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Republic of Croatia: Financial System Stability Assessment—Update

This update to the Financial System Stability Assessment on the Republic of Croatia was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on April 18, 2008. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of the Republic of Croatia or the Executive Board of the IMF.

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REPUBLIC OF CROATIA

Financial System Stability Assessment—Update

Prepared by the Monetary and Capital Markets and European Departments

Approved by Jaime Caruana and Michael Deppler

April 18, 2008

This Financial System Stability Assessment (FSSA) Update is based on the work of the joint IMF/World Bank Financial Sector Assessment Program (FSAP) update mission that visited Zagreb from October 25 to November 7, 2007.

The FSAP update team comprised Ms. İnci Ötker-Robe (Mission Chief, IMF/MCM), John Pollner (Deputy Mission Chief, World Bank), Inutu Lukonga and Vassili Prokopenko (both IMF/MCM), David Moore (IMF/EUR), Laura Ard, Kamil Borowik, Nagavalli Annamali (from HQ), and Dimitri Vittas (all World Bank), Martin Andersson (formerly Sveriges Riksbank), Michael Boss (Oesterreichische Nationalbank), Joerg Genner (German Financial Supervisory Authority, BaFin), and Peter Phelan (formerly Financial Services Authority of the UK). The FSAP update mission overlapped and closely coordinated with a European Commission Financial Sector Peer Assessment mission. The mission received excellent cooperation and support from the authorities. The main findings of the FSAP update are:

- Financial intermediation in Croatia has continued to deepen. Substantial progress has been achieved since the 2002 FSAP in strengthening the regulatory and supervisory frameworks. Although financial soundness indicators are generally favorable, rapid, though decelerating, bank credit growth and deteriorating external imbalances have intensified risks.

- Administrative measures adopted by the authorities since the early 2000s have helped slow bank credit to the private sector. A strategy to phase out these measures should be carefully planned, with the objective of eliminating their negative side effects while maintaining financial stability.

- Nonbank financial institutions are growing rapidly and their systemic importance has increased since the 2002 FSAP assessment. The stock market has also experienced rapid growth in recent years, but lacks liquidity, with significant volatility in equity prices. Cross-sector risk exposures and ownership linkages call for close coordination between the respective supervisory authorities, and close monitoring of banking group risks.

The main authors of this report are İnci Ötker-Robe and Vassili Prokopenko with input from the other members of the FSAP update team.

FSAPs are designed to assess the stability of the financial system as a whole and not that of individual institutions. They have been developed to help countries identify and remedy weaknesses in their financial sector structure, thereby enhancing their resilience to macroeconomic shocks and cross-border contagion. FSAPs do not cover risks that are specific to individual institutions such as asset quality, operational or legal risks, or fraud.

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Glossary

AMA	Advanced Measurement Approach
AML/CFT	Anti-money laundering/combating the financing of terrorism
BCP	Basel Core Principles for Effective Banking Supervision
BL	Banking Law
CAEL	Capital, Asset Quality, Earnings, and Liquidity
CAMELS	Capital Adequacy, Asset Quality, Management Soundness, Earnings and Profitability, Liquidity, and Sensitivity to Market Risk
CAR	Capital Adequacy Ratio
CDS	Credit Default Swap
CNB	Croatian National Bank
CROSEC	Croatian Securities Commission
DAB	State Agency for Deposit Insurance and Bank Rehabilitation
EC	European Commission
EMBI	Emerging Market Bond Index
EU	European Union
FSAP	Financial Sector Assessment Program
FSIs	Financial Soundness Indicators
FSSA	Financial System Stability Assessment
FX	Foreign exchange
FX LAR	Minimum required amount of foreign-currency claims ratio
GDP	Gross Domestic Product
HANFA	The Croatian Financial Services Supervisory Agency
IOSCO	International Organization of Securities Commissions
IRB	Internal Ratings Based Approach
LCNB	Law of CNB
LOLR	Lender of Last Resort
MCM	Monetary and Capital Markets Department
MoF	Ministry of Finance
MoU	Memorandum of Understanding
MRR	Marginal Reserve Requirement
NBFIs	Nonbank Financial Institutions
NBFS	Nonbank Financial Sector
NPLs	Nonperforming Loans
OMX	Nordic Stock Exchange Operator
ROSC	Report on Observance of Standards and Codes
SA	Standardized Approach
SDA	Croatian Central Depository Agency Inc.
SMEs	Small and Medium-Sized Enterprises
SRO	Self-Regulating Organization
ZSE	Zagreb Stock Exchange

EXECUTIVE SUMMARY

The Croatian financial sector has developed significantly since the 2002 FSAP assessment. Supported by strong macroeconomic performance, both banks and nonbank financial institutions (NBFIs) have grown rapidly, while regulatory and supervisory frameworks have been strengthened both for banks and nonbanks, and financial sector infrastructure has been improved and harmonized with European Union (EU) directives in a predominantly foreign-owned banking system.

The financial sector remains broadly healthy, but new areas of vulnerability have emerged. Banks' profitability remains satisfactory, and capital adequacy and asset quality are currently at comfortable levels. However, a significant external imbalance and rising asset prices have accompanied rapid credit growth. With the majority of loans at variable interest rates and linked to foreign currency, and banks dependent on foreign funding, the system is exposed to interest- and exchange-rate induced credit risks, cross-border contagion risk, and shifts in market sentiment. Against this background, higher capital buffers would seem warranted, especially for the most vulnerable banks.

The authorities have been proactive in addressing the macroeconomic and financial vulnerabilities associated with rapid credit growth. Given a tightly managed exchange rate regime that aims to keep the kuna stable, and insufficient support from fiscal policy, the Croatian National Bank (CNB) authorities have therefore relied on administrative measures to curb credit growth and external debt. The authorities also took supervisory and prudential measures to enhance the resilience of the banks and limit macro-financial vulnerabilities, established a credit registry, placed the leasing sector under oversight of the nonbank regulatory agency, HANFA, and worked to improve communications with banks.

These prudential and other measures have achieved some success. Also reflecting rising interest rates in the euro area, the share of foreign exchange (FX) linked loans has been reduced. Banks have lowered their external borrowing, have intensified efforts to attract domestic deposits and capital, and have tightened lending standards. Increased communications with banks have contributed to greater risk awareness. However, while bank credit has slowed, the deceleration in total borrowing from local banks and other sources (including direct foreign borrowing) has been more modest.

The administrative measures will need to be eliminated, albeit in a carefully phased manner that helps maintain macro-financial stability. Some of the measures may become incompatible, or difficult to sustain, under EU accession or an eventual euro adoption. They also have potential adverse implications for financial stability, intermediation, and market development. The elimination of the measures would need to be supported by tighter fiscal policies to reduce excess demand pressures, and close supervision of banks to help ensure that risk management and underwriting standards remain high. Additional prudential measures could be used to contain risks, coupled with efforts to enhance risk awareness and strengthen home-host coordination.

The CNB has put in place an effective bank supervision framework. Progress has been made in meeting international best practices, overseeing risks, and responding in a timely

manner to weaknesses in banks' condition. The framework for risk-focused supervision is evolving, but the current supervisory techniques and risk management processes do not appear to pose risks for successful Basel II implementation, the preparations for which seem on track. Significant progress has been made in home-host supervisory coordination. An area that needs close attention is the lack of clarity on supervision of the banking groups that conduct nonbank operations, to ensure that group risks are identified and supervised systematically.

The CNB has a broad range of instruments to manage systemic liquidity, but banks' day-to-day liquidity management is complicated by a shallow money market. Substantial amounts of kuna held at the CNB due to various reserve requirements could be released in the event of a liquidity squeeze, and a lender of last resort (LOLR) facility provides emergency liquidity to solvent banks at penal rates. However, a number of steps could be taken to help reduce market segmentation, facilitate liquidity management, and encourage markets for long-term hedging instruments: expanding the set of eligible collateral to raise the volume of securitized interbank lending; incorporating the information implied by interbank market volatility in daily liquidity forecasting and management operations; and continuing to allow greater flexibility in the repo rate and to engage in greater dialog with banks on regulatory changes.

Although Croatia has been relatively unscathed by turbulence in the global financial markets, continued global market turmoil highlights the need for effective contingency planning. The authorities have taken welcome steps to initiate formal communications on contingency planning with supervisory authorities of foreign banks. Continuation of these efforts and timely responses from foreign authorities will help reach a clear understanding of the options and procedures for coordination and communication between domestic and foreign authorities. Participating in domestic and cross-border crisis simulations would also be useful. The legal framework governing pre-bankruptcy bank resolution procedures also needs to be clarified to help avoid delays in payments to depositors and preserve asset values. Recent efforts to clarify the roles of the institutions involved in bank resolution are welcome.

NBFI regulation and supervision has improved, though weaknesses remain. The growth of the sector has been partly spurred by the measures to contain bank credit, and the inclusion of the previously unregulated leasing companies under HANFA's oversight has helped in closing a potential channel for circumvention of bank regulations. Since the sector is largely owned by foreign-owned banking groups that conduct bank and nonbank operations, strengthened coordination is needed between the CNB and HANFA, as well as a clear delineation of their respective roles in lead supervision. Coordination efforts have increased recently for information sharing, joint inspections of banking groups, and analysis of cross-sector risk exposures and ownership linkages between banks and NBFIs. Attention should also be paid to HANFA's inability to directly impose fines without involvement of the courts; weak enforcement of financial statement disclosure and auditing standards; and a risk-oriented supervision system.

Despite the recent correction, high and rising equity market valuations is a cause for concern, particularly given the low market liquidity. Steps should be taken to strengthen market analysis and surveillance, investor education, and to discourage market manipulation

and other abuses. Regulation could be strengthened through regular oversight of the stock exchange and securities depository and improvements in prudential regulation of brokers. Investor protection could be improved by the introduction of a compensation scheme covering fraud and theft.

Appendix I provides a detailed list of the main recommendations of the report. Priority recommendations are provided in Table 1.

Table 1. Priority Recommendations

MEASURES	TIMING	PRIORITY
Financial system stability		
• Carefully plan a transition away from the existing administrative measures, with the objective of eliminating negative side effects while maintaining financial stability	ST	High
• Continue to monitor closely bank risk management practices and lending standards to address any emerging prudential risks	ST	High
• Strengthen stress testing analyses and regularly use stress tests in monitoring risks and assessing financial stability	ST	High/Med
• Reduce fiscal or other incentives to the extent they stimulate particular types of bank loans and continue efforts to raise risk awareness of banks, borrowers, and stock market investors	MT	High/Med
Contingency planning		
• Establish formal arrangements with monetary and supervisory authorities of parent banks on crisis management	ST	High
• Strengthen bank resolution mechanism, clarifying the legal framework and roles of parties involved in bank resolution and restructuring process	MT	High
Liquidity and risk management		
• Broaden the range of eligible collateral for interbank securitized lending to help reduce segmentation in the interbank money market, which could in turn support development of the hedging markets/instruments to facilitate management of interest and FX risks'	MT	High
Nonbank financial sector and cross-sector risks		
• Further strengthen coordination between the CNB and HANFA to systematically monitor and analyze group risks; map ownership structures of conglomerates to assess cross sector risk exposures and ownership linkages; and clarify the roles for their supervision of banking groups	ST	High
• Build comprehensive data and monitoring processes of transactions on the stock exchange (investor composition, trading trends and composition, automated early warning system for suspicious trades)	ST	High/Med

I. BACKGROUND

1. **The 2002 FSAP found that the Croatian financial system was resilient, but identified vulnerabilities in a number of areas**. Large banks were found to be well-capitalized, and banking supervision was assessed as strong, though further improvements were needed in a few areas. The nonbank financial sector was relatively less developed and did not pose major systemic risks, but considerable weaknesses were identified in its supervisory and regulatory frameworks.

2. **Since the 2002 FSAP, rapid progress has been made in strengthening the financial system, but new risks for financial stability have emerged**. The regulatory and supervisory frameworks have improved, and most issues identified by the 2002 FSAP have since been addressed (Appendix II). However, both the banking and nonbank sectors have grown significantly and become more complex (Appendix III). In addition, many regulatory changes are being introduced in the context of EU accession and Basel II.

II. SOURCES OF POTENTIAL RISK TO FINANCIAL STABILITY

A. Macro-Financial Setting

3. **Despite the solid macroeconomic performance of recent years, significant vulnerabilities have emerged**. While GDP growth has been strong and inflation contained until recently, rapid (though slowing) growth of bank credit to the private sector has added to macroeconomic risks (see the accompanying staff report for more details).[1] Credit growth has accompanied rising asset prices, a widening current account deficit, and external debt to levels that may not be sustainable from a macroeconomic perspective (Figure 2).[2] Inflation also picked up, to above 6 percent year-on-year in early 2008. Moreover, a sudden correction of real estate and equity prices—with the latter already weakened from their October peaks—would adversely affect household and corporate balance sheets and could trigger an economic slowdown with potential second round effects on the banking sector.[3]

4. **Croatia has been relatively unscathed by the global financial market turbulence, but some spillovers have been observed.** Croatia has no direct exposures to the subprime market developments, and parent banks do not appear to have changed their willingness to fund Croatian subsidiaries. However, the spread on Croatian sovereign bonds relative to the

---

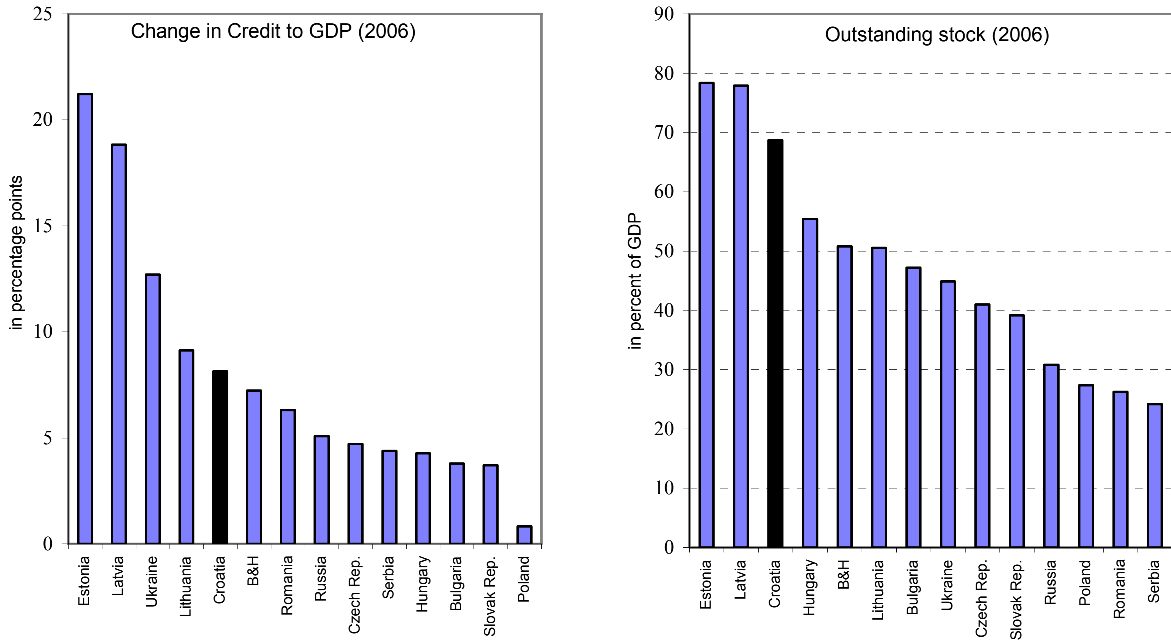
[1] Credit to the nongovernment sector in Croatia has grown at one of the highest rates among all Eastern European countries (Figure 1), but has started to slow recently, mainly in response to CNB measures.

[2] Real estate price data indicate average annual increases of about 9 percent over 2002–07—faster than those in the industrial countries of the region, but somewhat slower than elsewhere in emerging Europe. Stock price increases have been much more rapid (rising by 60 percent annually in 2006-07), partly reflecting strong domestic investor demand. The current account deficit and external debt reached 8.6 percent and 87.8 percent of GDP, respectively, at end-2007.

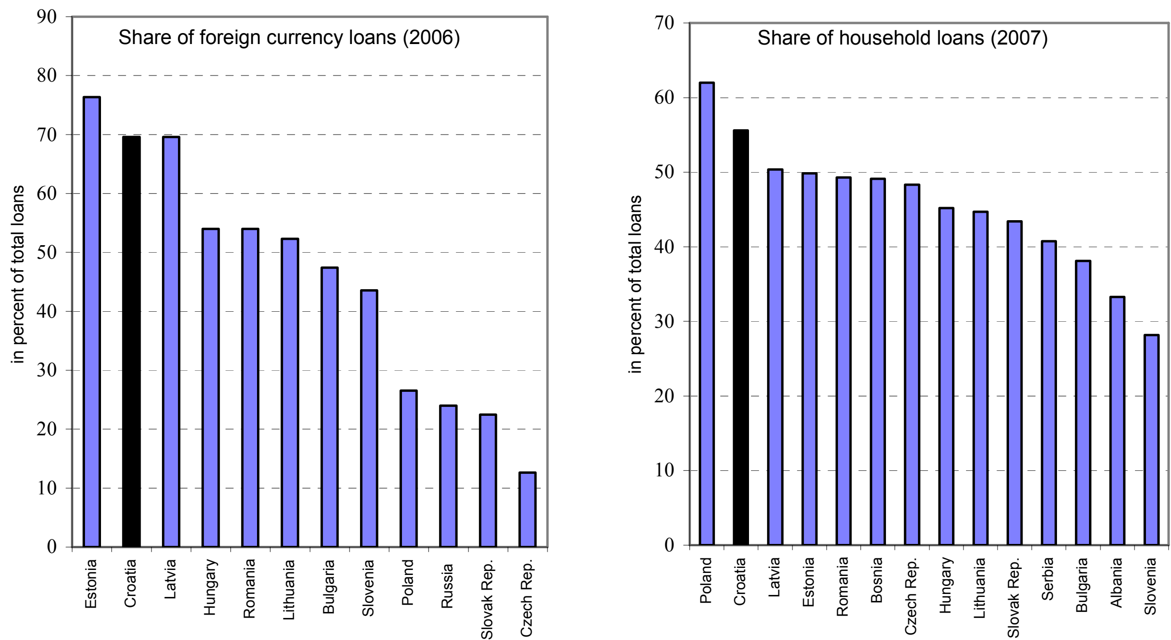
[3] Banks have limited holdings of stocks and real estate, but a sudden downturn in these markets could worsen banks' credit quality by lowering capacity to repay in the corporate and household sectors.

Figure 1. Central and Southern Eastern Europe: Indicators of Credit Growth

Bank credit to the private sector to GDP

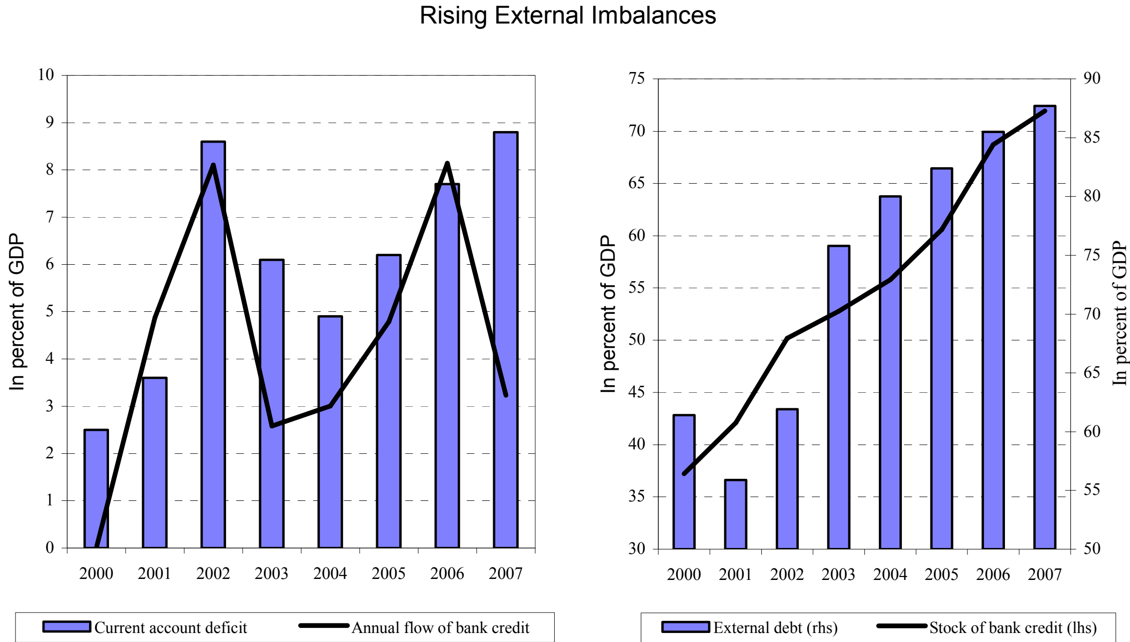


Distribution of loans

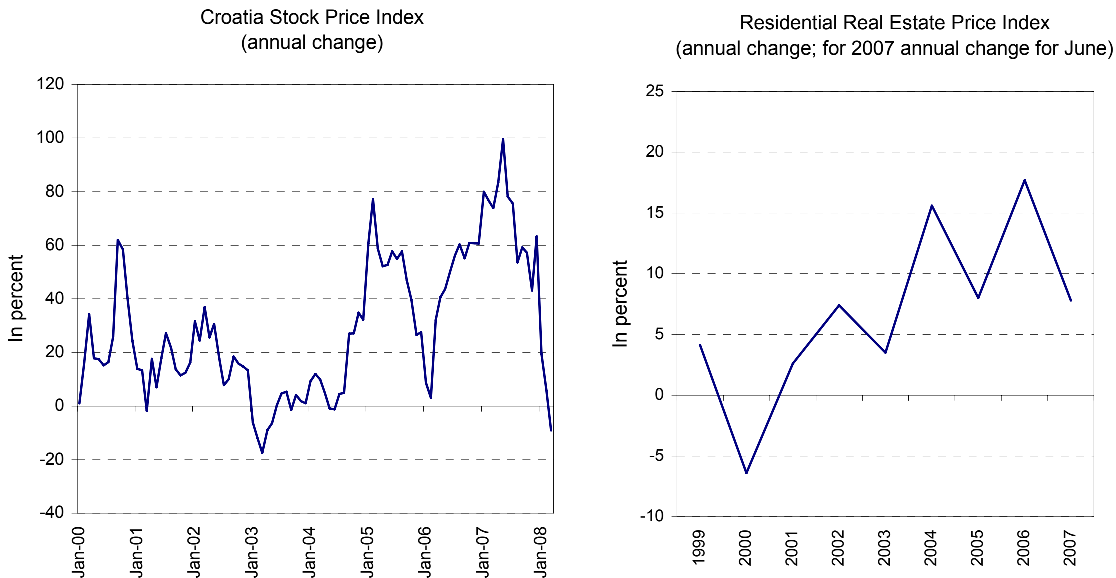


Source: IFS, ECB, National authorities, staff calculations, and WEO.

Figure 2. Croatia: Macroeconomic Risks Associated with Credit Growth



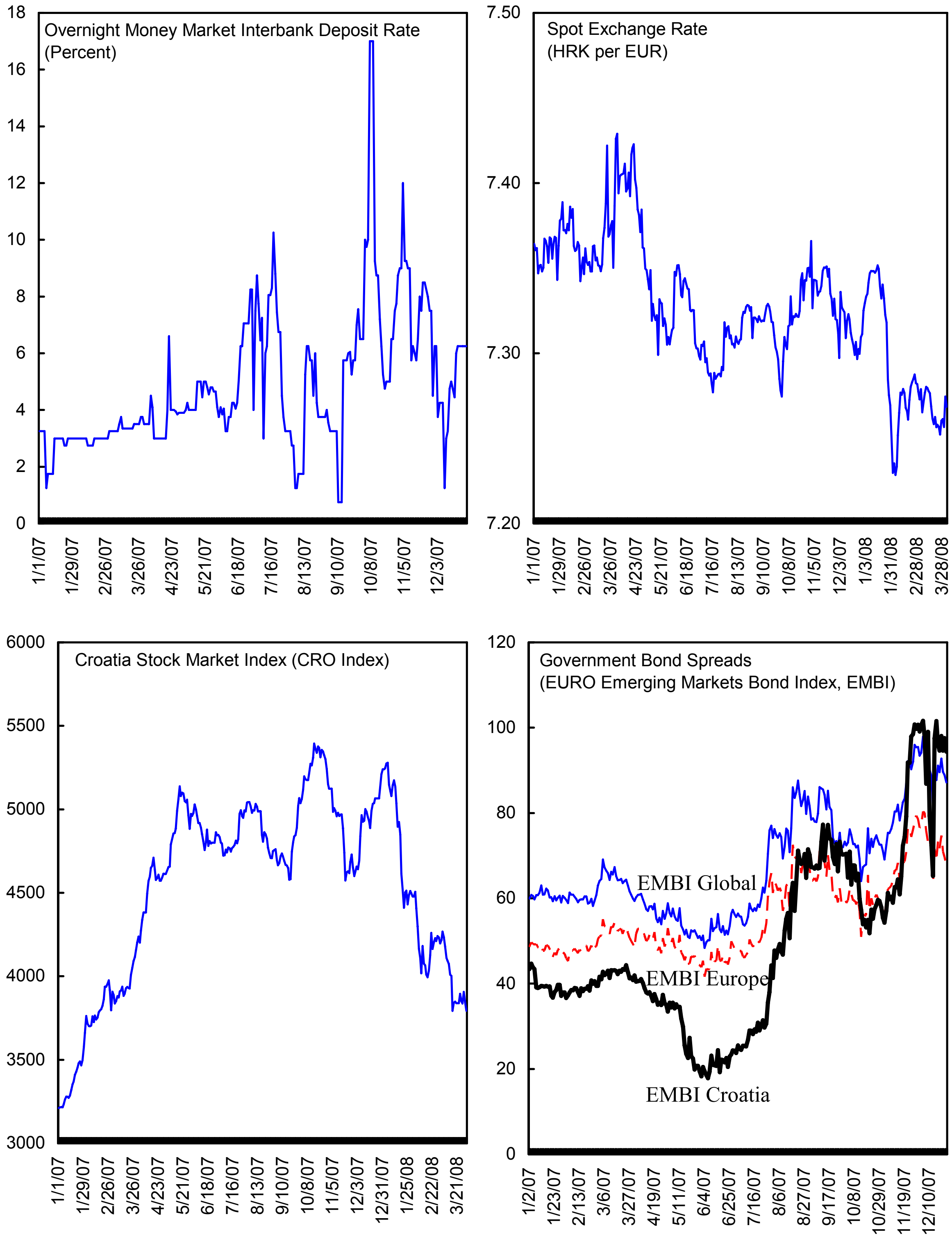
Rising Asset Prices



Sources: CNB and ZSE.

Emerging Market Bond Index (EMBI) sharply rose from historical lows in mid-2007, and remained high compared with other emerging European countries (Figure 3). The widening of Croatia's credit default swap (CDS) spreads may also suggest concerns with its external vulnerabilities. The stock market also experienced further falls in March 2008, in part due to liquidity disturbances from the renewed tensions in the global financial markets.

Figure 3. Croatia: Selected Financial Market Indicators



Source: Bloomberg, and J.P. Morgan

5. **The already high ratio of Croatian household debt to GDP continues to grow, raising macroeconomic concerns.** As of end-September 2007, household debt stood at over 40 percent of GDP—one of the highest among the central and eastern European countries and comparable to the household debt levels in some core EU economies. The share of bank lending to households rose significantly from around 33 percent of total loans in 1998 to 55 percent in 2005, and subsequently stabilized around this level, with about 40 percent of households loans for housing.

6. **The rising household debt ratio also increases the vulnerability of banks to a deterioration in debt servicing capacity**. Of particular concern is the high, albeit declining, share of the FX-linked loans (i.e., denominated in or indexed to foreign currencies, Figure 4), to mostly unhedged customers,[4] exposing banks to an indirect FX risk. Another source of concern is that the majority of loans, even mortgage loans with average maturity of around 20 years, are issued at floating rates linked to local or euro-area interbank market rates (less than 20 percent of all outstanding loans are at fixed rates), and are re-calculated quarterly, subjecting banks to credit risk through customers' interest rate exposure.

7. **The debt burden of the non-financial corporations is also growing rapidly.** The debt burden totaled 59 percent of GDP in end-2006. Debt owed to banks dominates the non-financial corporate debt structure, at around 57 percent of the total debt in 2006, and 54 percent of the loans are FX-linked. Current corporate financial performance indicators are broadly satisfactory, with return on equity steadily increasing in the last few years (from 1.8 percent in 2003 to 5.1 percent in 2006), and the ratio of nonperforming loans (NPLs) to total corporate loans steadily falling. The latter, however, has largely reflected the overall growth in corporate loans, with the amount of NPLs remaining relatively stable. While bank loans to the corporate sector are sufficiently diversified, the loan share of manufacturing or other productive capacity-generating and export-enhancing sectors is relatively small.

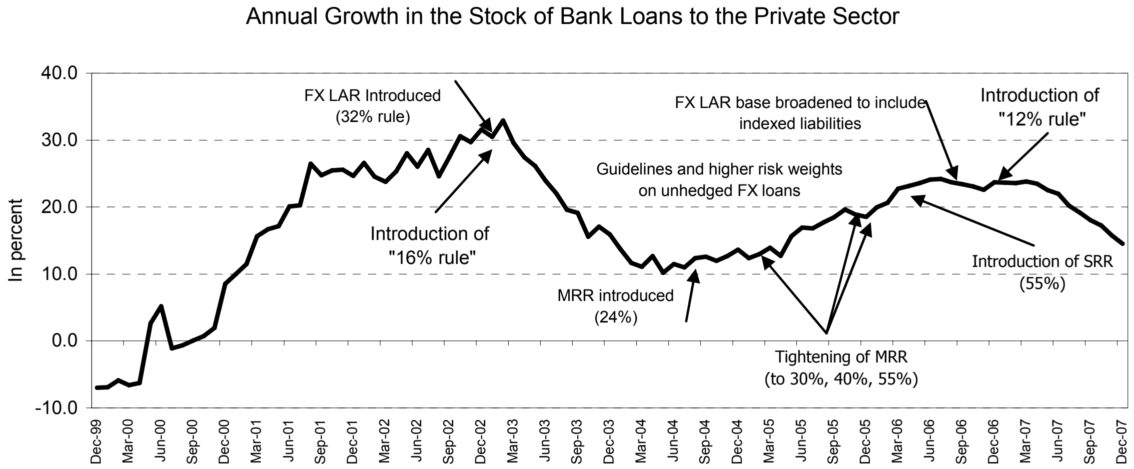
8. **A further concern is that deregulation and strong competition resulted in banks' lowering their underwriting standards.**[5] This weakening was indicated by the rapid expansion of FX-linked loans (particularly to the Swiss franc) to unhedged borrowers in 2005–06, the lengthening of mortgage maturities, and by a more general relaxation of requirements to qualify for various types of loans. While higher income households are still viewed to be the main borrowers, a growing share of bank lending is now channeled to low- and middle-income households. There are recent signs of tighter lending standards by some

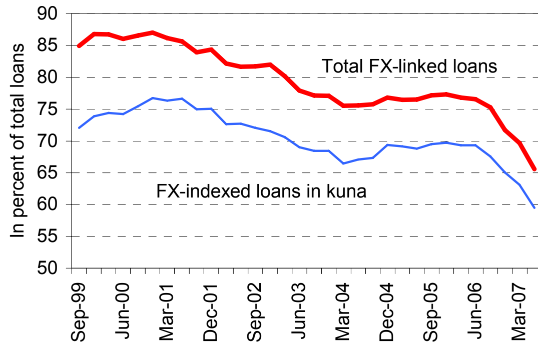
---

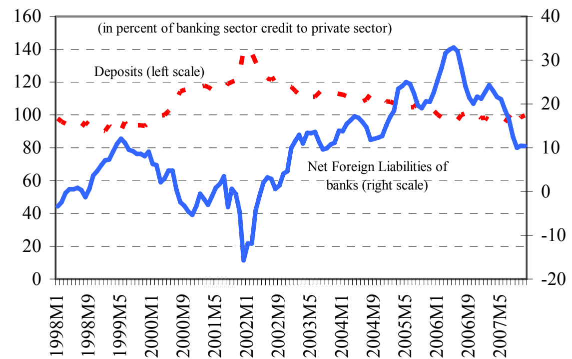
[4] Close to 70 percent of bank loans are denominated or indexed to foreign currencies, mainly the euro. The share of all unhedged loans in total bank loans was 90 percent at end-2007. The household sector in particular, had a significant share of unhedged items exposed to currency-induced credit risk (95 percent), and only 2 percent of housing loans were hedged (CNB Banks Bulletin 15, 2007).

[5] Most banks were believed to have relaxed their credit policy toward the household and corporate sectors in recent years compared with 2004 (CNB survey of commercial banks in April 2007), based on the number of loan guarantors required, collateral to loan ratios for housing and mortgage loans, the ratio of guarantor income to loan installment, time to approve long-term and housing loans, months of permanent employment/corporate financial reports needed to calculate average income/revenue used in maximum installments, obligatory business relations with a bank for long term loans, and availability of uncollateralized corporate loans.

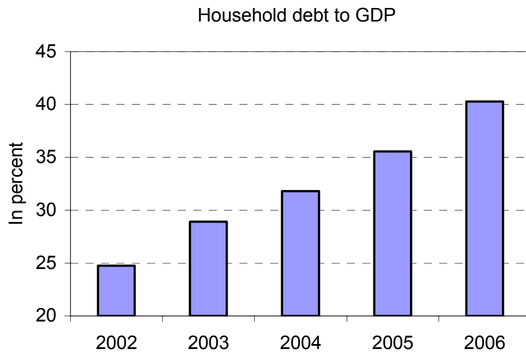
Figure 4. Croatia: Prudential Risks Associated with Credit Growth







The indebtedness of bank borrowers

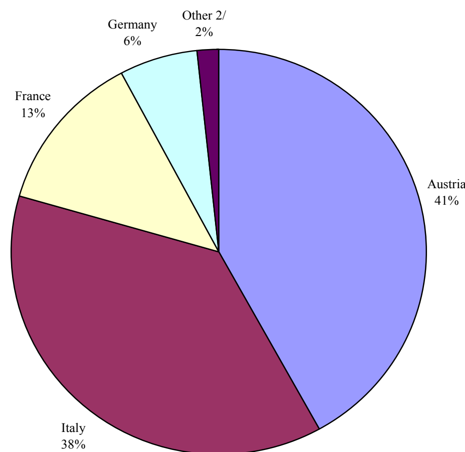


Sources: CNB.

banks (e.g., through higher lending rates and tighter loan granting conditions), in part in response to the CNB measures, but lending practices need to remain under close watch.

9. **With a significant share of foreign banks in the banking system, Croatian banks are exposed to external developments and contagion risks through their increased reliance on foreign funding**. The strong growth of banks' deposit base have supported the growth of credit to the private sector in recent years, but banks became increasingly dependent on foreign borrowing (including from their parent banks) until mid-2006.[6] The reliance on foreign funding has in turn increased vulnerability to contagion risks, with the exposure highly concentrated (mainly to Austria, Italy, and France—Figure 5). Problems in a parent bank could be transmitted to local banks, given the high concentration of exposures to only a few countries.[7] While reputational risks may render it unlikely that parent banks would not support their subsidiaries, the level and degree of their support would depend on general market conditions and cannot be assumed.[8]

Figure 5. Croatia's Exposure to the Main Home Countries of Parent Banks[1]



[1] Share of Croatia in a given country's total exposure to emerging Europe is 13 percent for Austria, 6 percent for Italy, 7 percent for France, and 2 percent for Germany.
[2] Includes Belgium, UK, Netherlands, Switzerland, and Portugal.

[6] Since mid-2006, the share of deposit base in funding private sector credit has stabilized, with a fall in foreign liabilities in recent months, largely in response to the controls on bank borrowing from abroad.

[7] The available information suggests that direct exposure of Austrian and Italian banks to the U.S. subprime market is marginal, but global liquidity pressures may increase the cost of foreign funding. Also, the parent banks with heavy exposure to the region may be susceptible to risks associated with problems in a third country.

[8] Indeed, in 2002, the parent bank of a Croatian subsidiary Riječka banka, decided to abandon its subsidiary that had incurred large losses due to a rogue FX dealer, and sold it to the Croatian state for a nominal amount.

III. Stability Assessment of the Financial System

A. Banking Sector

10. **Financial soundness indicators (FSIs) suggest a reasonably healthy banking sector, including by regional standards** (Table 2 and Figure 6). As of end-2007, the capital adequacy ratio (CAR) recovered to 16 percent, after dropping to 13.6 percent in 2006, reflecting, in part, the preference of foreign parent banks to inject additional capital to their subsidiaries rather than lend, given the high marginal reserve and foreign currency liquid asset requirements. The NPL ratio is on a declining trend, although this indicator tends to lag the cycle. Though still high, profitability has been falling in recent years, reflecting the narrowing interest margins under growing competition for market shares, and the effect of higher reserve requirements.

11. **Stress tests carried out jointly by the FSAP team and the CNB staff analyzed the extent of the vulnerabilities discussed in Section II and sensitivity of banks' condition to a number of shocks**. The tests included single factor sensitivity tests and macro scenarios agreed with the authorities. The former considered both direct and indirect credit risk induced by FX and interest rate exposure, and exchange rate, liquidity, and interest rate risks.[9] Taking into account historical experience, the tests simulated very large but plausible shocks: a slow-down or a reversal in capital inflows, an economic slowdown in the euro area with a spillover to Croatia, and higher global interest rates, all resulting in a significant rise in domestic interest rates, sharp kuna depreciation, and a corresponding rise in NPLs given exposures to interest and exchange rate risks. Appendix IV provides the tests and the detailed results.

12. **While the banking system capitalization is currently sufficient to withstand a range of shocks, banks are vulnerable to liquidity, contagion, interest rate- and foreign currency-induced credit risks.** Under a capital inflow reversal scenario that results in a significant depreciation of the kuna and higher interest rates, the CAR would fall below the 10 percent regulatory minimum for 21 of 33 banks with a total of 55 percent of system assets (Table 3), and five banks would become insolvent. A slowdown in the euro area and higher global interest rates would significantly reduce banks' capital, but leave the aggregate CAR above 10 percent, with no insolvencies.[10] An outflow of 20 percent of bank liabilities with maturity up to three months would push the liquid asset ratios of the banking system down from 16 percent to 11 percent. Contagion from a parent bank or a reassessment of risk facing

[9] While banks are exposed to the real estate market through mortgage lending or lending for commercial properties, no stress test for shocks to real estate prices was performed during the FSAP update, since CNB staff viewed the potential risks mitigated by the multiple collateral requirements and the dominance of first home buyers.

[10] Sensitivity to direct interest rate and exchange rate risks has been found negligible given the limited foreign currency mismatch in bank balance sheets, and with the majority of loans granted at floating interest rates. Sensitivity to equity risk was also small, since banks have little direct exposure to equities. Indirect exposure could be more significant through second round effects and if borrowers took loans to buy stocks, but data was unavailable to test it. Such practice, while observed recently, has reportedly not been common.

a Croatian subsidiary by its parent bank could also have a substantial impact on liquidity due to the dependence on parents for funding.

Table 2. Croatia: Financial Soundness Indicators, 2002–07

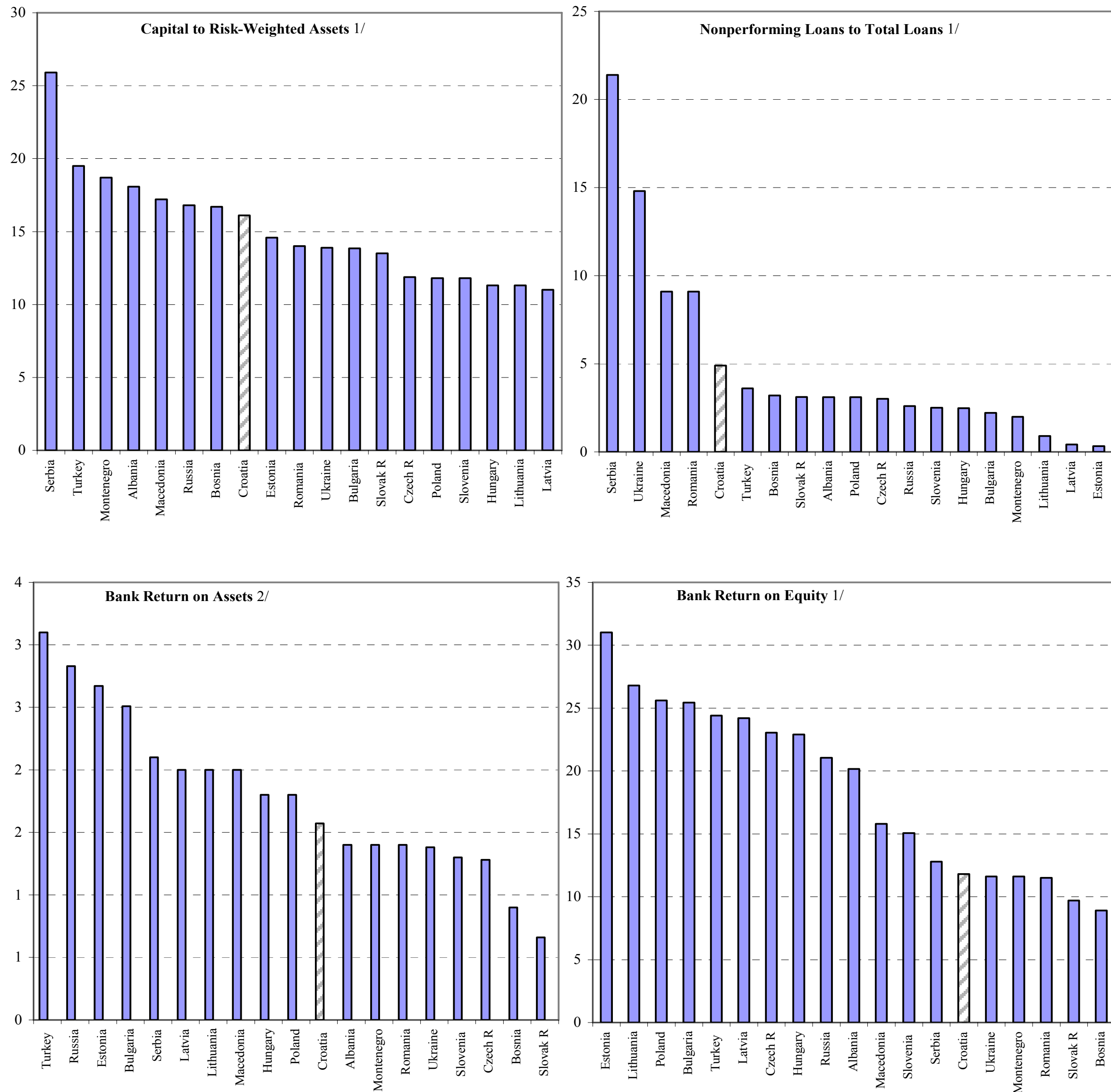
(In percent, unless otherwise indicated)

	2002	2003	2004	2005	2006	2007 [1]
Core Set						
Commercial Banks						
Regulatory capital to risk-weighted assets	17.4	16.5	16.0	15.2	13.6	16.1
Regulatory Tier I capital to risk-weighted assets	15.2	14.1	13.7	13.5	12.5	15.7
Nonperforming loans net of loan-loss provisions to capital	19.6	22.6	19.0	16.7	12.4	10.8
Nonperforming loans to total gross loans	10.2	8.9	7.5	6.2	5.2	4.9
Sectoral distribution of loans to total loans						
Nofinancial corporations	45.0	41.0	39.5	38.5	40.0	37.6
Households	44.5	47.8	49.9	49.7	49.4	49.4
Other sectors	10.5	11.2	10.6	11.7	10.7	13.0
Return on assets	1.6	1.6	1.7	1.6	1.5	1.6
Return on equity	13.7	14.1	16.1	15.1	13.0	11.8
Net interest income to gross income	56.3	58.9	56.6	57.9	58.3	57.2
Noninterest expenses to gross income	72.9	72.7	68.0	66.7	67.8	65.9
Liquid assets to total assets	17.6	18.7	16.1	11.5	12.6	11.1
Liquid assets to short-term liabilities	57.8	66.8	62.0	42.1	47.0	43.9
Net open position in foreign exchange to capital	n.a	24.7	18.2	7.4	2.6	2.7
Encouraged Set						
Commercial Banks						
Capital to assets	9.5	8.9	8.6	9.0	10.3	12.0
Large exposures to capital	151.3	128.4	161.4	122.6	83.7	60.3
Geographical distribution of loans to total loans						
Residents	99.5	99.6	99.8	99.7	99.5	99.4
Nonresidents	0.5	0.4	0.2	0.3	0.5	0.6
Gross asset position in derivatives to captal	n.a	n.a	0.8	0.6	0.9	1.1
Gross liability position in derivatives to captal	n.a	n.a	1.2	1.0	0.7	0.8
Noninterest income to total income	43.7	41.1	43.4	42.1	41.7	42.8
Personnel expenses to noninterest expenses	33.9	32.5	32.7	34.1	33.8	25.2
Spread between domestic lending and deposit rates	11.0	10.1	9.9	9.5	8.2	7.1
Spread between foreign exchange lending and deposit rates	5.5	5.0	4.2	3.8	3.3	3.2
Noninterbank loans to noninterbank deposits	80.9	87.0	92.2	101.1	107.9	112.4
Foreign currency-denominated loans to total loans	75.8	70.9	76.7	78.5	69.6	60.8
Foreign currency-denominated liabilities to total liabilities	76.0	76.1	78.1	78.8	77.9	73.8
Net open position in equities to capital	n.a	n.a	0.3	0.2	0.1	0.1
Nonfinancial Corporations						
Total debt to equity	44.5	40.9	45.9	49.3	57.0	n.a
Return on equity (corporates)	3.6	1.8	2.7	4.4	5.1	n.a
Net foreign exchange exposure to equity	8.9	10.0	10.9	12.4	13.2	n.a
Households						
Household debt to GDP	24.7	28.9	31.8	35.5	40.3	40.3
Household debt service and principal payments to income	4.6	6.1	6.0	6.1	6.0	n.a
Real Estate Markets						
Residential real estate prices (annual percentage increase)	9.2	0.9	15.9	6.4	18.1	n.a
Residential real estate loans to total loans	13.0	15.0	16.8	17.9	19.5	19.8
Other Indicators						
Loan-loss provisions to nonperforming loans	68.0	60.6	62.3	60.0	61.5	58.9
Change in credit to GDP ratio	13.5	8.3	6.9	11.3	14.0	10.8
Net interest income to average total assets	3.3	3.4	3.0	2.9	2.7	2.7
Noninterest expenses to average total assets	4.2	4.1	3.6	3.3	3.2	3.1
Loans to assets	53.0	53.9	54.7	58.5	61.6	63.4
Liquid assets to total deposits	24.6	26.6	23.8	17.4	18.9	17.5
Net claims on government to total assets	16.8	13.6	9.9	11.6	5.5	5.4
Foreign currency deposits to total deposits	74.4	73.1	74.2	73.1	64.6	61.3

Source: CNB.

1/ September 2007.

Figure 6. Selected Emerging European Countries: Financial Soundness Indicators



Source: GFSR

1/ September 2007 data for all countries, except for Albania and Slovenia (December 2006), Hungary (March 2007), Serbia, Montenegro, Russia, and Slovak Republic (June 2007).

2/ September 2007 data for all countries, except for Albania and Slovenia (December 2006), Hungary (March 2007), Serbia, Montenegro, Poland, Russia, and Slovak Republic (June 2007).

13. **There is a high degree of heterogeneity in the impact of the shocks among various banks and subgroups of banks** (Table 3). In particular, smaller banks and state-owned banks exhibit greater vulnerability to direct and indirect credit risks, while foreign-owned banks, including some systemically important ones, exhibit greater vulnerability to liquidity and contagion risks, given their significant dependence on funding from parent banks and wholesale foreign deposits. State-owned banks also seem particularly vulnerable to liquidity shocks, reflecting mainly a large maturity mismatch between the liquid assets and the liabilities in one of the banks.

Table 3. Summary Results of the Stress Tests Under Alternative Scenarios

	Capital Adequacy Ratio (CAR) 1/							
	Subgroups by size 2/			Subgroups by ownership 3/			Aggregate	
	Large	Medium	Small	FO	DO	SO	CAR	
Actual	15.5	15.8	15.7	15.7	16.1	12.5	15.5	
Euro area slowdown 4/	12.8	12.0	10.1	14.9	11.4	8.5	12.5	
Slowdown or reversal in capital inflow 5/	9.7	7.9	3.6	14.3	7.0	5.3	9.1	
Global interest rate increase 6/	12.2	10.9	8.1	14.8	9.9	7.4	11.8	
	Liquid Asset Ratio (LAR)							
	Large	Medium	Small	FO	DO	SO	Aggregate LAR	
Actual	16.1	17.8	13.9	16.4	12.8	14.1	16.2	
Withdrawal of 20% of liabilities with maturity up to 3 month	10.9	13.1	10.0	11.4	8.4	8.2	11.1	
Withdrawal of 35% of liabilities with maturity up to 3 month	6.4	9.3	6.8	7.1	4.7	3.3	6.8	
	Distribution of banks' CAR below 10 percent							
	By number			By share in total assets			Total number with CAR<10%	Total share in assets with CAR<10%
	< 4%	4-8%	8-10%	< 4%	4-8%	8-10%		
Actual	0	0	0	0.0	0.0	0.0	0	0.0
Euro area slowdown 4/	0	8	6	0.0	9.3	25.1	14	34.4
Slowdown or reversal in capital inflow 5/	11	6	4	18.1	24.8	12.1	21	55.0
Global interest rate increase 6/	5	7	3	2.6	12.1	12.7	15	27.4
	Distribution of banks' LAR							
	By number			By share in total assets				
	< 10	10-20	>20	< 10	10-20	>20		
Actual	2	28	3	0.7	88.2	11.1		
Withdrawal of 20% of liabilities with maturity up to 3 month	18	13	2	36.3	60.6	3.2		
Withdrawal of 35% of liabilities with maturity up to 3 month	26	6	1	78.2	21.4	0.2		

1/ The minimum regulatory CAR is 10 percent.

2/ Sub-groups by size are large banks (L) with share in total assets above 5 percent, medium sized banks (M) with share in total assets between 1 and 5 percent, and small banks (S) with share in assets below 1 percent.

3/ Sub groups by ownership are foreign owned banks (FO), domestic privately owned banks (DO), and state owned banks (SO).

4/ Assumes a depreciation of the kuna by 10 percent, an increase of kuna rates by 200bp, a decrease of euro interest rates by 50 bp, an additional increase of NPLs by 30 percent and an implied overall increase of NPLR by 118 percent.

5/ Assumes a depreciation of the kuna by 30 percent, an increase of kuna interest rates by 300 bp and an implied overall increase of NPLR by 251 percent.

6/ Assumes an increase of kuna interest rates by 200 bp, an increase of euro interest rates by 200 bp, an additional increase of NPLR by 10 percent and implied overall increase of NPLR by 146 percent.

14. **The stress tests suggest that higher capital buffers may be needed, particularly for the most vulnerable banks, to protect against worst-case but plausible scenarios.** They also suggest that to assess bank resilience, backward-looking FSIs should be combined with regular forward-looking analyses, in particular to: strengthen stress testing analyses at the CNB by integrating scenario analyses in the tests and establishing data sources to facilitate quantitative assessment of various exposures; encourage stress testing among banks as part of risk management practices (for credit, liquidity, and market risks); and monitor closely the more-easily-overlooked small banks that show vulnerabilities and bank practices that could potentially heighten risks. Including benchmarks to assess liquidity risks as part of supervisory oversight would also be useful. Since the FSAP update mission, the CNB has

intensified work on forward-looking stress tests to explore their sensitivity to additional shocks and scenarios, and plans to produce a forward-looking financial stability report.

B. Nonbank Financial Sector and Cross Sectoral Developments and Risks

15. **While smaller than the banking sector, the systemic importance of the NBFIs has increased since the 2002 FSAP, warranting a closer examination of the risk exposures of these institutions.** Some nonbank financial institutions are direct subsidiaries of foreign parent banks while others are owned by the local banks, and there are important intragroup linkages in terms of ownership and activity (e.g., mortgage loan borrowers are required to provide collateral in the form of life and hazard insurance, and banks insure their credit risks). The full scope of cross-ownership and cross-sector exposures, however, is not known. A consolidated mapping of ownership and exposure links would help identify the extent of risk exposures, providing information for necessary actions.

Capital markets

16. **Croatia's capital markets have experienced very rapid growth, but the market continues to lack depth and liquidity**. Equities have been the key driver of the rapid capital market growth. While market capitalization has more than tripled since 2001 to 133 percent of GDP at end-September 2007, the overall turnover ratio averaged 8.1 percent of capitalization, one of the lowest in the region. The existence of a number of company stocks that trade with a very low free float (the estimated amount of shares not readily and freely available for resale) contributes to low market liquidity and to the possibility that large orders generate significant price volatility.

17. **The very rapid growth of the stock market has raised valuation concerns and the risk of a correction**. The limited supply of securities coupled with increasing demand had exerted substantial pressure on the prices, though significant price correction has indeed taken place since early 2008. The favorable tax regime applied to equities likely also contributes to the popularity of the market. Investor education of the risks in the system, which the authorities have started addressing after the FSAP update, is needed to temper over-enthusiasm and herd behavior.

18. **Further deepening of the capital market should be supported by**: (i) stronger enforcement of disclosure requirements; (ii) strengthening shareholder rights by revising provisions in the Companies Act regulating conflicts of interest; (iii) enhanced market surveillance and analysis; (iv) an adequate legal framework and de-mutualization of the stock exchange to enhance market integrity; and (v) addressing the legal framework for the finality of settlement (to be introduced with the Capital Market Act). Increased sale and privatization of public enterprise shares could add to market liquidity.

The pension sector

19. **The new mandatory pension funds (the second pillar) introduced in 2002 have grown in importance, but face challenges.** Total assets reached 7.7 percent of GDP by August 2007. However, the 5 percent contribution rate (of gross salary) is quite low for a privately funded pillar that still functions mainly as a supplement to the public system. The

contribution rate needs to be raised significantly, taking into account fiscal implications.[11] Investment policies of the funds face regulatory restrictions and supply constraints: the funds are required to invest at least 50 percent of assets in government bonds and cannot place more than 20 percent in foreign assets. These restrictions will be lifted on EU accession.

20. **The voluntary pension system is small, and participation is modest**. Voluntary funds are subject to fewer investment restrictions, although the limit on foreign securities remains restrictive. A small subsidy is provided in the form of a government co-contribution to individuals participating in voluntary funds, which needs to be removed, and foreign investment limits liberalized to provide broader client choice.

The insurance sector

21. **The non-life insurance sector is reasonably well developed, but life insurance is lagging behind**. The share of life premiums in total premiums grew between 2000 and 2006, stimulated by the growth of the unit-linked business. Market concentration is high, with foreign-controlled companies having grown in relative importance. The insurance business is generally free of overly restrictive regulations. Observed risk retention ratios are high and need to be monitored to ensure that risk transfer mechanisms are being used appropriately.

22. **Mortgage loan providers in Croatia frequently require the borrower to purchase a life insurance policy as collateral.** The intent is to ensure coverage of mortgage payments through the payable benefit. While this practice has been customary in other countries, especially where collateral recovery is slow, its use as an obligatory collateral requirement needs to be based on fair pricing, and not to promote the insurance business within financial groups, and the customer needs to be sufficiently informed and protected.

The leasing sector

23. **Risks stemming from the leasing sector have diminished with the new Leasing Act, and the regulation and supervision of leasing companies by HANFA**. The new Act prohibits direct credit extension by leasing companies, which had stimulated their growth in the previous years to claim 11 percent of the financial sector assets—second to the banking sector. The Act also requires more stringent capital thresholds, fit and proper requirements, management and supervisory board structures, and risk management rules.

24. **Nonetheless, greater efforts are needed to fully assess the developments in the sector**, including profit/loss dynamics, ownership structures, interest rate and funding risks through effective regulatory reporting and risk analysis. Capital adequacy of the firms needs better assessment to ensure it is commensurate with the size and risk of operations. Changes in ownership and funding structures that may generate risks need to be monitored in

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[11] To compare, the rate is 6 percent in Hungary, 9 percent in Poland and Slovakia, and ranges from 7–12 percent in other selected emerging countries. Doubling the rate would allow a stronger development of the private pillar but imply additional public debt financing of about 28 percent of GDP over 20 years unless the parameters of the public pillar are modified.

collaboration with home supervisors. Including leasing clients in the credit registry—subject to the change in legislation—would improve information on debtors.

IV. Mitigation of Risks: Regulatory and Supervisory Issues

A. Measures to Address Rapid Credit Growth and Risks

25. **The authorities have been proactive in addressing the macroeconomic and financial vulnerabilities associated with rapid credit growth**. Concerned with the pace of credit growth against a relatively high base, rising external imbalances, and their potential implications for financial stability, the authorities adopted prudential and supervisory measures to limit the macro-financial vulnerabilities, including higher capital requirements for market risk, higher risk weights for unhedged FX-loans, guidelines for managing risks related to household and FX loans, and a link between capital adequacy and credit growth (Table 4). The CNB also adopted administrative measures to curb credit and external debt, against the background of deteriorating macro imbalances, intermittent support from fiscal policy, and limited instruments under a tightly managed exchange rate and high levels of financial euroization. Also, leasing companies were prohibited from extending loans and a credit registry was set up to enhance debtor information.

26. **The measures overall have achieved some positive results**. The administrative credit measures have contributed to a slowdown in bank credit, as intended, and total credit growth to the private sector from domestic and external sources also slowed, though more modestly (a fall of 3 percentage points in total credit vs. 7 percentage points in bank credit at end-2007 vis-à-vis end-2006). Together with rising interest rates in the euro area, the prudential measures have contributed to a fall in the share of FX-linked loans in total loans. Banks seem more aware of risks related to such loans, have reduced their foreign borrowing, and intensified efforts to attract deposits and capital. However, the administrative measures have negative side effects, with potential implications for financial stability, intermediation, and market development (Box 1).[12]

27. **Looking ahead, developing a plan for the eventual elimination of administrative measures is an important task.** Beside their negative side effects, Croatia's accession to the EU, likely in 2010–11, and eventual euro adoption would require a change in the existing policy framework to the extent that some regulations are incompatible or difficult to sustain under the EU integration.[13]

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[12] The authorities have anticipated many of the side effects of the measures in the process of their design, but have viewed that their potential benefits in containing the external imbalances and their implications for financial stability would exceed the cost of these side effects.

[13] As noted in the November 2007 Pre-Accession Economic Programme, EU accession implies that the MRR will become untenable. Also, in the context of euro adoption, the general reserve requirement will need to be reduced from its current level of 17 percent, to the 2 percent level set by the ECB. The adoption of the single passport policy is likely to have implications for the structure of the financial sector, as subsidiaries of foreign banks will be free to convert into branches, reducing the room to impose regulatory restrictions on their activities. Basel II implementation will also impose some constraints on bank regulatory framework.

Table 4. Croatia: Measures to Address Credit Growth

Prudential and Supervisory Measures

- Requirement to set up reserves for general banking risks for banks with asset growth above specific threshold and as a function of banks' CAR (2004, modified in 2006 to link the reserves set aside to credit growth only);
- Introduction of capital charges for market risks (2004);
- More emphasis on risks in the CNB's banking supervision (2004);
- Increased risk weights on unhedged foreign-currency loans (2006, raised further in late 2007);
- Issuance of guidelines for banks for managing risks related to FX and household loans (2006);
- New law on leasing limited operations of leasing companies to leasing activities only (no permission to extend loans, effective 2007), and brought these companies under HANFA supervision;
- Credit registry started operations in May 2007;
- In December 2007, in a further move to contain external vulnerability and preserve macroeconomic stability, the capital adequacy regulation was amended to link minimum required capital adequacy to credit growth and funding sources; and
- Cross-border supervisory coordination intensified.

Administrative or Direct Monetary Measures

- Foreign-currency liquid asset requirement (FX LAR or the "32 percent rule") (2003) (the base was broadened in late 2006 to include indexed instruments).
- Marginal reserve requirement (MRR): introduced in mid-2004 at a rate of 24 percent, subsequently increased in steps to 55 percent; loopholes in the base closed.
- Credit controls (2003, and since the start of 2007): During 2003, banks were required to hold CNB bills that yielded 0.5 percent (significantly below market rates) in an amount twice as high as excess quarterly credit growth of over 4 percent ("16 percent rule"). Effective 2007, credit controls have been reintroduced; banks were required to purchase low-yielding CNB bills for 50 percent of the amount by which their credit growth exceeded the CNB ceiling, which is consistent with 12 percent credit growth for the full year ("12 percent rule"). The CNB modified the current controls several times to close loopholes, and, in December 2007, confirmed the retention of the controls in 2008. In 2008, 1 percent monthly sublimits apply and other conditions were tightened (i.e., the purchase requirement for excess credit growth was increased to 75 percent; and the CNB bill yield was cut to 0.25 percent).
- Special reserve requirement, SRR (2006): set at 55 percent on banks' liabilities arising from issued securities to close the loophole for MRR. The reserve base is any increase in the average daily balance of issued securities in a specific period of time compared with the average daily balance of the issued securities in January 2006.
- Banks are also subject to a high general reserve requirement on bank deposits (17 percent).

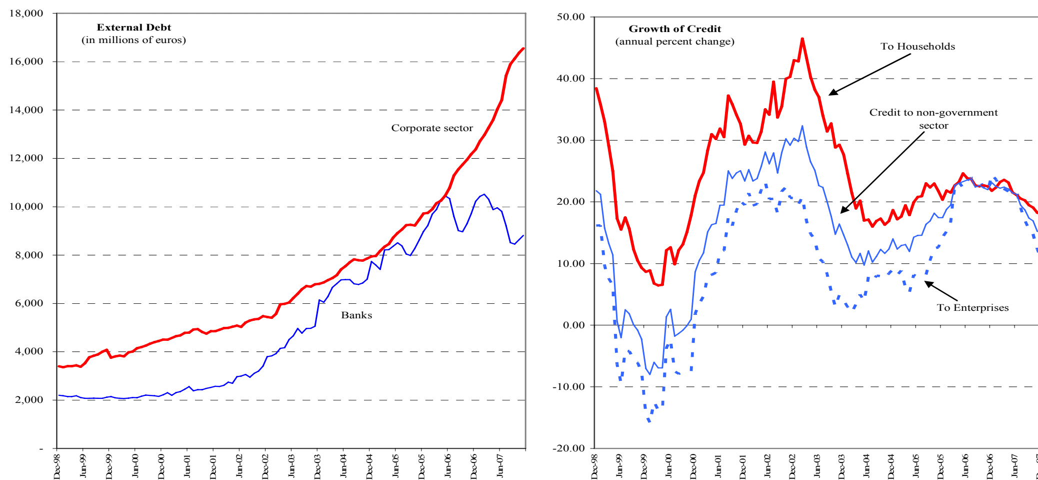
Box 1. The Effects of the CNB Measures to Deal with Rapid Credit Growth

The prudential and administrative measures adopted in recent years have achieved some favorable results in addressing the vulnerabilities associated with rapid credit growth. The administrative measures have contributed to slowing the growth of bank credit since the beginning of 2007. Together with higher interest rates in the euro area, the guidelines for risk management, higher risk weights on unhedged FX loans, and the broadening of the base for FX LAR pushed banks to reduce the share of FX-linked loans. Banks have intensified efforts to attract deposits to fund their activities. Capital adequacy has also increased, in part because foreign-owned banks now find it cheaper to raise capital from the parents rather than rely on foreign borrowing subject to the CNB measures. Banks' awareness of risks improved, especially regarding unhedged FX lending.

At the same time, the measures have some consequences that may have potential implications for financial stability. In the presence of the effective credit limits, foreign banks help arrange direct cross-border borrowing for their clients, typically for the most creditworthy large corporates, leaving the Croatian banks mostly with customers with no other sources of financing. The banks' attempts to raise additional funds in the form of capital, rather than foreign borrowing to avoid the reserve requirements make the link between capital and the risks that it is supposed to cover more complex. Banks' seeking higher returns to make up for the impact of effective limits on expanding loan volumes also increase their risk appetite. The implementation of the measures also have administrative costs for banks and the CNB, as attempts to circumvent the regulations prompt successive adjustments in their scope.

Also, the administrative measures have potentially negative longer-term implications. They encourage financial disintermediation as the banks' ability to meet client demand is constrained by the credit limits and the current market shares in the system are preserved. They would also undermine access to credit, particularly for small- and medium-sized enterprises, with banks directing loans within the prescribed limits to the retail sector—more profitable, though riskier, sector with no productivity enhancing potential. The subsequent tightening of the credit limits (by limiting the monthly growth and broadening the coverage to sister companies) also have the effect of hitting banks disproportionately and giving competitive advantage to stand-alone financial companies over those connected to a bank. While bond issuance by banks may have been used to circumvent the MRR, the SRR on bond issuance can hinder development of long-term instruments and liquidity and maturity management by banks.

Impact of the Measures on Bank Lending and Foreign Borrowing



Source: CNB

28. **The transition strategy should be carefully designed to avoid undermining financial stability.** In particular, it needs to identify: which measures should be eliminated, considering their negative effects and compatibility with the EU and euro frame-works; the circumstances under which they could be eliminated; the timing and pace of their removal in light of the potential macroeconomic implications; and safeguards to limit the potential consequences. The latter would include supportive macroeconomic policies, a resilient banking system, and strong bank supervision. Tighter fiscal policies, in particular, would be crucial in reducing excess demand pressures as liquidity is reinjected to the system. Banks need to make prudent lending and borrowing decisions, and the CNB intensify its monitoring of bank lending, risk management, and loan granting standards. Further prudential measures could be considered to contain any emerging prudential risks. Efforts to increase risk awareness, effective home-host supervisory coordination, and deeper financial markets and instruments to facilitate risk management would also be important for the transition.

B. Bank Regulation and Supervision

29. **The authorities have built the necessary expertise and put in place an effective framework for bank supervision.** The overall assessment of the BCP conducted by the FSAP update was positive (Annex). Most significant weaknesses identified by the 2002 FSAP assessment have been addressed. The CNB has also established necessary remedial powers to deal with noncompliance with regulatory requirements, weaknesses in risk management and banks' financial condition, although guidelines could be developed on when preemptive supervisory action might be undertaken and some pre-planning on actions in the event of a crisis. Significant progress has been made in the area of home-host supervisory coordination.[14] Only a few areas of bank supervision require further attention.[15]

30. **An area that needs close attention is the lack of clarity on the supervision of the banking groups that include nonbanking operations**. In particular, when a banking group includes nonbank operations, the CNB and HANFA cooperate through information exchange in accordance with the Memorandum of Understanding (MoU) established between the two

[14] Cross-border supervisory coordination between the CNB and home supervisors of Austria, Hungary, Italy, Bosnia and Herzegovina has been established formally in MoUs which include details on information exchange. There are ongoing negotiations with French and German supervisors on establishing similar MoUs. Supervisory cooperation takes place both at the policy and ongoing supervision level (e.g., through joint onsite inspections).

[15] These include: improving transparency of the operational independence of bank supervision within the CNB; refining the way in which offsite and onsite work is integrated into the supervisory cycle; and further advancing the forward-looking elements of the supervisory approach in moving further to risk-based supervision (e.g., by focusing increasingly on anticipating future risks and tailoring supervision more to the risk profile of the banks). An area that the FSAP update did not cover is Croatia's systems for anti-money laundering and combating the financing of terrorism (AML/CFT). The latter were last assessed by MoneyVal in September 2006, with the resulting report to be adopted at the MoneyVal plenary in early-April 2008. Although the final report was not available in time for inclusion in the FSSA, a Report on Observance of Standards and Codes (ROSC) based on the MoneyVal findings is being prepared and is expected to be available for circulation to the Board by mid-2008.

institutions.[16] There is a need to enhance consideration of group risks within a banking group, which are likely to grow as nonbanking activity within banking groups further develops, to clarify the lead supervisor role and to ensure that group risks are systematically monitored. The cross-sector risk exposures and close ownership links between banks and nonbanks call for stronger coordination between the CNB and HANFA to enhance the understanding of the risks bank and nonbank operations pose to the institutions subject to their respective supervision.

31. **Basel II preparations are on track to become effective in January 2009.** Most foreign banks—shareholders of Croatian banks, plan implementing internal ratings based (IRB) and advanced measurement approach (AMA). Their Croatian subsidiaries are either developing their own models or adjusting models developed by their parents (Table 5). Smaller domestic banks plan to implement standardized approach (SA) given the lack of data and experience for developing sophisticated models. The CNB and major Croatian banks seem well-placed to cope with the implementation. Impact studies are being prepared, including to assess the effect on capital. While the framework for risk-focused supervision is still evolving, the current supervisory techniques and risk management processes do not appear to pose risks for successful implementation. The CNB and banks also draw on knowledge from home supervisory authorities and parents. As in other countries, small banks are less prepared for implementation. Further dialog on a number of areas (e.g., consultative papers on Pillars 2 and 3 and the secondary legislation) would be helpful.

Table 5. Croatia: Approaches for Basel II Implementation
(Based on the data as of June 2007)

Risk	Approach	Bank Assets (in percent)	Number of banks (in percent)
Credit Risk	SA	11	61
	IRB	88	27
	Not decided	1	12
Market Risk	SA	82	97
	Internal model	18	3
	Not decided	0	0
Operational Risk	BIA	19	52
	STA	24	18
	AMA	54	12
	Not decided	3	18

C. Nonbank Financial System Regulation and Supervision

32. **Regulation and supervision of the nonbank financial sector has continued to improve since the 2002 FSAP**. Many weaknesses identified by the 2002 FSAP have been addressed (Appendix II). HANFA, the unified regulator for the nonbank financial sector, was established in 2006 by integrating the former Croatian Securities Commission, Agency for

[16] There is no legislative framework in Croatia for the regulation of supplementary supervision of financial conglomerates, but the provisions of Directive 2002/87/EC will be transposed into the Croatian legislation through the adoption of the Financial Conglomerates Act in the third quarter of 2008.

Supervision of Pensions and Insurance, and Directorate for the Supervision of Insurance companies, and also assumed responsibility for supervision of the previously unregulated leasing companies. The inclusion of leasing companies under HANFA's oversight has helped in narrowing a supervisory gap and room for circumvention of credit measures on banks. Coordination efforts on information sharing have been stepped up with the CNB. Work is also under way for joint inspections of banking groups under the CNB's lead supervision, and to map cross-sector risk exposures and ownership linkages between banks and nonbanks.

33. **The framework for securities, insurance, and pension regulation and supervision is largely in line with international standards, though some weaknesses remain**. A potential weakness is the inability of the HANFA to directly impose fines without the court system. Another is the enforcement of financial statement disclosure and accounting and auditing standards for nonfinancial companies, a job shared between HANFA and other state and private institutions.[17]A system of risk-oriented supervision also needs to be developed across the securities, pension, and insurance sectors, to include monitoring of risks and identify supervisory measures to mitigate them. In addition to complying with the regulation, supervision should focus on the management of various market risks as well as credit risks, and corporate/financial governance risks in the nonbank sector.

V. Systemic Liquidity Management and Contingency Planning

A. Systemic Liquidity Management

34. **Although the CNB has a broad range of instruments to manage systemic liquidity,[18] banks' day-to-day liquidity management is complicated by the under-developed and segmented interbank money market**. Daily turnover in the interbank market is low, with transactions concentrated in the unsecured overnight maturities, and no yield curve exists beyond one month. The market is unable to recycle liquidity across banks, with large banks relying on funds from the CNB, parents, or other large banks through bilateral arrangements, while small banks are constrained to trade with large banks given the exposure limits and internal limits set by their risk management systems. Limited amount of eligible collateral (kept for dealings with the CNB) and frequent changes in regulations also limit banks' willingness to recycle excess liquidity.[19] [20]

[17] A separate evaluation of the supervisory capabilities of HANFA covering the principles of supervision in the Securities, Insurance and Pensions was conducted by an EC Peer Assessment mission during October 2007.

[18] Among these, FX auctions remain the main instrument, and the stability of the kuna the main operational target, to achieve and maintain price stability, while other instruments (weekly auctions, reserve requirements, administrative measures) serve to support this instrument.

[19] Government treasury-bills are the only collateral permitted in various monetary operations (e.g., repo operations, intraday facility, Lombard facility). The outstanding stock of treasury-bills (HRK12 billion) is small and unevenly held among the banks, with many banks not having sufficient collateral to borrow in times of liquidity shortage.

35. **These and other impediments to efficient bank liquidity management need to be addressed within the limits of a monetary framework that aims to keep the kuna stable and limit financial vulnerabilities.** With efforts to curtail credit growth to safeguard macro-economic stability having resulted in a significant build up of liquidity at the CNB, banks had become dependent on the CNB's weekly repo operations in the absence of a well-functioning interbank market. Addressing these challenges requires: greater flexibility in the repo rate to reflect liquidity conditions; expanding the set of appropriate eligible collateral to raise the volume of securitized lending (to include government bonds with appropriate hair-cuts for longer maturities and FX denomination); continued dialog with banks on frequent regulatory changes to reduce their reluctance to recycle liquidity in the market; and incorporating the information implied by interbank market volatility in daily liquidity forecasting and management operations.

36. **The authorities have taken some steps in this direction following the FSAP update**. Since late 2007, the CNB allowed greater flexibility in the repo rate and emphasized that repo auctions will mainly be used for managing liquidity, where needed. Increased communication with banks has contributed to a better understanding of CNB measures, which is important to align incentives of financial institutions with those of the CNB.

B. Contingency Planning

Lender-of-last resort facility

37. **A broadly adequate framework for emergency liquidity provision exists.** A LOLR facility provides emergency liquidity to solvent banks at penal interest rates, for a period of no more than six months (used only once since 2002), and is accompanied by supervisory monitoring and conditionality to contain risks to the CNB (e.g., banks provide a detailed list of actions and cash flow projections for the period of loan use).[21] Liquidity support must be fully backed by eligible collateral. Exceptionally, collateral requirements can be extended to long-term government securities, sovereign bonds of euro member countries, or other normally accepted collateral, if the CNB assesses that the bank's liquidity problems threaten financial system stability. The CNB provides emergency liquidity only in kuna, but banks can exchange with the CNB the kuna funds borrowed for foreign currency. The 32 percent FX LAR also provides a cushion in case of a run on FX deposits. Substantial

[20] There are no known market infrastructure impediments to interbank trading. There is a well-functioning real-time gross-settlement payment system operated by the CNB. For securities settlement, the central depository agency provides central counterparty facilities, but finality and financial collateral arrangements are currently not stipulated in regulations.

[21] In exceptional circumstances, the maturity of the LOLR facility can be extended up to twelve months, but in that case, the loan must be requested and guaranteed by the government of Croatia with parliamentary approval. The CNB plans to modify this facility to extend its use to 12 months with no requirement for state guarantee.

amounts of liquidity frozen at the CNB for various other regulatory requirements can be released in the event of a liquidity squeeze.[22]

Bank resolution and deposit insurance

38. **The legal framework for bank resolution, insolvency proceedings, and deposit insurance provides the CNB with a broad range of powers.** These powers enable the CNB to deal with solvency problems of a bank and to limit potential adverse effects on depositors' confidence in the event that a bank closure proved necessary. The powers include: supervisory actions for bank improvement, and restructuring/liquidation/bankruptcy actions.

39. **The banking legal framework covers three modalities of bank resolution:** bankruptcy, liquidation, and use of special administrators. For bankruptcy, used for fully insolvent institutions, depositors are paid off immediately, and the State recovers the funds by the sale of recoverable assets according to an established hierarchy of creditors. For liquidation, depositors are not paid off but only receive reimbursement once viable assets are sold and proceeds received. Special bank administrators reportedly have the option to sell off partial balance sheets (e.g., viable loans with matching deposits) to other acquiring banks as a first step in resolution, but the legal framework does not explicitly list this mechanism.

40. **Some basic requirements for banking resolution are, hence, not fully captured in the current or proposed laws**. Since the legal framework does not explicitly list a pre-bankruptcy mechanism under the resolution process (namely, the option of conducting partial balance sheet transfers to continue servicing depositors without interruption), the CNB could be legally challenged by creditors and depositors if such mechanisms were used. Such appeals can slow the resolution process, preventing prompt reimbursement to depositors, and contributing to a deterioration of bank assets. This definitional/legal gap could be improved by listing the explicit use of the partial asset/liability carve-out mechanism among the legally permissible instruments under special administration arrangements. The CNB should also be given adequate legal protection for supervisory action taken in good faith (Annex).

41. **The current deposit insurance scheme will be subject to a number of changes in the context of harmonization with the EU.** The current system covers HRK 100,000 (approximately €14,000) for the sum of deposits of a person's accounts held in a given bank. The new draft deposit insurance law, drafted to meet the EU standards as part of the EU *acquis,* would raise the coverage to HRK 160,000, and would also cover small-medium enterprises (SMEs) as well as individuals, with the possibility of coinsurance; while details on this are pending, pros and cons of coinsurance need careful assessment.

42. **Discussions at the time of the FSAP update suggested a lack of clarity on the role of various agencies in bank resolution** (the CNB, the State Agency for Deposit Insurance and Bank Rehabilitation (DAB), Ministry of Finance (MoF), and the courts). The mission considered that: (i) the overall responsibility for rehabilitation programs for ailing institutions

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[22] At end-February 2008, the CNB's net (gross) official reserves, excluding (including) liabilities to banks held under various reserve requirements stood at 53 (68) percent of banks' foreign currency deposits.

should be with the CNB supervisors, and there should not be competing agencies with this task; (ii) the responsibility for providing capital to a troubled bank should be within the MoF; and (iii) the provision of liquidity support and other safety net funds should be the responsibility of the CNB and the DAB, respectively.

43. **With a view to strengthening the bank resolution framework, the FSAP update recommended to**: (i) establish clarity as to the roles and responsibilities of all the parties involved in the bank resolution process, and formalize the existing "common understanding" of these roles to limit the risk of delays and uncoordinated actions in the event of a crisis; (ii) set out clearly who takes the first losses, with clear guidelines to limit CNB support to systemic risk cases; and (iii) establish provisions for quickly paying/servicing guaranteed depositors upon a bank's failure—not only upon formal bankruptcy. The authorities recently stepped up efforts to clarify the roles of agencies involved in bank resolution.

Crisis preparedness

44. **While the impact of ongoing turbulence in the global financial markets have so far been limited for Croatia, continued global financial market pressures underscore the need for contingency planning**. Planning would include policy options, as well as practical issues, such as developing contingency plans on how to implement the options, in particular where the banking system is largely foreign-owned. Such planning could be documented in a manual that includes specification of principles for crisis management; establishment of analytical frameworks for assessing a crisis; preparation of the steps and procedures; key information needed for necessary analyses;[23] and specific forms of coordination, information sharing, and communication between the authorities (both externally and internally).

45. **At the time of the update, there were no formal arrangements for crisis management and burden sharing between the CNB and other relevant foreign authorities.** The notion of the parent bank taking responsibility for its Croatian subsidiary was seen as a first line of defense, followed by the possibility of releasing the significant quantity of bank reserves held at the CNB. A liquidity crisis originating in Croatia or elsewhere could still cause difficulties in the banking system if parent bank support failed to materialize in the event of adverse developments or possible regional contagion.

46. **The mission suggested the CNB establish formal communications with monetary and supervisory authorities of parent banks on issues of crisis management.** In particular it would be beneficial if the MoUs set out formally how to discuss modalities for action and coordination among supervisors. It would be useful for home-host authorities to discuss "who is in charge," as well as the options and guidelines for the use of liquidity facilities by

[23] These could include high frequency data on: (i) exposures of individual banks to other banks in the system, to parent banks, and to subsidiaries in other countries in terms of funding, deposits, and lending; and (ii) individual bank data on liquidity position, short term payment obligations falling due, net open positions, direct/indirect FX exposures, solvency indicators, collateral availability, and deposits of retail and corporate customers.

foreign and domestic-owned banks in a crisis situation. Strengthening banks' liquidity management capacity would also help reduce the burden on the CNB in stressful situations.

47. **Some work has started in this area**. The CNB has initiated formal communications with the foreign bank supervisory authorities, with a view to clarifying how parent banks would react in case of a problem in Croatia. The existing MoUs with the supervisory authorities of Austria, Bosnia, Hungary, and Italy are planned to be upgraded regarding crisis management arrangements and MoUs to be established with France and Germany. No responses to the formal communications have yet been received. On liquidity management, the CNB has been monitoring banks' liquidity and risk management through onsite-offsite inspections.

48. **The team also considered it useful for the authorities to participate in crisis simulation exercises or "war games," both in a domestic and a cross-border context**. Such exercises have become more common tools to help develop the coordinating procedures in crisis management, and could be very useful in testing the adequacy of internal and international processes, potential weaknesses in communication and coordination channels and procedures, the understanding of the responsibilities within and between the relevant institutions, and the nature of information and data needs.

C. Institutional and Legal Framework for Bank Intermediation

49. **The institutional framework has been strengthened significantly since the last FSAP but further work is ongoing to finalize the needed changes.** The majority of changes to the institutional framework of the financial market are related to harmonization of the financial system legislation with the EU acquis communautaire. A number of Acts have already been passed, several legislative work ongoing, including the Credit Institutions Act, and are planned to be implemented.

50. **Slow resolution of claims still underlie the problem of slow recovery of collateral and calls for improvement in the legal system.** Slow collateral recovery constrains the expansion of long-term corporate lending, with average recovery taking about three years. It also results in banks requiring somewhat unusual types of (multiple) collateral (including guarantors), as well as life and hazard insurance for particular types of loans, or in banks' insuring credit risk through insurance companies. In general, Croatia compares unfavorably with other eastern European countries with respect to investor protection and enforcement of contracts (World Bank "Doing Business Report for 2008").

51. **Progress has been made since 2002 in the area of land registry and cadastral reform, but further work is needed.** Land registry was subject to long delays, with practical difficulties in registration and enforcement of pledges over movable property. The delays encouraged banks to take on additional collateral, undermining the scope for financial intermediation and increasing its cost. Land records can now be accessed through the Internet. Nevertheless, the data in the cadastre book and land registry apparently continue to diverge in some cases. The completion of the project would help banks verify cadastre or land register data on the land and real estate and facilitate loan granting procedures.

Appendix I. Main Recommendations of the FSAP Update

MEASURES	TIMING	PRIORITY	STATUS
Financial sector stability			
• Carefully plan the transition from administrative measures, with the objective of eliminating negative side effects while maintaining financial stability	ST	High	Discussions ongoing
• Continue to monitor closely and frequently banks' risk management practices and lending standards and take appropriate measures to address emerging risks	ST	High	Ongoing
• Strengthen stress testing analyses and regularly use in monitoring risks and assessing financial stability	ST	High/Med	Ongoing
• Reduce fiscal and other incentives to the extent they stimulate particular types of bank loans	MT	High	Pending
• Continue efforts to raise risk awareness of banks, borrowers, and stock market investors	MT	High	Ongoing
• Expand the coverage of the credit registry to include non-banking institutions	MT	High/Med	Pending
Contingency planning			
• Establish formal communications with monetary and supervisory authorities of the parent banks on issues of crisis management	ST	High	Initiated; waiting for response
• Adopt the law on deposit insurance consistent with the EU framework and design of an effective bank resolution mechanism, with clarity as to the legal framework and roles and responsibilities of all the parties involved in bank resolution and restructuring process	MT	High	Ongoing; discussions took place to clarify the roles
Liquidity and risk management			
• Broaden the range of eligible collateral for interbank securitized lending to help reduce segmentation in the interbank money market	MT	High	Pending
• Develop hedging markets/instruments to facilitate management of interest and FX risks	MT	High	Pending
Nonbank financial sector and cross-sector risks			
• Build comprehensive data and monitoring processes (investor composition, trading trends and composition, automated early warning system for suspicious trades), and map ownership structures of conglomerates, and clarify the roles for their supervision	ST	High/Med	Initiated, efforts ongoing
• Improve regulatory capacity to monitor and enforce financial accounting standards and market disclosure	ST	Medium	Pending
• Increase pension funds' permissible investments in foreign securities	MT	Medium	Pending
• Pursue plans to increase the level of contribution and further privatize the pension fund system	MT	Medium	Pending
• Enhance supervisory capacity to migrate to Solvency II risk based standards for insurance companies	MT	Medium	Pending

Appendix II. Progress in Implementation of the 2002 FSAP Recommendations

Subject	2002 Recommended Actions	Implementation of 2002 Recommendations
BCP Assessment		
Objectives, autonomy, powers, and resources (CP 1)	The broad objectives of the CNB regarding supervision of banks to ensure a sound and safe banking system should be explicitly emphasized. In order to minimize the conflict of interests, the supervisory responsibility should ideally be explicitly transferred to the Supervision Division, which should be given autonomy within the CNB. This Division should be provided with its own budget and the necessary human resources. Information sharing with other supervisory authorities, both domestic and foreign, should be established on a regular basis.	Partially addressed. The responsibilities and objectives of the CNB regarding supervision of banks are clearly stated in the Law on CNB and the Banking Law. The Supervision Department is not an autonomous unit. Supervision is independent from outside influence, but consideration could be given to removing the responsibility for the monitoring of non-prudential matters from bank supervision. The CNB is still not protected in law against law suits for supervisory actions undertaken in good faith. Bank supervisors share information with home supervisors of foreign owned banks and with the nonbank supervisory authority, HANFA.
Licensing and structure (CPs 2-5)	The organizational structure of the CNB should be broadened by establishing a new department for licensing and enforcement. There should be some ongoing mechanism to evaluate the changes in ownership on an ongoing basis after the licensing process has been finished to ensure that the conditions for granting a license are still valid.	Addressed. The *Licensing and Market Competition Department* has responsibility for processing applications for establishing banks and building societies. The Banking Law also provides a transfer of significant ownership regime that is broadly in line with international standards.
Prudential regulations and requirements (CPs 6–15)	The calculation of the capital adequacy should include market risks and other risks. The developing of procedures and the issuing of regulations on measuring market risk should be given priority. Currently, the exposure to country risk is of limited importance, but the CNB should give appropriate instructions to banks.	Addressed. Additional risks included in CAR calculation as of January 2004—banks growing by more than 15 percent per year are required to form additional reserves; capital charges for market risk were introduced in 2004; guidelines were issued for banks' managing risks related to FX and household loans; risks weights were increased for unhedged FX lending to address indirect FX risks; the CNB has assessed country risk to be negligible since Croatian banks are not very active abroad.
Methods of ongoing supervision (CPs 16–20)	The supervision on a consolidated basis should be established to ensure sound banking practices. The delegation of on-site examination to external auditors should be limited. In these cases it should be clear that the external auditors will have the appropriate skills and will also have to bear some financial responsibility	Addressed. Consolidated supervision introduced in mid-2003. The CNB has the right to reject an external report and require that the audit be performed again by another firm.

Subject	2002 Recommended Actions	Implementation of 2002 Recommendations
	and that their liability insurance be adjusted. The draft *Banking Law* should also include some provisions where the CNB is allowed to reject external auditors (based on, for instance, qualifications, dependence on income, and conflict of interests).	
Information requirement (CP 21)	Following the international developments in the discussions about public disclosure, considerations should be given to publish half-yearly financial statements.	Addressed. The CNB publishes information on the aggregate situation of the banking industry on its website, in its Bulletin, and in its Annual Report.
Cross-border banking (CPs 23–25)	The importance of international cooperation among supervisors is significant due to the strong foreign influence in the Croatian banking sector and should be given priority.	Largely addressed. Home-host supervisory coordination has been strengthened. MoUs with Bosnia & Herzegovina, Austria, Italy, and Hungary and with HANFA signed and published. MoUs with France and Germany are being prepared. More emphasis is warranted on cross border coordination for crisis preparedness and management.
IOSCO Assessment		
Principles relating to the regulator, (CPs 1–5)	Define objectives of securities regulation clearly. Provide sufficient resources to the Croatian Securities Commission (CROSEC). Publish the CROSEC's interpretations of the laws.	Substantially addressed. The objectives of HANFA's regulatory and supervisory oversight are clearly stated. Adequate resources have been dedicated to HANFA for nonbank financial sector (NBFS) supervision. Interpretations of law are published. Drafts of secondary legislation should be published on HANFA website.
Principles of self-regulation (CPs 6–7)	Consider delegating the authority to set listing requirements to SROs. Utilize stock exchange systems as an effective venue for timely disclosures.	N/A – no change. SROs have not been established. Stock exchange systems have been in the process of upgrade.
Principles for the enforcement of securities regulation (CPs 8–10)	Clarify and strengthen the authority of the CROSEC. Ensure that the draft *Securities Law* grants the CROSEC legal authority to take corrective measures.	No change. Authority of HANFA is clearer than that of its predecessor. Enforcement powers still require substantial strengthening.
Principles for cooperation in regulation (CPs 11–13)	Enhance information sharing mechanisms with other regulators. Address ambiguity surrounding bank secrecy requirements.	Addressed. MoUs w/ HANFA and CNB, Croatian Competition Agency, signed Protocol on Cooperation and Formation of an inter-institutional Working Group for Anti-Money Laundering. HANFA signed an MoU with Hungary (in August 2007) and started negotiations with Austria and Germany. Clarified bank secrecy laws.
Principles for issuers (CPs 14–16)	Consider excluding commercial papers from the definition of securities. Extend disclosure requirements to: (a) supplementary documents prepared in	Substantially addressed. Information requirements are stated in HANFA regulations, most of which are aligned with EU regulation on the same.

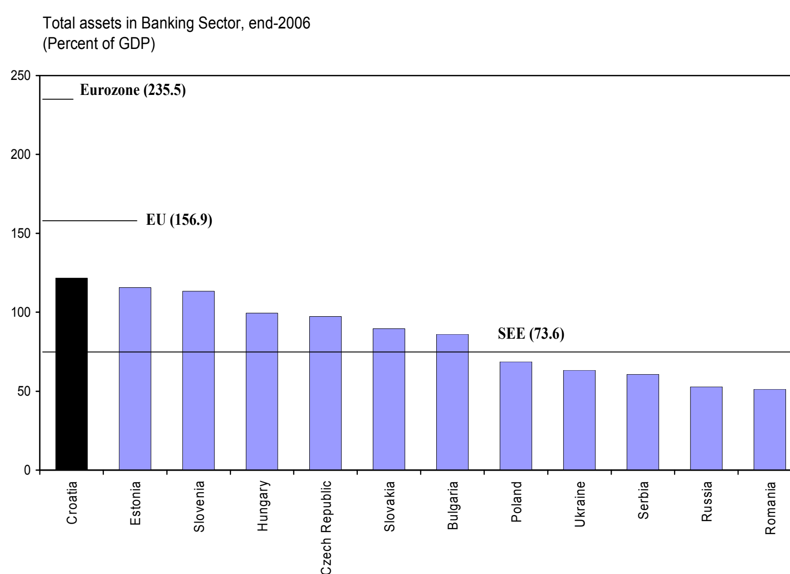
Subject	2002 Recommended Actions	Implementation of 2002 Recommendations
	offering; (b) information about those holding a material stake in a listed company; and (c) timely reports. Ensure that information on major shareholders of companies, especially those of listed companies, is disclosed within a shorter period of time.	However, the parallel or non-official market quoted on the Zagreb Stock Exchange (ZSE) is subject to less stringent requirements.
Principles for collective investment schemes (CPs 17–20)	Make certain that separate assets of an open-end fund will not be subject to claims against the investment company in the case of bankruptcy of the investment company. Require an arms-length relationship between an investment company and a depository bank. Regarding banning transactions with related parties, incorporate a clearer definition of related parties.	All Principles are implemented. All investment fund assets and activities conducted by the depository bank are required to be segregated from other bank and management company assets. [Status of claims against a company in case of bankruptcy not indicated nor is any change in the definition of a related party.]
Principles for market intermediaries (CPs 21–24)	Reconsider whether banks should be allowed to engage in securities business through its in-house department. Ensure that a proper internal control system is in place within a market intermediary.	Partially addressed. Rules for banks conducting securities business have been clarified and require segregation of activities. The law on the Securities Market requires certain controls. There are no ongoing capital requirements yet. There are no settlement and compensation schemes in case of failure.
Principles for the secondary market (CPs 25–30)	Transfer the majority ownership of the Croatian Central Depositoy Agency Inc (SDA) to the private sector, especially market participants.	Not addressed. SDA remains government owned, and HANFA should substantially upgrade its oversight activities of SDA.
IAIS Assessment		
Organization of an insurance supervisor (CP1)	As soon as possible, resources of supervisory authority should be reviewed and capacity strengthened. The single most pressing need of the Croatian supervisory office is the financial capacity to employ a skilled and experienced actuary.	Addressed. With HANFA established, resources have been substantially enhanced. Four actuaries have been employed.
Licensing and changes in control (CPs 2–3)	In medium term, consider adoption of EU rules for changes in control.	Addressed. Rules for changes in control have been adopted.
Corporate governance (CP4)	At next review of legislation, introduce features of modern corporate governance for insurance companies.	Addressed. The new Insurance Act specifies the responsibilities of the Board of Directors.
Internal controls (CP5)	Inspection process should include a review of internal controls on a regular basis. At next review of legislation ensure that necessary powers are obtained.	Partially addressed. Still outstanding to ensure independence of internal audit and the actuarial functions; clearly specify in the risk management regulation the risks that should be addressed, measured and managed by the insurer.
Prudential rules	Solvency margin should be brought into	Substantially addressed.

Subject	2002 Recommended Actions	Implementation of 2002 Recommendations
(CPs 6–10)	line with EU requirements. Supervision of reinsurance practices of companies should be started immediately and there should be requirements for regular reporting by companies and for review of transactions during on-site inspections. Composite insurance companies should be required to transfer life company business to a new company for that sole purpose. Splitting a composite is not a quick business and a time frame of two years should be allowed for compliance.	Solvency margin is now in line with EU requirements. HANFA has more specialized staff and resources to conduct a variety of onsite and offsite activities. However, a comprehensive process of risk evaluation by HANFA should be established, including risks underwritten, the reliability of the reinsurance cover, and policies. For newly established companies, life and nonlife are licensed separately. Existing composites must separate financial accounts between life and nonlife.
Market Conduct (CP 11)	At next review of legislation, powers of supervisor to require establishment of policies for fair treatment of consumers should be established.	Addressed. Regulation requires the disclosure of consumer information before and after completing the insurance contract. Consumers may send complaints to HANFA. However, public disclosures should be more comprehensive.
Monitoring, Inspection and Sanctions (CPs 12–14)	On-site inspections should be more frequent and should be risk-based. Changes can be introduced as soon as supervisors have adequate resources. Legislation could later be amended to mandate a minimum frequency.	Addressed. HANFA has the authority to conduct a variety of onsite inspections, planned or triggered by offsite reporting. However, it still lacks adequate enforcement authority.
Cross-border Business Operations (CP 15)		
Coordination and Cooperation, and Confidentiality (CPs 16–17)	In the medium term, review to ensure that supervisor has authority to execute MoUs with other supervisors.	Addressed. HANFA now has the authority to cooperate and share information with domestic and foreign authorities on an MoU basis and on an informal basis provided that confidentiality rules are observed.

APPENDIX III: THE CROATIAN FINANCIAL SYSTEM STRUCTURE

52. **The Croatian financial system has grown rapidly in recent years, and became one of the largest in the region** (Figure 7), but remains dominated by commercial banks (Table 6). As of end-2007, banking sector assets accounted for 125 percent of GDP or 74 percent of the total financial sector assets. The sector is over 90 percent foreign-owned (all subsidiaries), with a strong presence of large Austrian and Italian banking groups (Table 7). It is highly concentrated, with the five largest banks accounting for 72 percent of the total banking system's assets as of mid-2007.

Figure 7. Europe: Comparative Sizes of the Banking Sector



53. **Although NBFIs remain small relative to the banking sector, these institutions have grown rapidly since 2002**. Total assets of NBFIs have increased by over 20 percentage points of GDP since 2003 to 44 percent of GDP in end-2007. Leasing companies comprise the second largest group of financial intermediaries, with their rapid growth partly reflecting tighter requirements imposed on banks in an attempt to contain rapid credit expansion. The insurance sector also grew rapidly, partly stimulated by strong bank credit, as banks require various forms of collateral, including life or hazard insurance, and banks insure part of the credit risk by transferring it to insurance companies. The private pension fund sector began operations in 2002 and is growing rapidly.

54. **There are important interlinkages between banks and NBFIs**. Some of the non-bank financial institutions are direct subsidiaries of foreign parent banks while others are owned by the local banks. The larger banks generally have cross-sector subsidiaries or affiliates, including brokerage firms, pension funds, leasing companies, and asset management companies. There are important intra-group linkages in terms of ownership and activity (e.g., with bank mortgage loan borrowers required to provide collateral in the form of life and hazard insurance, and banks insuring their credit risks). While the exposure of banks

Table 6. Croatia: Structure of the Financial Sector, 2003–07 1/

	Dec-03			Dec-04			Dec-05			Dec-06			Dec-07		
	Number	Assets (m kuna)	Percent of GDP	Number	Assets (m kuna)	Percent of GDP	Number	Assets (m kuna)	Percent of GDP	Number	Assets (m kuna)	Percent of GDP	Number	Assets (m kuna)	Percent of GDP
Commercial banks 2/	41	204,037	102.8	37	229,305	106.7	34	260,278	112.5	33	304,609	121.6	33	344,998	125.4
Private	39	197,237	99.4	35	222,259	103.4	32	251,514	108.7	31	291,788	116.4	31	328,835	119.5
Domestic	20	11,435	5.8	20	12,928	6.0	18	13,832	6.0	16	15,192	6.1	15	16,931	6.2
Foreign	19	185,803	93.6	15	209,330	97.4	14	237,682	102.7	15	276,596	110.4	16	311,904	113.4
State-owned	2	6,800	3.4	2	7,047	3.3	2	8,764	3.8	2	12,821	5.1	2	16,163	5.9
Nonbank financial institutions															
Insurance companies 3/	25	12,689	6.4	26	14,407	6.7	25	16,563	7.2	24	19,663	7.8	24	21,850	7.9
Open investment funds	37	2,942	1.5	41	4,528	2.1	56	8,834	3.8	72	16,039	6.4	103	30,056	10.9
money based	11	1,803	0.9	12	2,881	1.3	13	4,660	2.0	15	4,275	1.7	15	4,140	1.5
equity based	6	105	0.1	8	216	0.1	13	711	0.3	15	4,311	1.7	36	14,181	5.2
bond based	11	612	0.3	10	667	0.3	15	1,451	0.6	14	1,139	0.5	14	674	0.2
composite	9	422	0.2	11	764	0.4	15	2,012	0.9	18	5,995	2.4	21	10,022	3.6
privately offered investment funds										9	320	0.1	16	1,039	0.4
Closed investment fonds	4	977	0.5	5	1,120	0.5	7	3,648	1.6	8	5,431	2.2	10	7,706	2.8
Pension funds - compulsory	4	4,677	2.4	4	7,913	3.7	4	11,714	5.1	4	15,919	6.4	4	21,002	7.6
Pension funds - voluntary	4	30	0.0	8	97	0.0	13	228	0.1	16	458	0.2	18	812	0.3
Leasing societies 3/	35	12,606	6.4	37	16,493	7.7	36	20,404	8.8	58	26,969	10.8	66	30,771	11.2
Building societies 1/	4	3,520	1.8	4	5,351	2.5	4	6,138	2.7	5	6,363	2.5	5	6,543	2.4
Savings/credit unions 3/	109	1,387	0.7	111	1,503	0.7	109	1,653	0.7	109	1,997	0.8	109	2,065	0.8
Total financial system		242,864	122.4		280,717	130.6		329,460	142.4		397,768	158.7		465,804	169.3
Memorandum item:															
GDP		198,422			214,983			231,349			250,590			275,078	

Sources: CNB (banks and building societies), Ministry of Finance (savings/credit unions), Central Bureau of Statistics (GDP), and Croatian financial services supervisory agency (other data).
1/ End-2007 data are preliminary.
2/ Supervisory data (figures may slightly differ from the monetary statistics).
3/ Preliminary Q3 2007 data.

Table 7. Croatia: Ratings of the Largest Banks, 2007

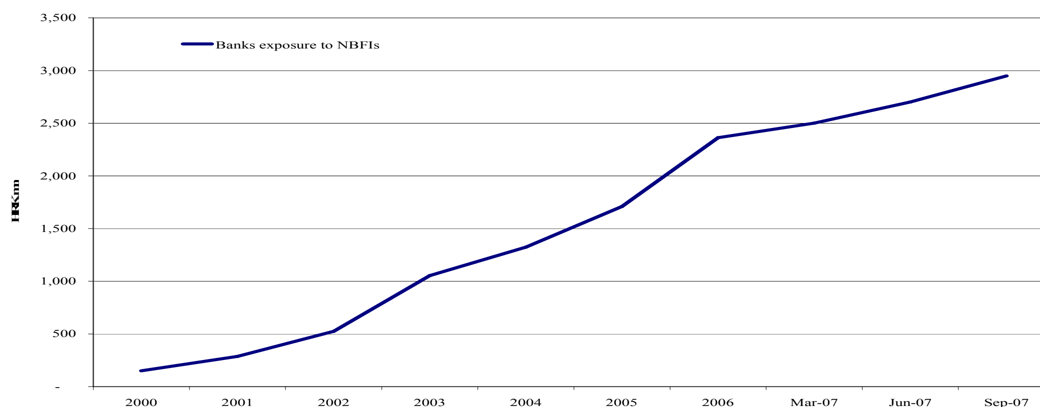
Croatian Bank		Parent Bank			
Name	Share in Banking System Assets	Name	Origin	Fitch Rating	Stake
ZAGREBAČKA BANKA d.d.	23.1	UniCredito Italiano S.p.A.	Italian/German	A+	81.9
PRIVREDNA BANKA ZAGREB d.d.	17.3	Intesa Bci Holding International, SA	Italian	AA-	76.3
ERSTE & STEIERMÄRKISCHE BANK d.d.	12.5	Erste Bank der Osterreichischen	Austrian	A	51.4
RAIFFEISENBANK AUSTRIA d.d.	10.4	Raiffeisen International Beteligungs, AG	Austrian		75.0
SOCIÉTÉ GÉNÉRALE-SPLITSKA BANKA (	7.7	Societe General	French	AA-	99.8
HYPO ALPE-ADRIA-BANK d.d.	7.5	Hypo Alpe-Adria-Bank AG	Austrian/German		100.0
OTP BANKA HRVATSKA d.d.	3.3	OTP Bank RT	Hungarian		100.0
SLAVONSKA BANKA d.d.	2.9	Hypo Alpe-Adria-Bank International AG	Austrian/German		97.2
Total	84.6				

Source: CNB and Fitch.

to NBFIs has grown at a phenomenal rate (Figure 8), the full scope of cross-ownership and links within the financial sector is not fully known.

55. **Financial markets are relatively undeveloped.** The interbank money market is shallow and segmented, with the market unable to recycle liquidity efficiently across banks. Only 20 percent of all transactions take place in the market with the remaining bilaterally. The FX market is more active and less volatile. Daily turnover has increased more than four-fold since 2003 to an average of €500 million in 2007. Although spot transactions have traditionally represented the bulk of FX transactions, the volume of FX swaps has increased recently, with the share rising to 60 percent of total transactions in 2007. The weaknesses and absence of longer tenor quotations in the money market along with exchange rate stability, hinder the development of longer term hedging markets for managing interest and exchange rate risks. Capital markets have recently boomed, with market capitalization one of the highest in the region (133 percent of GDP). However, the market continues to lack depth and liquidity and is dominated by equities; the overall size of the bond market remains small (15 percent of GDP).

Figure 8. Croatia: Exposure of Banks to NBFIs



Source: CNB.

APPENDIX IV. STRESS TESTS: OVERVIEW OF THE SHOCKS AND RESULTS[24]

56. **The FSAP team conducted a set of stress tests jointly with the CNB, to analyze the extent of the risks and the resilience of the banking sector to a range of shocks.** The tests included single factor sensitivity tests and macro-scenarios. They were designed and performed at the aggregate, peer group, and individual bank levels. The scenarios simulated exceptional but plausible shocks, taking into account historical experience. The single factor shocks considered both direct and indirect credit risk induced by FX and interest rate exposure, and exchange rate, liquidity, and interest rate risks.[25] Three scenarios were also considered, including a slowdown or a reversal in capital inflows that result in a fall in net inflows, an economic slowdown in the euro area with a spill over to Croatia, and higher global interest rates. The shocks were calibrated using a combination of econometric analysis and coefficients drawn from similar studies to make up for data limitations. In the absence of a macro-model to simulate feedback effects stress tests assumed immediate impact.

57. **Although the results suggest that Croatia's banking system is sufficiently capitalized to withstand a wide range of shocks, there are pockets of vulnerability**. The most significant risk for banks is captured by the combined impact of a decline in capital inflows that results in a significant currency depreciation and high interest rates. Under this scenario, given the significant unhedged FX and interest rate exposure of borrowers, the aggregate CAR would fall below the 10 percent minimum, reflecting shortfalls of 21 banks with 55 percent market share for assets; five banks would become insolvent (Table 8). Both the slowdown in the euro area and an increase in global interest rates would have a big impact on the banking system in terms of reduction in capital, but the aggregated CAR in both cases remains above the 10 percent minimum, with no insolvencies.[26] Liquidity risk also appears to be substantial: an outflow of 20 percent of liabilities with maturity up to 3 months would push the liquid asset ratios of the system from about 16 to 11 percent (Table 9).

58. **Stress tests conducted for contagion risk also suggest significant vulnerabilities**. Contagion risk within the domestic banking system (i.e., the impact of a default by one bank

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[24] The tests focused on all 33 commercial banks, comprising 75 percent of the financial system and excluded saving banks (2 percent of the system) and NBFIs which do not yet pose systemic risks.

[25] While banks are exposed to the real estate market through mortgage lending or lending for commercial properties, no stress testing for real estate risk has been performed during the mission, since this risk has not been identified by the staff as one of the most important risks, with potential risks mitigated by the multiple collateral requirements and the dominance of first home buyers. The tests also did not cover some other (trading book) market risks (e.g., changes in other currency yield curves, shocks to volatilities, credit spreads, etc) that were viewed not to be material in Croatia.

[26] Sensitivity to direct interest rate and exchange rate risks is negligible given the limited foreign currency mismatch in bank balance sheets and the high ratio of floating rate loans. Direct exposure to equity risk is also very small, despite the valuation concerns, since banks have little direct exposure to equities (less than one percent for most banks, with only one bank reporting 4 percent). Indirect exposure to equity risk could be more significant if borrowers took loans to buy stocks, but data was not available to test such exposure. The team was informed that such practice, while observed recently, has not been very common.

Table 8. Croatia: Multivariate Stress Testing

(In percent, unless noted otherwise)

	Aggregated CAR							Distribution of banks' CAR below 10 percent					
	Total	Subgroups by size[1]			Subgroups by ownership[2]			by number			by share in total assets		
		L	M	S	FO	DO	SO	< 4	4-8	8-10	< 4	4-8	8-10
Actual	**15.5**	**15.5**	**15.8**	**15.7**	**15.7**	**16.1**	**12.5**	**0**	**0**	**0**	**0.0**	**0.0**	**0.0**
Sensitivity stress tests													
Direct credit risk													
Increase of NPLs in NPLR by 50%	14.5	14.5	14.6	13.8	15.5	14.6	11.5	0	0	4	0.0	0.0	2.0
Increase of NPLs in NPLR by 100%	13.3	13.5	13.4	11.8	15.3	13.1	10.4	0	4	5	0.0	2.3	14.9
Increase of NPLs in NPLR by 200%	11.0	11.3	10.8	7.5	15.0	9.8	8.2	5	6	6	2.7	15.4	25.2
Foreign exchange induced credit risk[3]													
Depreciation of the Croatian Kuna by 5% (NPLR: 46%)	14.9	14.9	15.1	14.6	15.6	15.4	12.1	0	0	1	0.0	0.0	0.8
Depreciation of the Croatian Kuna by 10% (NPLR: 93%)	14.3	14.3	14.5	13.6	15.5	14.7	11.7	0	0	6	0.0	0.0	13.2
Depreciation of the Croatian Kuna by 30% (NPLR: 278%)	11.6	11.8	11.7	9.0	15.2	11.7	10.1	3	7	5	2.0	23.3	13.3
Interest rate induced credit risk[3]													
Increase of Kuna interest rates by 200bp (NPLR:142%)	14.4	14.5	14.1	13.1	15.4	13.8	10.5	0	2	4	0.0	1.1	1.9
Increase of Kuna interest rates by 300bp (NPLR:205%)	13.9	14.1	13.4	11.9	15.3	12.7	9.6	0	4	4	0.0	1.7	4.6
Increase of Kuna interest rates by 500bp (NPLR:316%)	12.9	13.3	12.0	9.6	15.2	10.7	8.0	3	5	4	1.4	4.8	8.3
Increase of Euro interest rates by 50bp (NPLR:35%)	15.1	15.0	15.3	14.9	15.6	15.6	12.3	0	0	1	0.0	0.0	0.3
Increase of Euro interest rates by 100bp (NPLR:69%)	14.6	14.6	14.9	14.1	15.5	15.0	12.0	0	0	3	0.0	0.0	1.6
Increase of Euro interest rates by 200bp (NPLR:132%)	13.7	13.8	14.0	12.6	15.4	14.0	11.5	0	2	6	0.0	1.3	15.6
Foreign exchange rate risk													
Depreciation of the Croatian Kuna by 10%	15.6	15.5	15.8	15.7	15.7	16.1	12.6	0	0	0	0.0	0.0	0.0
Appreciation of the Croatian Kuna by 10%	15.5	15.5	15.8	15.7	15.6	16.1	12.5	0	0	0	0.0	0.0	0.0
Interest rate risk													
Increase of Kuna interest rates by 300bp	15.0	15.0	15.0	14.8	15.1	15.2	11.2	0	0	1	0.0	0.0	0.3
Decrease of Kuna interest rates by 300bp	16.2	16.1	16.8	16.7	16.3	17.2	14.2	0	0	1	0.0	0.0	0.3
Increase of Euro interest rates by 200bp	15.5	15.6	15.3	15.1	15.6	15.6	11.8	0	0	1	0.0	0.0	0.3
Decrease of Euro interest rates by 200bp	15.6	15.4	16.3	16.3	15.7	16.7	13.4	0	0	2	0.0	0.0	8.3
Equity Price Risk													
Decrease of Equity prices by 50%	15.4	15.4	15.6	15.3	15.5	15.7	12.1	0	0	1	0.0	0.0	0.3
Macro stress tests													
Macro 1: Euro area slowdown[4]	12.5	12.8	12.0	10.1	14.9	11.4	8.5	0	8	6	0.0	9.3	25.1
Macro 2: Slowdown or reversal in capital inflow[5]	9.1	9.7	7.9	3.6	14.3	7.0	5.3	11	6	4	18.1	24.8	12.1
Macro 3: Global interest rate increase[6]	11.8	12.2	10.9	8.1	14.8	9.9	7.4	5	7	3	2.6	12.1	12.7

1/ Sub-groups by size are large banks (L) with share in total assets above 5 percent, medium sized banks (M) with share in total assets between 1 and 5 percent, and small banks (S) with share in assets below 1 percent.

2/ Sub groups by ownership are foreign owned banks (FO), domestic privately owned banks (DO), and state owned banks (SO).

3/ In brackets the increase in the ratio of NPLS to total loans to households and corporates (NPLR) that is implied by the respective increase of the foreign exchange rate or the interest rate is indicated.

4/ Assumes a depreciation of the Croatian Kuna by 10 percent, an increase of Kuna rates by 200 basis points, a decrease of Euro interest rates by 50 basis points, an additional increase of NPLs by 30 percent and an implied overall increase of NPLR by 118 percent.

5/ Assumes a depreciation of the Croatian Kuna by 30 percent, an increase of kuna interest rates by 300 basis points and an implied overall increase of NPLR by 251 percent.

6/ Assumes an increase of Kuna interest rates by 200 basis points, an increase of Euro interest rates by 200 basis points, an additional increase of NPLR by 10 percent and implied overall increase of NPLR by 146 percent.

on the other banks in the system) is negligible, given the very limited interbank exposures among the banks in the system. However, contagion from troubles of a parent bank or a reassessment of risk facing a Croatian subsidiary by its parent bank could have a more substantial impact on Croatia's banking system due to the dependence on parent companies

Table 9. Croatia: Results of Stress Tests for Liquidity Ratios

(In percent, unless noted otherwise)

	Aggregated Liqidity Ratios							Distribution of individual banks' Liquidity Ratios					
	Total	Subgroups by size[1]			Subgroups by ownership[2]			by number			by share in total assets		
		L	M	S	FO	DO	SO	< 10	10-20	> 20	< 10	10-20	> 20
Actual LQR (liquid over total assets)	**16.2**	**16.1**	**17.8**	**13.9**	**16.4**	**12.8**	**14.1**	**2**	**28**	**3**	**0.7**	**88.2**	**11.1**
Withdrawal of 10% of liabilities with maturity up to 1 month	14.7	14.6	16.3	13.0	14.9	11.8	12.1	4	27	2	0.8	96.0	3.2
Withdrawal of 20% of liabilities with maturity up to 1 month	14.7	14.6	16.3	13.0	14.9	11.8	12.1	4	27	2	0.8	96.0	3.2
Withdrawal of 35% of liabilities with maturity up to 1 month	10.6	10.3	12.5	10.9	10.9	9.3	6.6	13	18	2	61.9	34.9	3.2
Withdrawal of 10% of liabilities with maturity up to 3 month	13.7	13.6	15.5	12.0	14.0	10.6	11.3	7	24	2	1.9	94.9	3.2
Withdrawal of 20% of liabilities with maturity up to 3 month	11.1	10.9	13.1	10.0	11.4	8.4	8.2	18	13	2	36.3	60.5	3.2
Withdrawal of 35% of liabilities with maturity up to 3 month	6.8	6.4	9.3	6.8	7.1	4.7	3.3	26	6	1	78.4	21.4	0.2
								< 0	0-50	> 50	< 0	0-50	> 50
Actual 1-month LLR (liquid assets to liquid liability ratio)	**46.3**	**39.4**	**61.4**	**138.6**	**43.5**	**127.3**	**49.7**	**0**	**6**	**27**	**0.0**	**66.2**	**33.8**
Withdrawal of 10% of liabilities with maturity up to 1 month	40.4	32.7	57.2	142.9	37.2	130.3	44.1	0	7	26	0.0	69.5	30.5
Withdrawal of 20% of liabilities with maturity up to 1 month	32.9	24.3	51.8	148.2	29.4	134.1	37.2	0	7	26	0.0	69.5	30.5
Withdrawal of 35% of liabilities with maturity up to 1 month	17.4	6.8	40.7	159.4	13.1	141.9	22.7	3	5	25	36.6	44.7	18.7
Actual 3-month LLR (liquid assets to liquid liability ratio)	**42.1**	**24.6**	**39.9**	**61.7**	**26.9**	**58.6**	**35.8**	**0**	**18**	**15**	**0.0**	**92.0**	**8.0**
Withdrawal of 10% of liabilities with maturity up to 3 month	35.7	16.3	33.2	57.4	18.8	54.0	28.7	0	21	12	0.0	92.9	7.1
Withdrawal of 20% of liabilities with maturity up to 3 month	27.6	5.8	24.8	52.1	8.6	48.2	19.7	2	20	11	25.6	67.6	6.8
Withdrawal of 35% of liabilities with maturity up to 3 month	10.9	-15.9	7.5	41.1	-12.5	36.3	1.2	10	14	9	69.8	24.2	5.9

1 [1] Sub-groups by size are large banks (L, 6 banks) with share in total assets above 5 percent, medium sized banks (M, 4 banks) with share in total assets between 1 and 5 percent, and small banks (S, 23 banks) with share in assets below 1 percent.

2 [2] Sub groups by ownership are foreign owned banks (FO, 16 banks), domestic privately owned banks (DO, 15 banks), and state owned banks (SO, 2 banks).

for deposits and capital, and to the systemic impact of the banks in the Croatian banking system. A withdrawal of 100 percent of deposits by parent banks would result in negative liquid-assets-to-liquid-liability ratios for four foreign-owned banks with a 25 percent share in total assets. When more long-term funding (including loans and hybrid instruments) are withdrawn, most large foreign-owned banks with over 50 percent market share would show negative liquid-assets-to-liquid-liability ratios.

59. **The stress tests also indicate that the aggregate figures mask a high degree of heterogeneity in the impact of the shocks among various banks and sub-groups of banks**. In particular, smaller banks and state-owned banks exhibit greater vulnerability to direct and indirect credit risk, while foreign-owned banks, including some of the systemically important ones, exhibit greater vulnerability to liquidity and contagion risk from the parents.

60. **Going forward, there is need to:**

- **Strengthen stress testing analyses at the CNB.** This calls for (i) integration of scenario analyses in the CNB stress testing exercises; (ii) integration of cross-sector and cross-border analyses; (iii) compilation of data series to facilitate quantitative assessment of exposures, including bankruptcy rates and leverage ratios for households and corporates; and more detailed information on distribution of assets by repricing and remaining maturities to facilitate interest rate and liquidity risk analysis.
- **Make scenario analyses more macro-consistent**. The core macroeconomic structural model the CNB is currently developing could be used to test the sensitivity of various financial and macroeconomic variables to alternative shocks (e.g., to the exchange rate, interest rates, output, capital inflows in the form of bank borrowing, policy instruments, etc.). The results of such experiments could provide input for the macro scenarios used in stress testing.
- **Encourage stress testing among commercial banks.** The CNB should (i) encourage banks to integrate stress testing in their risk management practices, and (ii) request banks to undertake stress tests from time to time for risks that the CNB determines, and report to the CNB the results of their analysis. The results of such tests could then be compared with the CNB's own analyses.
- **Monitor developments in the smaller banks that exhibit vulnerabilities.** While small banks are of less material importance, they exhibit greater vulnerabilities that that could undermine confidence in the banking system, thereby need close attention.
- **Monitor a number of risks and bank practices.** These include: (i) degree to which banks may be undertaking riskier investments in the face of limits on credit growth and competition-induced margin compression, (ii) the extent to which all-purpose loans are invested in the stock market; and (iii) the extent to which insurance collateral actually transfers risks out of the banking groups. The outcome of such monitoring should be incorporated into stress testing and risk analyses and followed up with close onsite inspections of the banks involved.

ANNEX I: SUMMARY ASSESSMENT OF OBSERVANCE OF THE BASEL CORE PRINCIPLES FOR EFFECTIVE BANKING SUPERVISION

61. The assessment of observance of the *Basel Core Principles for Effective Banking Supervision* (BCP) was performed in accordance with the guidelines set out in the October 2006 Core Principles Methodology. The assessment was conducted in October/November 2007, in the context of the IMF-World Bank FSAP update. The assessment reflected the legal and regulatory framework together with the banking supervision practices of the Croatian authorities as of early November 2007. As requested by the Croatian authorities, the assessment covered observance of both the essential and the additional criteria. The assessment was undertaken by Joerg Genner (German Financial Supervisory Authority) and Peter Phelan (formerly Financial Services Authority of the UK).

Information and methodology used for assessment

62. **The BCP assessment was based on:** (i) review of laws, regulations, and other documentation on the supervisory framework and on the structure and development of the Croatian financial sector; and (ii) interviews with staff from the CNB and with the representatives of several individual banks and the banking association. The work of the mission was informed by a self-assessment conducted by the CNB in September 2007 in accordance with the 2006 Core Principle Methodology.

Institutional and macroeconomic setting and market structure—overview

63. **The Croatian financial sector is dominated by commercial banks**. At end June 2007, there were 33 banks and 5 housing savings banks, accounting for around 120 percent of GDP or 74 percent of the total financial sector assets. The 33 banks consist of 15 foreign owned, 16 domestic private banks and 2 state-owned banks. The banking system is highly concentrated, with the five largest banks accounting for 72 percent of the total banking system's assets. The foreign owned banks make up over 90 percent of the banking system assets and consist largely of Austrian and Italian owned banks. Due to the predominance of banking groups that have cross sector operations, the CNB closely coordinates the supervision of banks with the HANFA, the regulator for the NBFS.

64. **The CNB's Prudential Regulation and Bank Supervision Area is responsible for licensing and supervising the banking institutions**. This Area is further divided into five departments: (i) the *Licensing and Market Competition Department*, (ii) the *Prudential Regulation and Banking System Analysis Department*, (iii) the *Off-site Supervision Department*, (iv) the *On-Site Risk Management Supervision Department* and undertake the on-site examinations; and (v) the *Specialized On-site Supervision*.

65. **Overall, the CNB has most of the powers needed to address the challenges arising from the structure of the financial system.** The Banking Law (BL), introduced in 2002, strengthened the CNB's supervisory powers and resources. Supervision of conglomerates and cross border supervision is bolstered by the introduction of consolidated supervision and the signing of MoUs with almost all the home supervisors of Croatia's

banks. The HANFA's establishment and the inclusion of leasing companies under its purview would help reduce regulatory arbitrage. Nevertheless, the growing complexity of groups will require more focus on conglomerate supervision and associated risks. Conflicts of interest are a potentially serious problem in banks and other market intermediaries. The CNB is aware of the challenges but the extent to which group risks are systematically monitored by the CNB as the consolidated supervisor remains unclear.

Preconditions for effective banking supervision

66. **The preconditions for effective banking supervision are broadly in place, but some gaps remain.** Some elements of the macroeconomic environment add to the risks in the banking sector and there is a need to address a number of areas that affect the quality of banking supervision, including the information infrastructure (both accounting and auditing and credit registry); legal infrastructure; and corporate governance.

Main findings

67. **The CNB has made substantial progress toward establishing its bank supervision system at the level of international best practice.** The CNB operates a comprehensive and transparent system in exercising its exclusive right to grant banking licenses, to maintain observance of bank legislation and regulations, and to impose and enforce prudential rules. The supervisor has a comprehensive understanding of the market and the supervised institutions. Most issues raised in the previous BCP assessment in 2002 have been addressed.

Objectives, independence, powers, transparency, and cooperation, CP 1

68. **The responsibilities of the CNB as the only banking supervisor are established in law**. The laws also establish the CNB's powers to license, supervise, take remedial action against and revoke licenses of banks, and there is a clear and transparent decision-making process for such matters. The Central Bank is responsible to Parliament for its actions, and some details of supervisory activity are published in its Annual Report. The CNB's resources are sufficient for its responsibilities, and the Governor and other senior staff are appointed by Parliament for terms of six years, and can only be dismissed for cause. Arrangements are in place for exchanges of information with other supervisors, both at home and abroad, subject to the protection of confidentiality. Individual supervisors are protected from law suit when carrying out their work in good faith, but this does not extend to the CNB itself. Operational independence of the supervision department needs greater transparency (see CP 1.2, Table 10).

Licensing and structure, CPs 2–5

69. **Use of the term 'bank' and its derivatives is limited to licensed institutions**. A comprehensive set of criteria are established in law for the licensing of banks, together with any significant changes of ownership and major investments. These criteria include 'fit and proper' tests for shareholders and senior managers, as well as the strategy, business plans and internal controls of the organization.

Prudential regulations and requirements, CPs 6–17

70. **There is a generally satisfactory regime for the supervision of risks in the banks, covering all the major issues such as credit, market, liquidity, operational and interest rate risk**. The CAR regime is fully compliant with Basel I, but the CNB needs to check that the side effects of non-prudential measures do not reduce the sensitivity of CAR to risk. Determining the effectiveness of risk management and management oversight, and assessing the amount of risk an institution is exposed to is an integral part of the CNB's ongoing off- and on-site supervision. However, there is a need to further advance the forward-looking elements of the supervisory approach and qualitative risk assessment.

Abuse of financial services, CP 18

71. **Croatia's legal framework for dealing with the abuse of financial services covers all the basic elements that are needed.** There are rules for 'know-your- customer,' and a Financial Intelligence Unit has been established within the MoF to which transactions over a certain amount and all suspicious transactions are reported. The CNB monitors the effectiveness of these arrangements as part of its on-site work.

Methods of ongoing supervision, CPs 19–25

72. **The CNB performs both off-site analysis and on-site inspections as an integral part of its supervisory approach, and receives a comprehensive set of regulatory reports**. Effective measures to enhance the quality of supervisions have given the CNB sufficient understanding of the risk profiles of their banks to enable a shift away from full scope to more targeted examinations. The CNB has in place a process for rating the overall condition of the banks which informally drives the supervisory cycle. As mandated by the CNB, banks are required to produce financial statements audited to international standards, both on a solo and a consolidated basis. There is a full range of remedial actions available to the CNB in the event that a bank fails to comply with prudential requirements or its safety and soundness are threatened. Exchanges of information and cross-border cooperation with other relevant (home) supervisors have been established for ongoing supervision and are likely to intensify further. The supervisory approach could be further strengthened by enhanced consideration of group risks within banking groups and coordination with HANFA.

Table 10. Summary Compliance with the Basel Core Principles—ROSCs

Core Principle	Comments
1. Objectives, independence, powers, transparency, and cooperation	
1.1 Responsibilities and objectives	
1.2 Independence, accountability and transparency	The fact that the Governor's immediate subordinates (Deputy Governor and Vice-Governors) used to be appointed on Governor's recommendation could conceivably give him/her disproportionate influence on the management of the CNB, but there has been no evidence of this in practice. Moreover, the recent amendment to the LCNB has changed this procedure in that Deputy Governor and Vice Governors will no longer be appointed on the recommendation of the Governor but of the special Parliamentary Committee. The transparency of operational independence of the Supervision Department is affected by the monitoring of implementation of the credit measures in a unit within this Department. A section in the Annual Report on the activities of supervision (avoiding mention of confidential matters) could be helpful, as would a more pro-active attitude to the Press. This could be set in the context of explicit supervisory objectives enshrined in law. The current work to upgrade the laws still further provides an opportunity to achieve this.
1.3 Legal framework	For the avoidance of doubt, it would be best if there were an explicit cross-reference to the BL in Article 25 of the LCNB. Moreover, Article 5 of the BL states that no one unauthorized by the CNB shall engage in banking activities 'unless authorized by another law.' This leaves the door potentially open to confusion. The law should make it clear what other laws could be involved here (e.g., laws relating to housing banks, credit unions and savings associations) and make it explicit that no other laws relevant to banking activities can exist (which the mission assumes is in practice the case). (Note that the new Credit Institutions Act does not have a reference to "authorized by another law" in prescribing the provisioning of banking services but this Act is not yet Law and the review is based on the existing Law.)
1.4 Legal powers	
1.5 Legal protection	Adequate legal protection should be extended to the CNB.
1.6 Cooperation	
2. Permissible activities	
3. Licensing criteria	The CNB has not licensed a new bank for many years and thus staff lack practical experience. The transfer of the responsibility for monitoring the competitive situation in the industry elsewhere is welcome, since this is a matter for competition authorities, not bank supervisors. An explicitly more intensive supervisory regime in the early days of a new bank would be appropriate, including merged banks.
4. Transfer of significant ownership	The BL provides a transfer of significant ownership regime that is broadly in line with international standards. It enables the CNB to suspend the voting rights of shareholders that are likely to exercise an undue influence on a bank's management. However, significant ownership, as defined by the BL, does not explicitly comprise exertion of control and the BL does not stipulate a suitability test.
5. Major acquisitions	With regard to major acquisitions, laws and regulations are in line with international standards and provide the CNB with sufficient authority to deal with risks resulting from investments in other institutions both financial and non-financial.
6. Capital adequacy	The prudential CAR regime is fully acceptable both in its structure and the monitoring arrangements by the CNB, although banks should adopt a forward-looking approach to the management of capital adequacy. While it is not explicitly written in a law, banks are required to maintain the required CAR at all times (and will be required explicitly in the future according to the draft Credit Institutions Act).
7. Risk management process	The CNB is dedicated to be, and moving toward being, risk-focused in its supervision. While it continues to rely significantly on capital adequacy, compliance with rules, classification of risks, and risk mitigants, in moving toward risk-based supervision, the CNB is expected to further advance the forward-looking elements of the supervisory approach that consider the extent to which a bank's policies and procedures are leading to greater or lesser risk.

Core Principle	Comments
8. Credit risk	The assessment of credit risk and its management is a major, if not the most major, concern of the CNB while performing supervision. It would be desirable for the CNB to focus increasingly on enhancing the quality of banks' risk management for the risks they are taking, with a view to implementing fully a more forward looking approach. Therefore, it is recommended to put even more emphasis on the identification of weaknesses of individual bank's risk management, to assess the potential impact such weaknesses potentially have on an individual bank's risk profile, and to deal with supervisory concerns as regards risk management on a case-by- case, bank-by-bank basis.
9. Problem assets, provisions, and reserves	
10. Large exposure limits	The BL, broadly in line with international best practices, stipulates limits for large exposures and the management and reporting of such exposures. Determination of banks' compliance is subject to off-site analysis and on-site inspections. In order to further emphasize the potential risk resulting from large exposures, participation of all (executive) Board members or even an unanimous decision should be required.
11. Exposure to related parties	The BL provides a not entirely sufficient framework for the prevention of abuses and potential conflicts arising from exposures to related parties. Although CNB staff claimed the lack of an exertion of control concept is not material, to include it in the definition of 'persons in a special relationship with a bank' should provide the necessary legal certainty. Moreover, participation of all (executive) members of the board or even unanimous decisions should be necessary to enter into such exposures. Furthermore, there should be an explicit requirement that executive board members with a potential conflict of interest shall be excluded from the decision-making process.
12. Country and transfer risks	Taking into account the limited relevance of countries and transfer risks and Croatia, and the scrutiny they receive by the CNB's off-site analysis and on-site inspections, and lack of specific legal framework does not hamper the CNB's capacity to assess these risks and the quality of their risk management in a bank.
13. Market risks	Laws and regulations provide the CNB with sufficient powers to assess the market risks that banks are exposed to, and the quality and effectiveness of market risk management. The definition of the BL, which defines market risks as interest rate risk, FX risk, and other market risks, properly reflects the relative importance of these risks. Their overall significance in the Croatian market is currently limited.
14. Liquidity risk	The existing legal framework provides the CNB with the necessary power to assess funding risks banks are exposed to and to verify the efficiency of the banks liquidity (risk) management through off-site analysis and on-site inspections. However, CNB should closely monitor whether banks adopt their liquidity management policies and procedures to reflect changes to the structure of their funding. The lack of currency by currency reports is of minor relevance since those currencies (predominantly Euro, Swiss franc, U.S. dollar) are fully fungible, and foreign funding is provided by foreign parent banks. Furthermore, special minimum reserve requirements for foreign currencies provide an additional risk buffer.
15. Operational risk	The BL and secondary legislation provide the CNB with sufficient power to assess the quality of the banks' risk operational risk management which is predominantly done through on-site inspections.
16. Interest rate risk in the banking book	Despite the lack of a specific legal framework and supervisory guidance regarding the management of interest rate risk in the banking book, off-site analysis of information available through reporting and on-site examinations provides the CNB with sufficient information to monitor interest rate risk in the bank's books and the subject is covered during on-site examinations. In order to better assess the risks resulting from the rise in interest rates, however, banks and the CNB should regularly assess their potential effect both on the economic value and on their profits. This will be done following implementation of the new Credit Institutions Act.
17. Internal control and audit	The CNB review of internal audit work has found that in some smaller banks internal audit lacks the skills to audit information systems adequately and also that the work generally is more compliance than risk oriented.
18. Abuse of financial services	An assessment of the Croatian AML/CFT regime was conducted by MoneyVal in September 2006. The resulting report is scheduled to be adopted by MoneyVal in plenary in April 2008.

Core Principle	Comments
19. Supervisory approach	A basically sound approach could be further enhanced by more work on judging explicitly whether a bank's risk management is generally satisfactory or not, depending on the risks it is running, and doing more work on the forward assessments of risks as they develop. Business and concentration risks should be explicitly considered. The supervisory approach could also be strengthened by enhanced consideration of group risks within a banking group, which are likely to grow as non-banking activity in banking groups further develops. The cross-sector risk exposures and close ownership links call for further strengthening of coordination between the CNB and HANFA and clarifying the roles.
20. Supervisory techniques	The basic structure of day-to-day supervision is satisfactory, but there are a number of ways in which the current arrangements can be further improved. Matters worth considering are the following: (i) Ensuring that a full risk assessment is carried out on a regular basis. At the moment, while capital, asset quality, earnings, and liquidity (CAEL) is performed off-site on a quarterly basis, the other elements of capital adequacy, asset quality, management soundness, earnings, and profitability, liquidity, and sensitivity to market risk (CAMELS) are only looked at on-site when those particular elements are considered during a visit. Given the preponderance of focused visits, it is at least possible that a very long time could elapse between assessments of 'M' (an absolutely key risk element). If, for example, a bank is on a two-year inspection cycle and credit risk is looked at on one visit, and market risk on the next, no full risk assessment of management and internal controls could take place for at least six years. Only partial, informal reviews of management competence occur other than when a full internal controls inspection takes place. In this context, moreover, it should be remembered that CAMEL is a risk assessment scoring tool, not an identifier of specific risks. Moreover, it is backward-looking, and a full risk assessment should look forward to where the bank is going; (ii) The full integration of the risk assessment into the arrangements. The assessment of the elements of CAMELS, when done, appears rather informal, and it is not clear how it feeds into the risk-based approach. This appears more focused on specific risks that have been identified. There is nothing wrong in this, indeed rather the contrary, but, if a risk assessment tool is to be deployed, it should be used. The two obvious ways in which to use CAMELS (or any other such risk assessment tool) is to fix the frequency of on-site work (including how often either a full scope or an internal systems review is undertaken), and to act as a check on whether banks with a similar risk profile are being subjected to a similar intensity of supervision. In addition, a full CAMELS assessment should be carried out on a regular basis; (iii) Clarifying the duration of the supervisory cycle, i.e., the periods between full risk assessments, which should vary with risk; (iv) Holding prudential meetings (as defined in the Description above) with the boards of the bank (both supervisory and management) on a regular basis. How often these should take place is a function both of the risks in the institution and also of the extent to which changes might be taking place (new shareholders, management, products).
21. Supervisory reporting	It is important that the CNB supplements its analysis of past risks, as shown by the figures with some forward-looking assessment (e.g., by extrapolating current trends which may be leading to problems and/or stress testing the figures on a regular basis). Putting banks into comparable risk-based peer groups might also be worth considering.
22. Accounting and disclosure	The CNB should consider whether there would be value in holding trilateral meetings involving the bank, as well as the external auditor. Any issues arising from the external audit of returns, as well as the auditors' views on the bank's internal controls could be discussed at such a meeting. The CNB should deal appropriately with banks that missed the deadline for publishing 2006 Accounts if they have not already done so.
23. Corrective and remedial powers of supervisors	The CNB has all the powers that it needs to take action against banks in breach of regulations or suffering from problems. The full range is available from fines, through business restrictions, forced changes in management, to liquidation/bankruptcy, and revocation of the license. There is no formal 'prompt corrective action' regime requiring the CNB to take action in certain defined circumstances, and there is no obvious reason to require one, particularly given the ownership structure of the banking industry. However, some guidelines on when pre-emptive action might usefully be undertaken would be helpful. Some pre-planning on what to do in the event of a crisis, particularly one that affects only Croatia (when foreign supervisors/parent banks might be less willing to become involved) could also be useful.

Core Principle	Comments
24. Consolidated supervision	There is a sufficient legal framework in place to empower the CNB to undertake supervision on a consolidated basis provided by the BL and secondary legislation. Domestic as well as foreign subsidiaries are sufficiently covered. Supervision on a consolidated basis is facilitated by the lack of complexity of the existing groups, and the CNB has adapted its ongoing off-site and on-site work to monitor even more closely the risks that might result from growing activities of the subsidiaries of the banks that are subject to its supervision. However, it is recommended to increase the frequency of consolidated prudential reports on a case-by-case basis if need be. Moreover, it might be helpful to fine-tune exchange of information and cooperation with HANFA on an individual banking group basis to develop a better understanding of the potential impact the risks run by non-bank subsidiaries might have on the risk profile of the subordinate bank / banking group.
25. Home-host relationships	The legal framework established by the BL enables the CNB to exchange information and cooperate with foreign supervisors. Furthermore, MoUs have been signed with all relevant supervisors and supervisory cooperation is an integral part of the CNB's ongoing off-site and on-site supervision. Despite Croatia not yet being an EU member state, the CNB has profited from the intensified cooperation between European supervisory authorities. To further enhance this process is of particular importance for the CNB as the host supervisor of a banking market that is dominated by foreign banks, and Basel II implementation is likely to intensify the trend towards more cooperation.

Recommended action plan and authorities' response

Recommended action plan

73. Table 11 lists the suggested steps for improving compliance and provides recommendations where deficiencies are assessed.

Authorities' response to the assessment

74. The Croatian authorities were in broad agreement with the BCP assessment. They provided a number of technical suggestions and factual corrections to the draft version of the assessment, most of which have been taken into account. In addition, the authorities noted that work is in hand to resolve some of the existing lacunae in the supervisory regime (e.g., draft guidance notes on various banking risks have been produced and are expected to be issued shortly).

Table 11. Recommended Action Plan to Improve Compliance with the Basel Core Principles

Reference Principle	Recommended Action
1 (2). Independence, Accountability and Transparency	The independence of supervision within the CNB, particularly the responsibility for the monitoring of non-prudential matters, should be made more transparent. Consideration should be given to pursuing enhanced disclosure; producing a section in the Annual Report on supervision, linked to explicit supervisory objectives enshrined in law; and adopting a more pro-active attitude to the Press.
1 (3). Legal Framework	An explicit cross-reference should be provided to the BL in Article 25 of the LCNB. Article 5 of the BL says that no one unauthorized by the CNB shall engage in banking activities 'unless authorized by another law' (work under way).
1 (5). Legal Protection	The CNB should be protected in law against lawsuits for supervisory actions undertaken in good faith.
4. Transfer of Significant Ownership	The significant ownership regime should be extended to cover persons exercising, or being able to exercise, control. A suitability test should be introduced.
6. Capital Adequacy	The CNB should continue implementing a forward-looking approach to the management of capital adequacy. Potential side-effects that could reduce the risk sensitivity of the CAR regime should be closely monitored.
7, 8, 14. Risk Management Process, Credit, and Liquidity Risk	The CNB should continue shifting focus from emphasis on capital adequacy, compliance with rules, and classification of risks, to the forward-looking elements of the supervisory approach, especially the assessment of the extent to which a bank's current policies and risk management procedures are leading to greater or lesser risk. It should introduce explicit qualitative assessments of the risk a bank is exposed to and the quality of the risk management in the quarterly reports prepared by off-site on individual banks. These should be made the key element of the CNB's risk review and assessment, with more emphasis put on identifying weaknesses of individual bank's risk management to assess the potential impact such weaknesses have on an individual bank's risk profile. The CNB should also closely monitor whether banks adopt their liquidity management policies and procedures to reflect changes to the structure of their funding.
11. Exposures to Related Parties	An explicit requirement should be established for Board members with a potential conflict of interest to be excluded from the decision-making process.
19, 24. Supervisory Approach and Consolidated Supervision	As consolidated supervisor and de facto 'lead supervisor' of financial conglomerates, the CNB should ensure that group risks are explicitly identified and supervised effectively; and that the CNB and HANFA have effective and efficient cooperation and coordination arrangements in place to enhance the understanding of the risks bank and nonbank operations pose to the institutions subject to their respective supervision. The frequency of consolidated prudential reports should be increased when needed, and cooperation with HANFA be fine tuned on an individual banking group basis as to the risks in the group that could affect the banking group.
20. Supervisory Techniques	The CNB should ensure that a full risk assessment is carried out on a regular basis, and that it is fully integrated into the supervisory approach. It should clarify the duration of the supervisory cycle for each bank, which should vary with the degree of assessed risk, and hold prudential meetings with the senior management/ Board of all banks on a regular basis.
23. Corrective and Remedial Powers of Supervisors	Guidelines should be developed on when pre-emptive supervisory action might usefully be undertaken, as well as some pre-planning on what to do in the event of a crisis.