



Banking and the Financial Sector in Transition and Emerging Market Economies

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Lending Booms, Foreign Bank Entry and Competition: The Croatian Case

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LENDING BOOMS, FOREIGN BANK ENTRY AND COMPETITION:
THE CROATIAN CASE

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1. Introduction

Recent economic experience and research has identified lending booms as a frequent cause of banking and currency crises. Rapid lending growth, it is argued, very often entails lowered underwriting standards and over-optimistic assessment of clients' future ability to repay. (Gavin and Hausman 1996) Furthermore, rapid lending growth may cause increases in asset prices, which improve borrowers' balance sheets and apparent creditworthiness, leading to further loan expansion, further asset price appreciation and an asset bubble. When the bubble bursts, a painful financial crisis occurs.

In addition, rapid lending growth has been associated with macroeconomic instability. A credit boom can lead to either a consumption boom, or an investment boom, or perhaps both. The result may be increased inflation and overheating, and/or balance of payments problems, and possibly an outright currency crisis.

Although the connection between lending booms and these adverse outcomes has been to some extent established in the literature, some theoretical and practical issues remain difficult to resolve:

- 1) The evidence shows clearly that not all lending booms end up in crisis, whether of the financial or currency variety. In some cases, rapid lending growth seems to be associated with financial deepening, and not with instability. In fact, Gourinchas, Valdes and Landerretche 2001 provide evidence suggesting that the connection between lending booms and either type of crisis is much stronger in Latin America than in other regions of the world.
- 2) Gathering evidence on the quality of bank portfolios "in real time" during a lending boom is extremely difficult. To the extent that the lending boom stimulates consumption and/or investment, it is likely to raise cash flows and profitability across the board. This implies that credit quality will generally improve during the earlier portion of the boom. We simply do not have the analytical tools to accurately predict either the size or the timing of the future deterioration of portfolios in such situations.
- 3) Some lending booms have been associated with financial liberalization and increased competition. These measures increase the efficiency of the financial system. It is not clear that the benefits of increased efficiency are actually smaller than the costs of crises (see Allen and Gale 2003).¹ This raises important policy questions about the advisability of measures to stop lending booms when there are no signs that either prudential or macroeconomic problems are developing.
- 4) Recent evidence suggests that the arrival of foreign banks has led to rapid lending growth in several Latin American and Central and East European countries. Foreign banks in several Latin American and Central and East European countries tend to be less reliant on domestic funding sources than domestic banks (Crystal, Dages and Goldberg 2002, Haas and Lelyveld 2003, Kraft 2002). This may allow them to grow more rapidly than domestic banks. And, in fact, their struggle for market share may push them towards rapid credit expansion. Thus, the arrival of foreign banks, which is often presumed to strengthen the local banking system, may contribute to lending booms.

¹ On the one hand, much of the reported fiscal costs of crises represents transfers, which do not represent foregone GDP. On the other hand, broad macroeconomic effects of banking crises are difficult to estimate and may be large.

These questions underline the continuing importance of study of lending booms. Our paper is further motivated by the situation in Croatia, which experienced rapid lending growth in the years 1996-98 and again from 2000 to the present.² The Croatian case study contains a number of interesting elements. First, as a former communist country, Croatia entered the 1990's with a relatively underdeveloped financial system, especially considering its relatively developed and industrialized economic structure. Although the economic system of the former Yugoslavia was much less "financially repressed" than the former Soviet Union, Croatian banks did not function according to the usual market criteria.

Second, Croatia's lending boom followed on the heels of a macroeconomic stabilization program. In October 1993, the government announced a stabilization program, which included an upper bound for the exchange rate and liberalization of the foreign exchange market. In the event, the nominal exchange rate appreciated, as households converted foreign exchange savings into local currency. But despite the fact that the exchange rate was not rigidly fixed, it is probably fair to consider Croatia's stabilization exchange-rate based. Some authors have argued that non-credible exchange rate based stabilization leads to eventual crisis.

Third, Croatia has stood out among transition countries for its very rapid growth of lending to households. There are many reasons to think that lending to households is less risky than lending to enterprises, but of course lending to households is linked to consumption and perhaps to consumption booms.

Fourth, foreign banks have become the dominant players on the Croatian market since late 1999. The foreign banks have engaged in a rather public and spirited battle for market share. This, of course, includes rapid lending growth, especially in retail lending.

For all these reasons, we believe that the Croatian case provides an excellent opportunity to study some of the major questions raised by the literature on credit booms. We will argue that the whole period from 1996 to the present can be characterized as a single lending boom. The main driver has been lending to households, and this has been connected to strong consumption growth. Balance of payments issues more than prudential issues have forced the hand of the central bank, which has on two occasions (in 1998 and in 2003) taken measures to slow down credit growth.

We will also argue that the Croatian lending boom has important characteristics of financial deepening resulting from liberalization and the entry of foreign banks. Thus the lending boom has not been an unmitigated evil. Nor has it been an unmitigated blessing.

In what follows, we will first examine the literature on the causes and consequences of booms in section 2. Then, in section 3, we will look at the impact of foreign banks on transition banking systems and on credit booms. In section 4, we provide an overview of Croatia's lending boom. Section 5 continues with a more detailed examination of causes, consequences and policy actions. Section 6 concludes.

² We cannot use Gourinchas et al's definition of deviation from a trend, since there are too few observations. Instead, we note that total bank lending grew 44% in 1997 and 30% in 2002, in our view justifying the lending boom designation.

2. CAUSES AND CONSEQUENCES OF LENDING BOOMS

2.1 Causes

Gourinchas, Valdes and Landerretche 2001 present the following list of causes of lending booms:

- 1) Technology or terms of trade shocks. In a real business cycle context, positive shocks of either kind lead to investment booms. Such booms are not strongly connected to banking or currency crises.
- 2) Financial development and liberalization. Here, the argument is that financial repression, for example via interest rate ceilings, results in a lower equilibrium stock of credit than in a non-repressed system. Liberalization, by removing the constraint, allows a supply response that eventually leads to a higher level of credit (Gourinchas et al focus on the credit/GDP ratio).
 In addition, liberalization of entry may raise competition and efficiency in the banking sector, resulting again in a greater stock of lending and higher economy-wide output in equilibrium. Allen and Gale (2003) offer models that show that in a number of possible market structures, liberalization raises welfare by strengthening competition. They argue that this result holds despite the increased probability of a banking crisis in a more competitive banking system.
- 3) Capital inflows. In the model proposed by Calvo, Leiderman and Reinhart (1993), common external factors such as low interest rates in key countries as the US, lead to capital inflows in a set of countries. The best example of this would be Latin America in the early 1990's. (See also Eichengreen and Rose 1998)
- 4) Wealth shocks. A discovery of natural resources, or large exogenous changes in relative prices that increase a country's wealth could then lead to a financial accelerator mechanism. Agents' use their increased wealth as collateral for new loans.

2.2 Consequences

Lending booms have been argued to be causes of banking problems. Caprio and Klingebiel (1997), Demirgüç-Kunt and Detragiache (1997), Honohan (1997) and Eichengreen and Arteta (2000) all provide evidence based on large cross-country data sets indicating that lending booms are associated with increased probability of banking crisis.

The explanation of these findings is that lending booms are often accompanied by a loosening of underwriting standards.³ However, as Gavin and Hausman (1996) point out, it may be difficult to properly identify less-reliable borrowers during buoyant times. When aggregate demand is strong, firms' balance sheets tend to improve. Overall enterprise liquidity tends to strengthen, decreasing default probabilities. While everyone may know that a portion of the currently sound loans will go bad in the next downturn, reliable prediction of both the timing and extent of future bad loan problems remains virtually impossible. Credit risk modeling remains a rather inexact science, even if improvements in this area have led to widespread adoption of quantitative methods and their acceptance by the Basel Committee.

³ Niinimäki (2001) frames the argument in terms of relationships. Rapidly growing banks acquire more new clients, and thus have shorter average relationship time with their clients. This, he argues, leads to greater credit risk.

Identifying risky borrowers may be even more difficult when important structural changes occur. Branches that have traditionally been reliably profitable may suddenly face difficulties as relative prices shift. New products may seem promising, but later turn out to have had limited staying power. This further limits the predictive power of models and the ability of banks to accurately predict future losses.

Finally, when lending booms lead to asset price increases, there is the potential for a financial accelerator as increased wealth raises collateral and creditworthiness, leading to further increases in credit and asset prices. While such phenomena may seem obvious in retrospect, models of asset prices remain relatively unreliable. "I know it when I see it" still seems to be the main way of identifying asset price bubbles.

In these respects, the argument that better banking supervision can prevent inaccurate credit risk assessment can only be partially true. Supervisors may be able to compel banks to use state-of-the-art methods, but it is doubtful that supervisors have better information about the future evolution of credit risk and asset prices than the best informed private sector actors. Perhaps the opposite is true.

Balance of payments problems, or ultimately currency crises, are the other main negative consequences of lending booms. Lending booms, at least in some cases, are correlated with consumption and/or investment booms.⁴ Depending on the prior balance of payments position and the marginal propensity to import, consumption and investment booms can have substantial effects on the balance of payments that tip the economy over into crisis.

Furthermore, when the lending boom is partially financed by increased capital inflows, exchange rate appreciation adds a further boost to imports and, in fixed exchange rate regimes, can lead to an attack on the currency. Banking problems can also lead to a currency collapse even after the lending boom collapses, if the authorities' borrowing needs to finance a clean-up cause a deterioration in the country's credit rating (as in Mexico in 1995).

This discussion of banking, currency and twin crises does not pretend to completeness. We merely want to suggest the major negative impacts lending booms can have, along with their interconnections.

However, before leaving this topic, we should also discuss the positive aspects of lending booms. In many cases, lending booms do not end up in instability. In such cases, the main result is financial deepening—an increase in credit/GDP and usually M2/GDP ratios. There is now a fairly extensive and rapidly growing literature arguing that financial development stimulates long-run growth (King and Levine 1993, Levine, Loayza and Beck 2000, Rousseau 2002, Wachtel 2001, Rousseau and Wachtel 2002).

This argument, in a sense, raises the stakes for policy makers. If we simply took the view that lending booms lead to increased probability of banking, currency or twin crises, it would then seem logical to "insure" against these catastrophic outcomes by some kinds of policy measures. But if accept the argument that lending booms may simply lead to financial deepening, which in turn has positive and important effects on long-term growth, the potential costs of policy measures come clearly into focus.

⁴ Gourinchas, Valdes and Landerretche (2001) find that investment booms are on average larger than consumption booms.

3. FOREIGN BANKS AND LENDING BOOMS

Foreign banks have entered the markets of Latin America and Central and Eastern Europe in unprecedented numbers in the last decade or so. In fact, in the transition countries of Central and Eastern Europe, there are only a few countries whose banking system is mainly in domestic hands.

Evidence from developed markets generally suggests that foreign banks are less effective than domestic ones, or, as Allen Berger puts it, domestic banks possess a "home field advantage." (Peek, Rosengreen and Kasirye 1998, Berger et al 2002, Claessens et al 2001) However, the situation appears to be different in less-developed countries, where foreign banks from developed countries seem more likely to have a positive impact. Numerous authors have argued that foreign bank entry would promote efficiency, competition, technology transfer, and banking sector stability in transition countries. (Bonin et al 1998, Buch 1997, EBRD 1998) The nub of the argument is that developed country banks possess superior knowledge (especially in risk management and marketing), technology (IT), and financial strength (both absolute size and degree of diversification).

The first empirical studies of Latin American and Central and East European countries have generally supported these claims (Abel and Siklos (2001) for Hungary, Galac and Kraft (2000) and Kraft (2002, 2003) for Croatia, Crystal, Dages and Goldberg (2001) for several Latin American countries, and Clarke, Cull d'Amato and Molinari (1999) for Argentina.)

One of the important findings of these empirical studies is that foreign banks, above all greenfield banks founded de novo, tend to have more rapid rates of loan growth than domestic banks (Dages, Goldberg and Kinney 2000, Haas and Lelyveld 2003, Kraft 2003).

There are several explanations for the rapid growth of lending at foreign banks. First, among greenfield banks, there is a catch-up effect, in the sense that these banks generally began on a relatively small scale and only later decided to compete for substantial market share. Initially, these banks were cautious, and explored the markets carefully, probably hoping to familiarize themselves with local conditions. Particularly in the transition countries, as reforms deepened and the macroeconomic situation stabilized, these banks then seem to have decided to expand, seeking a much larger market share than their very small initial ones. But such expansion required rapid growth, unless acquisition possibilities happened to present themselves (which, of course, they sometimes did).

Second, Haas and Lelyveld (2003) show that foreign bank lending is highly sensitive to home country conditions. This implies that, during periods of slowdown or recession at home, these banks energetically seek to make up for their domestic problems by expanding lending abroad. Given the sheer size of the developed country banks relatively to the Latin American or Central and East European markets, a relatively small shift in the banks' total portfolio can have a large effect on the host country.

Third, foreign banks seem to be less dependent on local funding sources, above all deposits, than domestic banks (Crystal, Dages and Goldberg, 2001, Haas and Lelyveld 2003, Kraft 2003). This means that the growth of deposits, and indeed local monetary policy, is less of a limiting factor for the foreign banks.

All of this suggests that the entrance of foreign banks may increase the frequency of lending booms in emerging markets. At the same time, large-scale presence of strong foreign banks may reduce banking system vulnerability, *ceteris paribus*, by improving risk management, technology and financial strength. One could therefore hypothesize that the frequency of credit booms qua financial deepening would increase with greater foreign entry. The frequency of credit booms leading to banking crisis would seem to be ambiguous, since foreign banks may grow faster but may be sounder. To use a commonly-used metaphor in the literature, with foreign banks, the cars are faster, but the roads are better. The net effect on the accident rate is unclear.

4. THE CASE OF CROATIA: OVERVIEW

4.1 Liberalization and the basic features of the banking system in the first half of the 1990's

The Croatian banking market was liberalized in the early 1990's. The first steps were taken under the last government of the former Yugoslavia in 1989 and 1990, and liberalization was completed by the Croatian authorities with the Law on Banks and Savings Banks (1993). Entry onto the market was made rather easy, with low initial capital requirements and relatively loose licensing criteria. Interest rates were also liberalized early on. The number of banks grew rapidly, but banking activity was hampered by the war and its accompanying economic consequences during 1991-95.

Important changes occurred in the real sector during the same period. Privatization in Croatia was carried out initially on the basis of privatization plans created by the enterprises themselves. Insiders were given the opportunity to buy limited amounts of shares at discount. Privatization plans were vetted by the Croatian Development Fund, which later became the Croatian Privatization Fund.

In practice, insiders did not play the lead role, although there were cases of "spontaneous privatization" and manager-employee buyouts. Instead, outside entrepreneurs ended up taking over many important enterprises, and a number of new corporate groups were formed. These groups were usually headed by a single entrepreneur, often pejoratively labeled a "tycoon" in popular parlance. (Franičević and Sisek 2001)

We dwell on these features of the privatization process because of their importance in the 1995-98 phase of the credit boom, and in the banking problems of 1998-99. But before we turn to the lending boom, we should mention several other important features of Croatia's banking system. First, a word on market structure. The system was dominated by two large banks. These banks were the only banks with a presence throughout most of the country. The next four largest banks were all regional players. Most had been formed as early as the 1950's to finance local development. These banks had close relations with local politicians, and had dominant market positions in their regional markets. These characteristics made it very difficult for the Croatian authorities to consider sending such banks to bankruptcy when they ran into problems. Croatia faced a sort of regional "too big to fail" problem.

Second, the banking system inherited major problems from communist times, and incurred substantial new ones during the war. The problems from communism were alleviated by a one-off issue of government bonds to enterprises in 1991, but in fact the same enterprises continued to function, and often to lose money. After the successful stabilization of inflation in October 1993, it became apparent that one of the two large national banks, and three of the largest regional banks, were insolvent. The three regional banks were also illiquid, putting

enormous pressure on the interbank market and raising interest rates. The smallest of the regional banks was taken over by the government in October 1995, and the other two in March 1996. Liquidity infusions and recapitalizations helped these banks end their dependence on money market financing, leading to a rapid fall in interest rates.

4.2 Lending boom, first phase: 1996-98

Table 1: Basic Features of the Banking System, 1995-1998

	1995	1996	1997	1998
Number of banks	54	58	60	60
Total banking assets, 000 HRK	69.168	73.807	88.871	96.777
Number of foreign banks	1	5	7	10
Share of foreign banks in total assets	0	1	4	6,7
Capital-adequacy ratio	19,6	17,7	16,4	12,7
Return on Average Assets, %	0,3	0,6	1,2	-2,8
Interbank lending rate, end-year, %	27,3	9,7	8,5	10,0

Source: Croatian National Bank

Table 1 shows the basic features of the Croatian banking system during the first lending boom phase. At the end of 1995, interbank rates were still extremely high, only one foreign bank was present, and profitability was low. But after the Croatian military actions in May and August 1995, and the signing of the Dayton Accords in November, there was a clear shift in depositor confidence. Croatians who had held money abroad during the war began to bring their savings back to Croatia, and for the most part it seems that they deposited this money in bank deposits.

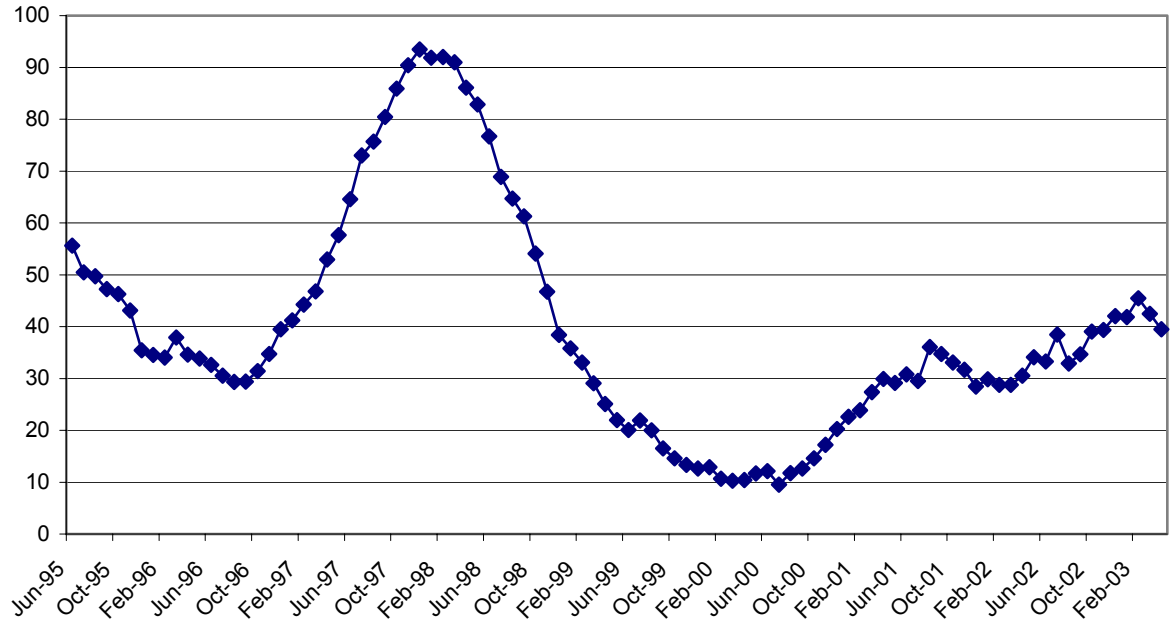
At the same time, the end of hostilities brought a general upswing in business confidence, and the beginning of government investment to reconstruct infrastructure and housing. GDP had actually begun to grow in 1994, and it would grow at 5-6% through 1997.

In other words, by early 1996 credit demand was recovering, and funding was growing. On top of this came the rehabilitation of the three regional banks, which brought interbank interest rates down from over 30% in March to only 9% in September 1996. The collapse of money market rates also stimulated lending to non-financial institutions, by removing an easy and relatively safe source of earnings in the interbank market.⁵

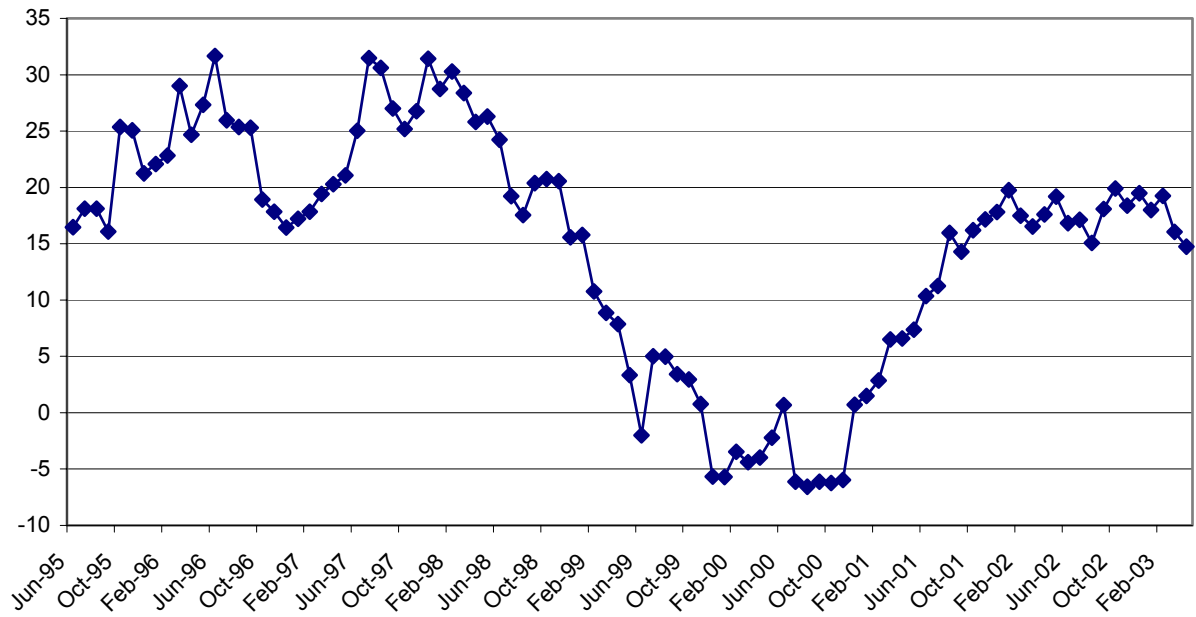
Furthermore, in January 1997 Croatia received an investment grade credit rating from each of the three major ratings agencies. This was a first for the new country, and it opened the doors wide for substantial capital inflows.

⁵ While there was no direct guarantee of interbank loans, it was widely assumed that none of the big banks would be sent to bankruptcy.

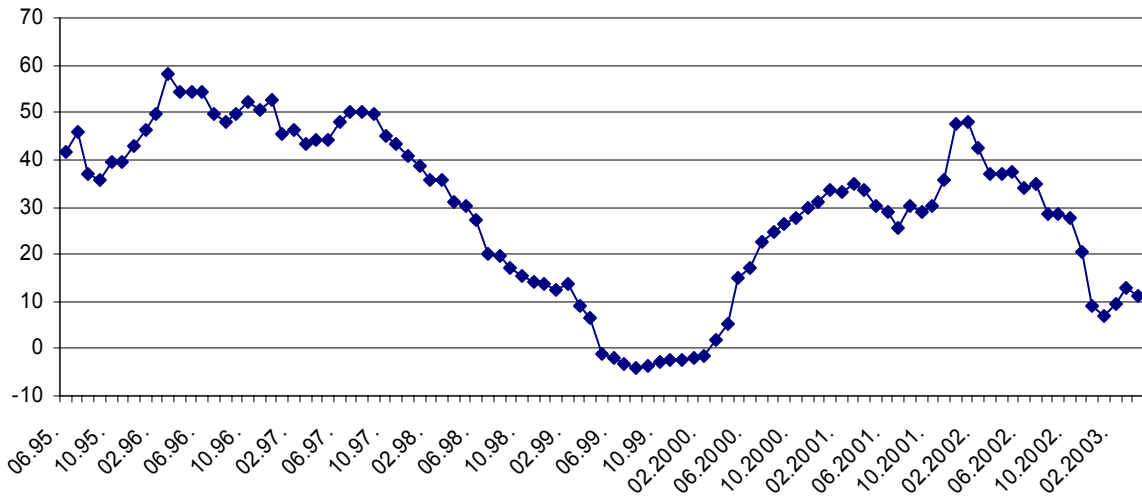
Graph 1: Lending to households (corrected), yoy growth



Graph 2: Lending to enterprises (corrected) yoy growth

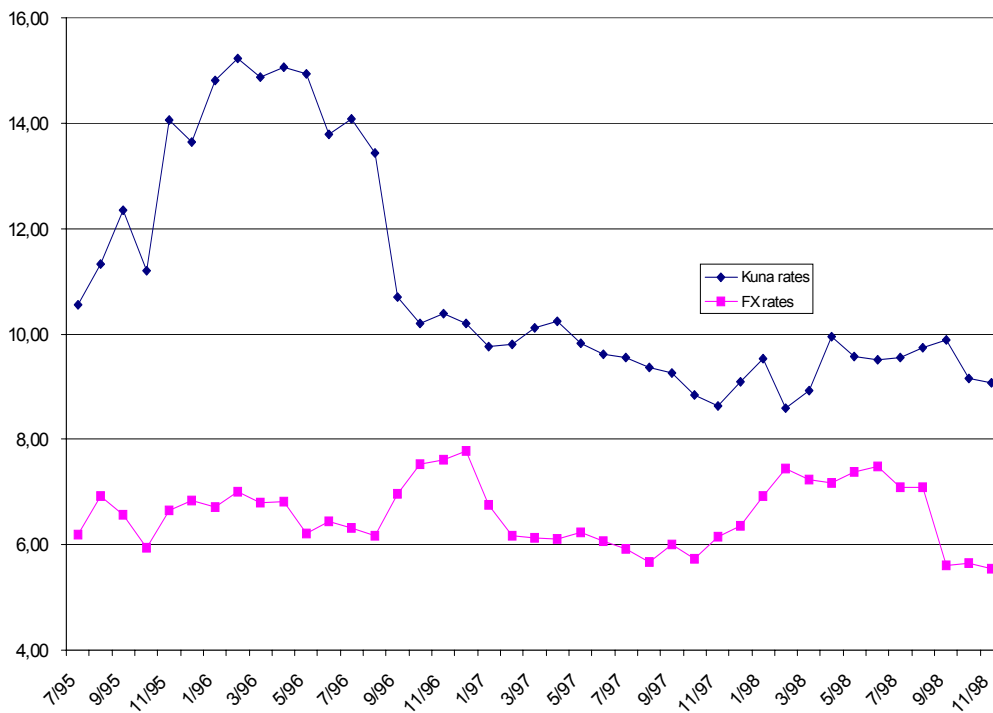


Graph 3: Growth rate of total deposits, yoy, %



Despite the rapid increases in total deposits due to repatriation of deposits from abroad, some rapidly-growing banks also competed intensely for deposits. Deposit interest rates on time deposits at some banks rose as high as 16%, with inflation between 3 and 4%. This phenomenon was especially visible in 1996, when foreign borrowing was still very difficult for the banks. Such high deposit interest rates had strong negative effects on other banks, who were faced with the unpleasant choice of losing customers or increasing funding costs.

Graph 4: Time and Savings Deposit interest rates, 1994-98



The macroeconomic situation in 1995-97 was characterized by rapid growth, low inflation, a stable nominal exchange rate along with a slightly depreciating real effective exchange rate, and a growing current account deficit (see Table). The fiscal situation was rather non-transparent. The government only reported its activities on a cash basis, while it was widely known that large arrears had been incurred by particular ministries. The amounts of these arrears were not known to the public.

Table 2: Macroeconomic Indicators, 1995-1998

	1995	1996	1997	1998
Inflation rate, retail prices, %	3,7	3,4	3,8	5,4
Real GDP growth, %	6,8	6	6,6	2,5
Current Account balance, % GDP	-7,7	-5,5	-11,6	-7,1

Sources: Croatian National Bank and Central Statistical Office.

Croatia signed a Stand-by Agreement with the IMF in early 1997, but this agreement was frozen after only one tranche had been received due to political differences about Croatia's cooperation with the Hague War Crimes Tribunal. Nonetheless, policy dialogue with the IMF continued throughout the period. The World Bank also played an important role in banking sector restructuring and the rehabilitation of the failed banks.

By mid-1997, it was clear to policymakers that the current account problem was becoming serious. The central bank initially tried conventional monetary tightening, decreasing its monetary creation and allowing the kuna to appreciate.⁶ However, both the lending boom and the import boom continued. Imports peaked in December 1997, as importers sought to frontload purchases before the introduction of the Value-added tax in January 1998.

Although imports decreased slightly thereafter, there was no sign of a substantial deceleration. The CNB then resorted to administrative measures, imposing deposits on foreign borrowing in April 1998. These measures succeeded in slowing lending growth.

In addition, in March 1998, one of the fastest growing regional banks (a bank that had not been recapitalized and in fact was in private ownership) failed. After a run on the bank, it was established that its capital was deeply negative. This led to two other, smaller runs. Even though these banks survived, tensions mounted. The exchange rate began to depreciate, and both lending and deposit growth slowed down. Thus ended the first phase of the lending boom, and thus began the banking crisis.

4.3 Banking crisis, 1998-99

The banking crisis gradually gathered momentum during 1998. A bank failed in May, one in June, then one each month in October, November and December. The sending of temporary administrators to four of these banks in January 1999, under new powers received by the CNB under a newly-passed banking law, only seemed to heighten tensions. Three more banks failed in February, which marked the height of the crisis.

The first bankruptcy procedures were opened in March. In that month and the following one, 6 banks were sent into bankruptcy. This cleaning of the market helped stabilize the situation. In addition, the central bank had granted emergency liquidity loans to 7 banks in January.

⁶ The Croatian National Bank mainly affects monetary aggregates by interventions in the foreign exchange market. Interest rate based interventions have been rare and relatively unimportant.

These loans were for a 1 year period and carried tough conditions, including limits on lending growth, dividend distribution and other conditions. These loans also helped prevent "domino effects." By June, the situation was largely stabilized.

Rates of loan growth fell in 1999. Even excluding the failed banks, loans to enterprises contracted. Aggregate deposits in the banking system also fell from February-May, and then stabilized.

4.4 Lending boom, phase 2: 2000-present

Although there were no more bank failures after July 1999, and aggregate deposits began to grow slowly, the second half of 1999 did not see a rapid recovery of lending. Quite the contrary. Lending to enterprises showed a few signs of life in the fall, only to completely bottom out at the end of the year. Lending to households fell to its lowest rate in years, about 10% annual growth, and stayed there.

However, two significant events, one economic and one political, began a new ascent. First, three of the rehabilitated banks were sold to foreign owners in late 1999 and early 2000. After these transactions, Croatia suddenly had a banking system in majority foreign ownership. In addition, the largest bank announced that a majority of its shareholders were now foreigners. Given the dispersed nature of shareholding in the bank, there were no immediate implications for bank management. But this change resulted in a level of foreign ownership near 90% of total banking assets. Table 3 below shows the evolution of foreign ownership, along with other basic indicators of the banking system.

Table 3: Basic Indicators of the Banking System, 1999-2002

	1999	2000	2001	2002
Number of banks	53	43	43	45
Total banking assets, 000 HRK	93.523	11.838	148.428	174.404
Number of foreign banks	13	20	24	23
Share of foreign banks in total assets	39,9	84,1	89,3	90,2
Capital-adequacy ratio	20,6	21,3	18,5	16,6
Return on Average Assets, %	0,7	1,4	0,9	1,6
Interbank lending rate, end-year, %	8,9	2,4	2,5	1,6

Source: Croatian National Bank

The second change was the electoral victory of a coalition of parties in the January 2000 parliamentary elections. The new government rapidly took steps to mend fences with the European Union and the international community generally, and began the process of identifying and repaying fiscal arrears. The former improved Croatia's access to international capital markets, and the latter greatly improved enterprise liquidity.

The recovery of lending took a little while to materialize. Loans to households started to pick up by June 2000, while loans to enterprises only began to move upward in January 2001. But by mid-2001, loans to households were growing at an annual rate near 30% and loans to enterprises at an annual rate near 15%.

It may be worthwhile to pause here to ask why household lending grew so much faster than enterprise lending in the second lending boom phase. One clue can be seen in the table below. Overall ROA in the enterprise sector remained negative through 2000, and only reached a

rather low positive value in 2001. Beyond this, many whole branches made losses, even in 2001.

Table 4: Profitability of the enterprise sector

	1998	1999	2000	2001
Overall ROA	-0,70	-0,83	-0,10	0,33
Branches with ROA >0	5	5	11	12
Branches with ROA =0	3	0	2	2
Branches with ROA < 0	14	17	9	8

Source: Payments Agency

It seems reasonable to infer that the low profitability of much of the enterprise sector would have limited the growth of lending. Furthermore, continued problems with the legal system, including protracted waiting periods for foreclosure and uncertainty about legal outcomes also limit banks' willingness to lend to enterprises. (Galac 2002, Kowalski et al 2003)

By contrast, collection of past-due loans to households can often be done without resort to the courts. For many loans, banks require co-debtors and guarantors. The moral pressure on these individuals often results in repayment without a court case. This is true even though actual foreclosure of property, especially real estate, is probably more difficult in the case of households.

In addition, a not insignificant portion of household loans consist of loans where collateral can be foreclosed easily, such as automobile loans.

In short, there are several clear explanations for the more rapid growth of consumer lending relative to corporate lending.⁷ This raises the crucial question of whether a consumer-lending based lending boom is less likely to end in banking crisis. We will return to this question later.

On the macroeconomic front, GDP growth was slower in 2000-2002 than it had been in 1995-97. Inflation started out rather higher, but fell sharply after 2002. The current account was extremely favorable in 2000, and then rose in 2001 and 2002, a similar dynamic but in smaller quantity than in the earlier period. In addition, the financing of the current account was now different, with FDI in 2000 and 2001 more or less covering the current account deficit, and still making up a substantial portion in 2002.

Table 5: Basic Macroeconomic Indicators, 1999-2002

	1999	2000	2001	2002
Inflation rate, retail prices, %	4,4	7,4	2,6	2,3
Real GDP growth, %	-0,4	2,9	3,8	5,2
Current Account balance, % GDP	-6,9	-2,3	-3,8	-7,1

Sources: Croatian National Bank and Central Statistical Office.

⁷ One remaining puzzle is the fact that lending to households has grown much faster in Croatia than in other transition countries. As of end-2001, loans to households were over 17% of GDP in Croatia, about 12% in Slovenia, and under 10% in Slovakia, the Czech Republic, Hungary and Poland. See Croatian National Bank *Bulletin* 69, graph 47.

In addition, two precautionary stand-bys were signed with the IMF. The first lasted throughout 2001 and through the first quarter of 2002, and the second began in 2003 with an intended duration of 15 months. These agreements above all aimed at achieving a sustainable fiscal position, controlling foreign debt and preventing current account deterioration. They included specific measures to decrease the government wage bill, to limit borrowing of consolidated government, and to improve fiscal transparency.

5. CAUSES, CONSEQUENCES AND POLICY RESPONSES IN CROATIA

5.1 Causes

The first suspect for triggering the lending boom in Croatia has to be the liberalization process itself. Credit to GDP reached extremely low levels in the early 1990's. This was in part due to the recognition of losses on credits granted under socialism, and the replacement of these credits by government bonds in banks' balance sheets. Furthermore, the flow of new credit was very limited in the early 1990's, and further losses created by the war led to an additional round of write-offs and replacement of loans by government bonds during the rehabilitation process.

The liberalization process, of course, was designed to promote financial deepening. By deregulating interest rates and promoting entry, the authorities hoped to create a more robust, efficient and extensive financial system. The only thing that the authorities might not have expected was the speed of the adjustment, and the dangers therein.

Arguably, the key channel through which liberalization worked was increased competition. The number of banks operating grew enormously, from only 23 in 1991 to some 61 in 1997. While many of these new banks were small, some grew relatively large. Five of the fifteen largest banks in 1997 had been formed since 1990. Together, these five banks accounted for 10.6% of total banking assets. The largest of these had a 3.2% share in total system assets. Thus, while the new banks were far from being market leaders, a few were large enough to be significant market players.

Especially in the years before 1999, competition was very uneven geographically. The Zagreb market seemed to be the most competitive, while markets in many areas were dominated by regional banks. By the late 90's, the two large national banks intensified their geographic scope, and helped break down the regional monopolies somewhat.

The best indicator of competition at the regional level would be actual balance sheet data on banks' branches. Unfortunately, such data are not compiled in Croatia. The Croatian National Bank only disposes of data on the number of branches in each of Croatia's 20 counties. These data can be used to get a crude picture of banks' networks. The thinking behind using this measure is that physical presence matters a great deal for retail business, and probably for banks relations with small and medium business as well. The largest companies may be willing to travel from their home region to a bank's headquarters, but overall, geographical proximity probably matters.

The other complication involved in using this data is that the counties have widely varying populations and activity levels. To take this into account, we have constructed a measure of the percentage of the population in counties in which each bank has a branch. For example, if a bank has branches in two counties which contain 20 and 5 percent of Croatia's total population, we count that the bank covers 25% of the population.

Table 6: Banks with population coverage over 50% and 75%

	above 50%		above 75%	
	number	asset share, %	number	asset share, %
1998	5	46,7	3	43,9
1999	5	53,2	3	48,4
2000	8	65,0	3	52,1
2001	9	72,2	3	51,8
2002	11	90,3	8	79,9

Source: Croatian National Bank

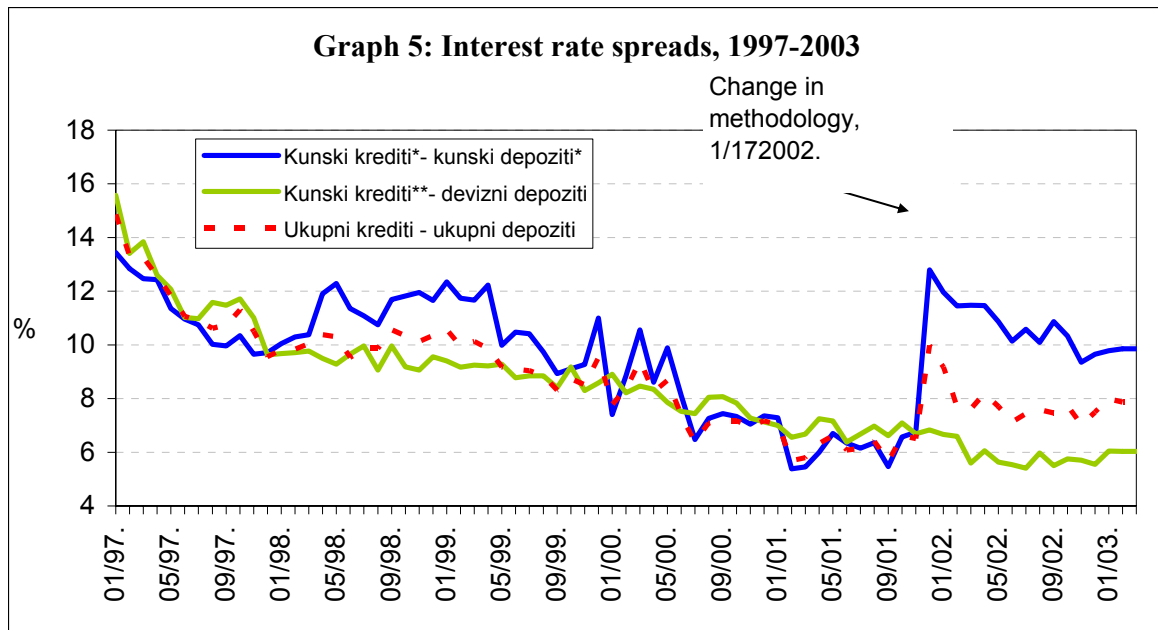
The table shows that only the two large national banks, plus another much smaller new bank, had 75% or greater coverage straight through 2001. Only 5 banks even had 50% coverage through 1999. But by 2002, the numbers and asset shares increase substantially. Interestingly, of the five banks achieving 75% coverage in 2002, four were foreign banks. And by far the largest of the three banks with between 50% and 75% coverage in 2002 was foreign.

While these data show that there were more players on the market, both at the national and at the regional level, they do not prove that behavior was altered. We present three kinds of evidence. The first is data on interest rate margins. The second is data on the cross-bank variation in interest rates. The third is the Panzar-Rosse h-test.

1) Interest rate spreads. Spreads were extremely high through 1996 due to distress borrowing. Spreads decreased drastically in 1996 due to the bank rehabilitation program, that is, due to the ending of the distress situation. With that in mind, we show in the graph below the development of spreads after 1996.

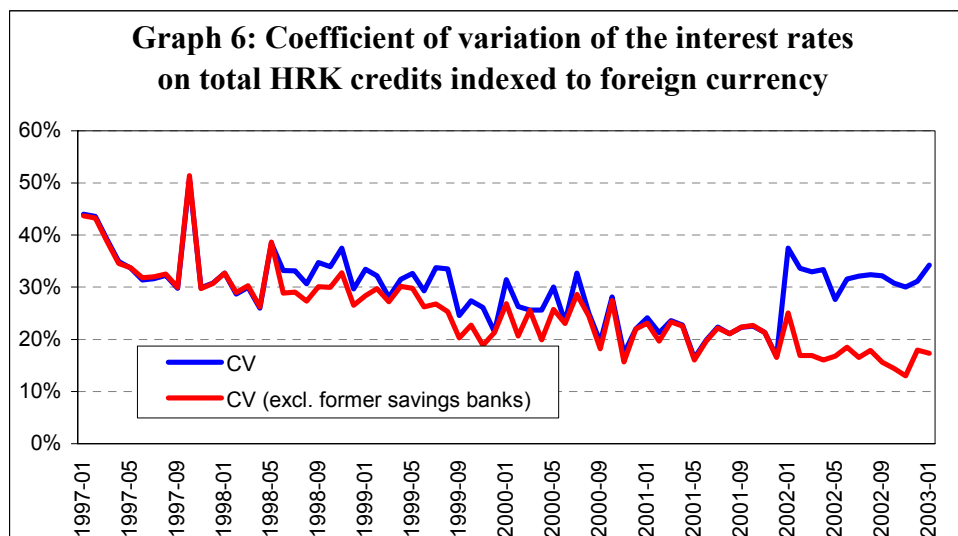
We show two measures of interest rate spreads. We do this because of the widespread indexation of lending to exchange rate changes, and the large share of foreign exchange deposits. The dynamics of spreads actually do not vary too greatly between the two measures. What we see is strong decreases in 1997, followed by much slower changes or even stagnation in 1998 and early 1999. The spreads then fall further thereafter, with the indexed loans to foreign currency deposits curve flattening out in 2002. The non-indexed spread continues to fall in 2002 (after a methodological break at the beginning of the year).

In short, there is a persistent tendency for spreads to tighten. It seems logical to attribute this to increased competition. Increases in spreads seem mainly to be associated with episodes of increased bank risk. Thus we can tentatively conclude that competition has persistently lowered interest rate spreads, subject to fluctuations in bank risk premia.



2) Coefficient of variation of interest rates. We present data on the cross-bank variation in interest rates in part because the range of interest rates across banks was strikingly high during the 1990's in Croatia. This variation in rates certainly suggests an extremely segmented market.

To follow the variation over time, we show the interest rates on loans to enterprises indexed to the exchange rate of the kuna vs the Euro. This interest rate is quantitatively the most common interest rate in bank lending to enterprises. We avoid using a broader aggregate to remove the affect of shifts in the composition of new lending, which can be significant in the monthly data.⁸



⁸ Interest rates are measured as rates on newly-granted loans.

The graph has several interesting features. First, it does slope downward on the whole, indicating that the coefficient of variation has fallen over time. Second, it can be seen that the downward trend was interrupted during the banking crisis from mid 1998 to mid 1999. Third, the extra line shows the effect of the entry of four small new banks. These banks, as seems to be typical of such market players, offered somewhat higher deposit rates and charged somewhat higher lending rates than the established players. When they are excluded, the trend becomes clearer.

In other words, there is evidence that lending interest rates are converging closer to a unified market price.

3) Panzar-Rosse test (Panzar and Rosse 1987). Recently, several papers have attempted to use this test to compare the degree of competition across countries and across time (De Bandt and Davis 2000, Claessens and Laeven 2003, Bikker and Haaf 2002) The Panzar-Rosse test provides a theoretically grounded empirical test of the degree of competition in a given market by estimating the elasticity of income to input price changes. The test is carried out by estimating an equation of the form:

$$\ln(p_{it}) = a + b_{1,it} \ln(W_{1,it}) + b_{2,it} \ln(W_{2,it}) + b_{3,it} \ln(W_{3,it}) + c_{1,it} \ln(Y_1) + c_{2,it} \ln(Y_2) + c_{3,it} \ln(Y_3) + e_{it}$$

where p is a ratio of income to assets (usually gross interest revenues to total assets), the W 's are factor costs (labor, funds and physical capital), and the Y 's are exogenous variables affecting income. The Panzar-Rosse h -test is then formed by calculating the sum of the b_j coefficients, $b_{1,it} + b_{2,it} + b_{3,it} = h$. If $h=1$, the market is perfectly competitive. If $0 < h < 1$, the market is characterized by monopolistic competition. And if $h < 0$, the market is a monopoly.

We estimated the model for Croatia using panel data on all banks operating in the years 1994-2002. The input costs were: labor costs, interest costs, and administrative and operational costs. The exogenous variables, following Claessens and Laeven (2003), were total bank assets, loans to assets, and the capital asset ratios. The left-hand side variable was interest income to assets. All data were from the Croatian National Bank's bank database.

The results were comparable to Claessens and Laeven's. Since they used BankScope, which only covers some of the banks operating in Croatia, our data set covered more banks. Also, there may be slight differences in data definitions. However, like Claessens and Laeven, we find monopolistic competition for the whole period, and cannot reject the hypothesis that the banking system was in long-term equilibrium in the period.

Claessens and Laeven used the h -test to compare competition across countries, and to look for the determinants of competition. We, by contrast, test for variations in competition across time. To do this, we estimated the basic model with slope dummies. We distinguished the period 1994 to 1997 from the period 1998-2002. Following the literature, we used the Fixed Effects estimator with and without time dummies. As is evident in De Bandt and Davis (2000), choice of estimator can have a substantial effect on the estimated value of the h -statistic.

Table 7: Competition h-tests

Panzar-Rosse h-test for subperiod		
	1994-1997	1998-2002
Fixed effects		
no time dummies	0,444	0,589
time dummies	0,386	0,403

Our results provide some support for the hypothesis that competition was greater in the 1998-2002 period as compared to the 1994-1997 period. However, the results are not entirely conclusive.

Comparing our results to Claessens and Laeven (2003), we can make three further points. First, the estimated h-statistic here is broadly similar to Claessens and Laeven's range of estimates of 0,52 to 0,58 for 1994-2001, although the estimate with time dummies is somewhat lower than their estimates. Second, Claessens and Laeven's cross-country analysis suggests that the share of foreign ownership is an important determinant of the degree of competition. Our results are consistent with this finding, in that the degree of competition apparently increases in the 1998-2002 period when foreign bank presence increases.

Third, Claessens and Laeven's cross-country analysis suggests that indexes of concentration such as the Herfindahl index do not explain the degree of concentration as measured by the Panzar-Rosse test very well. This would appear to be true in Croatia as well, since the Herfindahl index rose from 1018 in 1998 to 1189 in 1999 and 1368 in 2000. This increase in the Herfindahl index was the result of numerous exits from the market and mergers. Similarly, the asset share of the four largest banks rose from 53.3% in 1998 to 62.0% in 2000. Nonetheless, our results suggest an increasingly competitive market, which is consistent with Claessen and Leaven's finding that conventional concentration measures do not explain h-statistic competition measures.

In our discussion of the causes of the lending boom, then, we have provided evidence of a supply-side shift resulting in increased competition. While the sheer number of banks has decreased since 1998, competition continues to intensify, in part through the unification of previously segmented markets.

On the supply side, we should also emphasize improvements in the legal framework that have strengthened creditors' rights, including the Bankruptcy Act of 1997 and the Company Act of 1995. Such legislative reform provided crucial underpinning to financial liberalization. Furthermore, increased funding via the repatriation of deposits (mainly in 1995-98), easier access to international capital markets (in 1997, and again after 2000) and foreign banks' borrowing from their parent companies has played a key role.

On the demand side, our contention is that low level of the stock of credit relative to the needs of a relatively industrialized country and its households represented a long-term disequilibrium. Where the new equilibrium level of credit/GDP is, we cannot say. But it seems clear to us that Croatia has not yet reached it.

It should be noted, however, that the behavior of the corporate sector differed substantially between the first and second phases of the lending boom. In the first phase, connected lending was a significant problem at several banks. Many of the problem loans made during the first

phase were in fact loans to insiders.⁹ (Jankov 2000, Kraft 1999, Škreb and Kraft 2002) Most likely, loan demand from insiders inflated loan demand. To put it differently, insiders may have felt that they faced a sort of soft budget constraint. This problem was directly related to the privatization process, which had created several groups of companies ultimately owned by a single entrepreneur. Many of these groups in fact failed in the 1998-99 period, bringing down several banks with them.

Since connected lending has not been a major feature of the second phase of the lending boom, it seems that firms are now facing harder budget constraints and stricter repayment conditions. Furthermore, enterprise liquidity has improved since 2000, in part because the government repaid its arrears, so that firms may be less reliant on external funding. The data in Table 8 document this. The low coefficients of indebtedness actually suggest that enterprises might actually have room to increase their borrowing in the future.¹⁰

Table 8: enterprise sector financial indicators (% of total assets)

	1997.	1998.	1999.	2000.	2001.
short-term obligations	35,4	36,8	33,1	32,9	28,8
long-term obligations	11,4	13,0	17,0	18,2	14,0
total obligations	46,8	49,9	50,1	51,0	42,8
liquidity ^a	0,39	-0,38	3,50	3,90	2,38
coefficient of indebtedness ^b	0,21	0,26	0,34	0,37	0,24

^a (Short term assets-short term liabilities)/total assets

^b Long-term obligations/capital

Data source: Payments Agency

What has been the role of the foreign banks in the second phase of the lending boom? The answer is clear: the foreign banks have led the way. Rates of lending growth have been highest among the foreign banks, and in particular among the de novo (greenfield) foreign banks. The table below shows growth rates by types of banks. T-tests show that both de novo and privatized foreign banks increased lending significantly more rapidly than domestic banks in 2000 and 2001.¹¹ However, differences among banks break down in 2002, as rapid loan growth spread to almost all banks. Also, four new small domestic banks grew their loan book very rapidly in 2002, boosting the growth rate of that group substantially.

Table 9: Growth of lending by bank type, 2000-2002

	Loan growth, %
2002	
domestic	25,64
de novo foreign	47,83
privatized foreign	35,22
2001	
domestic	4,33
de novo foreign	86,27
privatized foreign	25,66

⁹ The evidence on insider lending is mainly anecdotal at this point. A quantitative assessment of the importance of insider lending would be a very worthwhile research project.

¹⁰ One problem with this data is that values of both assets and capital may have been inflated by accounting conventions that automatically revalued assets for inflation instead of following replacement value. If so, firms may be more indebted than the data indicates.

¹¹ At 5% confidence, except for the difference between privatized foreign banks and domestic banks in 2001, which was significant at about 7%. See Kraft (2003) for details.

2000	
domestic	0,20
de novo foreign	46,83
privatized	9,94

Source: Croatian National Bank database

As Haas and van Lelyveld (2003) show, push factors seem to have a great deal of influence on the quantity of foreign bank lending. Furthermore, the foreign banks present in Croatia are extremely large relative to the size of the Croatian market. Thus a small increase in one of these banks' allocation of its budget to its Croatian subsidiary can result in a relatively large increase in lending in Croatia.

Table 10: Shares of Croatian subsidiaries in bank group totals

In percent	2001			2002		
	Share in Assets	Net income	Local market	Share in Assets	Net income	Local market
Subsidiary/Mother						
Zagrebačka / Unicredito ¹	3,1	3,4	30,0	3,0 ³	5,6 ³	28,7
Privredna / Banca Intesa ¹	1,3	5,3	20,9	1,6	29,7	20,0
(Erste + Riječka) / Erste ¹	2,4	1,9 ²	10,4	1,7	9,4	9,0
(HVB + Splitska) / HVB ¹	0,2	7,3	8,5	0,3	-3,0 ⁴	8,7
Raiffeisen Croatia/ Raiffeisen Zentral	3,0	12,9	6,4	4,1	12,2	8,1
(Hypo Alpe-Adria + Slavonska) / Hypo Alpe-Adria	16,9	32,4	6,3	na	na	8,1
Total			82,5			82,6

1 pro forma in 2001

2 without Riječka

3 end of September 2002

4 loss on group level

Source: bank websites

In addition, the table makes clear that the share of the Croatian subsidiaries in total group profit was much higher than their share in total group assets in 2002. This reflects the weak situation of the banks in their home countries (Italy, Austria and Germany) as well as the high level of profits in Croatia. It also goes a long way towards explaining the lending boom in Croatia in 2002.

Given this background, it should come as no surprise that some of the foreign banks rely heavily on non-deposit funding. The de novo banks in particular seem to have ambitious expansion plans, but lack the deposit base to fully fund their desired lending activities. Despite their success in attracting deposits during the Euro conversion process in late 2001 and early 2002, the de novo foreign banks ended that year with a ratio of deposits to total liabilities of only 68.5%. This was a major increase from the level of 52.4% that they had maintained at the end of 2000, but was still substantially below the 82.9% held by domestic banks and the 81.1% held by privatized banks.

In short, the de novo banks funded their expansion on borrowed funds much more than other banks. Such funds were generally either borrowed from the mother bank or on the international market. In this way, the lending boom contributed to capital inflows, creating appreciation pressures.¹² This echoes experiences in Latin America (Crystal, Dages and Goldberg 2002) and other Central and East European countries (Haas and van Lelyveld 2003).

5.2 Consequences

In this section, we will examine two major consequences of the lending boom: banking failures and current account deficit problems. We begin with banking failures.

A descriptive way to analyze the effect of rapid loan growth on portfolio quality is to define "downgrade incidents." These are cases in which a bank (perhaps at the urging of bank supervisors) substantially decreases its estimate of the quality of its portfolio. We define this idea operationally as follows: under regulations in effect until 2003, banks were required to classify all risk assets and risky off-balance sheet items in five categories from A to E. A assets required no provisioning, since A assets were expected to provide full return of all contractually agreed-upon payments. B assets required a provision of 25%, C of 50%, D of 75%, and E of 100%.

This means that a decrease of x percentage points in the share of A assets implies at least a $0,25 * x$ increase in provisions/assets. We select a 4 percentage point threshold, since this implies a 1 percent of assets increase in provisions. 1 percent of assets is roughly equal to average profits, so such a downgrade would wipe out that year's profits for an average bank. Admittedly, this is somewhat arbitrary, but our results are not very sensitive to this choice.

We must now define rapid growth. We take a relatively high cut-off of 30% annual growth. That is, if a bank grew by more than 30% year-on-year in any quarter, we define it as having experienced rapid growth. The table below, then, cross-tabulates rapid growth against downgrade incidents, using growth experience from the last quarter of 1996 through the end of 1999, and downgrade experiences in 1998 and 1999:

Table 11: Downgrade incidents

	By number of incidents	By number of banks
Preceded by rapid growth	51	37
Not preceded by rapid growth	7	6
Unclear	3	3

This table suggests that downgrade incidents are usually preceded by rapid growth. But we can ask whether rapid growth usually leads to downgrade incidents. This is shown in the next table:

¹² Of course, to the extent that loan proceeds were used to finance imports, the indirect effect would be towards depreciation.

Table 12: Rapid growth and downgrades, 1996-1999

	Number of banks
Rapid growth defined as 30%	
Grew rapidly and experienced downgrade	30
Grew rapidly and did not experience downgrade	10
Rapid growth defined as 25%	
Grew rapidly and experienced downgrade	33
Grew rapidly and did not experience downgrade	7

All in all, these tables provide suggestive evidence that downgrade problems are closely associated with rapid growth. However, there could be other factors involved in downgrade problems. Hence, a multivariate approach would be more satisfactory. In addition, we might want to actually study bank failure, rather than downgrade, since failures present much greater problems to all concerned.

The CNB Research Department has developed early warning models (EWM) of bank failure. Predictive variables were chosen using data from 1995 to 1996, so as to provide an adequate signaling horizon for the bank failures of 1998-99. (Galac 2001). The independent variable selection process was based on a modification of the signaling approach of Kaminsky, Lizondo and Reinhart (1997). In contrast with the standard Wilcoxon median test, which distinguishes only between high and low states of the variables (single threshold), the Kaminsky / Reinhart approach allows one to distinguish among one normal and two tail states (upper and/or lower threshold). A wide range of variables were tested using this approach.

After the most significant variables were identified, failure prediction models were built combining the variables. Only three variables out of the ten that were significant in predicting failure were found suitable for model design: the deposit interest rate, liquidity¹³ and credit growth. Interestingly, the credit growth variable was the least significant of the predictive variables, measured by its standalone significance in bank failure prediction. Moreover, unlike deposit interest rates and liquidity, only the values of credit growth in 1995 were significant predictors of eventual failure.

The most powerful predictors of bank failures in these models are deposit interest rates and secondary liquidity. This may be due to strong correlation between credit growth and the other two variables. Banks with high deposit rates are either inefficient (low margins) or lend to more risky customers (high loan rates). Banks with weak liquidity are highly dependent on interbank funding, and can run into immediate liquidity problems if the market turns against them.

This suggests that it may be too simplistic to point to rapid growth alone as the cause of banking problems. Instead, rapid growth combined with other bad business policies such as relying on interbank funding or paying above-average interest rates on deposits may be deadly combination. Such an interpretation also accords with the observation that lending booms do not always lead to banking crises.

However, one should not take the evidence about downgrades lightly, either. Rapid growth does seem to lead to downgrades. But well-capitalized banks may be able to weather these downgrade incidents.

¹³ Liquidity = vault cash + excess reserves with central bank + net interbank claims - net loans from the central bank.

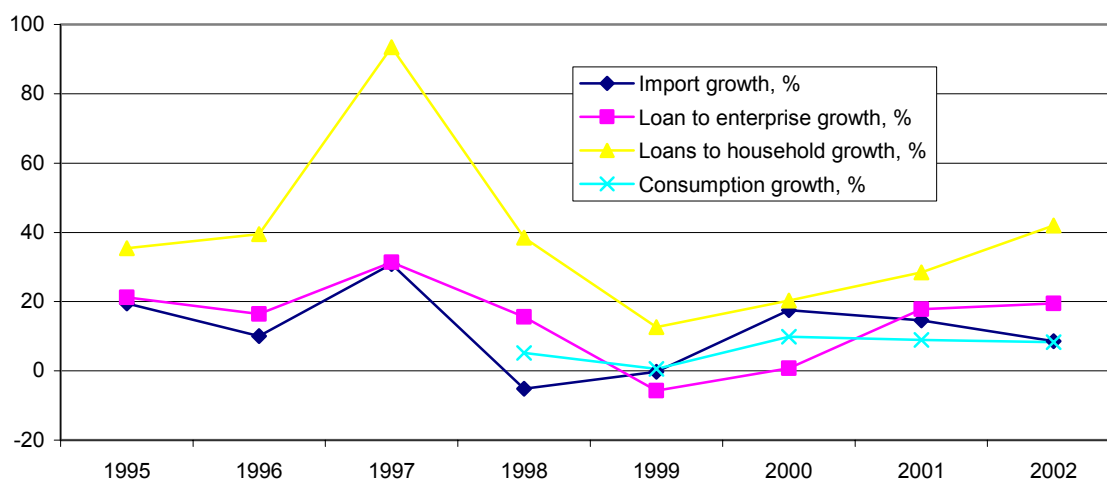
Does this mean that the second phase of the lending boom will not be associated with asset quality problems? It seems possible to argue both sides at the moment. One could argue that asset problems will be seen whenever economic growth slows down. The lag may be longer, but problems will eventually emerge, since such rapid lending growth simply cannot be accomplished without lowering underwriting standards.

The other possible argument is that the second phase is not really the same as the first. The greater importance of household lending, and the reduced importance of connected lending, could be argued to make the second phase much less risky than the first. A further argument might be that the foreign banks possess better risk management procedures and stronger capital bases, and therefore are less likely to create problems for themselves and less prone to failure if problems emerge.

Since we do not pretend to be clairvoyant, we will not attempt to choose between these two arguments. However, we will have a little more to say about this when we discuss policy measures in the next section.

Turning now to the macroeconomic consequences of the lending boom, the graph below shows the time pattern of import growth, lending growth and consumption. The series seem highly correlated, with the interesting proviso that import growth slows slightly in 2001 and 2002, despite accelerating lending. Perhaps this is due to fiscal contraction, which limited the public sector wage bill. Fiscal contraction may also explain flat nominal consumption growth rates. With inflation falling, real consumption growth actually accelerated, however. In any case, it is not difficult to connect Croatia's growing current account deficit with the lending boom.

Graph 7: Lending, Imports and Consumption



5.3 Policy responses

In both phases of the lending boom, the main trigger for central bank action has been current account problems. As we mentioned earlier, straightforward policy responses such as contractionary monetary policy, were tried in 1997 without effect. The central bank believed fiscal policy to be relatively expansionary in 1997, and was not able to convince the government otherwise.

Furthermore, monetary policy's maneuvering room was not great. The current account could not be improved by depreciating the currency for two major reasons: first, the memory of uncontrolled depreciation and inflation was very fresh, and it would have been rather risky to wake this demon again. Second, banks balance sheets contained very large proportions of foreign currency liabilities (household foreign exchange deposits). These were matched by loans in kuna indexed to the exchange rate. A substantial depreciation would have set off the indexation clauses, sharply raising the cost of credit and risking increased loan defaults. (see Kraft 2003 for more detailed arguments).

At the same time, stronger monetary contraction would have most likely meant further nominal appreciation of the kuna. It was believed that this, too, would have been highly destructive of exports. A combination of devaluation, fixing and then tight policy would not have been any better either.

With conventional means ineffective, the central bank decided to aim at banks' funding sources. This explains the Chilean-style capital controls introduced in April 1998. The capital controls were introduced in the form of deposits on foreign borrowing of 1 year or under. Naturally, there were many attempts to circumvent the controls by signing contracts for 1 year and 1 day, etc. However, capital inflows fell rapidly and lending slowed after the controls were introduced.

At the same time, the failure of Dubrovačka Banka in March also probably had a negative effect on other Croatian banks' ability to borrow from abroad. And, the Russian crisis in August added a further dampening effect. Even in retrospect, it is not entirely clear whether these external events alone can explain the slowdown in banks' foreign borrowing and in lending, or whether the capital controls in fact were effective.

In the second phase of the boom, the Croatian National Bank again felt compelled to react. Again, the trigger was the current account deficit, which almost doubled as a percentage of GDP between 2001 and 2002. The central bank issued three measures. 1) Growth of risk assets was limited to 4% per quarter. If banks exceeded this growth rate, they were required to purchase low-yield CNB bills (0.5% interest rate). The amount of mandatory bills to be purchased was twice the amount of the excess of actual growth over the 4% limit.

2) Banks were required to hold liquid foreign exchange assets equal to 35% of their total foreign exchange liabilities. Liquid assets were defined as assets with a remaining maturity of under 3 months. Cash, reserve deposits with the central bank, and deposits with other banks are counted. Banks must meet this requirement every day, but those banks that started with substantially lower levels were given an adjustment period. All banks will be required to be in compliance at the end of the first quarter of 2004.

3) Banks whose risk assets grow above 20% will be required to form a special reserve from after-tax profits. This reserve must be held for three years from the year in which rapid growth

occurred. The size of the reserve depends on growth rates. Banks with higher capital adequacy ratios may be exempt from the requirement. This regulation goes into effect on January 1, 2004.

The first two measures can be seen as more macroeconomic than prudential. They are taken across the board, without reference to a bank's loan quality or capital ratios. And they clearly aim at slowing loan growth and limiting capital inflows. The third measure is mainly prudential, aimed at ensuring that rapidly-growing banks and well enough capitalized to absorb potential future downgrade problems.

Why were these measures chosen as opposed to raising interest rates? One problem is that the CNB only has direct influence on the interest rate on CNB bills.¹⁴ These interest rates have risen recently, but only from 1.90% in July 2002 to 2.48% at the auction on June 18, 2003. In any case, it is not clear whether there is a strong transmission mechanism between CNB bill rates and other interest rates. Banks tend to use CNB bills as a way of managing their excess liquidity. Thus it is not clear whether changes in the CNB bill rate would have a major influence on funding costs. Certainly, substantial increases in CNB bill rates would affect the relative attractiveness of loans and CNB bills, probably leading either to higher lending interest rates or to increased demand for CNB bills. But with most lending rates in the 8-10% range, large increases in CNB bill rates would be required to have an effect on lending rates.

Another complication involved in raising interest rates is the effect on government finances. The Croatian government has substantially increased its reliance on the domestic market to finance its debt in recent years. Policymakers see this as an important step in reducing foreign borrowing and insuring the sustainability of Croatia's external position. Substantial increases in interest rates could imperil this effort.

Finally, there is the question of capital inflows. Raising interest rates would increase the attractiveness of the Croatian market for foreign capital. Of course, at some point increased lending rates resulting from increased CNB bill rates would cut into loan demand, but the question is when.

All this does not prove that interest rate measures would necessarily be ineffective. But it is clear that a simple policy prescription reading "raise interest rates" is not a panacea in Croatia.

There are, of course, other measures that could be taken. Increasing reserve requirements in one way or another could be considered. Here, the central bank has the problem that its goal is to lower reserve requirements in the long run. However, in a system with high liquidity and strong capital inflows, it may be impossible to match the reserve requirement levels of advanced countries.

At this point, it is difficult to tell whether the measures have had the desired effect. As with any regulation, the ingenuity of the private sector in getting around the rules is not to be underestimated. No one ever expects regulation to be 100% effective. The only question is whether they are effective enough to achieve their goal. And, in this case, the jury is still out.

¹⁴ While the CNB has a discount rate and a Lombard rate, discount loans are not made at all, and Lombards have been extremely rare in recent years.

6. CONCLUDING THOUGHTS

This paper, almost necessarily, ends on a note of uncertainty. The Croatian case provides a great deal of material, but perhaps not so many firm conclusions. The relationship between the Croatian lending boom and current account problems is clear. We doubt that anyone would dispute the need to deal with current account problems, although there certainly may be dispute about what particular measures should be taken, particularly in the presence of foreign banks.

Regarding the risk of banking crisis, the Croatian experience is one of a lending boom clearly connected to a banking crisis in the 1995-98 period. But it is not clear whether rapid lending per se, or rapid lending in the presence of a weak legal framework, inadequate management and self-dealing owners are to blame. This leaves our assessment of the current situation ambiguous. Will Croatia's banking system, thanks to stronger ownership and better banking supervision, survive the lending boom unscathed? Is the concentration of lending on consumer credit less risky? While we do not know the answers to these questions, we do believe that there are reasonable measures that can be taken to limit the risks without excessively damaging future growth. And that, perhaps, is the main lesson of the Croatian experience.

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