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Why are Eastern Europe's banks not failing when everbody else's are?

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Working Paper

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WHY ARE EASTERN EUROPE'S BANKS NOT FAILING WHEN EVERYBODY ELSE'S ARE?

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Abstract

While the South East Asian financial crisis spread to Russia and Brazil, the transition economies in Central and Eastern Europe seem to be largely unaffected by international financial contagion. The lack of recent banking crises in Central and Eastern Europe is the more surprising considering that most economies have experienced severe banking sector problems in the recent past, that large bad loan ratios are still prevalent, that banking regulation and supervision are only slowly improving, and that stabilizing policies, such as capital and exchange rate controls, have slowly been eliminated. We focus on real, financial and external fundamentals compiled from the IMF's International Financial Statistics, from the World Bank's World Debt Tables, and from the BIS' Consolidated International Banking Statistics. We use univariate tests to see whether there are systematic differences between transition economies and other economies during the months leading up to a crisis, and in the months right after a banking crisis. Our results indicate that economic fundamentals during periods before and after a crisis month are generally different than non-crisis months. Also, changes in economic fundamentals are significantly different in transition economies than in other emerging economies. In particular, our results indicate that the transition economies' recent insulation from international contagion may result from a general lack of overly optimistic credit expansions. Similarly, speculative asset bubbles do not appear to have real repercussions, mainly because asset markets are underdeveloped. Because of a lack of speculative financing in transition economies, the real repercussions seem to be significantly smaller in CEECs than in other emerging economies. Thus, other risks, particularly the larger interest rate and maturity risks are less likely to materialize. As real credit is expanding more rapidly, and as asset markets become more developed, transition economies may become more similar to other emerging economies, which could lead to less insulation from international contagion in the future if adequate regulation and supervision are not implemented.

Keywords: Transition economies; Central and Eastern Europe; emerging economies; banking crisis; univariate tests

I. Introduction

Financial contagion in emerging economies seems to have been growing, with the exception of the Central and Eastern European countries (CEECs). While the Asian financial crisis has spread to Russia and Latin America, other transition economies in Central and Eastern Europe seem to have been spared from the fate of massively failing banks.

The recent apparent insulation of the CEECs from international contagion is the more surprising considering that there are a number of factors which should make the transition economies even more susceptible to banking crises. For instance, in a number of recent studies, it has been found that the likelihood of a banking crisis appears to increase after the introduction of financial liberalization in emerging economies. As all transition economies liberalized their financial systems in a rather rapid fashion, one would expect a similar increase in the likelihood of banking crises in the CEECs. Also, the three Baltic economies, the Visegrad states as well as Croatia and Slovenia have either undergone a banking crisis or experienced significant banking sector problems in the 1990's. More importantly, a number of problems, which led to the earlier crises, such as bad loan ratios or ineffective oversight, are not fully resolved yet. So, why are the Central and Eastern European dominoes not falling given their fragile situation?

As CEECs are unaffected by the recent financial turmoil despite their already weak position, something must have gone right. The greater apparent stability of CEECs - in comparison with other emerging economies - may result from a constellation of economic fundamentals unique to the transition economies, which has led to an overall lower exposure to risks that are usually associated with less regulated financial markets, such as default, maturity, interest rate or exchange rate risk.

Not only the period leading up to crises may be different, but also the time immediately following the beginning of banking crises may be different in CEECs than in other emerging economies. In particular, all nine CEECs analyzed here have experienced severe banking sector problems between 1991 and 1995. Yet, it seems that CEECs have recovered rather quickly. For instance, in the Czech Republic growth took off after 1993, while the country resolved its financial sector problems with bad loan ratios of 38% in 1994-1995. Similarly, Polish real GDP growth gained momentum at rates of 3-7% between 1992 and 1997, even after, in 1991, 16% of all loans were classified as losses, 22% as doubtful, and 24% as substandard. Finally, while the Latvian banking crisis in the spring of 1995 may have contributed to that economy's negative growth rate of -0.8% in the same year, Lithuania grew at 3.3% in 1995, despite the fact that 2 banks accounting for 15% of deposits had to be supported (BCE, 1999; Lindgren, Garcia and Saal, 1996). If the repercussions of banking sector problems in CEECs are smaller than in other emerging economies, some of the risks banks are exposed to may be less likely to materialize.

Understanding the stability of CEECs is not only of interest to the economies themselves, but also to industrialized economies, particularly to the neighboring EU countries. Closer ties of the CEECs with industrialized economies, especially in light of the pending EU accession of the first wave countries, mean that banking crises in CEECs may have stronger repercussions for industrialized economies than financial problems in other parts of the world.

The rest of the paper is organized as follows. Section II discusses the risks banks in

less industrialized economies are exposed to after FL. In section III, we then provide a comparison of economic fundamentals in CEECs and other emerging economies for the months leading up to a banking crisis to see whether the risks commonly associated with FL are greater or lower in transition economies. Section IV, then, looks at the real, financial and external consequences of a banking crisis in either set of countries to see whether transition economies are, in fact, recovering faster than other emerging economies, and to see what the implications for the current stability a quick recovery may have had. Finally, a few concluding remarks follow in section V.

II. Risks in Banking after Financial Liberalization

We begin with brief definitions of banking crises, and financial liberalization (FL), and then lay out a framework which connects FL to increased default, interest rate, maturity and exchange rate risks, and consequently to a greater likelihood of banking crises.

Banking sector problems are characterized by high bad loan ratios - in our case more than 10% -, "bank runs that lead to closure, merging or takeover by the public sector of one or more financial institutions, [or].. if there are no runs, the closure, merging, takeover, or large-scale government assistance of an important financial institution (or group of institutions), that marks the start of a string of similar outcomes for other financial institutions" (Kaminsky and Reinhart, 1996:6; Lindgren, Garcia, and Saal, 1996; Sheng, 1996; Balino and Sundararajan, 1991).

In a number of previous studies the likelihood of banking crisis has been connected to an economy's previous liberalization of its financial sector. FL is understood as the elimination of financial regulations to reduce excess demand for credit (McKinnon, 1973; Shaw, 1973). In addition, FL often also comprises capital account liberalization leading to more portfolio investments and greater mobility of multinational corporations (MNCs) and multinational banks (MNBs). In the case of the CEECs, financial market changes have included both domestic and external liberalization, such as market based interest rate determinations, and lending decisions, MNB entry as well as inward and outward capital account liberalization. It seems important to note here that these changes are generally faster introduced in transition economies than in other emerging economies. Since FL has been the prominent policy stance in CEECs, our attention now focuses on the connection between FL and crisis. Generally speaking, FL exposes banks to a number of risks, such as maturity, interest rate and exchange rate risk, which are also more likely to materialize after liberalization. Additionally, FL in less industrialized economies may lead to an increase in the default risk due to inadequate supervision and regulation.

Increased risk exposure, which may lead to crises, could arise from an initial "deregulation euphoria". As domestic financial markets become more liberalized, credit may be expanded to sectors that were previously credit constrained, mainly because rising real interest rates promise more profits. Greater credit supply might in turn increase business investment, thus possibly leading to an output increase (Calvo and Corricelli, 1993). With higher real rates and with expanding real and financial sectors, more funds should be attracted from overseas. More capital inflows may lead to a real currency appreciation, hence attracting even more capital.

The key to understanding a possible link between FL and a greater likelihood of crisis is that rather than a stable equilibrium, changes in economic fundamentals may merely produce periods of tranquility (Minsky, 1986). Two aspects are of particular importance here: a continued appreciation helps to attract capital, and deregulated financial markets, in

particular capital markets, may promise short-term gains. Both a continued overvaluation and the diversion of liquidity into asset markets can generate speculative financing, thereby destabilizing banks. Particularly, an overvalued exchange rate hurts the real sector through a deterioration in the terms of trade. Also, additional liquidity invested in short-term speculative assets diverts funds from business investment finance, especially since capital markets early during FL may promise high growth rates. In other words, the financial sector continues to grow due to real exchange rate and asset market gains, thereby creating the conditions for a real economic slow down. This growing disparity between financial and real sectors means that default risk rises.

Default risk, that is, the risk that borrowers default on their loans, increases due to a real slow down, while liquidity expands. Besides a deterioration in the quality of borrowers due to speculative financing, default risk may also rise due to increased foreign currency borrowing in the wake of an appreciating currency. An appreciating currency provides an incentive to borrowers to take out foreign currency denominated loans, thereby raising the chance of borrower default in the case of a devaluation. Finally, monetary authorities may be tempted to tighten their stance on money to stabilize their exchange rate, thus inducing a real slow down.

With a rise in default risk, maturity, interest rate and exchange rate risks become more likely to materialize. Maturity risk is understood here as the risk that short-term bank liabilities, which have been used to fund long-term assets, are withdrawn, such that banks are forced to recall outstanding loans. Short-term funds are withdrawn if investors anticipate economic difficulties. As a large share of overseas funds are in the form of short-term loans, quick recall is rather easy. Ironically, large scale capital inflows may have helped to generate an overvaluation, which may make a devaluation and capital outflows more likely.

An overvaluation which has attracted capital may foster an economic slowdown, thus making maturity and exchange rate risk more likely to materialize. Exchange rate risk is the risk that a domestic currency will be devalued, thus making repayment of foreign currency loans harder. Especially, with an initially appreciating currency banks may be enticed to finance domestic assets with foreign liabilities. Considering that a continued overvaluation may have adverse real consequences, capital outflows may eventually become more likely. To avoid capital outflows monetary authorities may try to sustain an overvaluation by spending official reserves or by tightening money. As reserves are depleted or the real sector begins to slow down, a devaluation may be unavoidable, hence making foreign currency loans more difficult to repay.

Besides a real economic decline, a lower interest rate differential due to rising interest rates abroad may also result in net capital outflows. Such a materialization of interest rate risk induces capital outflows unless domestic money is tightened. If domestic rates are subsequently increased to, investors may be temporarily compensated, but capital outflows may become more likely as tight money may stifle the real sector.

Adding to the greater risk exposure of banks is the fact that the support governments can provide may decline, too. A crisis, and with it the need to support banks may come in the wake of deteriorating economic fundamentals before a crisis, possibly induced by government policies, such as tightened money (Kaminsky and Reinhart, 1996). In other words, at the same time that government finances are worsening the demands on these finances may be rising.

The risks banks incur may decline due to more international financial competition. It is likely that banks in transition economies reduce their risk exposure once they find

themselves in competition with well capitalised MNBs. In other words, if a bank's net worth is above its safety threshold for prudent lending, more international competition may lead a bank to reduce its lending, such that it can lower its loan and risk exposure. The reduction in domestic bank lending will be greater if MNBs engage in "cherry picking" leaving only borrowers of lesser quality. Obviously, the more a bank reduces its lending the less it is exposed to any of the above risks.

Alternatively, the increased risk exposure of banks can be compensated by specific policies. Such policies can take the form of adequate supervision and regulation. Demirguc-Kunt and Detragiache (1998), for instance, find that in countries where the institutional environment is stronger, that is, where there is respect for the rule of law, a low level of corruption, and good contract enforcement, there the chance of banking crisis is reduced. Similarly, capital controls lower maturity, exchange and interest rate risks. It should be noted, though, that adequate supervision is only slowly established in CEECs, while capital and exchange controls are reduced. Recently a number of remaining problems in the supervision and regulation of banks in CEECs have been identified (Bonin, Mizsei, Szekely, and Wachtel, 1998). Overall, it seems that "the infrastructure for bank supervision and regulation has not developed as quickly as it should" (Bonin et al, 1998:1). Furthermore, tables 1 and 2 document that capital controls as well as restrictions on foreign exchange transactions are gradually eliminated across the region.

So far, we have focused on less industrialized economies, while banking crises in CEECs may, in fact, come about in different ways than crises in other emerging economies. The gradual elimination of government regulations in CEECs should lead to us to suspect that CEECs may be at least as vulnerable to changes in economic fundamentals as other emerging economies. Thus, we are focusing on each group's economic situation around the time of crisis. We would expect economic fundamentals to be quite different between CEECs and other emerging economies around the time of crises because of the speed at which CEECs transformed their financial systems, and because of the fact that CEECs transformed from non-market based systems.

III. Empirical Analysis of the Months Leading Up to Crisis

III.1 Definitions, Data Sources, and Methodology

To investigate the differences between CEECs and other emerging economies with respect to economic fundamentals around the time of banking crisis, we use data for 27 emerging economies, and for nine transition economies after FL has been introduced. To mark the beginning of FL, a point in time is chosen since the range of policies encompassed in FL is often not introduced at once, but rather over a period of several years. Here, we choose the elimination of interest rate restrictions as the onset of FL (Fry, 1997; Demirguc-Kunt and Detragiache, 1998). The data set, then, includes real, financial and external variables. The data are collected from the IMF's International Financial Statistics, with the exceptions of international debt data taken from the World Bank's Global Development Finance (previously World Debt Tables), and of MNB loans collected from the BIS' Consolidated International Banking Statistics.

To compare economic fundamentals between emerging economies and CEECs, we proceed in three steps. First, we study whether each variable is different prior to crises as compared to non-crises periods in each group of economies. This allows us to evaluate the response to changes in the four risk categories, government support and international

financial competition prior to crisis. Second, we look at the behavior of each variable following the beginning of a banking crisis in each subset of economies to see whether it is substantially different than during tranquil periods. This permits us to address the real, financial and external impact of banking crisis. Finally, we compare the pre-crisis and post--crisis periods in emerging and transition economies, respectively. Thus, we can test whether responses to changes in economic fundamentals actually differ, and we can also see whether there are differences in economic developments after a crisis which may have helped to insulate the CEECs from international contagion during the recent financial turmoil.

Here, we are interested in both the months prior to a crisis and the months directly after a crisis. Following the above definition of banking crises, we first identify the month in which the banking crisis begins. We then consider the 18 months prior to this month as pre-crisis months, whereas the 18 months following the crisis month are classified as post-crisis period[1].

To make each variable comparable across periods and sub-sets, we need to control for time, country and units by manipulating the data slightly. Here, we only consider percentage ratios, or percentage changes to establish comparable units. Further, to control for time and country specific effects, we first take the average of each variable in each cross-section for the months that are neither classified as crisis month nor as pre-crisis nor as post-crisis period. Then, the deviation of each observation from this tranquil period average is calculated. Finally, our univariate tests compare the mean in each subperiod of these differenced observations.

III.2 Results

The univariate test results presented in tables 2-4 show that most variables are different in pre-crisis months than during tranquil periods, and that most variables are also different between the two groups of countries for the months prior to crises[2].

We now consider changes in each risk category in each subset of economies during pre-crisis months, beginning with default risk. Default risk is captured by the growth rate of real industrial production, by the asset market growth rate, by the export growth rate, and by the growth rate of real credit. A growing real sector suggests a declining default risk, whereas higher real credit growth indicates a higher than average default risk. Finally, larger than average stock market growth should increase default risk as it is used here as a proxy for speculative finance.

Default risk appears to decline in CEECs, while it grows in emerging economies prior to a crisis, which is also reflected by a higher default risk in emerging economies. In CEECs, industrial production growth stays the same, while export and credit growth are slowing down. Thus, there is evidence that finance constraints increase in the months leading up to a

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[1] We could also test the robustness of our results by using different time lengths. However, extending to 24 months would leave us with too few tranquil periods for CEECs, while shortening to 12 months seems problematic because "[banking sector] problems may first become public through illiquidity, [while] insolvency normally precedes illiquidity" (Lindgren, Garcia and Saal, 1996:9). Hence, we may miss important changes with a too short period.

[2] We use t-tests, Wilcoxon ranksum tests, and Kruskal-Wallis tests for differences in means. As some of the sample sizes for CEECs may be small the use of non-parametric tests is appropriate.

crisis, and that consequently overly optimistic credit expansions are not a problem in CEECs. The more rapid stock market growth in CEECs, though, may speak to increased asset market speculation during the months leading up to crisis. However, given that capital markets are rather narrow and shallow in CEECs, an asset market bubble is unlikely to have severe real effects. Hence, default risk seems to decline in CEECs prior to crisis. Not so in emerging economies, where industrial production growth and real export growth are slowing down, while real credit growth remains unchanged, indicating a gradual shift towards softer budget constraints, or more accommodating finance. Supporting the view that speculative financing increases, stock market growth is also increasing faster in the months before a crisis. In emerging economies, asset market bubbles tend to have real consequences as markets are better developed than in CEECs. Emerging economies also seem to have a higher default risk than CEECs because real credit growth is the same, where industrial output growth is lower in emerging economies than in CEECs.

In emerging economies, which have undergone FL, maturity, interest rate and exchange rate risks should be higher due to greater capital mobility, and these risks should be more likely to materialize if banking crises have real repercussions. Maturity risk is captured here by the growth rate of short-term loans relative to short-term loans and relative to official reserves. All else equal, higher growth rates suggest above average increases in maturity risk. Short-term loans relative to total loans grow faster in the months leading up to a crisis, but since official reserves are also growing faster, the growth rate of short-term loans relative to official reserves is actually lower in the months leading up to a crisis, thus suggesting a lowered maturity risk in CEECs. In contrast, there is no difference between tranquil and pre-crisis periods in emerging economies, suggesting little change in maturity risk. Not surprisingly, comparing the pre-crisis periods between the two groups indicates that short-term loan growth rates, and hence maturity risk increases, are higher in emerging economies than in CEECs.

The next risk considered here is interest rate risk, captured here by the real interest rate and the interest rate differential between each economy and the US. A widening interest rate differential should lower the interest rate risk. There is some evidence that both the real interest rate and the real interest rate differential are declining in transition economies before a crisis, whereas there is no discernible difference in either variable in emerging economies. Thus, the interest rate risk is rising in transition economies, while it stays the same in emerging economies, which is also reflected in a higher interest rate differential in emerging economies.

Exchange rate risk is the last risk, which is measured by the deviation of the real exchange rate from its mean during tranquil periods. An overvaluation should raise exchange rate risk as it entices borrowers to borrow more in foreign currencies. Since a decline in the real exchange rate indicates an appreciation, there is evidence that the real exchange rate is appreciating everywhere. The overvaluation seems, in fact, to be greater in emerging economies than in transition economies, which means that exchange rate risk is larger there too.

Besides the risks banks are exposed to, we look at three more aspects, namely financial sector development, international financial competition, and the government's external support structure. Financial sector developments are the growth rates of real M1, and of real deposits. Faster growing M1 or deposits indicate financial intermediation growth. More financial intermediation may mean a growing burden on the public sector in case stabilizing measures become necessary. Further, changes in international financial

competition are captured by the growth rate of MNB market share, where a growing MNB presence should theoretically help to reduce the chance of a banking crisis by making domestic banks more efficient. Finally, the viability of the government's support structure is measured by the growth rate of official reserves, the ratio of the current account balance to official reserves, and the ratio of short-term loans to off1cial reserves. The argument here is that government support becomes weaker either if official reserves are declining or if the burden on official reserves becomes greater.

With respect to financial sector developments, the monetary aggregates show that there are no changes in the financial sector in transition economies, whereas M1 growth and deposit growth seem to be slowing down in emerging economies. The growth rates of international financial competition, however, show that in the months leading up to a crisis, growth of MNB loans as a share of total loans is slowing down in transition economies, while it is picking up in emerging economies. While the monetary aggregate growth rates seem to be the same in both sets of economies, the growth rate of MNB market shares is higher in emerging economies.

The evidence on public external finances suggests improvements for CEECs, but it is mixed for emerging economies. For instance, official reserves grow faster both in CEECs and emerging economies in the months leading up to a crisis, thus indicating a stronger support structure, particularly in transition economies where the growth rate is higher than in emerging economies. Further, short-term loans relative to official reserves are lower in the months leading up to crises, again in both sets of economies, and the ratios are also the same for both sets of economies. When it comes to the current account, transition economies see their current account balance improving relative to official reserves, whereas it is lower in emerging economies. Not surprisingly, the average current account balance relative to reserves is greater in transition economies than in emerging economies. Thus, the government's external support structure is improving in CEECs prior to a crisis and relative to that in other emerging economies.

Before a crisis, economic fundamentals show significant differences between CEECs and other emerging economies. In particular, while default, maturity and exchange rate risks are lower in CEECs, interest rate risk is lower in emerging economies. Also, one stabilizing measure, namely MNB growth is lower in CEECs, whereas public support means seem to be strengthening more in CEECs than in other emerging economies.

Our results suggest that crises in CEECs are driven by other forces than crises in emerging economies. In particular, the growing division between real and financial sectors in emerging economies, which is not observable in CEECs, indicates in turn that speculative financing is less of a problem in CEECs than elsewhere. Similarly, while there is rapid stock market growth – a sign of an asset market bubble - this is unlikely to have had severe real consequences in CEECs, mainly because capital markets are very narrow and shallow in CEECs. With a lack of real repercussions, though, the other risks, such as maturity, interest rate and exchange rate risk are less likely to materialize, even though interest rate risk is higher in CEECs. Finally, the financial resources authorities in CEECs have available are growing faster than in emerging economies. Thus, the current stability of banks in CEECs may lie in the lack of real repercussions of banking crises. That is, without real repercussions, which may have been prevented by improved government finances, other risks are less likely to materialize.

Before we take a look at the issue of the repercussions of banking crises, one question still remains to be answered, namely why did CEECs encounter severe banking sector

problems in the past. One standard answer is that banks inherited large bad loan burdens as the newly established commercial banks kept old, inefficient state-owned enterprises as their customers (Fleming and Talley, 1996). Our results suggest, then, that in order to avoid further increases in bad loan ratios, banks may have imposed hard budget constraints during the early stages of the transition process (see also Anderson and Kegels, 1998; Bonin, Mizsei, Szekely, and Wachtel, 1998; Dittus, 1994; Cornelli, Portes and Schaffer, 1996). As credit relative to output has been increasing (table 1), finance constraints may slowly be eliminated, which may suggest that the financial systems of CEECs may become more similar to other emerging economies.

IV. Changes in Variables after Crises

Our question of interest in this paper is the insulation from international contagion of the CEECs in the wake of the South East Asian and Russian crisis. In this section, we are looking at another possibility, namely the chance that repercussions of crisis are less than in other emerging economies. With a quick recovery, though, maturity, interest rate, and exchange rate risk are less likely to materialize and banking sector problems are more likely to be insulated.

We look at a number of real, financial, and external variables after crises to see what the implications of bank crises are. The real sector is captured by industrial production growth, and by stock market growth; the growth rates of real M1, of real deposits, of real credit, the real interest rate and the growth rate of MNB loans relative to total loans measure the financial market; and the external sector is captured by the deviation of the real exchange rate, real export growth, the growth rate of official reserves, the real interest rate differential, the growth rates of short-term loans relative to total loans and relative to official reserves, the ratio of short-term loans to official reserves, and the ratio of current account balances to official reserves.

Interestingly, the real sector is growing faster after a crisis in CEECs, while it is shrinking in emerging economies. Both industrial production growth and asset market growth rates are higher in the months following a crisis as compared to tranquil periods in CEECs, while both rates are lower in emerging economies. Also, industrial production growth and stock market growth rates are lower in emerging economies than in transition periods. Thus, the univariate tests not only confirm the hypothesis that real repercussions from banking crises are smaller in transition economies than in emerging economies, but that they also suggest that the real sector is actually improving immediately following a crisis in CEECs. The tests further indicate that banking crises in are centered around speculative asset market bubbles, as asset market growth is above average before a crisis, and below average after a crisis in emerging markets. In CEECs, though, this connection between asset market speculation and financial instability does not emerge, most likely not because asset markets are still underdeveloped in CEECs.

There are signs of a slow down in financial intermediation in CEECs, whereas financial intermediation is improving in other emerging economies. In CEECs, both real M1 and real deposit growth are less in the months after a crisis, suggesting that less funds are channeled through the financial sector. In contrast, M1 growth rate is higher for tranquil periods than the post-crisis months, while real deposits are actually increasing faster in emerging economies after a crisis, which suggests a growing financial intermediation. Further, in CEECs real credit growth and the growth rate of MNB market share are lower in post-crisis periods than during tranquil periods. In emerging economies, though, real credit

growth is actually greater immediately following a crisis, and so are MNB loans. Real improvements, financial disintermediation, and less real credit seem also in line with an unchanged real interest rate in CEECs, and a growing real interest rate in other emerging economies as compared to non-crisis periods.

As the real and financial developments in the wake of crises in CEECs provide some insights into their stability, the external sector highlights a few trends which may spell future trouble. While real exchange rate overvaluations continue, growth rates of official reserves are less in CEECs and emerging economies than during tranquil periods. These trends indicate that the currency overvaluations may become a drain on official reserves after a crisis, while they help to attract foreign reserves prior to a crisis[3]. Further, while CEECs attract more short-term loans relative to total loans after a crisis, emerging economies lose short-term loans during the period. Thus, maturity risk is increasing in CEECs. Finally, there are some signs of strengthening government support structure. Official reserves grow at a lower rate during the post-crisis months than during tranquil periods. However, in CEECs, the potential strains on official reserves decline as the ratio of short term loans to reserves is lower and the current account balance relative to reserves is unchanged after a crisis as compared to tranquil months. Similarly, the strains on official reserves decline in emerging economies due to a higher ratio of current account balances relative to reserves and unchanged short-term loans relative to reserves.

The observations after crisis hint at one continued stabilizing trend in CEECs, whereas they also point to potential future problems. Current banking stability in CEECs may arise from banks' continued reluctance to lend to the real sector, which is reflected in observed finance constraints for the real sector (Anderson and Kegels, 1998; Abel, Szekely and Siklos, 1998; Mygind, 1997; Dittus, 1994). Put differently, banks in CEECs may have not been caught up in the recent financial turmoil as they may have reduced their lending. However, future problems may loom as their official reserves may be depleted in an effort to stabilize their exchange rates, while simultaneously their short-term borrowing and their stock markets seem to grow above average. In other words, if speculative financing becomes more prevalent, possibly due to a growing disparity between real and financial sectors, or due to deepening and widening capital markets, greater maturity and exchange rate risks in CEECs may materialize.

V. Concluding Remarks

In this paper we address the issue of the apparent insulation from international contagion of the banking systems in CEECs. Despite large bad debt burdens, and banking sector problems in every single economy in the recent past, the financial turmoil, which started in Asia and spread to Russia, did not spill over into Central and Eastern Europe. We tried to solve this puzzle by looking at a number of economic fundamentals in the months leading up to a crisis, and after a crisis, and compare changes in these economic fundamentals to changes during non-crisis times, and to changes in other emerging economies in similar situations.

We find that the insulation of CEECs has resulted from a lack of speculative

[3] This result also supports the evidence found in Kaminsky and Reinhart (1996), who argue that currency crises are more likely to follow banking crises than the other way around.

financing, which seems, in contrast, more prevalent in other emerging economies. In other words, the continued reluctance on the part of banks in CEECs to engage in lending even to an expanding real sector, never mind a contracting one, has helped to stabilize banks. Obviously, the most stable banking sector is the one that does not give out credit, and hence does not incur any risks. The fact that banks in CEECs are not engaged in speculative financing also lowers the chance that maturity, interest rate and exchange rate risks materialize. However, overvaluations in the months following a crisis, along with depleting resources, and increasing short-term international borrowing may spell future troubles for local banks. Again, the crucial point here is that for maturity, and exchange rate risks to materialize, real and financial sectors would have to move apart, that is, banks in CEECs would have to engage in speculative financing.

While speculative financing does not seem to be a problem so far in CEECs, future instabilities may still loom. In particular, policy makers should be worried about real economic slowdowns for which signs are emerging in 1999, since real lending has been growing on average as a share of GDP since 1996, leading to a gradual reduction in finance constraints (table 1). An added cause for worry should be the high stock market growth rates around the times of crises. So far, asset market speculation has had no destabilizing impact due to underdeveloped asset markets. However, with clearer property rights, better developed real estate markets, and broader and deeper stock markets, speculative asset bubbles can cause the same disruptions in CEECs as they have in other emerging economies. Furthermore, future increases in speculative financing are more likely, and they are more probable to have severe real repercussions, if regulation and supervision continue to be inadequate in the CEECs.

APPENDIX

A. Tables

TABLE 1

MONEY AND CREDIT IN CEES

Year	M1/GDP	M2/GDP	Credit/GDP	Inflation
1990	22.83	43.51	80.98	203.33
1991	24.39	47.19	73.38	119.00
1992	26.88	50.51	68.47	444.67
1993	21.45	48.88	60.82	490.99
1994	20.70	47.48	57.44	29.45
1995	18.25	47.05	50.36	18.46
1996	17.71	53.77	51.10	11.86
1997	22.83	62.77	68.37	9.84

Note: All money and credit figures are GDP weighted averages, whereas inflation rates are simple averages. All figures are reported in percent.

TABLE 2

CHANGES IN EXTERNAL CAPITAL CONTROLS

Time	Changes
Croatia	
02/1996	New trade law allows domestic juridical persons to engage in FDI.
03/1997	Foreign juridical persons allowed to withdraw monthly foreign currency equivalent up to HRK 15,000 from deposit accounts.
Czech Republic	
09/1994	Partial liberalization of foreign securities purchases. Simplification of rules to acquire properties abroad. No longer import and export restrictions on securities denominated in Koruny.
08/1995	Overseas bank borrowing curtailed.
Hungary	
12/1991	Financial institutions‘ foreign borrowings to be approved by the NBH. Credits to foreigners by Hungarian financial institutions limited to maturities up to 6 months; exceptional cases with NBH authorization. Joint ventures possible without approval, with the exception of foreign participation of more than 10% in banks and insurances.
01/1991	Abolition of the licensing requirement for joint ventures.
01/1996	Capital account restrictions eliminated. Foreigners allowed to buy securities with maturities of more than 1 year without NBH permission. Permission of outward equity investments if share of more than 10% is acquired (canceled on March 20)
07/1996	Liberalization of issue, placement and introduction of OECD government bonds and highly-rated OECD-based enterprises' bonds and shares**.** Extension of foreign exchange law's provisions on domestic securities to debt instruments with maturities of 1 year and more.
01/1997	Liberalization of issue of bonds with maturities of more than 1 year and OECD-based enterprises' investment grade-rated shares. Liberalization of banks' futures and options transactions in foreign currencies.
01/1997	No longer government approval for foreign participation in banks required.
11/1997	Liberalization of short-term lending to non-residents

TABLE 2: CHANGES IN EXTERNAL CAPITAL CONTROLS – CONT.

01/1998	Liberalization of issue of shares, other securities, bonds and other debt securities with a maturity of more then 1 year on domestic market, denominated in foreign exchange and issued by OECD-based enterprises – irrespective of credit rating. For residents: ability to purchase these securities without foreign exchange authorization.
01/1998	Elimination of restrictions on investments in branches of foreign companies (in addition to investments in joint ventures and fully foreign-owned companies).
	Elimination of further, more specific criteria on these direct investments.

Latvia

04/1996	Elimination of cabinet approval requirement for FDI above $ 1 million.

Poland

07/1991	All restrictions on transfers of profits and capital repatriation canceled
01/1995	Removing exchange restrictions on international transactions
02/1997	Liberalizations on transfers of salaries, funds and deposits by resident foreigners.
02/1997	Liberalization of capital transactions: Limit for investment in publicly tradable securities issued in Poland by foreign entities raised to ECU 300,000,00
	Residents allowed to purchase publicly traded securities in OECD countries ; purchases above ECU 50,000 needing 3 months' notice to NBP
03/1997	Insurers permitted to purchase securities traded in OECD countries (minimum ratings required); up to a maximum of 5% of funds covering their fund overseas.

Slovak Republic

12/1996	Limits on exporting and importing of national and foreign currency abolished and partly replaced by declaration requirement.
12/1996	Liberalization of credits with a maturity of 5 years and more from Slovak residents to OECD residents. Liberalization of trade credits for OECD trade. Liberalization of foreign borrowings by residents with a maturity of 3 years and above.
12/1996	Liberalization of direct investments in OECD countries.

TABLE 2: CHANGES IN EXTERNAL CAPITAL CONTROLS – CONT.

Slovenia

04/1992	Ratios of foreign exchange deposits required to be held abroad by deposit money banks as cover against domestically held foreign exchange deposits changed to 5-90%, depending on deposits' maturity. Permission to commercial banks to extend foreign exchange credits to resident juridical persons.
02/1995	40% of external borrowing with maturities of less than 5 years not immediately used for import financing to be deposited to a unremunerated Tolar bank account.
07/1996	Extension of the maturity of loans borrowed abroad by residents subject to 40% interest-free deposit requirements from 5 to 7 years.
12/1996	Introduction of 10% interest-free deposit requirement on loans borrowed abroad by residents with maturities of more than 7 years.
01/1997	Domestic banks permitted to extend credits to nonresidents.
02/1997	Cash withdrawals from foreign exchange accounts exceeding equivalent of SIT 250,000 per month are to be approved by BOS. Nonresidents' portfolio investments in secondary market-traded securities and derivatives have to be performed through custody accounts at domestic banks.
05/1997	Remove of interest-free deposit requirement for loans raised abroad for setting up company abroad, increasing capital or purchasing foreign companies' shares.

Source: IMF, Exchange Arrangements and Restrictions Annual Report.

TABLE 3

UNIVARIATE COMPARISON BETWEEN PRE-CRISIS AND TRANQUIL PERIODS IN TRANSITION ECONOMIES

Variable	t-test	Wilcoxon Ranksum	Kruskal-Wallis
Industrial Production Growth	1.2429	1.761	3.103*
Stock Market Growth	-2.7617***	-2.294***	5.262***
Real Export Growth	0.7988	1.944**	3.777***
Real Credit Growth	2.5238***	0.087	0.008
Growth of Short-Term Loans/ Total Loans	-6.9864***	-8.315***	69.142***
Growth of Short-Term Loans/ Official Reserves	4.7698***	3.365***	11.323***
Real Interest Rate	1.4043	2.047***	4.181***
Real Interest Rate Differential	1.4889	3.045***	9.246***
Real Exchange Rate	3.6216***	1.731	2.997
Real M1 Growth	1.8973	0.876	0.768
Real Deposits Growth	-0.0702	0.834	0.696
Growth of Official Reserves	-4.6391***	-3.216***	10.346***
Current Account/Official Reserves	-2.8290***	-2.554***	-6.524***
Short-Term Loans/ Official Reserves	3.7331***	1.842	3.393*
Growth of MNB Loans/ Total Loans	3.1358***	4.357***	18.986***

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. The t-test is a one sided test with a positive sign indicating that the null hypothesis of the means of both subsets being the same is rejected in favor of the alternative that the average for non-crisis periods is larger than the one for pre-crisis periods. In case of a negative sign, the mean for pre-crisis periods is larger than for non-crisis periods. Data sources are the IMF's International Financial Statistics, the World Bank's World Debt Tables, and its Global Development Finance Annual Report, and the BIS' Consolidated International Banking Statistics.

TABLE 4

UNIVARIATE COMPARISON BETWEEN PRE-CRISIS AND TRANQUIL PERIODS IN EMERGING ECONOMIES

Variable	t-test	Wilcoxon Ranksum	Kruskal-Wallis
Industrial Production Growth	4.775***	4.775***	66.716***
Stock Market Growth	-8.5014***	-0.999	0.998
Real Export Growth	1.8221**	2.789***	7.779***
Real Credit Growth	0.3554	-0.979	0.959
Growth of Short-Term Loans/ Total Loans	1.0280	0.147	0.022
Growth of Short-Term Loans/ Official Reserves	-0.9023	-.709	0.502
Real Interest Rate	-1.5637	-0.692	0.478
Real Interest Rate Differential	-.5637	0.157	0.024
Real Exchange Rate	6.8053***	8.871***	78.691***
Real M1 Growth	3.1499***	6.638***	43.993***
Real Deposits Growth	-0.9194	2.227***	15.141***
Growth of Official Reserves	-2.2332**	-0.079	0.006
Current Account/ Official Reserves	2.6055***	5.366***	28.798***
Short-Term Loans/ Official Reserves	2.2011***	4.205***	17.678***
Growth of MNB Loans/ Total Loans	-8.2639***	-6.018***	36.221***

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. The t-test is a one sided test with a positive sign indicating that the null hypothesis of the means of both subsets being the same is rejected in favor of the alternative that the average for non-crisis periods is larger than the one for pre-crisis periods. In case of a negative sign, the mean for pre-crisis periods is larger than for non-crisis periods. Data sources are the IMF's International Financial Statistics, the World Bank's World Debt Tables, and its Global Development Finance Annual Report, and the BIS' Consolidated International Banking Statistics.

TABLE 5

UNIVARIATE COMPARISON OF PRE-CRISIS PERIODS BETWEEN EMERGING AND TRANSITION ECONOMIES

Variable	t-test	Wilcoxon Ranksum	Kruskal-Wallis
Industrial Production Growth	-2.1682***	-1.803	3.251*
Stock Market Growth	1.5018	-1.813	3.287*
Real Export Growth	-0.4191	0.312	0.097
Real Credit Growth	1.2726	-0.338	0.114
Growth of Short-Term Loans/ Total Loans	-8.2368***	-6.628***	43.928***
Growth of Short-Term Loans/ Official Reserves	3.5255***	2.965***	8.794***
Real Interest Rate	2.4899***	-1.679	2.818*
Real Interest Rate Differential	2.4899***	-1.463	2.138
Real Exchange Rate	-3.2405***	-4.701***	22.101***
Real M1 Growth	-1.3011	-1.490	2.221
Real Deposits Growth	0.8822	0.283	0.080
Growth of Official Reserves	-4.8423***	-3.157***	9.970***
Current Account/Official Reserves	-3.4132***	-3.438***	11.821***
Short-Term Loans/Official Reserves	-0.7448	-1.662	2.763*
Growth of MNB Loans/Total Loans	1.9182**	2.710***	7.342***

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. The t-test is a one sided test with a positive sign indicating that the null hypothesis of the means of both subsets being the same is rejected in favor of the alternative that the average for emerging economies is larger than the one for transition economies. In case of a negative sign, the mean for transition economies is larger than for emerging economies. Data sources data are the IMF's International Financial Statistics, the World Bank's World Debt Tables, and its Global Development Finance Annual Report, and the BIS' Consolidated International Banking Statistics.

TABLE 6

UNIVARIATE COMPARISON BETWEEN POST-CRISIS AND TRANQUIL PERIODS IN TRANSITION ECONOMIES

Variable	t-test	Wilcoxon Ranksum	Kruskal-Wallis
Industrial Production Growth	-4.0071***	-2.618***	6.856***
Stock Market Growth	-3.8451***	-4.008***	16.064***
Real M1 Growth	3.2244***	3.402***	11.576***
Real Deposits Growth	5.2391***	2.566***	6.585***
Real Interest Rate	-0.6809	-0.837	0.699
Real Credit Growth	3.3190***	3.492***	12.191***
Growth of MNB Loans/ Total Loans	4.5129***	4.088***	16.708***
Real Exchange Rate	3.8644***	2.334**	5.448***
Growth of Official Reserves	2.2979**	0.845	0.714
Real Export Growth	-0.5388	-0.599	0.359
Growth of Short-Term Loans/ Total Loans	-4.9326***	-2.174**	4.727**
Growth of Short-Term Loans/ Official Reserves	-0.0758	1.801*	3.243*
Real Interest Rate Differential	-0.5674	0.934	0.871
Current Account/Official Reserves	1.4452	1.293	1.672
Short-Term Loans/Official Reserves	2.6295***	1.251	1.565

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. The t-test is a one sided test with a positive sign indicating that the null hypothesis of the means of both subsets being the same is rejected in favor of the alternative that the average for non-crisis periods is larger than the one for post-crisis periods. In case of a negative sign, the mean for post-crisis periods is larger than for non-crisis periods. Data sources are the IMF's International Financial Statistics, the World Bank's World Debt Tables, and its Global Development Finance Annual Report, and the BIS' Consolidated International Banking Statistics.

TABLE 7

UNIVARIATE COMPARISON BETWEEN POST-CRISIS AND TRANQUIL PERIODS IN EMERGING ECONOMIES

Variable	t-test	Wilcoxon Ranksum	Kruskal-Wallis
Industrial Production Growth	6.5533***	8.459***	71.563***
Stock Market Growth	6.6729***	8.509***	72.409***
Real M1 Growth	-1.0961	5.568***	31.003***
Real Deposits Growth	-0.5797	-3.369***	15.163***
Real Interest Rate	-2.2887**	6.357***	40.364***
Real Credit Growth	0.9278	0.784	0.614
Growth of MNB Loans/Total Loans	-1.3781	-3.894***	15.163***
Real Exchange Rate	3.5523***	4.277***	18.292***
Growth of Official Reserves	-1.1010	7.603***	57.808***
Real Export Growth	-0.0130	2.704***	7.310***
Growth of Short-Term Loans/Total Loans	1.5274	2.363**	5.586**
Growth of Short-Term Loans/Official Reserves	-3 1063***	-4.004***	16.034***
Real Interest Rate Differential	-2.2887**	7.011 ***	49.085***
Current Account/Official Reserves	-3.5978***	-3.922***	15.382***
Short-Term Loans/Official Reserves	-0.4748	-1.367	1.869

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. The t-test is a one sided test with a positive sign indicating that the null hypothesis of the means of both subsets being the same is rejected in favor of the alternative that the average for non-crisis periods is larger than for post-crisis periods. In case of a negative sign, the mean for post-crisis periods is greater than for non-crisis periods. Data sources are the IMF's International Financial Statistics, the World Bank's World Debt Tables, and its Global Development Finance Annual Report, and the BIS' Consolidated International Banking Statistics.

TABLE 8

UNIVARIATE COMPARISON OF POST-CRISIS PERIODS BETWEEN EMERGING AND TRANSITION ECONOMIES

Variable	t-test	Wilcoxon Ranksum	Kruskal-Wallis
Industrial Production Growth	-9.1479***	-7.691	59.155***
Stock Market Growth	-3.1552***	-6.647***	44.178***
Real M1 Growth	1.9221**	1.357	1.841
Real Deposits Growth	4.2365***	1.369	1.873
Real Interest Rate	1.7588**	-7.714***	59.496***
Real Credit Growth	-0.0582	2.313***	10.478***
Growth of MNB Loans/ Total Loans	0.3018	3.651***	13.329***
Real Exchange Rate	-2.1334**	-1.662	2.761
Growth of Official Reserves	1.9581 **	-1.191	1.418
Real Export Growth	-0.2239	-2 232***	4.983**
Growth of Short-Term Loans/ Total Loans	-6.2607***	-3.501***	12.260***
Growth of Short-Term Loans/ Official Reserves	1.811**	3.599***	12.954***
Real Interest Rate Differential	1.7588**	-7.012***	49.158***
Current Account/Official Reserves	3.8630***	4.184***	17 509***
Short-Term Loans/ Official Reserves	0.9702	1.621	2.628

Note: * denotes significance at the 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. The t-test is a one sided test with a positive sign indicating that the null hypothesis of the means of both subsets being the same is rejected in favor of the alternative that the average for emerging economies is larger than the one for transition economies. In case of a negative sign, the mean for transition economies is larger than for emerging economies. Data sources are the IMF's International Financial Statistics, the World Bank's World Debt Tables, and its Global Development Finance Annual Report, and the BIS' Consolidated International Banking Statistics.

TABLE 9: VARIABLE DEFINITIONS AND SOURCES[4]

Variable Name	Definition	Source
Industrial Production Growth	12-month change in industrial production index (where available; where not available the industrial production index has been replaced – in order of priority – by manufacturing production index, mining production index, crude petroleum production index, and gold output index).	IMF
Real Export Growth	12-month change in CPI adjusted exports.	IMF
Stock Market Growth	12-month change in stock market index.	Datastream
Real Interest Rate Differential	Difference between real (CPI adjusted) domestic interest rate and respective US rate (where available discount rates have been used; where not available the following interest rates have been used – in order of priority: federal funds rate, treasury bill rate, long- term government bond rate) (in percent).	IMF
Real Interest Rate	Domestic CPI inflation adjusted interest rate (see interest rate differential for further detail).	IMF
Real M1 Growth	12-month change of CPI adjusted M1.	IMF
Real Deposit Growth	12-month change of CPI adjusted deposits.	IMF
Real Credit Growth	12-month change of CPI-inflation adjusted domestic credit (based on monetary survey).	IMF
Real Exchange Rate	Official exchange rate adjusted for CPI differences between respective emerging economy and the US.	IMF
Change in Official Reserves	12-month change of official foreign exchange reserves.	IMF
Current Account/ Reserves	Current account balance relative to official reserves	IMF
Short-term Loans/ Total Outstanding Loans	12-month change in total short-term loans relative to total outstanding external debt.	WB
Growth of MNB Loans/Total Credit	12-month change in the ratio of loans by multi-national banks relative to total domestic credit.	BIS; IMF

Sources: IMF, *International Financial Statistics*; World Bank, *World Debt Tables*; BIS, *International Banking and Financial Market Developments*; DataStream.

[4]Balance of payments data and international debt positions are interpolated where appropriate.

TABLE 10

OVERVIEW OF COUNTRIES AND BANKING CRISES

Country	Financial Liberalization	Banking Crisis
Argentina	1977	03/1980; 05/1985; 12/1989; 12/1994
Bolivia	1985	12/1986
Brazil	1975	11/1985; 12/1994
Chile	1980	12/1981
Colombia	1980	07/1982
Mexico	1989	09/1982; 12/1992; 12/1994
Paraguay	1990	07/1995
Uruguay	1976	03/1981
Venezuela	1981 [controls reimposed 1984-01/1989]	10/1993
Indonesia	1983	11/1992
Korea	1984 [controls reimposed 1988-91]	11/1997
Malaysia	1980	12/1983; 07/1985
Philippines	1981	01/1981
Thailand	1989	03/1979; 10/1983; 05/1997
Israel	1990	12/1983
Jordan	1988	08/1989
Kenya	1991	12/1993
Tanzania	1993	12/1988
Turkey	1980 [controls reimposed 12/83-06/87]	12/1982; 01/1991; 06/1994
Egypt	1991	12/1991
Zambia	1992	12/1994
Guatemala	1989	
Guyana	1991	12/1993
Honduras	1990	
El Salvador	1991	12/1989
Peru	1980 [controls reimposed 1984-90]	04/1983
Croatia	07/1993	12/1995
Czech Republic	01/1990	12/1993;12/1996
Estonia	05/1992	11/1992
Hungary	01/1987	12/1993
Latvia	12/1993	03/1995
Lithuania	02/1989	12/1995
Poland	02/1989	12/1991
Slovak Republic	01/1990	08/1995
Slovenia	12/1991	12/1991

Sources: Demirgüc-Kunt and Detragiache, 1997, 1998; Kaminsky and Reinhart, 1996; Lindgren, Garcia and Saal, 1996

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