have not undergone crucial changes in the last two years, changes in some of their parameters indicate a strategic shift of large banks towards increased retail lending and long-term lending to the economic sector in this period (Illustration 1). The shift in household lending (Table 2 a) in the Appendix) has been achieved by a minor easing of lending requirements and a more immediate approach to clients with more aggressive advertising. With regard to corporate loans, (Table 2 b) in the Appendix) it should be noted that cheaper long-term loans have been made available to the economy, largely thanks to programs of various state institutions, such as the CBRD, local government units and the Ministry of Crafts and Small and Medium-Sized Enterprises.

**Illustration 1** A relative upward trend in household lending and cheaper long-term corporate lending has been noticed since January 2000.



Sources: CNB and author's calculations.

Bankers said that tough competition was the main reason for the described two strategic shifts on the lending side. They maintain that interest rates on corporate loans have reached their minimum and that their further decline would be potentially very dangerous in a legal environment that is still unfavourable to creditors. With this estimate of the interest rate level on corporate loans that is often given by banks – creditors, firms – debtors probably would not agree since interest rates on corporate loans, though they were falling in nominal terms till end-2001, have been rising in real terms since March 2001 (Illustration 2).

Similarly, the increased maturity mismatch between sources and placements, which is caused by the shift to long-term lending from still predominantly short-term sources, banks already consider very dangerous. On the other hand,

**Illustration 2** Interest rates on corporate loans, which have been steadily falling in nominal terms, have been growing in real terms since March 2001.



Sources: CNB and author's calculations.

CNB statistics shows that the share of long-term corporate loans in total corporate loans has not changed much in the last two years (notwithstanding the interest rate fall). Also, in the same period, the increase in the maturity mismatch, which points to a rise in total long-term loans (assets) relative to total long-term deposits (liabilities), was only minor (Illustration 3). All of this shows that the real danger from shifting towards long-term lending from unchanged sources possibly lurks in some future period.

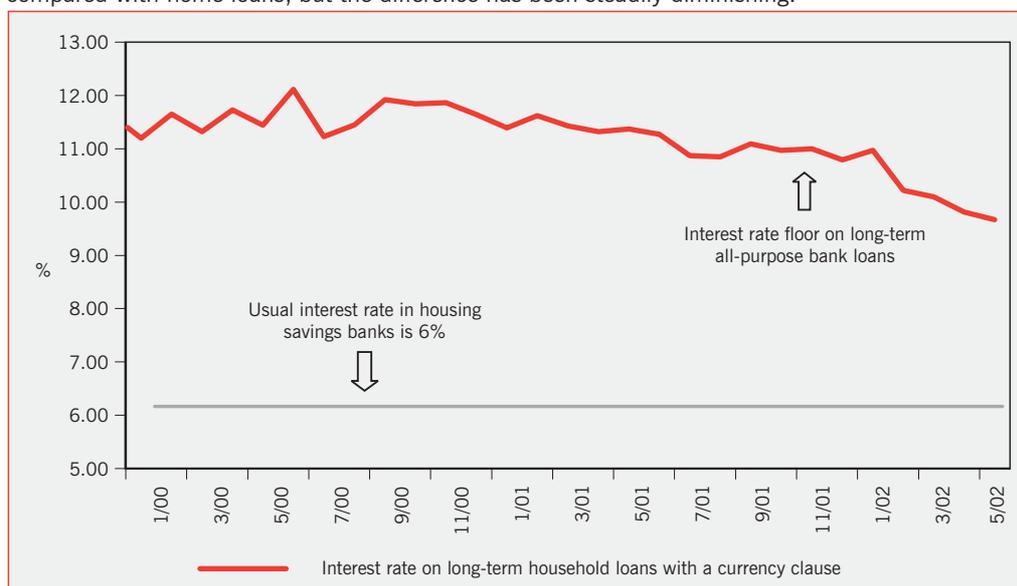
**Illustration 3** Share of long-term loans in total corporate loans and the long-term loan to long-term deposit ratio have not shown a clear upward trend in the last two years.



Sources: CNB and author's calculations.

Finally, in the area of housing lending, which has only recently gathered momentum, most banks do not view housing savings banks<sup>2</sup> as competition. They believe that banks, which extend loans of larger amounts, with longer maturity periods, and applying a more simplified procedure, attract a completely different type of clients compared with housing savings banks, which offer slowly available, but more favourable smaller home loans with shorter repayment periods (Tables 3 a) and 3 b) in the Appendix). In fact, according to bankers, the main role of housing savings banks within the system is not to provide home loans in the traditional meaning of the term but to provide saving incentives. Bankers also expect that the role of housing savings banks in small home lending will additionally weaken due to a drop in banks' interest rates on currently expensive all-purpose loans to households (Illustration 4).

**Illustration 4** Since January 2000, long-term all-purpose household loans have been uncompetitive compared with home loans, but the difference has been steadily diminishing.



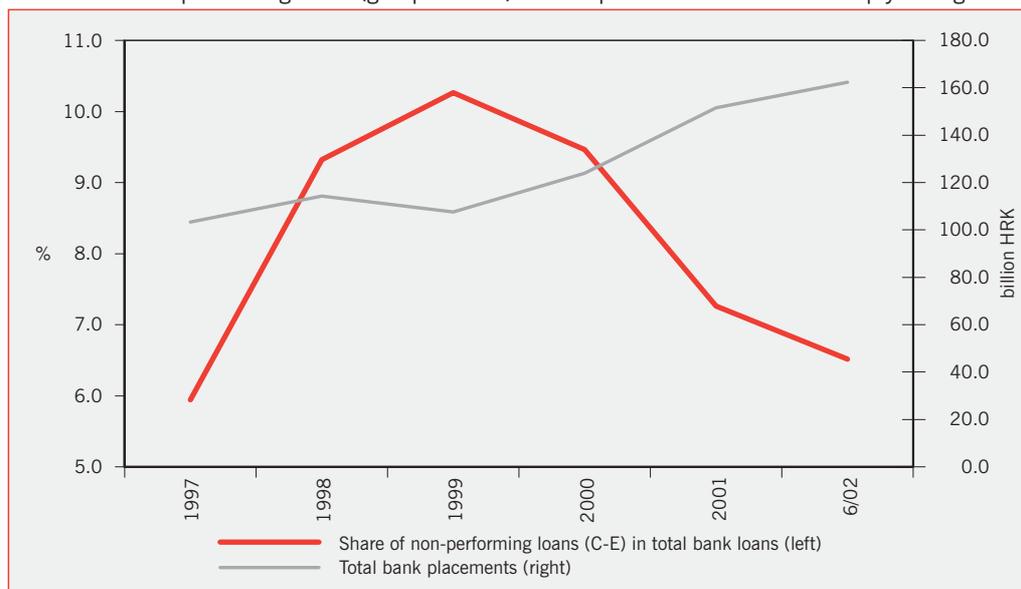
Source: CNB.

Concluding the discussion on bank lending policies, the bankers state that lower interest rates and recently improved availability of long-term loans have been due to extremely fierce competition in the last “round” of oligopolistic positioning on the Croatian banking market. Thus, lower interest rates have not resulted from the enhanced legal protection of creditors and decreased credit risk in corporate and household lending, as is often stated, which makes these trends potentially dangerous for the banking system. Such pessimistic bankers' estimates somewhat contradict the data that the banks themselves submitted to the CNB, which show that the estimated riskiness of bank placements has sharply fallen in the last two years.

2 For a more detailed presentation of housing savings bank operation in Croatia, see Tepuš (2001).

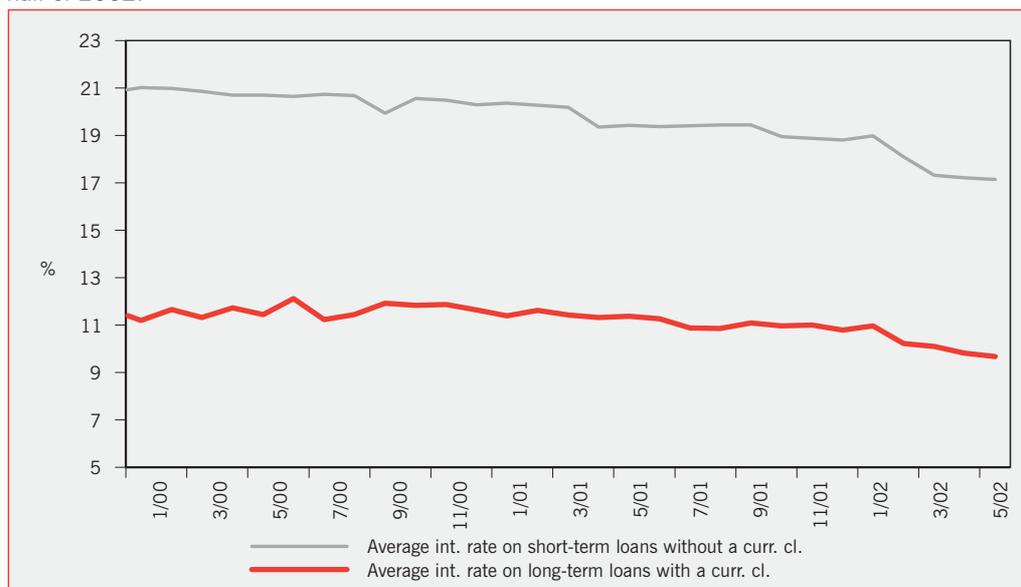
If the presented fall in the share of non-performing loans in total bank loans accompanied by strong growth in total placements (Illustration 5) did not result from the decreased credit risk in corporate and household lending, the next most probable cause of this phenomenon is a too optimistic classification of new placements (the so-called seasoning effect). On the other hand, it is possible that loan classification was too pessimistic in 1999, considering the achieved economic recovery, so that the fall in the share of non-performing loans in total bank placements resulted from the reclassification of old placements into less risky groups.

**Illustration 5** Total bank placements have been strongly growing for three consecutive years, while the share of non-performing loans (groups C to E) in total placements has been sharply falling.



Source: CNB.

**Illustration 6** Bank loans to households have become much cheaper as late as the first half of 2002.



Source: CNB.

Either way, time will show whether bankers were too pessimistic in their subjective assessments of systemic credit risk, or their institutions were too optimistic in the risk classification of new placements in the last two years, or none of this is true.

With regard to the rest of 2002 and later on, bankers' answers predict further strengthening of bank competition in lending, with its expected removal into the arena of household lending where there is still ample room for cuts in lending rates, which have stayed flat at very high levels in the last few years (Illustration 6).

## 4.2 Risk Management in Banks

Since bankers still believe that credit risk is the only daily present and most widely spread risk in bank operations, this risk attracts most of their attention. This is also evident in their descriptions of the major changes in the process of measuring, monitoring and limiting credit risk in the last two years. Bankers stated that the separation of the function in charge of credit risk management from that in charge of loan approval has been made in all, even the smallest banks. Furthermore, depending on the bank's size, some banks have separated the *ex ante* assessment of credit risks from their *ex post* assessment, and both these functions have been separated from substandard claims handling. Finally, in almost all banks, the office in charge of credit risk assessment is directly responsible to a management board member, and often to the chairperson of the bank management.

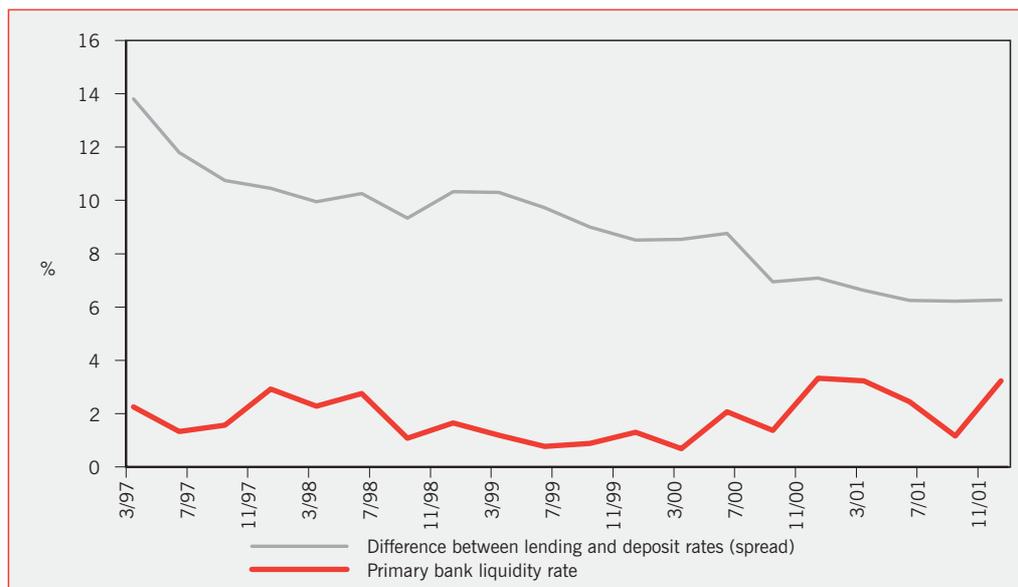
One of the major changes in credit risk management is that most banks have introduced automated credit scoring for natural persons, which at the time of the last survey existed only in a minority of banks. In the meantime, some banks have introduced automated credit scoring for legal persons as well, so that these banks now make a technologically more advanced minority. Also, larger banks have introduced limits on all exposures on the lending side, including also the limit on exposure to the CNB, which has not been applied before.

The recent case of Riječka banka has shown that all efforts devoted to credit risk management can be undone in a minute if attention is not paid to other risks, more specifically, fraud risk. In the context of protection against fraud in foreign exchange and securities trading, the separation of the front, middle and back office operations within the treasury department has been implemented in all large banks, except two banks in domestic ownership due to special circumstances in their operations in recent years. However, a complete automation of treasury operations (via the IT system) exists in only one bank, whereas it is at different development levels in other banks. Bankers consider that a complete separation of the treasury department and its partial computerisation provide sufficient protection against events similar to those in Riječka banka.

Bankers believe that market risk management is much simpler in Croatia than elsewhere due to a lower degree of Croatian financial market development. Still, they recognize that the role of interest rate risk and risk of maturity mismatch between sources and placements has recently increased. As the bankers themselves admit, a larger cut in lending rates than the fall in deposit rates would eliminate the protection against interest rate risk that banks until recently secured by the

excessive interest rate spread. On the other hand, maturity mismatch risk has increased due to the stated much-lengthened loan maturities to all sectors. In contrast with the stated types of risk that have been increasing, bankers do not forget liquidity risk, which is currently neutralised by the hyper-liquidity of the banking system. They believe in the truth of their past experience which shows that liquidity risk has been important whenever general economic or political situation in the country deteriorated (Illustration 7).

**Illustration 7** Interest rate risk has grown due to a large reduction of the interest rate spread, while liquidity risk has receded due to improved banking system liquidity in recent years.



Source: CNB.

Neither the consolidation and market positioning stage, nor the last seven years of stable macroeconomic environment have affected the level of currency risk in banking, and this risk is still present in the entire Croatian banking system (Illustration 8). Therefore, bankers did not comment specifically on this risk this time, but only in the context of their desire that Croatia adopts the euro as its legal tender. This strongly contrasts with our findings of two years ago when bankers almost unanimously upheld the thesis that the loss of income from foreign exchange trading could not be offset by lower expenses arising from a simpler offer of products and easier closing of foreign exchange positions, the thesis which they presently, also unanimously, reject.

Finally, in light of preparations for the new Basel Accord on risk management in banking (the so-called Basel II<sup>3</sup>), the greatest uncertainty according to bankers lies in procedures for operational risks monitoring. These risks have been strongly increasing due to exceptional growth in card (Illustration 9) and electronic products and services in recent years. Bankers also believe that these risks

3 Basel II is a short name for the second Basel Capital Accord which will redefine guidelines for the best risk management practices in banking, which were recommended on the international level by the first Basel Capital Accord. For details, see [www.bis.org/publ/bcbsca.htm](http://www.bis.org/publ/bcbsca.htm).

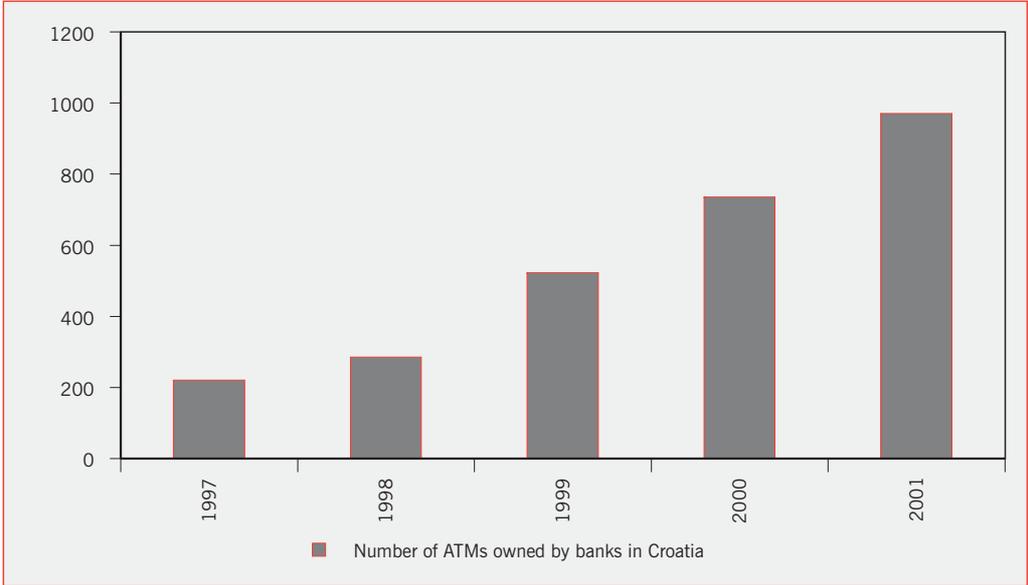
do not receive sufficient attention, which is illustrated by the example, about which rumours spread in the banking community, when domestic hackers caused (luckily) a small loss in card operations to one bank.

**Illustration 8** Share of f/c deposits in total bank deposits has not fallen below 70% in the last three years, while the share of f/c and kuna loans with a currency clause and f/c deposits has been below 100% and steadily falling.



Sources: CNB and author's calculations.

**Illustration 9** Number of ATMs owned by banks is still strongly growing.



Source: CNB.

### 4.3 Preparations for Basel II

To measure and control credit risk according to Basel II most large banks will opt for an internal ratings-based (IRB) approach, whereas banks with an international strategic partner/owner will probably develop it at the (international) bank group level. Various interviewed banks are at different stages of developing an IRB system according to Basel II: some have not yet considered this issue, whereas some have, either alone or in cooperation with their groups, or even an international credit rating agency, been developing models and IT support (software) for an IRB system.

**Illustration 10** Approaches to Credit Risk Assessment according to Basel II

Standardised approach	Internal ratings-based approach
<p>A risk weight for each asset item depends on a borrower's category (sovereigns, banks or corporates). Under the new accord, risk weights are assigned in line with ratings assigned by eligible external credit assessment institutions (e.g. rating agencies). Conceptually the same as in the former accord, the standardised approach is more risk sensitive in the new accord. For example, under the existing accord, there is only one risk weight for corporate exposures (100%), while the new accord provides for 4 categories (20%, 50% 100% and 150%), depending on the corporate debtor's rating.</p>	<p>In credit risk assessment banks may use their internal assessment of borrowers' creditworthiness, but applying strict and precise methodological standards. For various types of credit exposures (e.g. retail and corporate) there must be detailed analytical frameworks. The IRB approach may be foundation or advanced: under the foundation approach, banks estimate the probability of default for each exposure, while supervisory authorities provide other data. Under the advanced approach, banks with sufficiently developed process of internal capital allocation will be able to collect all data alone. The IRB approach provides for a much wider range of risk weights than the standardised approach, which results in greater sensitivity to risk.</p>

Source: BIS.

Most Croatian banks have just embarked on the transition from a flexible IRB approach, which was provided for by the 1998 amendments to the CNB's decisions, to the most recent IRB approach, which has been implicitly imposed by the introduction of International Accounting Standard (IAS) 39.<sup>4</sup> Applied as of early 2001, IAS 39 prescribes, among others, that expected future collections of receivables be valued by taking account of the time dimension of money (i.e. according to their present net value). In this regard, banks are not satisfied with the short-time limit, which the CNB imposed, for the adjustment of their existing IRB approaches to IAS 39, taking account of its complexity and the consequent delays in its implementation, even in the Western countries. Also, the application of IAS 39 at the individual loan level, instead of at the portfolio level, considerably increases the price of this standard's application for large banks with huge portfolios of small household loans. Hence, they believe that such IAS 39

4 IAS 39 is the abbreviation for the recently adopted international accounting standard 39, which provides for significant changes in corporate asset evaluation. IASs are prescribed by the International Accounting Standards Board (acronym: IASB). See [www.iasb.org.uk](http://www.iasb.org.uk).

application is an unnecessary measure of precaution on the part of the CNB, particularly in the light of the high quality of household loans and negligible amounts of individual exposures on such loans for the overall quality of large banks' loan portfolios.

Among expected challenges regarding harmonisation with Basel II, banks most often mention its complexity, i.e. the fact that its development has begun before transition countries were even “included in the equation” and that as such it has been intended only for the largest banks – conglomerates with complex international operations. With regard to the development of advanced IRB systems (which imply comprehensive, high quality and long time series of data on debtors) banks point to the lack of the national register of credit commitments. Still, bankers themselves cannot agree on who is responsible for delays in the establishment of the first such register in Croatia, the feasibility study on which has become known within the broad professional community as the CRCC<sup>5</sup> (Illustration 11). Most of the bankers interviewed pointed this time to both the CNB, for its passive stance, and to the largest banks, for their short-sightedness; representatives of small and medium-sized banks agree that the largest banks are not interested in the CRCC in the long-run, whereas in the short-run they see its lack as an advantage in their competition with smaller and newly-established banks.

**Illustration 11** History of CRCC Development

June 1997	Project was initiated at the meeting of the Board of Directors of the Croatian Institute for Banking and Insurance.
February 1998	Presentation of market survey results that confirmed the interest of Croatian financial market participants for the CRCC.
April 1998	Establishment of the task force for the preparation of the feasibility study on CRCC.
October 1998	Study was published and adopted at the meeting of bank directors; agreement was reached on the steps needed for the project realisation.
December 1998	New Banking Act provides that the CNB is to be a lead institution in the formation of a national credit register to be established by banks.
July 2002	New Banking Act allows commercial banks to establish a national credit register; the CNB is not mentioned in this context.

Source: CBA.

Due to all of the above, banks expect and desire strong cooperation with the CNB regarding the application of new guidelines for risk management in banking, which will be comprised in the final Basel II document (Illustration 12).

5 CRCC, the acronym for the “Croatian Register of Credit Commitments” stands for a five-year long initiative of banks, the CNB and the Ministry of Finance of the Republic of Croatia, which has resulted in a feasibility study on the first Croatian credit register. See [www.hub.hr](http://www.hub.hr).

#### Illustration 12 History of the Basel Accords

July 1988	– first Basel Capital Accord published
End-1992	– time limit to begin implementation of the Basel Accord
June 1999	– first proposal of the new Accord
January 2001	– Consultative paper published
April 2001	– study on the new Accord's impact on capital adequacy of banks published (Quantitative Impact Study, QIS)
End-May 2001	– time limit for comments on the new Accord, over 250 comments received
November 2001	QIS 2.5 – examines banking sector's attitudes on proposed modifications to the Accord
October 2002	QIS 3 – to provide banks with a detailed and precise assessment of the new Accord's impact on bank operations; banks are obliged to submit results by 20 October 2002
2nd quarter 2003	– final proposal of the new Accord, subject to public comments
4th quarter 2003	– final version of the Accord
End-2006	– time limit to begin implementation of Basel II

Source: BIS.

### 4.4 Liberalisation of Foreign Exchange Operations and National Payment System Reform

The process of consolidation and market positioning of banks over the last two years has not been just an internal matter of Croatian banks. In addition to the stated external factors, such as an immediate need to privatise the post-war transition economy and the unstoppable spread of foreign capital to transition markets caused by financial globalisation, one of active “external” participants in this process has been the Croatian central bank. In the period from 2000 to the present, the CNB has led the finalisation of three key reforms in the Croatian financial system: liberalisation of foreign exchange operations, reorganisation of the national payment system (Illustration 13) and elimination of savings banks from the system of deposit institutions. Within the survey, bankers were asked to assess the implementation of the first two reforms, since the third one was still in progress at that time.

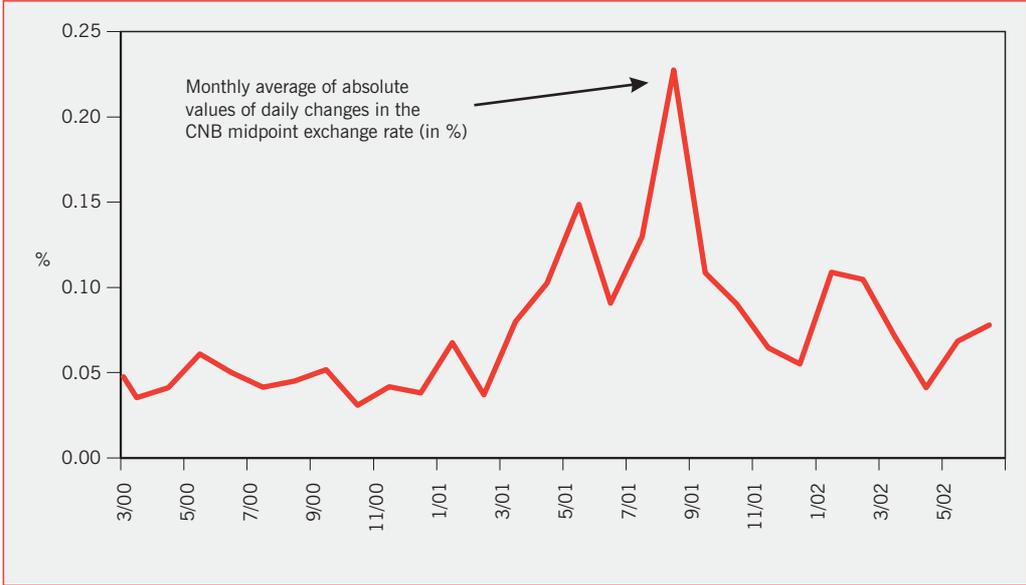
The 2001 liberalisation of foreign exchange operations, which allowed firms to freely trade and save in foreign exchange, all bankers consider well designed and implemented, notwithstanding a one-off destabilisation of the foreign exchange rate in mid-year (Illustration 14). By contrast, there is a general opinion that the draft Foreign Exchange Act, which is currently subject to public review, is a step backwards in liberalisation of the foreign exchange system. Among the main reasons for this estimate bankers mention that the draft Act has obviously been affected by CNB's fears of derivatives and foreign investments in central bank securities, which the bankers consider unreasonable. Also, most bankers agree that foreign exchange lending to households should be allowed, which would eliminate non-transparent differences between existing versions of currency clauses, together with natural persons' investment in securities and bank deposits abroad, which is anyway possible via the Internet (illegally) and through investment funds (legally).

**Illustration 13** History of the National Payment System Reform

- 4 January 1995** CNB (NBC at the time) adopted the material *Bases for the Improvement of the Domestic Payment System*, according to which the only institutions responsible for domestic payment operations are the CNB, banks and savings banks.
- 1997** Adoption of the draft National Payment System Act, issuance of the invitation to bid for the formation and establishment of the large value payment system, selection of the most suitable bidder.
- 25 February 1998** Agreement on the establishment of the large value payment system concluded with Logica UK Limited from London. Preparations for a gradual entry of payment operations across accounts of legal persons into banks made in the existing legal framework.
- 3 April 1999** Settlement and reserve requirement accounts, as well as accounts of obligatory deposits of banks and savings banks transferred from the Institute for Payment Transactions (IPT) into the CNB.
- 6 April 1999** Croatian Large Value Payment System (CLVPS) began operations.
- In 1999** Establishment of the Unified Register of Business Entities' Accounts, the prerequisite infrastructure for the transfer of business entities' accounts from the IPT to banks.
- December 2000** CNB Council adopted the decision on the beginning of operations of the National Clearing System (NCS).
- 5 February 2001** National Clearing System (NCS) began operations.
- 15 October 2001** Unified Register of Business Entities' Accounts began functioning.
- In 2001** Adoption of several subordinate regulations related to payment system reform.
- End-2001** New National Payment System Act adopted, in full effect as of 1 April 2002.

Source: CNB.

**Illustration 14** Exchange rate fluctuations gradually increased due to anticipated liberalisation of f/c operations of firms, culminated in August 2001 and equally fast returned to almost the same level as before liberalisation.

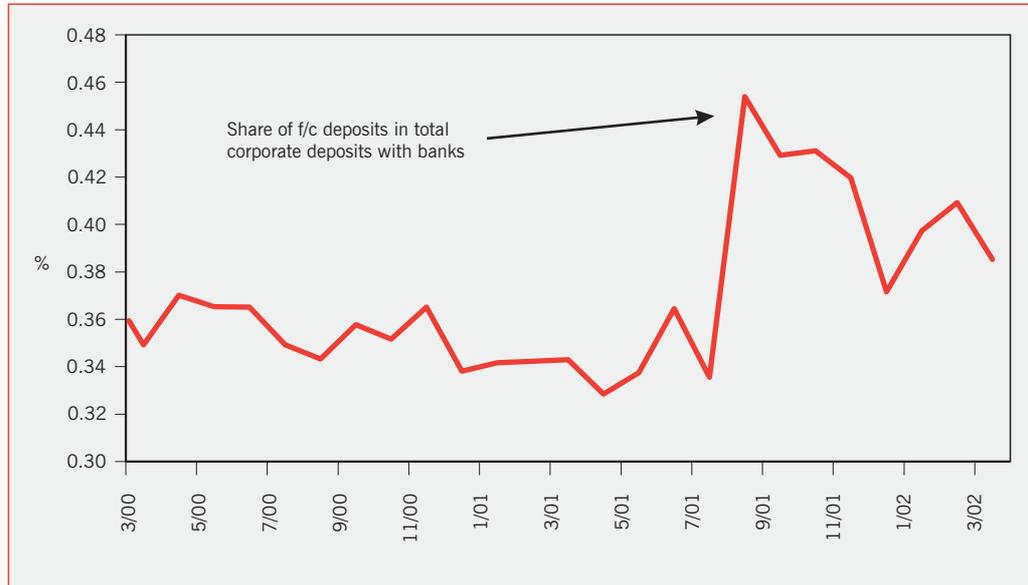


Sources: CNB and author's calculations.

Some bankers claim, in a negative tone, that even the 2001 liberalisation, although correctly implemented, has not produced a major impact: due to weak general liquidity of the corporate sector, balances in corporate f/c accounts stopped growing soon after the initial wave of f/c purchase, which was in any case the outcome of actions taken by several largest and most-liquid firms (Illustration 15). Those that do not consider the implemented foreign exchange liberalisation

to be successful at all mentioned the lack of necessary subordinate legislation as one of the main reasons for the failure of foreign exchange liberalisation.

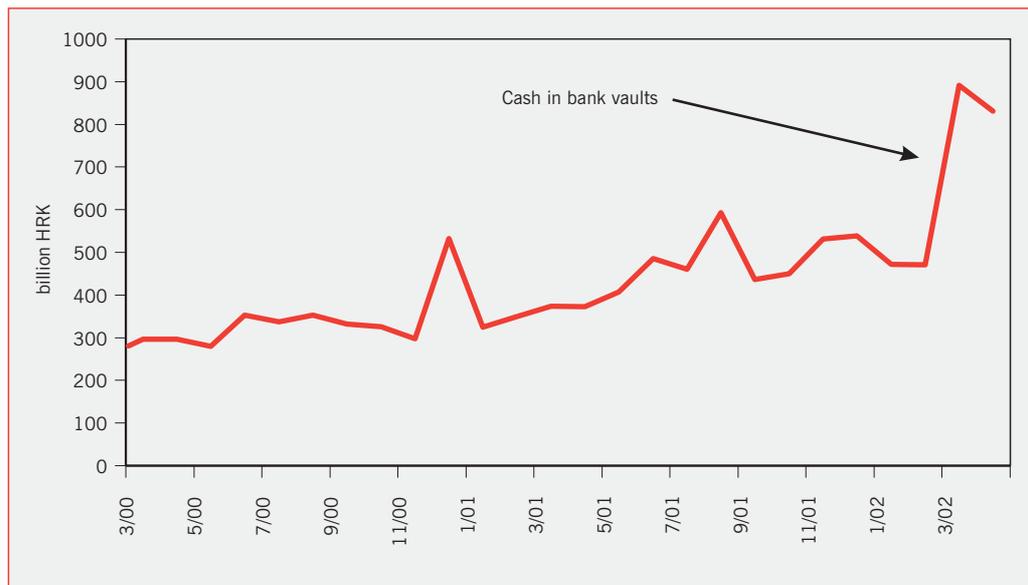
**Illustration 15** Following a hike in August 2001, corporate f/c deposits have been slowly falling to a new stable level, which will apparently surpass their level before foreign exchange liberalisation.



Sources: CNB and author's calculations.

In contrast with foreign exchange liberalisation, all bankers consider that the completion of the national payment system reform in 2002, i.e. final deinstitutionalisation of the Institute for Payment Transactions (IPT) and the transfer of payment operations into banks, together with the enactment of the Payment

**Illustration 16** Banks prepared themselves to end the transition to the new model of domestic payment operations by an unseasonal increase in cash supplies.



Source: CNB.

System Act, has been extremely hasty. As the draft for the payment system reform was made as early as 1995, bankers believe that the reform implementation should have been much more gradual. Bankers estimated that numerous technical problems (temporary inaccessibility of some accounts or incorrect balances in some accounts), which occurred in the abrupt transition to the new payment system at the end of the first quarter and beginning of the second quarter of 2002, were only temporary and were ready for them (Illustration 16). Still, they warned about potential damage that their individual clients may suffer due to delays and mistakes in the transfer of accounts from the former IPT (presently the Financial Agency, FINA) into banks.

Bankers cannot agree on reasons for the problems in the introduction of the new payment system, so they shift responsibility for reform delays among themselves. The interviews did not show clearly whether the transfer of accounts was delayed due to a few banks that decided to alone conduct payment operations of their clients, due to Hrvatska poštanska banka, for whose problems responsibility is shifted to politicians because they assigned a special role in the payment system to unprepared post offices, or due to banks that opted for a new model of payment operations in cooperation with FINA. Anyway, bankers believe that further speculations on FINA destiny are inadmissible, and project that its role in payment operations will completely disappear after a while, while all large banks will perform payment operations for themselves and for smaller banks which could not profit from conducting these operations alone.

#### 4.5 Legal Framework and Court Practice

In recent years, in addition to its leading role in the implementation of the above described banking system reforms, the Croatian National Bank has played an active advisory role in the preparation of new legal solutions for the Croatian financial system. The efforts to modernise laws governing the financial system functioning have resulted in five new acts in 2002: on banks, payment system, securities market, savings and loan associations, and the takeover of joint stock companies. Before that, the central bank participated in redefining its own role in the Croatian financial life during the enactment of the new Croatian National Bank Act in 2001. Finally, the seventh act in this wave, the one on foreign exchange operations, is in the final drafting stage, and its adoption will finalise the transformation process of Croatian laws governing the financial system, and to a large extent, its harmonisation with European laws. Within the survey, bankers were asked to assess the new acts and acts whose drafts are still subject to public review, since most of them have been adopted after the survey.

With regard to the new Banking Act,<sup>6</sup> it should be noted that large banks have already given a joint opinion on its draft (at the time of the survey, the act proposal

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6 The new Banking Act was enacted on 3 July 2002 (official gazette *Narodne novine*, No. 84/2002). Former acts: official gazette *Narodne novine*, Nos. 161/1998 and 94/1993.

was in the parliamentary procedure) via the CBA.<sup>7</sup> Different bankers commended the new act for its increased harmonisation with EU regulations, rationalisation and unification of internal audit and control, more liberal restrictions on investments in physical assets and its positive attitude towards universal banking. However, most bankers thought that the definition of connected persons in the proposed act was inappropriately restrictive for the present (see Table 5 in the Appendix), since it resulted from a direct CNB's reaction to banking sector developments in 1998 and 1999. Still, each banker's view on the strictness of new CNB regulations depended on a specific situation of a bank he/she represented, so that some bankers also thought that legal restrictions on investments in tangible assets and large exposure were too tight (see Table 6 in the Appendix).

Still, the strongest bankers' objections on banking regulations did not refer to the content of various acts governing the financial services sector but to their incompleteness and lack of mutual harmonisation. More precisely, bankers estimated that the incompleteness of the Banking Act has heretofore unjustly prevented banks from selling additional and ancillary banking products and services (e.g. insurance products). Also, they claimed that due to the lack of harmonisation between the Banking Act and the Securities Trading Act the rules on securities trading have not been defined for years.

This lack of completeness and harmonisation has affected banks since laws did not actually support universal banking, which the Banking Act supposedly endorsed. Soon after the survey, in July 2002, the Parliament adopted the new Banking Act that specifically allows banks to add additional (non-)banking products to their offer. The Securities Market Act, which was also enacted in July 2002, specifically allows banks to engage in securities trading. As expected, such trading is subject to strict and precise provisions of the Croatian Securities and Exchange Commission, as well as to its authorisation and supervision. At all events, the new acts have addressed the two major concrete objections of Croatian bankers regarding financial system regulations.

Whereas objections of most bankers that referred to the legal framework were rare and irrelevant, their objections on the practical implementation of these acts were numerous and deeper. However, these objections did not largely concern the stated acts regulating the domestic financial system. Instead, they referred to the acts governing legal proceedings between a creditor bank and its debtors and the process of forced collection of payments. With regard to court practice, the greatest problem according to bankers is a persistently low level of creditor protection, i.e. slow realisation of undisputable creditor rights (e.g. collection of bills of exchange) and complete uncertainty regarding the collection of "disputable" claims (foreclosure of mortgaged real estate).

While some of the bankers mentioned that minor and sporadic improvements have been made in the last two years, others claimed that the court performance

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<sup>7</sup> CBA is the acronym for the Croatian Banking Association. See [www.hub.hr](http://www.hub.hr).

has been equally weak, with unbelievable shifts in judgements to the detriment of creditors, leading to lien disputes and potential endless delays in presentation of evidence on the basis of trivial objections, which are made possible by bad laws and indecisive judges. Hence, banks have been opting less for bankruptcy proceedings and have increasingly prompted debtors to settle. This shows that bankers estimate that a discount inherent in the settlement presents a lesser expense than the expected sum of legal expenses, expenses for bankruptcy estate management and potential costs of a lien loss, all of which are expenses connected with a typical bankruptcy of a debtor.

The problem of weak creditor protection in court practice can sometimes be reflected also in (in)adequacy of individual laws or subordinate legislation. Thus, bankers believe that the principle of residence, which has been prescribed by the Basel Committee<sup>8</sup> and thence adopted into Croatian regulations,<sup>9</sup> is completely inadequate for Croatia due to weak court performance. Croatian bankers' experience shows that it is much more likely that a bank collects its claims out of a property that is in bad debtor's ownership but which is not his/her residence (house, flat) than it is likely that the debtor does everything possible to raise funds and repay the debt so as not to lose "a roof over his/her head". By contrast, the Basel principle of residence estimates that the scenario in which one strives not to lose residence is more probable, so that Croatian regulations accordingly consider that a residential mortgage is of higher quality than a mortgage over dwellings for vacation or business premises), which is in contrast with evidenced bank experience with courts.

Banks mentioned that the only improvement in court practice regarding creditor protection has been faster activation of fiduciary ownership compared with mortgages, though many of the banks lack experience to make such estimates. On the other hand, banks noted that fiduciary ownership is extremely inadequate for loans with high collateral to loan ratios. Once a property is in fiduciary ownership it cannot be used as collateral for further borrowing regardless of the positive difference between the property value and debt amount. By contrast, in mortgage lending, the value of mortgaged property can be used to obtain several smaller loans that together amount to (somewhat less than) the value of property in question. The choice between fiduciary and mortgage ownership (Illustration 17) is not clear cut, which is reflected in bankers' answers to that question.

Finally, a uniform estimate of developments in court practice some bankers consider impossible since, in their opinion, court proceedings are today slower, and foreclosure proceedings are quicker than in the immediate past, so that the overall estimate depends on a specific relative weight that one assigns to these two

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8 Basel Committee on Banking Supervision is a body of the Bank for International Settlements (BIS), which harmonises international standards of banking supervision. See [www.bis.org/bcbs/aboutbcbs.htm](http://www.bis.org/bcbs/aboutbcbs.htm).

9 In the application of the principle of residence in the Republic of Croatia crucial is item XX of the CNB's Decision on the Classification of Placements and Risky Off-Balance Sheet Items and Assessment of Bank Exposure. See [www.hnb.hr/propisi/epropisi.htm](http://www.hnb.hr/propisi/epropisi.htm).

**Illustration 17** Main Features of Mortgage and Fiduciary Ownership

MORTGAGE	FIDUCIARY
Lien based on a contract that is entered in public records. It is established in the form of a notary instrument with a foreclosure clause.	Transfer of ownership to secure a claim. It is based on an agreement between a debtor and creditor (fiduciary) in the form of a solemn notary instrument.
In the land register, it is recorded as a burden in document C. A mortgage is attached to the real estate regardless of the change in ownership.	In the land register, a fiduciary is recorded as the owner in the title document (document B), with a note "for insurance purposes".
	Advantages over mortgages – a fiduciary does not need to collect a claim through court, collection is executed via notary public.
When conditions for collection are fulfilled, foreclosure proceedings are initiated and the property is sold at auction (not more than three are allowed). If the property is not sold, foreclosure proceedings are stopped; the bank purchases the real estate and removes the mortgage. Claims against the debtor are then equal to the difference between former claims and the estimated real estate value.	The sale is announced when conditions for the sale of the property are fulfilled. If the real estate is not sold within three months it is transferred in fiduciary's ownership without compensation and the claim against the debtor is revoked.

Source: Act on Foreclosure (official gazette *Narodne novine*, No. 57/1996).

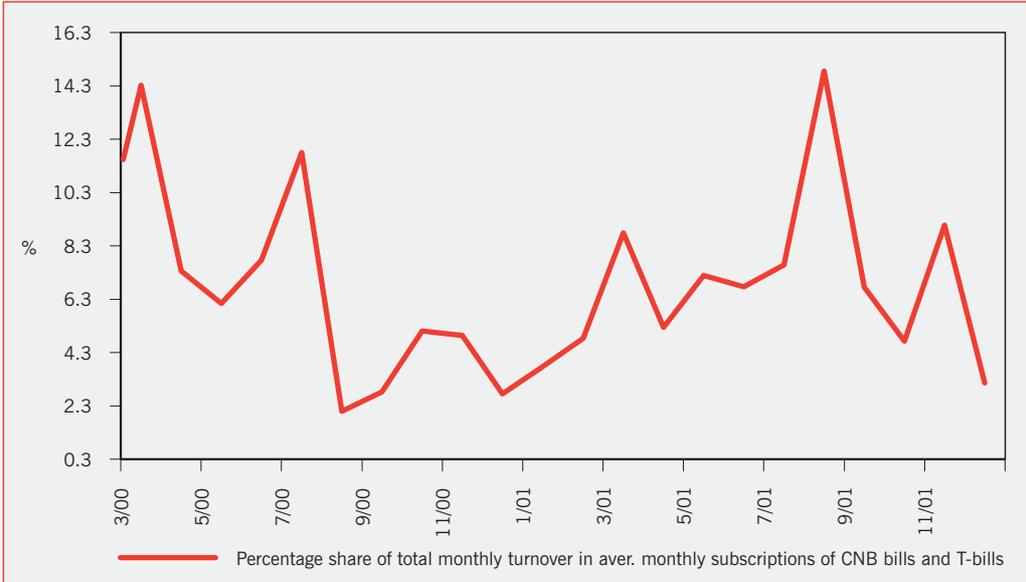
criteria. Bankers consider that disorganised land books are among the most important reasons for the current difficulties in the collection of bad claims by means of mortgaged real estate. The fact that the Croatian government has accepted a World Bank loan of EUR 26m for the first five years of land registry reform, which should last for as long as 15 years and cost over EUR 37m, probably confirms the strength of the negative impact that land registry problems exert on banking.

#### 4.6 Monetary and Foreign Exchange Policies and Bank Environment

The greatest problem in the area of monetary and foreign exchange policies according to (foreign) bankers is the measure that has introduced reserve requirements on derivatives (see Table 5 in the Appendix). The bankers claim that such a measure is not applied anywhere in the world and is contrary to the declarative CNB's goal to enhance banking system stability. They believe that derivatives as a part of a bank's supplementary capital are a stable (i.e. capital) source of bank funding and that they should accordingly be treated as capital and not a deposit base. Bankers also question the CNB's motive to introduce this measure and see it as the CNB's attempt to hamper active bank trading on the foreign exchange market at end-summer 2001. In this regard, bankers consider that the second CNB's measure with the same effect has been much more appropriate: i.e. the introduction of the kuna component of foreign exchange reserve requirements. Bankers consider as especially controversial the motive to retain the measure of reserve requirements on derivatives even months after the stabilisation of the foreign exchange market. As the possible reason for the retention of this measure bankers did not mention its secondary objective – slower bank loan growth – which the CNB itself admitted to be hardly attainable in 2002. Hence, it may be reasonably assumed that this was the main reason for the retention of the stated measure.

With regard to monetary policy instruments, bankers believe that a lesser frequency of CNB bill auctions has not achieved its goal, if it was to promote the development of the secondary market for government and central bank securities. In conditions of an underdeveloped and, according to some, non-existent, secondary market (Illustration 18), CNB bills have lost their attractiveness, so that banks sometimes subscribed T-bills even when there was (a small) negative interest rate spread between these two instruments. The main motive to purchase short-term CNB and MoF securities in kuna and foreign exchange is to close an open position in derivatives and foreign exchange and not to earn a yield. Obviously, the central bank has become aware that less frequent CNB bill auctions were inefficient, and/or has recognised a reasonable commercial banks' need for more frequent auctions even before the publication of this text, so that since the beginning of July 2002 CNB bill auctions have again been held each week.

**Illustration 18** In the last two years, monthly trading in short-term government and CNB securities on the secondary market has not exceeded 15% of these securities' subscriptions, nor has it shown a clear upward trend.



Sources: CNB and author's calculations.

Furthermore, even the closure of positions is not a sufficient motive for smaller banks to subscribe MoF and CNB securities. When they do purchase these securities, they do so exclusively by means of non-borrowed excess reserves, because these securities bring low yields, whereas Lombard loans of the CNB, which can be collateralised by these securities, are too expensive. Lombard loans of large banks are extended faster and are cheaper so that many smaller banks prefer to deposit funds with large banks. Large banks are forced to subscribe these securities for “emergency purposes” (Illustration 19).

With reference to Lombard loans, and related to the emergency need for liquidity, bankers claim that all banks in foreign ownership, i.e. all large banks, use

**Illustration 19** Small banks prefer to deposit their liquidity reserves with other banks and not with the government or the central bank

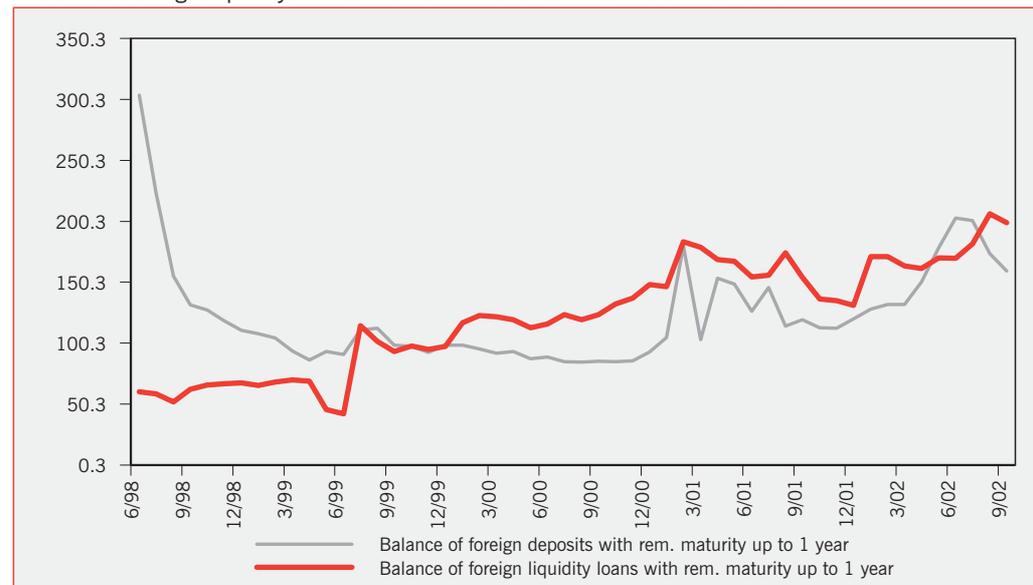
Balance as at 30 June 2002 (million HRK)	Total assets	MoF T-bills and CNB bills	Deposits with banking institutions	Share of short-term bills in total bank assets
	(1)	(2)	(3)	(4) = (2)/(1)
Total large and small banks	146,626	9,968	18,156	0.07
Total small banks (assets < HRK 750m)	7,081	358	803	0.05
Total all banks	153,707	10,326	18,958	0.07

Sources: CNB and author's calculations.

foreign sources available on international money markets only in case of emergency, and not for daily management of liquidity. CNB loans are today viewed as an instance of “the last resort” and not as the last resort. Still, this estimate of the lesser CNB’s role as the lender of last resort is slightly in contradiction with the CNB statistics showing steadily growing high levels of short-term foreign deposits and loans at Croatian banks (Illustration 20). Their possible sudden withdrawal, in case of major disturbances on the financial market, could easily restore the CNB’s central role in maintaining banking system liquidity.

On the other hand, small banks cannot quickly and directly access international markets, but only through their correspondent banks. All this brings us to the conclusion that if large banks have certain advantages over small banks it is not because of their greater ability to quickly satisfy sudden liquidity needs in emergency situations but because of their better access to cheaper foreign credit lines on an ongoing basis (*de facto* revolving loans) at regular market terms.

**Illustration 20** The level of foreign deposits with Croatian banks has doubled since early 2001, and the level of foreign liquidity loans has increased four times since mid-1999.

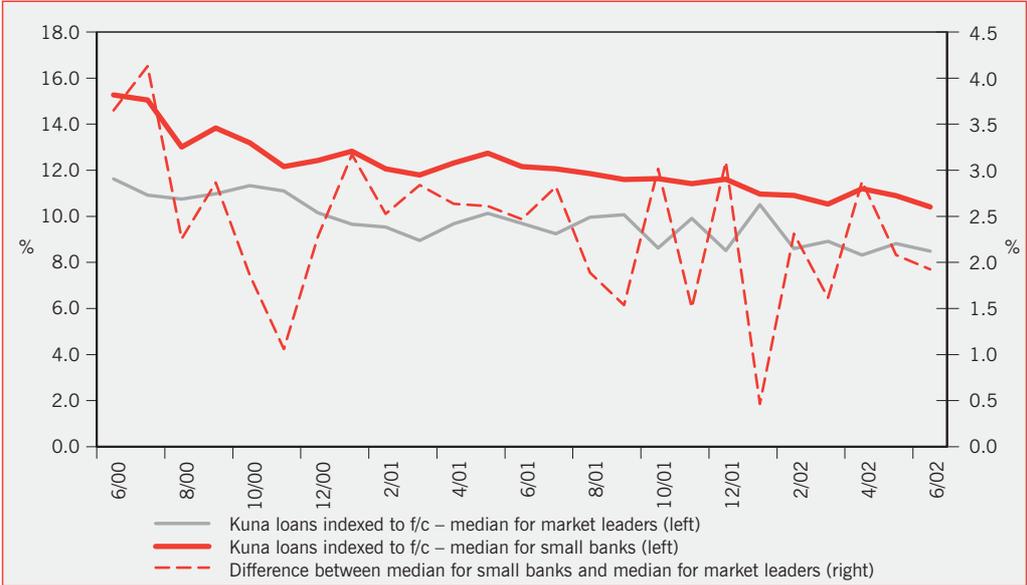


Source: CNB.

Finally, bankers identified two other essential features of banking environment that, though undesirable, are not particularly restrictive in daily operations of banks. Bankers believe that these features will eventually disappear, both thanks to further development of the overall financial system and economic growth. First, lack of education on the part of financial personnel at non-financial firms is considered as one of the reasons for insufficient penetration of existing products for the protection against currency risk connected with bank clients. Bankers also see this as the main reason for underdevelopment of more complex instruments (standardised futures and options) and for the lack of their offer on the Croatian market. No interest for such products has been noticed at small firms.

Second, no bank considers the ZIBOR to be the benchmark rate for the domestic market, though most of them are ZIBOR members, i.e. banks do not view any interest rate in Croatia as a benchmark for the price of their products. Thus, various large banks determine their prices on the basis of different formulas taking into account for example, ZIBOR, LIBOR and EURIBOR, interest rates on Lombard loans or T-bills and CNB bills. Small banks use even less sophisticated benchmarking to determine their interest rates and adjust them to interest rates of large banks, mostly those of market leaders (Illustration 21).

**Illustration 21** Interest rates of small banks have followed closely those of market leaders, so that the difference between them has been steadily diminishing.



Sources: CNB and author's calculations.

### 4.7 Directions for Further Research

Bankers' attitudes, observations, interpretations of events and opinions presented so far are shared by all or at least most of the bankers interviewed, or by their clearly distinguishable subgroup (e.g. small banks, but not large banks). The

remaining part of this section presents minority or individual bankers' opinions that were sufficiently provocative or popular to be subject to public scrutiny and possibly surveyed in more detail in future papers of the CNB or other institutions.

First, in the area of CNB's monetary and lending policies, one banker considers that limits on exposure to connected persons are unnecessary since these limits can always be disregarded by swap of claims between cooperating banks, which increases the price of legitimate operations with connected persons. Another banker sees nontransparency of CNB bill auctions on the primary market, non-linking to the euro and the announced penalising of fast-growing banks as the weakest points of monetary, foreign exchange and lending policies of the central bank. Finally, several persons interviewed consider that the central bank should be, if not a market-maker, at least more active on the secondary markets of short-term risk-free securities and foreign exchange forward agreements.

Second, in the area of risk management, several banks see a growing systemic risk not only as the result of interest rate and maturity risks but also of the risk of impaired forced collection due to "laxer" collateralisation (see Tables 1, 2 and 3 in the Appendix), which is also the result of severe competition. With regard to the reduction of damage caused by credit risk, several banks that had valuable experience with the activation of fiduciary ownership over business premises positively assessed this form of forced collection.

Third, some banks warn about the potential abuse in home lending on the part of banks that have stakes in housing savings banks, since they could transfer typical home loans to their housing savings banks in order to gain government incentive funds and thus *de facto* simulate housing savings.

Finally, one bank pointed out that problems in the introduction of the new domestic payment system could potentially be aggravated by the banks' reluctance to open accounts to bad firms, which still exist in the formal legal sense and are numerous in Croatia. The same bank also stated that strong non-financial firms (Pliva, Podravka, TDR, Agrokor, etc.) may pose a greater threat to CNB's efforts to stabilise the foreign exchange rate than banks themselves.

#### 4.8 Expectations for the Short Period from 2002 to 2003

In view of the brisk pace of changes in the Croatian banking market, in the period between the survey and the finalisation (and publication) of this report, sufficient time has elapsed for the realisation of some expectations and bankers' plans for the 2002-2003 period, which were addressed in one of the most important questions in the oral part of the survey. Thus, the rest of the section on the survey results presents most bankers' expectations and plans at the time of the survey in early 2002, which will be reflected or have already been reflected in developments in Croatian banking and its environment in the two-year period (up to end-2003).

Large banks expect faster relative growth in household loans compared with corporate loans to continue in the stated period, although not at growth rates recorded in previous years. Smaller banks presented opposite expectations, i.e.

most of them consciously plan to shift towards faster corporate loan growth after several years of increasing the share of their household loan portfolio in total loans.

Banks that “came late” plan to cut their interest rates, whereas market leaders expect that interest rates on corporate loans will stabilise at the attained level since there is no room for their further reduction. Expectations concerning commissions and fees are similar: they have been stable for some time, whereas the scope of services and products on which they are charged has been increasing.

Most new products and services that banks plan to offer in the next period are related to card and electronic operations. As with the described interest rate cut, a better offer of card products is planned by banks that “came late”. It should be noted that this group is numerous with regard to “real” credit cards (for instalment payments). Banks’ focusing on their own technological development is also evident in their plans to improve existing or acquire new information systems. In this sense, literally all banks found themselves in one of the following three groups: 1) banks where IT upgrading/renovation is in progress, 2) banks that view their IT upgrading as a continuous process, and 3) banks that plan IT upgrading in the near future.

Market competition and consolidation of the Croatian banking sector could continue at a less dynamic pace than before. Within proactive measures banks mentioned the continued spread of business networks and increased advertising. Still, as stated earlier, competition in the area of corporate lending has subdued, and most bankers believe that the speed of services has already reached its maximum. Finally, apart from several bank mergers and takeovers that occurred during the survey, only one recapitalisation was announced, whereas a potential spread of domestic banks on neighbouring markets in the following period was only sheepishly announced.

Finally, bankers were asked to give their own view on developments in demand for bank loans in the next two-year period. The majority opinion was that loan demand will somewhat exceed that in 2001.

## 5 Conclusion

If Croatian banking development over the last two years (up to mid-2002) should be summed up in one sentence, it could be said that the Croatian banking system has gone through a brief but turbulent stage of consolidation and market positioning, accompanied by several major reforms. Consolidation is evident in the fall in the total number of banks to the detriment of small banks, with a parallel reduction of differences in size among large banks. Market positioning has brought about a sharp decline in interest rates, which is still in progress, and (at least declarative) shift towards increased share of household loans in total loans and more favourable long-term corporate loans. The implemented reform of foreign exchange operations has increased liveliness on the foreign exchange market by

allowing large non-financial firms to actively participate in foreign exchange trading. Finally, the national payment system reform has, for the first time in this region, enabled banks to provide this traditional banking service.

In the studied period, most laws in the area of financial system regulation were replaced by the new ones, whereas the remaining few were amended. The objectives of these changes were to redefine the central bank's role in the financial system, eliminate observed legal obstacles to stronger development of universal banking and provide legal background and support to the implementation of reforms in banks' foreign exchange operations and the national payment system. In this period, according to bankers' evidence, there were no major changes in court practice due to objective (increased number of cases) and subjective (lack of reorganisation) reasons, and the only bright spot in protection of creditor rights is faster and simplified activation of fiduciary ownership of debtor's pledged property.

In the area of central bank's monetary and foreign exchange policies and its relation with banks the last two years have been marked by typical bankers' "games": whenever bankers tried to use an unexpected possibility to make a fast profit, the CNB prevented them. Thus, the central bank implemented several measures that were to bring short-term stabilisation of the exchange rate and temporarily slow down loan growth, which provoked bankers' intense reaction. On the other hand, a high degree of coordination among banks and the CNB was reflected in the fast and effective prevention of the contagion effect in the case of Riječka banka.

Looking ahead, the greatest challenge to the banking sector in the mid-run, according to bankers' estimates, will be the continued stiff competition on the lending side, which, in case it gets out of control, could threaten the sustainability of already extremely low interest rates on corporate loans, growing maturity mismatches between sources and placements, and relaxed collateral requirements. In this context, it is positive that, as the banks announced, since early 2002, competition has moved into the household sector where lending is still considerably below the European average and where lending rates are still far from their potential minimum.

With regard to risk management, the greatest efforts banks expect in the long-run are related to adjustment of operations to the second Basel Accord, especially concerning the procedures and application of the system for operational and market risk management, for which there is currently no adequate approach, even on the part of the Basel Committee itself. Hence, banks hope that the central bank will assume an active leading role as their partner in this area. Otherwise, bankers view the CNB both as their partner and rival. Rivalry is mostly evident in the phenomenon that bankers unanimously described as too frequent retroactive actions of the CNB, both regarding monetary and foreign exchange policy measures and regarding the regulations in whose enactment the CNB actively participates either directly (decisions and other subordinate legislation) or indirectly (proposals for draft acts).

Among unfulfilled wishes that, at least in theory, could be satisfied in a relatively short time, bankers unanimously give prominence to the adoption of the euro as the legal tender, which would eliminate at least the system's currency risk, and to the finalisation of the national register of credit commitments, which is a precondition for the development of advanced IRB models. Two wishes whose fulfilment would require relatively more time refer to legal protection of creditors. These are reorganisation of land books and faster pronouncement of final court judgements. The fulfilment of the first wish has begun soon after our interviews with bankers, and this is the first stage of the land book reform, for which a favourable foreign loan has been recently secured.

Finally, if we compare all the above stated conclusions with those of the preceding bank survey (described in the introduction), problems related to court practice and the lack of the credit register are still present in Croatian banking. In the meantime, improvements have been made in the area of financial system legislation, while banks have enhanced their credit scoring systems and credit risk monitoring. With regard to strategic challenges in the observed period, such as the issues of size, specialisation and competition, they have been mostly solved or are currently being solved. Small banks that survived this crucial period have specialised for dealing with small firms, while large banks have maintained and strengthened their dominant role in dealing with big firms and households. The only issue that has remained unsolved is the issue of determining an optimum level of competition among banks and its control, which will for some time prevail in relations among banks and their relations with the central bank.

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## Appendix

**Table 1 a)** Relevance of the Method Used to Assess the Creditworthiness of Legal Persons; scores from 1 to 5 (1 – completely irrelevant, 2 – of some relevance, 3 – relevant, 4 – very relevant, 5 – extremely relevant)

	Q1 2000				Q2 2002			
	Number of banks	Share in assets (%)	Average score	Weighted average score	Number of banks	Share in assets (%)	Average score	Weighted average score
Knowledge about a client through a business relationship	32	76.3	4.1	3.8	33	78.2	4.3	4.2
Assessed creditworthiness of a client	32	76.3	4.0	3.7	33	78.2	4.1	4.1
Loyalty to the bank	32	76.3	3.4	3.5	33	78.2	3.5	2.9
Capital strength of a client	32	76.3	4.0	4.1	33	78.2	4.1	3.8
Income strength of a client	32	76.3	4.3	4.3	33	78.2	4.4	4.4
Business recommendations	32	76.3	3.3	2.9	32	77.1	3.3	3.2
Personal recommendations	32	76.3	2.4	2.4	33	78.2	2.4	2.4
Investment project quality	32	76.3	4.0	3.4	33	78.2	4.3	3.9
Management quality in a client's firm	32	76.3	4.2	4.3	33	78.2	4.3	4.7
Mortgage value	32	76.3	3.7	4.1	33	78.2	3.7	3.6
Income/capital strength of guarantors	29	74.9	3.7	3.7	30	76.7	3.8	3.7
Share of down payment	32	76.3	3.7	3.8	33	78.2	3.6	3.4

Source: CNB Survey.

**Table 1 b)** Relevance of the Method Used to Assess the Creditworthiness of Natural Persons; scores from 1 to 5 (1 – completely irrelevant, 2 – of some relevance, 3 – relevant, 4 – very relevant, 5 – extremely relevant)

	Q1 2000				Q1 2002			
	Number of banks	Share in assets (%)	Average score	Weighted average score	Number of banks	Share in assets (%)	Average score	Weighted average score
Knowledge about a client through a business relationship	30	75.6	3.7	3.7	31	77.4	3.9	4.0
Assessed creditworthiness of a client	29	74.5	3.6	3.2	30	76.4	3.7	3.4
Loyalty to the bank	30	75.6	3.2	2.9	31	77.4	3.1	2.5
Capital strength of a client	28	74.1	3.7	3.7	29	76.0	3.8	3.7
Income strength of a client	30	75.6	4.5	4.4	31	77.4	4.5	4.1
Business recommendations	28	74.2	2.9	2.5	29	76.1	2.8	2.4
Personal recommendations	29	74.5	2.3	2.3	30	76.4	2.3	2.3
Investment project quality	26	43.2	3.6	3.4	27	45.1	4.0	3.8
Management quality in a client's firm	20	60.1	3.8	3.5	21	61.9	3.9	3.5
Mortgage value	28	74.1	4.0	3.7	29	76.0	4.2	4.2
Income/capital strength of guarantors	29	75.2	3.9	3.5	30	77.0	4.0	3.3
Share of down payment	28	74.3	3.3	3.3	29	76.2	3.2	2.8

Source: CNB Survey.

**Table 2 a)** Comparison of Current Lending Terms for Natural Persons with Those of Two Years Ago

Factor/condition	Q1 2000						Q1 2002						Proposed answers (1/.../max. 6)
	1	2	3	4	5	6	1	2	3	4	5	6	
Number of months in permanent employment for special-purpose loans	8						7						
Availability of long-term loans to households (over 2 yrs)	1	27			1	4		27					6 1 – no, 2 – yes, 3 – only cars, 4 – only flats, 5 – cars and flats, 6 – other
Most frequent purpose of household loans	6		17	1		8		1	17	1			13 1 – cars, 2 – flats, 3 – all-purpose, 4 – consumer, 5 – revolving, 6 – other
Most frequent ratio of mortgaged non-financial assets to loan amount	9	14	7				13	12	5				1 – less than two, 2 – two, 3 – more than two, 4 – other
Availability of household loans without mortgaging physical or financial assets	18	12	2	2			24	5	3	2			1 – yes, 2 – no, 3 – only revolving, 4 – other
Minimum number of guarantors	2						1						
Guarantors' income to annuity ratio	3						3						
Use of automated expert system for household lending	8	22		1			9	21		1			1 – yes, 2 – no, 3 – not individually, 4 – other
Mandatory exclusive relationship with the bank for long-term loans	7	20		5			5	22		5			1 – yes, 2 – no, 3 – only for some purposes, 4 – other
Who approves loans?	5	17	2	9			4	17	2	10			1 – management, 2 – credit committee, 3 – management and credit committee, 4 – other
Usual duration of a loan approval procedure	13	7	2	11			15	6		11			1 – less than 1 week, 2 – one to two weeks, 3 – over two weeks, 4 – other
Do courts pass judgements faster than two years ago?		2	24	4			3	2	23	5			1 – faster, 2 – slower, 3 – the same, 4 – other
Have you ever succeeded in foreclosing property?	15	14	2				21	8	2	1			1 – yes, 2 – no, 3 – irrelevant, 4 – other
Average foreclosure time		2	14	11				3	15	10			1 – less than 6 m., 2 – 6 to 12 m., 3 – 1 to 2 yrs, 4 – over 2 yrs, 5 – other
Offer leasing of consumer goods	4	21	2				7	18		1			1 – yes, 2 – no, 3 – other
Obstacles to wider use of consumer goods leasing in Croatia	10	2	1				11	2	1				1 – foreclosure, 2 – tax deductions, 3 – other

Note: category "other" includes also "no answer" and "invalid answers".

Source: CNB Survey.

**Table 2 b)** Comparison of Current Lending Terms for Legal Persons with Those of Two Years Ago

Factor/condition	Q1 2000						Q1 2002						Proposed answers (1/.../max. 6)
	1	2	3	4	5	6	1	2	3	4	5	6	
Number of years for which financial statements are required	18	14					8	20	5				1 – less than three, 2 – three, 3 – more than three, 4 – other
Frequency of client and potential client visits and the most common reason for visits	1	5	7	21					20	15			1 – never, 2 – sometimes, 3 – regularly, 4 – other
Availability of long-term loans (over 2 yrs)	3	5				5	1	28				5	1 – no, 2 – yes, 3 – only CBRD, 4 – only local government, 5 – only foreign credit lines, 6 – other
Most frequent loan amount	16	4		4	8		9	6		4	13		1 – less than HRK 0.5m, 2 – HRK 0.5-1m, 3 – HRK 1-2m, 4 – over HRK 2m, 5 – other
Most frequent loan purpose	1		1	29			2			30			1 – fixed assets, 2 -working capital, 3 – liquidity, 4 – other
Most frequent ratio of mortgaged non-financial assets to loan amount	10	20	3				17	14	3				1 – less than two, 2 – two, 3 – more than two, 4 – other
Availability of loans without mortgaging physical or financial assets	14	16		3			20	9	3	2			1 – yes, 2 – no, 3 – only revolving, 4 – other
Minimum number of guarantors	1,7						1,5						
Guarantors' income to annuity ratio	3,2						3,2						
Mandatory exclusive relationship with the bank for long-term loans	16	11	1	4			13	14	1	5			1 – yes, 2 – no, 3 – only for some purposes, 4 – other
Who approves loans?	5	19		9			5	17		12			1 – management, 2 – credit committee, 3 – management and credit committee, 4 – other
Usual duration of a loan approval procedure	4	4	7	18			6	7	6	15			1 – less than 1 week, 2 – one to two weeks, 3 – over two weeks, 4 – other
Do courts pass judgements faster than two years ago?		2	5	20			3	1	6	22			1 – faster, 2 – slower, 3 – the same, 4 – other
Have you ever succeeded in foreclosing property?	16	10	3	1			26	4	2	1			1 -yes, 2 – no, 3 – irrelevant, 4 – other
Average foreclosure time		1	18	9				2	15	14			1 – less than 6 m., 2 – 6 to 12 m., 3 – 1 to 2 yrs, 4 – over 2 yrs
Offer leasing of business equipment	10	19	1				18	13					1 – yes, 2 – no, 3 – other
Obstacles to wider use of business equipment leasing in Croatia	10	7	1				10	7	2				1 – foreclosure, 2 – tax deductions, 3 – other

Note: category "other" includes also "no answer" and "invalid answers".

Source: CNB Survey.

**Table 3 a)** Standard Commercial Banks' Home Loan Terms in August 2002

Bank	Loan amount (in EUR)	Interest rate (%)	Repayment term	Effective interest rate (%)	Ratio of loan amount to assessed real estate value	Number of guarantors
Zagrebačka	2,500 – 250,000	6.99 – 7.99 (fixed or variable)	up to 30 yrs	min. 7.03	1 : 0.3 – 1 : 2.5	min. 0,1,2
Privredna	5,000 – 100,000	7.38 – 8.88 (variable)	up to 20 yrs	9.15 – 9.54	1 : 1 – 1 : 1.25	2-5
Splitska	up to 100,000	7.49 – 8.20 (fixed) 8.19 – 8.90 (variable)	up to 20 yrs	7.63 – 8.35 (fixed) 8.33 – 9.08 (variable)	1 : 1.1 – 1 : 2	min. 1
Riječka	5,000 – 75,000	9 – 9.5 (variable)	up to 15 yrs	10.75 – 12.58	min. 1 : 1.5	min. 1
Varaždinska	up to 100,000	7.99 – 11.50	up to 30 yrs		min. 1 : 1.3	0
Hypo-Alpe-Adria	12,500 – 100,000	7.5 – 8.9 (variable) 7.25 (fixed for 5 yrs)	up to 30 yrs	9.12 – 10.31	1 : 1 – 1 : 2	1-4
	15,000-100,000	7 (fixed for 5 yrs)		7.33 – 8.01	min. 1 : 1.1 – 1 : 1.2	
Raiffeisen	7,500-100,000	7.5 – 9 (variable)	up to 25 yrs	9.11 – 9.55	1 : 1 – 1 : 1.5	0-3

Source: Internet.

**Table 3 b)** Standard Housing Savings Banks' Home Loan Terms in August 2002

	Saving type	Saving period	Interest rate on savings (%)	Minimum amount of own funds	Interest rate on loans (%)	Loan repayment period
Prva stambena štedionica	Fast	2 yrs	3	50% of target amount	6	7 yrs (monthly payments) or 8 yrs (single payment)
	Regular	3 – 4 yrs	3	50% of target amount	6	11 yrs
	Slow	5 yrs	3	40% of target amount	6	up to 13 yrs
Wüstenrot stambena štedionica	Fast	21 m.	3 – without curr. cl., 2 – with curr. cl.	50% of target amount	6 – without curr. cl., 5 – with curr. cl.	from 7 yrs and 11 m. up to 8 yrs and 4 m.
	Regular	min. 21 m.	3 – without curr. cl., 2 – with curr. cl.	50% of target amount	6 – without curr. cl., 5 – with curr. cl.	from 9 yrs and 10 m. up to 10 yrs and 5 m.
	Slow	min. 57 m.	3 – without curr. cl., 2 – with curr. cl.	40% of target amount	6 – without curr. cl., 5 – with curr. cl.	around 11 yrs and 11 m.
Raiffeisen stambena štedionica	Fast	min. 2 yrs	3	50% of target amount	6	up to 7.5 yrs.
	Regular	2 – 5 yrs	3	50% of target amount	6	up to 11.5 yrs
	Slow	min. 5 yrs	3	40% of target amount	6	up to 15.5 yrs

Source: Internet.

**Table 4** Recent Amendments to the CNB's Decision on Reserve Requirements of Banks (and Savings Banks)

<b>Decision on Reserve Requirements, official gazette <i>Narodne novine</i>, No. 46/2001 (applied as of 8 June 2001)</b>
<i>Kuna base:</i> 1 received kuna deposits and loans (with or without a foreign currency clause) 2 liabilities based on financial leasing 3 issued securities (excluding banks' equity securities). <i>The kuna sources of funds excluded from the reserve requirement calculation base are:</i> 1 funds granted by the Croatian National Bank 2 loans and deposits received from financial institutions which calculate reserve requirements in terms of this Decision 3 loans and deposits received from the Croatian Bank for Reconstruction and Development 4 relief funds for areas struck by natural disasters, including emergency funds for recovery of war damages 5 hybrid and subordinated instruments that are included in supplementary capital.
<i>Foreign exchange base:</i> 1 ordinary foreign currency accounts 2 special foreign currency accounts, foreign currency accounts and sight deposits 3 received foreign exchange deposits 4 received foreign exchange loans 5 obligations arising from the issued securities in foreign currency (excluding banks' equity securities). <i>The foreign exchange sources of funds excluded from the reserve requirement calculation base are:</i> 1 foreign exchange loans and deposits received from financial institutions which calculate reserve requirements in terms of this Decision 2 blocked household foreign exchange savings converted into public debt of the Republic of Croatia 3 foreign exchange loans refinanced by the Republic of Croatia 4 relief funds for areas struck by natural disasters, including emergency funds for recovery of war damages 5 foreign exchange accounts and deposits received from the Croatian Bank for Reconstruction and Development 6 hybrid and subordinated instruments that are included in supplementary capital.
<b>Decision on the Amendments to the Decision on Reserve Requirements, official gazette <i>Narodne novine</i>, No. 77/2001 (applied as of 10 September 2001)</b>
Twenty percent of the calculated foreign exchange reserve requirement is included in the calculated kuna reserve requirement and allocated in kuna.
<b>Decision on the Amendments to the Decision on Reserve Requirements, official gazette <i>Narodne novine</i>, No. 87/2001 (applied as of 8 November 2001)</b>
The reserve requirement calculation base includes also hybrid and subordinated instruments that are included in supplementary capital.
<b>Decision on the Amendments to the Decision on Reserve Requirements, official gazette <i>Narodne novine</i>, No. 100/2001 (applied as of 10 December 2001)</b>
The rate of reserve requirements was reduced from 22% to 19%. The percentage of the calculated foreign exchange reserve requirement that is included in the calculated kuna reserve requirement and allocated in kuna is increased from 20% to 25%.

**Table 5** Definition of Connected Persons According to the New and Former Banking Act

FORMER ACT	NEW ACT
<p>Legally independent companies which may have the following relations:</p> <ul style="list-style-type: none"> <li>– a company possessing a majority participation or a majority of voting rights in another company,</li> <li>– dependent or controlling company,</li> <li>– concern companies,</li> <li>– companies with mutual equity participation,</li> <li>– companies connected through entrepreneurial contracts, in accordance with the provisions of the Companies Act.</li> </ul>	<p>The persons fulfilling at least one of the following conditions:</p> <ul style="list-style-type: none"> <li>– two or more natural or legal persons that constitute a single risk for the bank because one of them has control over the other or others,</li> <li>– two or more natural or legal persons that constitute a single risk for the bank because one of them exercises a significant influence on the other or others,</li> <li>– two or more natural or legal persons between whom there is no above mentioned relationship but who constitute a single risk for the bank because they are so interconnected that there is a large probability that if one of them were to impair or improve its economic and financial position, the other or all of the others would be likely to encounter the same,</li> </ul>
<p>The natural person's parents, spouse or children</p>	<p>– a commissioner or the person for whose account he/she acts.</p>
<p>Natural or legal persons between whom there is no above mentioned relationship but for which a bank may determine that if one of them were to impair or improve its economic and financial position, the other or all of the others would be likely to encounter the same.</p>	<p>Connected persons are also:</p> <ul style="list-style-type: none"> <li>– close relatives,</li> <li>– members of the management or supervisory board and close relatives of such persons,</li> <li>– persons employed on the basis of work contracts under special terms with the company in which they are employed, as well as close relatives of such persons.</li> </ul> <p>Close relatives of a specific person are:</p> <ul style="list-style-type: none"> <li>– the person's spouse or a person with whom he/she cohabits in a long-term domestic community,</li> <li>– children or adopted children of the person,</li> <li>– other persons under the guardianship of that person.</li> </ul>
	<p>All persons connected in at least one of the above listed ways constitute a group of connected persons.</p>
	<p>A group of connected persons is also considered one person.</p>
	<p>Other types of connected companies in accordance with the Companies Act are also considered connected persons.</p>

Sources: Banking Act of 1998 (official gazette *Narodne novine*, No. 161/1998) and 2002 (official gazette *Narodne novine*, No. 84/2002) and CNB's decisions.

**Table 6** New and Former Capital Restrictions on Bank Exposure to Credit Risk

<b>EXPOSURE</b>	<b>FORMER ACT/CNB's DECISIONS</b>	<b>NEW ACT/CNB's DECISIONS</b>
Share capital	at least HRK 20m	at least HRK 40m
Minimum capital adequacy	10% of regulatory capital	10% of regulatory capital
Exposure to a shareholder with more than 3% of bank shares	5%	
Total exposure to shareholders with shares amounting to 5% of share capital	25%	
Large exposure amounts to	at least 10% of regulatory capital	at least 10% of regulatory capital
Exposure to one person	at most 25% of regulatory capital	at most 25% of regulatory capital
Bank's overall exposure to persons directly or indirectly controlled by the bank or to persons directly or indirectly controlled by the person controlling the bank	–	at most 20% of regulatory capital
Exposure to persons in a special relationship with a bank	?	at most 10% of regulatory capital
Sum of all large exposures	at most 400% of regulatory capital	at most 600% of regulatory capital
Total amount of loans for the acquisition of own shares	most 10% of regulatory capital	
<b>INVESTMENT IN EQUITY AND REAL ESTATE</b>		
Investment in tangible assets and equity participation	70%	–
Investment in tangible assets	30%	–
Total investments of a bank in land, buildings, equipment and the furnishing of business premises	–	at most 40% of regulatory capital
Bank's investments in the capital of non-financial institutions	–	at most 30% of regulatory capital
Bank's investments in the capital of a single non-financial institution	–	at most 15% of regulatory capital
Specific reserves for unidentified losses	1%	0.75%

Sources: Banking Act of 1998 (official gazette *Narodne novine*, No. 161/1998) and 2002 (official gazette *Narodne novine*, No. 84/2002) and CNB's decisions.

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After the submission, the manuscripts shall be subject to peer review and classification by the Manuscript Review and Classification Committee. The authors shall be informed of the acceptance or rejection of their manuscript for publication within two months following the manuscript submission.

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The first page of the manuscript should contain the article title, first and last name of the author and his/her academic degree, name of the institution with which the author is associated, author's co-workers, and the complete mailing address of the corresponding author to whom a copy of the manuscript with requests for corrections shall be sent.

Additional information, such as acknowledgments, may be included in the first page. If this information is extensive, it is preferred to incorporate it within the text, whether at the end of the introductory section or in the special section preceding the list of references.

The second page should contain the abstract and the key words. The abstract is required to be explicit, descriptive, written in third person, consisting of not more than 250 words (maximum 1500 characters). The abstract should be followed by maximum 5 key words.

A single line spacing and A4 paper size should be used. The text must not be formatted, apart from applying bold and italic script to certain parts of the text. Titles must be numerated and separated from the text by a double line spacing, without formatting.

Tables, figures and charts that are a constituent part of the paper must be well laid out, containing: number, title, units of measurement, legend, data source, and footnotes. The footnotes referring to tables, figures and charts should be indicated by lower-case letters (a,b,c...) placed right below. When the tables, figures and charts are subsequently submitted, it is necessary to mark the places in the text where they should be inserted. They should be numbered in the same sequence as in the text and should be referred to in accordance with that numeration. If the tables and charts were previously inserted in the text from other programs (Excel, Lotus...), these databases in the Excel format should also be submitted (charts must contain the corresponding data series).

The preferred formats for illustrations are EPS or TIFF with explanations in 8 point Helvetica (Ariel, Swiss). The scanned illustration must have 300 dpi resolution for gray scale and full color illustration, and 600 dpi for lineart (line drawings, diagrams, charts).

Formulae must be legible. Indices and superscript must be explicable. The symbols' meaning must be given following the equation where they are used for the first time. The equations in the text referred to by the author should be marked by a serial number in brackets closer to the right margin.

Notes at the foot of the page (footnotes) should be indicated by Arabic numerals in superscript. They should be brief and written in a smaller font than the rest of the text.

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