



European Bank
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Understanding the crisis in emerging Europe

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Summary

Emerging Europe suffered larger output declines during 2008-09 than any other region in the world. However, some countries experienced much smaller declines than others; major balance-of-payments crises and banking collapses were avoided; and economic policy reactions stayed well clear of populist and confiscatory measures experienced in previous crises. This paper argues that this can be attributed to European economic and political integration. It shows that foreign bank ownership was a mitigating factor in the output decline, and that more than half of the cross-country variation in output decline can be explained by a small group of macroeconomic vulnerabilities.

Keywords: Growth, Financial integration, Capital flows, Emerging Europe

JEL Classification Number: F43, F36, F34, O57

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<p>The findings, interpretations and conclusions expressed in this paper are those of the authors and do not reflect the official position of the organisations the authors belong to.</p>
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INTRODUCTION

When measured by the size of output declines in late 2008 and the first half of 2009, the global financial crisis hit emerging Europe harder than any other region of the world.² Given the high degree of integration of the region with advanced countries at the centre of the crisis, and large pre-crisis financing needs and macroeconomic vulnerabilities, this is not surprising. Rather more surprising are two facts.

- The region has been surprisingly resilient in several ways. With few exceptions – namely the Baltic states and Kazakhstan, where the crisis began in 2007 – the crisis arrived late, in the third and fourth quarters of 2008. Until then, most countries in the region enjoyed an extraordinary period of “decoupling”, with output and credit growth continuing unabated, notwithstanding the fact that the financial crisis had already engulfed the advanced economies for over a year. Furthermore, the crisis is missing some of the defining attributes of emerging market crises in the past. No country has suffered an uncontrolled currency collapse coupled with a systemic banking crisis, although some have come perilously close.
- Although the region has been hard hit on average, there is an extraordinary degree of variation in the extent to which countries within the region have been affected. Year-on-year output growth in the first quarter of 2009 was in the negative double digit range in several countries, but still in the low positive single digits in others. This variation roughly corresponds to EBRD and IMF projections for the whole year, so it is unlikely to be just a reflection of differences in the timing of the crisis impact.

The purpose of this paper is to document these two facts and take a first step towards understanding them.³ The paper’s main thesis is that the resilience of the region can be linked to a particular model of European integration: namely, financial integration through international banking groups, and political and institutional integration with western Europe. The former softened the blow of the capital flow reversal, while the latter helps to explain why the region, unlike emerging market regions in the past, did not descend into a spiral of destructive and populist policy reactions and twin crises.

As far as the cross-country variation in growth declines is concerned, a preliminary analysis suggests that this is most robustly related to pre-existing debt levels, and to a lesser extent to the structure of foreign liabilities. Since the accumulation of foreign debt is clearly a by-product of financial integration, this leads to the overall conclusion that financial integration has been a mixed blessing in this crisis. The question, which we leave for future research, is why some countries but not others managed to benefit from the stabilising aspects of integration while avoiding its risks.

While the results point towards a stabilising role of foreign bank ownership during the crisis, this paper does not evaluate the overall role of foreign banks in economic and financial development of emerging Europe. Doing so would require also examining the role of foreign banks *before* the crisis; both in facilitating financial deepening and

² We use the term “emerging Europe” broadly to denote Turkey and the transition countries of central, south-eastern and eastern Europe, including the Caucasus region. In addition, a few Central Asian countries form part of our analysis, constrained by data availability, bringing the total number of countries to about 25.

³ For a related analysis focused on the role of capital flows, written in parallel with this paper and with largely consistent conclusions, see Mihaljek (2009).

accelerating economic growth, and in contributing to the build-up of macroeconomic and financial vulnerabilities. EBRD (2009, Chapter 3) analyses these issues in some detail and finds evidence for a role of foreign banks, and of foreign financing more generally, in both of these areas.

In the next section we briefly summarise the background to the crisis and the main course of the crisis so far, document the region's initial resilience and show the large cross-country variation in crisis impact. We then examine the possible causes of these two phenomena in turn. A concluding section summarises our views on the outlook and risks for the region in the immediate future.

1. BACKGROUND: A CAPITAL INFLOW AND CREDIT BOOM, 2001-07

From the beginning of this decade until the first half of 2008, the economies of central and eastern Europe (CEE) experienced large capital inflows from the West, a credit boom and rapid expansions in both consumption and investment. The counterpart to this boom was a sharp increase in private sector external indebtedness. In most countries, debt was denominated primarily in foreign currency, making corporate and household borrowers – and hence creditor banks – vulnerable to a depreciation of the exchange rate.

Chart 1 documents these developments and compares them to those in other emerging market regions. Chart 1a shows that emerging Europe (excluding Russia, which initially suffered a crisis and later benefited from an oil boom, leading to capital account surpluses) received much higher capital inflows compared to both Latin America and emerging Asia. Private net capital inflows consistently exceeded 5 per cent of regional GDP and rose to over 10 per cent of GDP by 2007.

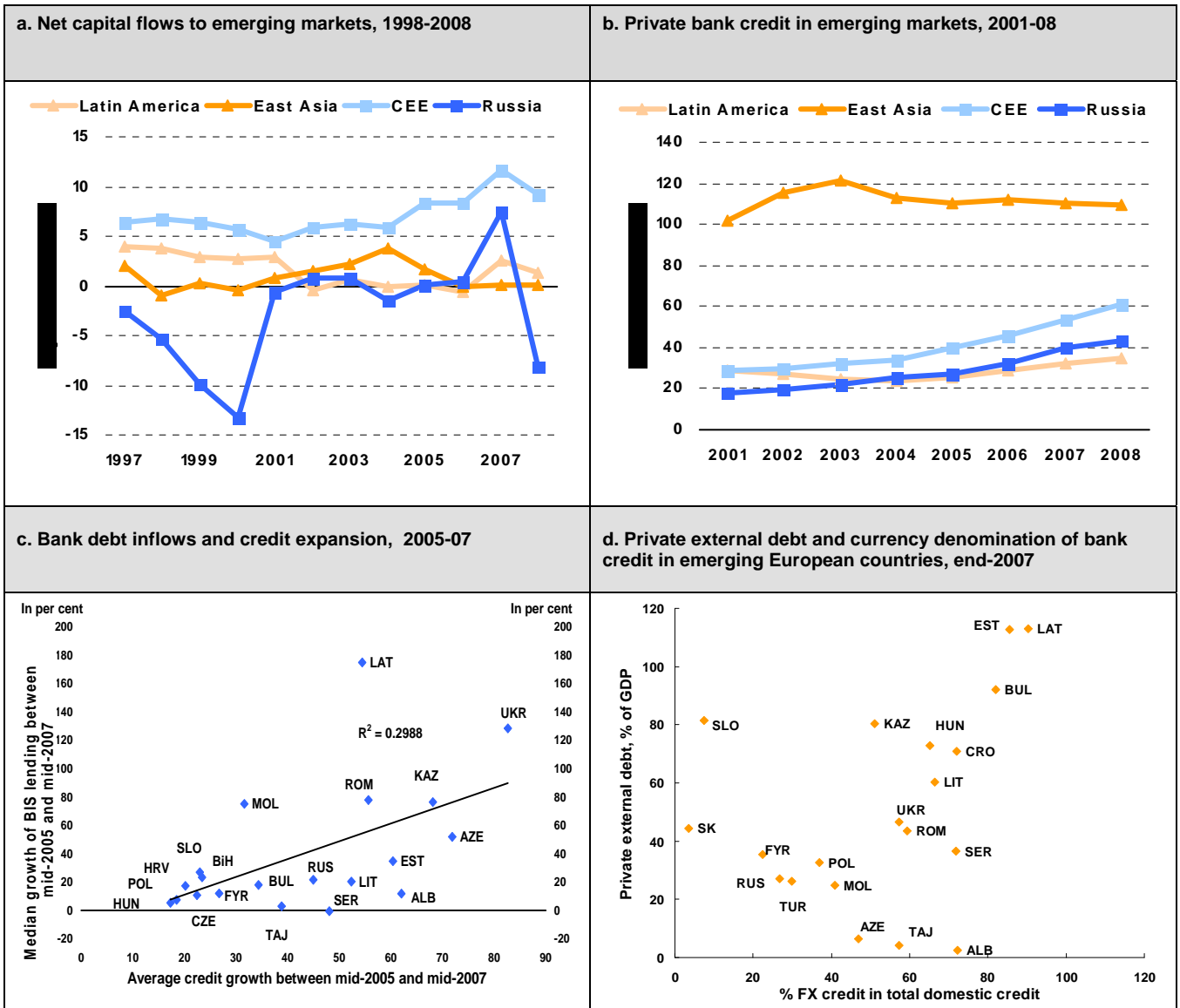
This rise coincided with a sharp increase in credit (Chart 1a). Beginning with relatively low levels – about 30 per cent of GDP on average, in line with Latin America, and much below emerging Asia – the ratio of credit to GDP doubled over the course of six years. Chart 1c documents the correlation between the size of bank debt inflows and credit booms during the 2005-07 boom period. Finally, Chart 1d shows that private external indebtedness was correlated, across countries, with a high share of foreign currency lending, with most (but not all) countries in the region exposed in both dimensions.

By the time the financial crisis erupted in advanced countries in the summer of 2007, emerging Europe had experienced many of the classic macro-financial vulnerabilities that formed the basis of past emerging market crises – in particular, the Asian crisis of 1997-98, in which currency mismatches and private indebtedness also played a critical role.

2. THE CRISIS: A SYNOPSIS

In July and August 2007 the crisis in the US subprime mortgage sector erupted and quickly spilled over to securitised assets more generally, both in the United States and in Europe. With confidence in the balance sheets of financial institutions holding such assets shaken, money markets dried up. Risk premiums rose sharply, affecting corporate borrowing. The US high-yield bond spread, traditionally a bell-wether for global risk aversion and a solid predictor of financing conditions in emerging markets, quickly doubled from around 250 to about 500 basis points by September.

Chart 1. Pre-crisis capital inflow and credit boom

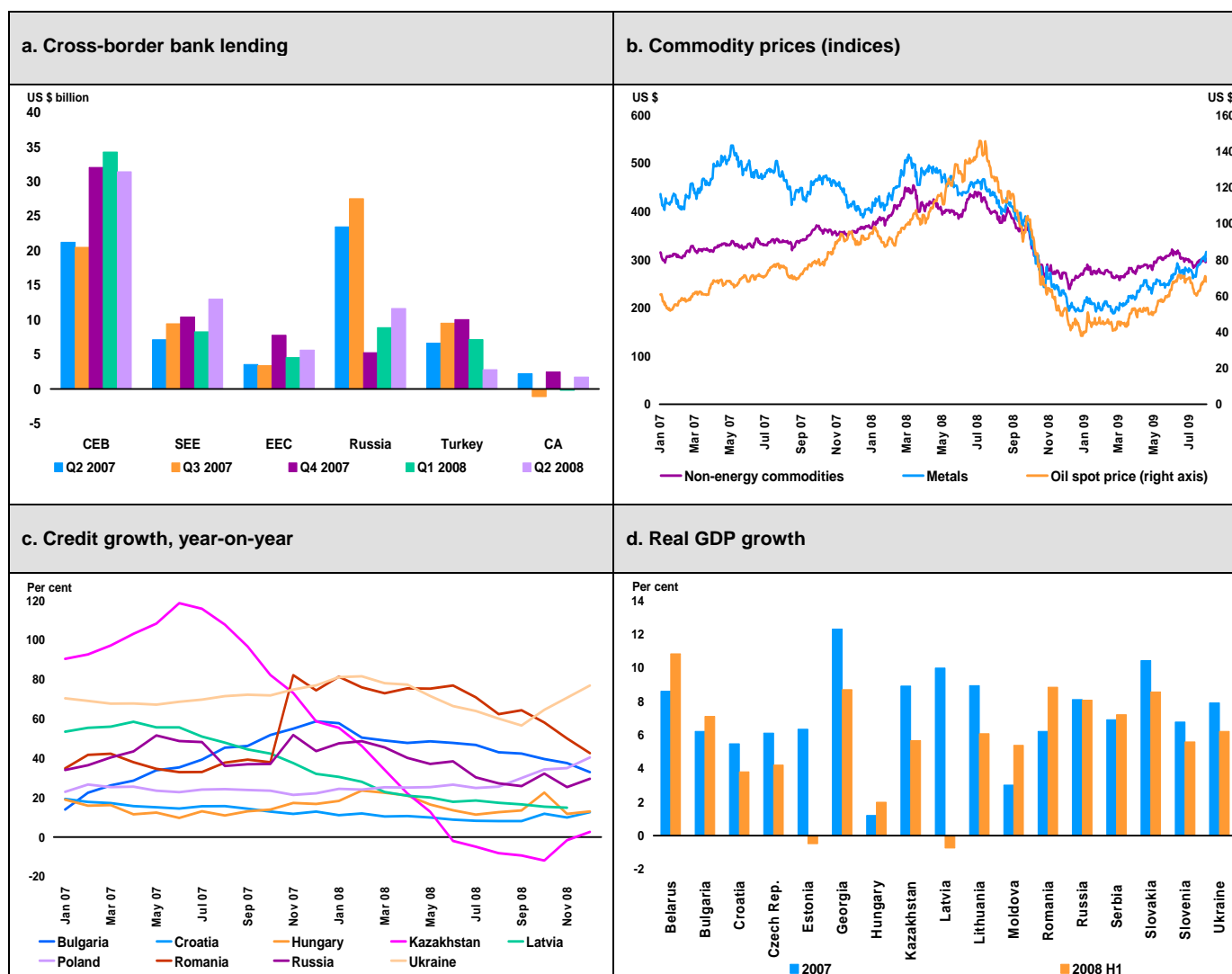


Sources: International Monetary fund (IMF) *World Economic Outlook*, IMF International Financial Statistics Database, Bank of International Settlements (BIS) locational dataset, national statistical agencies.
 Note: Latin America includes Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. Emerging Asia includes China, Indonesia, Korea, Malaysia, Philippines, Taipei China and Thailand. East Asia includes China, Indonesia, Hong Kong, Korea, Malaysia, Philippines and Thailand. CEE includes Bulgaria, Croatia, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic and Slovenia. The countries shown in charts 1c and 1d are Albania (ALB), Azerbaijan (AZE), Bosnia and Herzegovina (BiH), Bulgaria (BUL), Croatia (HRV), Czech Republic (CZE), Estonia (EST), Hungary (HUN), Kazakhstan (KAZ), Latvia (LAT), Lithuania (LIT), FYR Macedonia (FYR), Moldova (MOL), Poland (POL), Romania (ROM), Russia (RUS), Serbia (SER), Slovenia (SLO), Slovakia (SK), Tajikistan (TAJ), Turkey (TUR) and Ukraine (UKR).

Given the large macro-financial vulnerabilities in most emerging European countries, a shock of this size at the centre of the international financial system might have been expected to trigger a “sudden stop” in capital flows, followed by a credit contraction, depreciations, insolvencies of borrowers indebted in foreign currency and output declines. Yet this did not occur. Instead, the crisis unfolded in three phases.

- Decoupling (July 2007 to September 2008).** With the exception of four countries, the crisis left emerging Europe largely unaffected during its first four quarters, as capital inflows generally held up, credit growth continued unabated, domestic demand remained buoyant and high commodity prices supported growth in Russia and other resource-rich countries (Chart 2). The exceptions include Kazakhstan, whose largely domestically owned banking system relied on funding in international financial markets, and the three Baltic states, where credit booms had peaked and begun to reverse even before the onset of the global crisis.

Chart 2. The first year of the crisis, mid-2007 to mid-2008: boom as usual

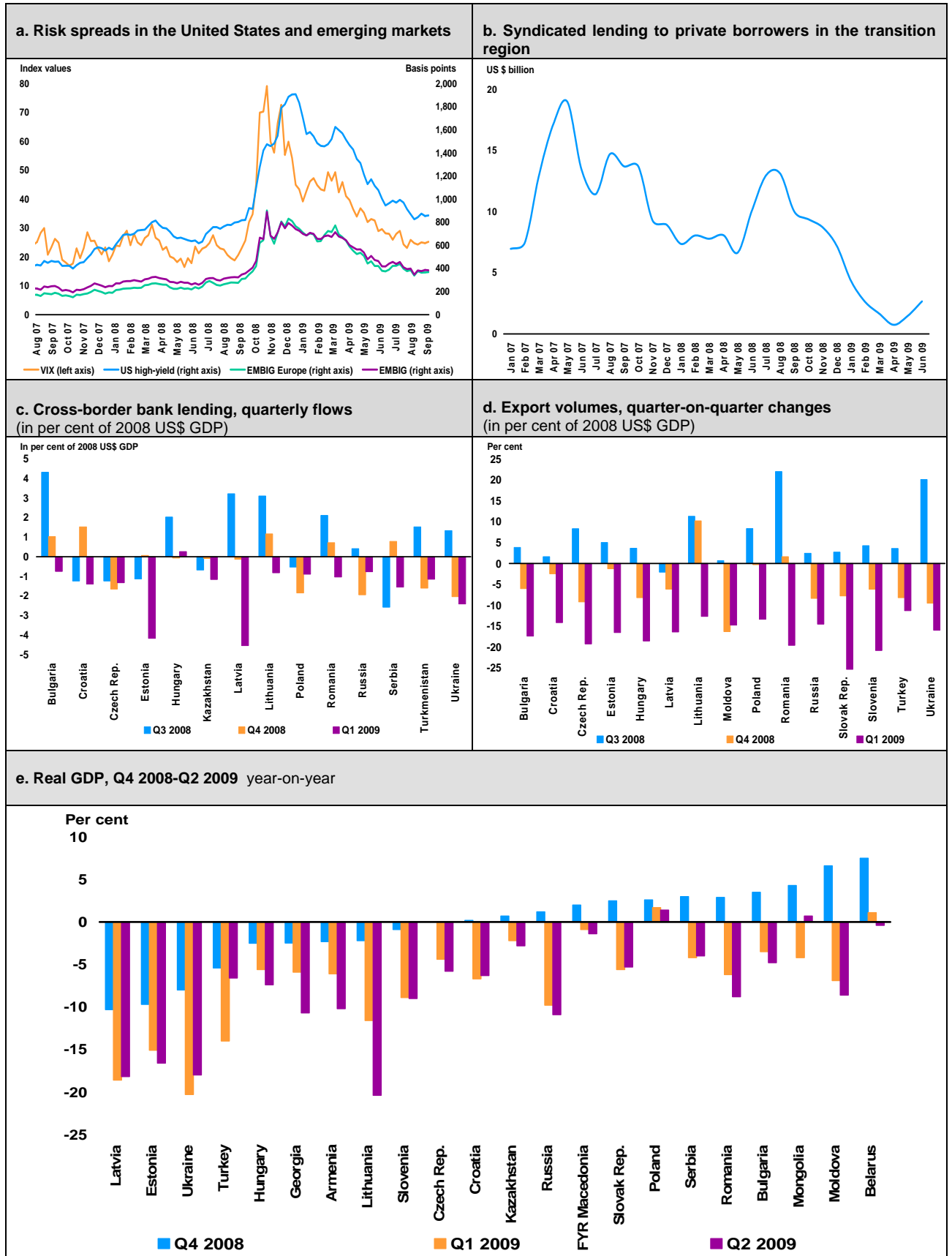


Sources: Bank of International Settlements (BIS) locational dataset, Bloomberg, IMF International Financial Statistics Database, Eurostat, national statistical agencies.

Note: BIS locational dataset 6A, exchange rate adjusted changes in external assets of BIS-reporting banks. CEB (Central Europe and the Baltic states) SEE (south-eastern Europe), EEC (eastern Europe and the Caucasus) and CA (Central Asia).

- The crisis hits (October 2008 to March 2009).** The crisis finally hit in the fourth quarter of 2008, after the turmoil that followed the collapses of Lehman Brothers and Washington Mutual. Emerging market risk premiums shot up and bank lending flows, FDI flows and export volumes all turned negative (Chart 3). Economic

Chart 3. The crisis hits



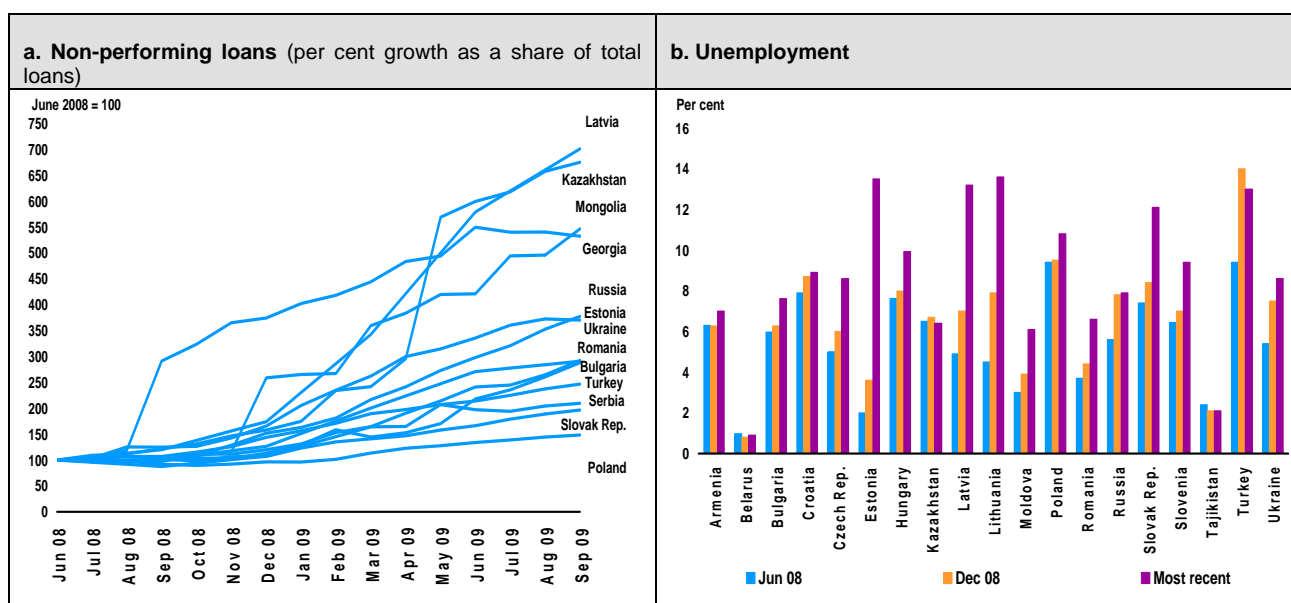
Sources: Dealogic Loan Analytics, EBRD calculations, Bloomberg, Bank of International Settlements (BIS) locational dataset, CEIC Data Company, Eurostat and national statistical agencies.

Note: In Chart 3e, data for Armenia, Kazakhstan and Serbia in the second quarter of 2009 are EBRD projections.

activity contracted rapidly, with almost no lag. By November, many countries were experiencing large declines in industrial production and domestic credit growth began to weaken for the first time in years. By the second half of February the crisis was spilling from the real into the financial sector, as fears of bank credit losses triggered a new wave of currency pressures. In January and February 2009 industrial production data revealed sharp contractions in countries that had previously been resilient (for example, some south-eastern European countries), albeit with large cross-country differences.

- **Tentative stabilisation with rising crisis costs (April 2009-present).** In line with the general recovery in international financial markets, regional financial indicators began to point upwards beginning in March 2009. Industrial output declines either slowed or reversed in a number of countries and confidence indicators stabilised. At the same time, ripple effects of the financial and real shocks began to be felt in the corporate, household and banking sectors, with gradual rises in unemployment, corporate insolvencies and non-performing loans (Chart 4).

Chart 4. The rising costs of the crisis: non-performing loans and unemployment



Sources: CEIC Data Company and EBRD calculations, IMF International Financial Statistics Database, national statistical agencies.

Note: Non-performing loans as defined by national authorities. Most recent data represent September 2009 for Bulgaria, Croatia, Estonia, Georgia, Kazakhstan, Latvia, Mongolia, Poland, Turkey, Serbia, Slovak Republic and Ukraine; and August 2009 for Romania and Russia. Recent unemployment data refer to June 2009 for Croatia, Estonia, Lithuania, Moldova, Tajikistan, Turkey and Ukraine; July 2009 for Bulgaria and Slovenia; August 2009 for Armenia, Belarus, Czech Republic, Hungary, Kazakhstan, Poland, Romania, Russia and Slovak Republic; and September 2009 for Latvia.

The most likely future path for the region is one of gradual stabilisation and eventual recovery in 2010. This said, the situation in some countries – most acutely Ukraine and Latvia – remains precarious (for different reasons). In addition, non-performing loans in the banking system are still significantly below their expected peaks in most countries in the region. The question is whether financial systems will be able to withstand the expected stress without a new breakdown in confidence, which could lead to bank runs and

a new round of output collapses. We return to the challenges that this poses for policy in the concluding section of this paper.

3. RESILIENCE: FACTS AND TENTATIVE EXPLANATIONS

Emerging Europe has been surprisingly resilient to the crisis in two respects. First, as documented above, the shocks at the centre were not felt in the region for over a year after the US and western European crises erupted. Second, and less obviously, the region exhibited resilience along some important dimensions even after the crisis hit. This claim rests on two facts: one qualitative and one quantitative.

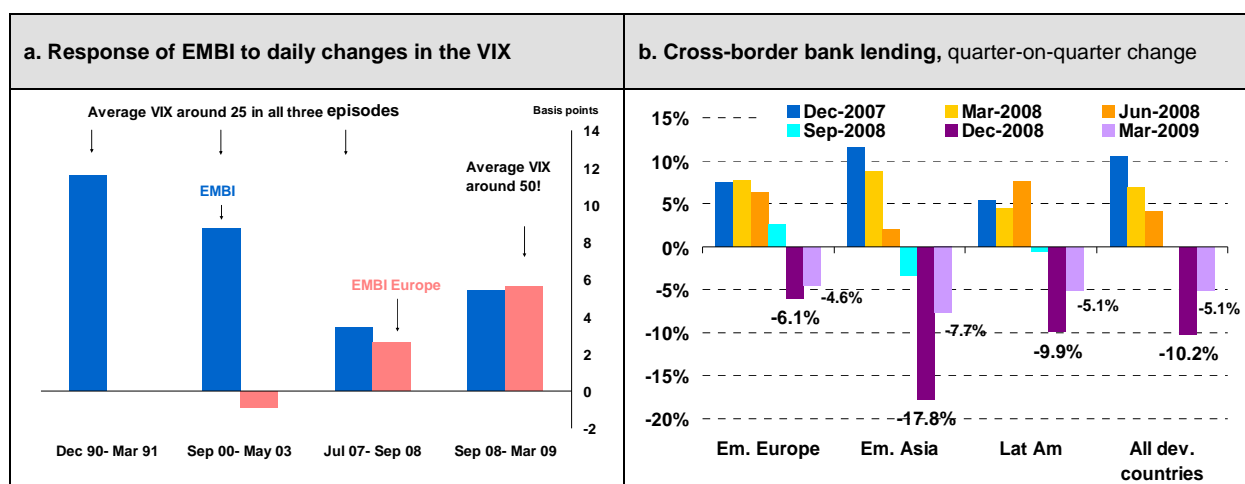
First, notwithstanding the large output costs of the crisis and the expected high costs in terms of insolvencies, unemployment and bank recapitalisation, there are some thresholds that this crisis has not crossed.

- Most emerging market crises were “twin crises” that involved temporary loss of macroeconomic control: currency crises with large overshooting of exchange rates, runs on the banking system and the collapse of systemic banks.
- Policy reactions in these crises often involved coercive measures that overturned the rules of financial relationships, and sometimes private contracts, at least temporarily: capital controls, standstills, bank holidays, deposit withdrawal restrictions and forced currency conversions.
- Finally, emerging market crises have often been accompanied by political turmoil and reactions against incumbent regimes and ideologies. Argentina’s 2001 crisis led to the resignation of two presidents in the space of a few weeks. The Asian crisis triggered the end of the Suharto regime in Indonesia.

To be sure, there have been instances of collapses and nationalisations of large banks in emerging Europe (most prominently Parex in Latvia and BTA in Kazakhstan); currency controls in Ukraine and a few other countries; several changes of government; and political unrest in Moldova and Georgia. But bank nationalisations have also occurred in western Europe over the same period; currency controls seem to have been largely consistent with the normal conduct of business; and political changes occurred in the course of the normal political process and affected governments that were already weak before the crisis. Furthermore, these changes have not, so far, benefited populist, nationalist or anti-reform governments (see EBRD, 2009, Chapter 6).

Second, while the financial shock to emerging Europe in the fourth quarter of 2008 and at the beginning of 2009 was large and damaging, it was nonetheless moderate compared to shocks suffered by other emerging market regions and advanced financial markets. Chart 5b shows that emerging Europe suffered smaller bank lending outflows, as a share of existing bank assets, than other developing and emerging market regions. The fact that the shocks to advanced country risk premiums in September of 2008 had a smaller than one-for-one effect on emerging market risk – with no noticeable difference between emerging Europe and the emerging market average – is apparent from Chart 3a.

Chart 5. Emerging Europe capital outflows and risk premiums



Sources: Bank of International Settlements (BIS) locational dataset, Bloomberg.

Note: Chart 5a is based on regression of daily changes in EMBI spreads on changes in the VIX in periods during which the VIX consistently exceeded 20 points. Chart 5b: BIS locational dataset 6A, exchange rate adjusted changes in external assets of BIS-reporting banks, developing Europe excludes Caucasus, Central Asia and Mongolia.

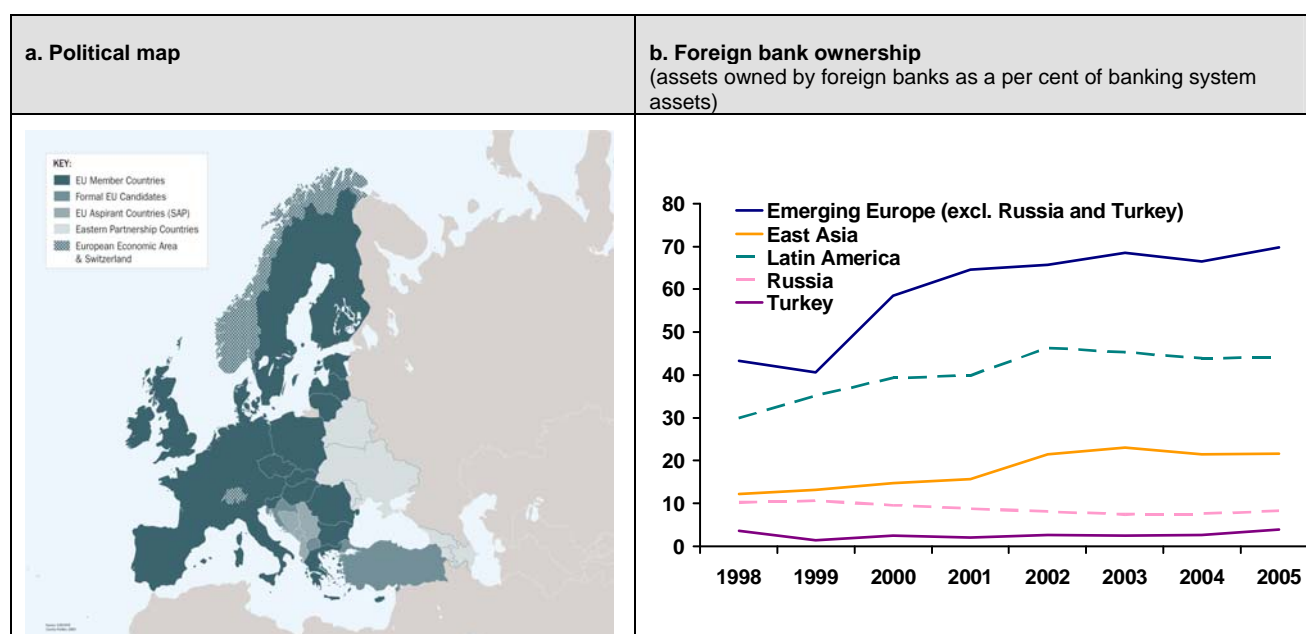
Chart 5a confirms that the response of emerging market risk premiums – including in emerging Europe – to financial shocks in advanced countries has indeed been muted in the present crisis compared to previous episodes. The idea is to compute correlations of emerging market risk spreads with a widely used indicator of risk in advanced countries, the implied volatility index of S&P 500 stocks, the “VIX”, during periods of financial market volatility in the United States. These are identified as periods in which the VIX consistently averaged 25 (it normally fluctuates between 10 and 20). Because emerging markets are small compared to US financial markets, correlations between the VIX and emerging market risk can be assumed to reflect the effect of the former on the latter, rather than vice versa. The main insight is that this effect was much smaller than usual between July 2007 and August 2008, when the financial crisis was already under way in the United States (see EBRD, 2009, Box 1.2 for details). After the expansion of the crisis in September 2008 the correlation rose but it remained below its typical level in previous crises. Furthermore, the level of financial stress in advanced countries in this period, as measured by the VIX, was much higher than in any of the previous crisis periods.

What explains emerging Europe’s financial resilience compared to earlier emerging market crises and other emerging markets during the present crisis? Since emerging Europe in many respects suffered *greater* pre-crisis macro-financial vulnerabilities than other regions (in particular, higher external debt, larger pre-crisis credit booms, and higher shares of foreign currency borrowing), the answer must be that these were partly or wholly offset by comparative strengths. One candidate might be relatively sound public balance sheets, but this feature was shared by other emerging market countries. However, the region also benefited from two additional structural characteristics that are unique to emerging Europe.

First, political and economic proximity to, and in some cases membership in, the European Union. As Chart 6 illustrates, virtually all emerging European countries have by now developed political and economic ties of various strengths with the European Union. These ties benefited them in two ways.

- Through financial support provided or coordinated through European institutions. Three countries – Hungary, Latvia and Romania – received large loan packages co-financed by the European Union and the IMF. Under the Joint IFI Initiative, the EBRD, the European Investment Bank (EIB) and the World Bank committed to providing up to €25 billion to financial institutions operating in the transition region. Under the broader Vienna Initiative, key public and private sector stakeholders attempted to coordinate public and private sector responses to the crisis, including by obtaining commitments from international banking groups to maintain exposures to central and eastern European countries (see EBRD 2009, Box 1.4).
- Through a political commitment mechanism, which may have had salutary implications on the handling of the crisis. Countries that maintain close political and economic ties to the European Union (and possibly harbour expectations to join the European Union in the future) are more likely to respect international commitments and less likely to undertake measures that interfere with private contracts or come at the expense of foreign banks and investors. Along with institutional development since the collapse of central planning, this may help explain why the domestic policy response has generally been mature and populism has been muted, in spite of the large output collapses and associated social costs that the region has suffered.

Chart 6. Political and financial integration⁴



Sources: Eurostat Country Profile, Claessens et al. (2008) and EBRD calculations.

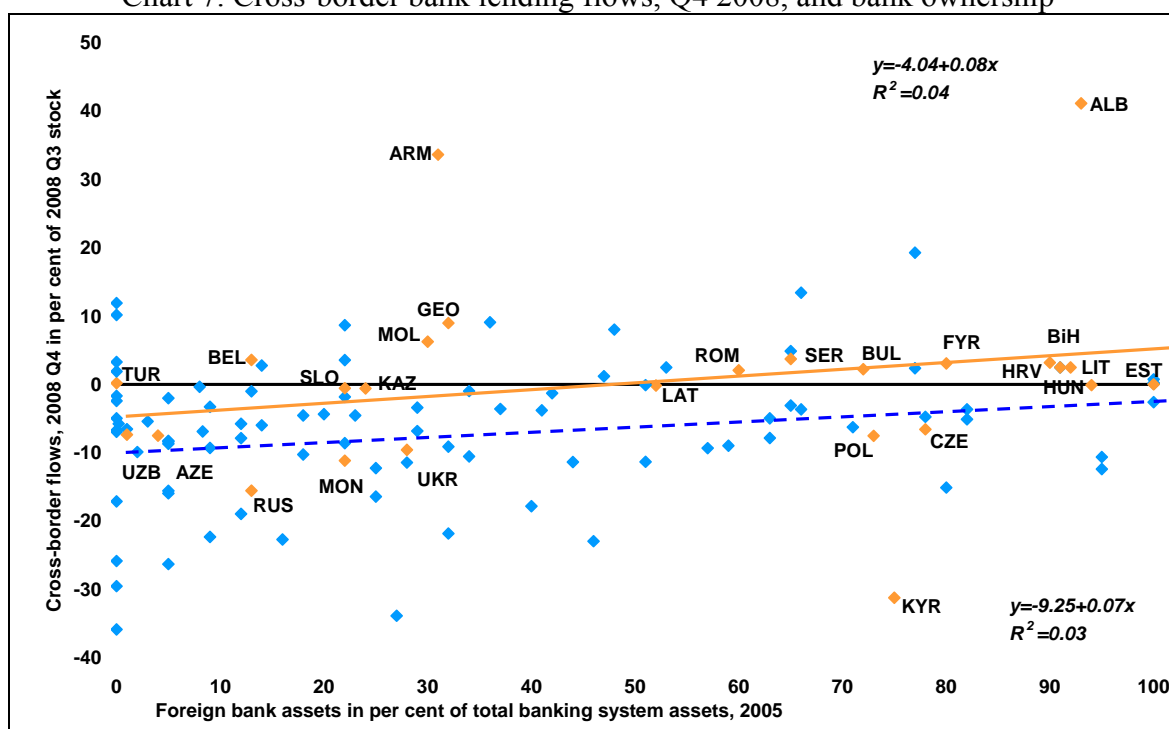
The second characteristic is the role of international banking groups in emerging European financial sectors, which have a significantly higher degree of foreign ownership than other emerging market regions (see Chart 6b). A recent empirical literature concludes that

⁴ Data for emerging Europe, excluding Turkey, are from the EBRD database; data for Latin America and East Asia are taken from Claessens, et al. (2008). Emerging Europe includes Bulgaria, Croatia, Czech Republic, Estonia, FYR Macedonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia and Ukraine. Latin America includes Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela; East Asia includes China, Indonesia, Hong Kong, Korea, Malaysia, Philippines and Thailand.

international bank lending through a local network of branches and subsidiaries is much more stable than direct cross-border lending, and shows that foreign bank subsidiaries reduce their lending less during a financial crisis than domestic bank lending.⁵ This could help explain why bank lending outflows from emerging Europe were generally more moderate than from other regions.

In the remainder of this section we test the proposition that foreign bank ownership attenuated bank lending outflows at the height of the financial crisis. We examine two samples: a large sample comprising 64 emerging markets, developing countries and transition economies; and a smaller sample of 25 transition economies only (emerging Europe plus some central Asian countries). Chart 7 shows the correlation between cross-border bank lending and foreign ownership in both samples in the fourth quarter 2008, when the “sudden stop” of capital flows to emerging markets occurred. Data points corresponding to transition economies are labelled with their country codes. The figure shows two simple regression lines: one associated with the whole sample and the other with the transition sample only. The coefficient is positive in both cases, indicating that flows were indeed more resilient in countries with higher foreign bank ownership.

Chart 7. Cross-border bank lending flows, Q4 2008, and bank ownership⁶



Sources: Bank of International Settlements (BIS) locational dataset, Claessens et al. (2008) and EBRD calculations.

Note: BIS locational dataset 6A, exchange rate adjusted changes in external assets of BIS-reporting banks. The countries shown are Albania (ALB), Armenia (ARM), Azerbaijan (AZE), Belarus (BEL), Bosnia and Herzegovina (BiH), Bulgaria (BUL), Croatia (HRV), Czech Republic (CZE), Estonia (EST), Georgia (GEO), Hungary (HUN), Kazakhstan (KAZ), Kyrgyz Republic (KYR), Latvia (LAT), Lithuania (LIT), FYR Macedonia (FYR), Moldova (MOL), Mongolia (MON), Poland (POL), Romania (ROM), Russia (RUS), Serbia (SER), Slovenia (SLO), Turkey (TUR), Ukraine (UKR) and Uzbekistan (UZB).

⁵ See Peek and Rosengren (2000), De Haas and Van Lelyveld (2006), García Herrero and Martínez Pería (2007), and de Haas and van Lelyveld (2010).

⁶ Equations refer to a linear regression of cross-border flows in Q4 2008 (shown on y-axis) on foreign bank assets share (shown on x-axis).

The question is whether this correlation can be interpreted as causal. In general, the answer is clearly no, as the correlation might pick up the influence of other variables that are correlated with both foreign ownership and outflows. For example, foreign banks may decide to invest in countries that have better fundamentals, and it may be differences across these fundamentals, as opposed to the presence of international bank groups per se, that explain the smaller outflows in the crisis.

To disentangle the effects of economic fundamentals which may be correlated with high foreign ownership from those of foreign ownership per se, we regress net cross-border flows after the “Lehman shock” on the (pre-crisis) share of foreign bank ownership, the country sovereign credit rating as a summary measure of fundamentals, and purchasing power adjusted per capita GDP as a general measure of the level of development. Table 1 shows the results. The dependent variable is Q4 2008 cross-border lending flows (expressed as per cent of Q3 2008 bank asset stocks). Regressions were performed first on a broad sample of emerging market and transition countries (defined largely by availability of data on foreign bank ownership);⁷ and then separately on the transition and non-transition subsamples.

Table 1. Bank-lending flows, Q4 2008, and foreign bank ownership
(coefficient estimates, p-values in parenthesis)

	Dependent variable: per cent change in cross-border lending, Q4 2008 ¹				
	Broad sample	Transition only	Non-transition only	Broad sample	
	(1)	(2)	(3)	(4)	(5)
Foreign bank ownership	0.14 (0.008)	0.14 (0.053)	0.05 (0.469)	0.03 (0.631)	0.07 (0.320)
Foreign bank ownership* *transition dummy				0.13 (0.036)	0.03 (0.793)
Transition region dummy					6.89 (0.177)
Country credit rating	-1.52 (0.038)	-1.87 (0.158)	-1.08 (0.132)	-1.22 (0.087)	-1.33 (0.055)
GDP per capita PPP, log	-6.76 (0.082)	-15.62 (0.061)	-2.08 (0.488)	-6.20 (0.092)	-6.45 (0.071)
Number of countries	64	25	39	64	64
R-squared	0.20	0.38	0.09	0.26	0.28

Note: definitions and sources are as follows. Foreign-owned bank assets in per cent of total bank assets (Claessens et al., 2008); country credit rating on a scale from 1 (AAA) to 19 (D) (Rose and Spiegel, 2009, based on Standard and Poor’s rating scale), hence, a larger number means a worse rating. GDP per capita PPP in log of internationally comparable US\$ (IMF *World Economic Outlook*).

¹ In per cent of 2008 Q3 stock.

⁷ The sample consists of all middle income countries (World Bank definition) for which data on both foreign bank ownership and sovereign credit ratings were available (see notes to Table 1 for sources).

The results show a statistically significant effect of foreign bank ownership in the expected direction (that is, stabilising) in both the broad and the transition samples. The remaining coefficients also have the expected signs. The magnitude of the effect is larger than in the simple correlations of Chart 7: a 10 percentage point increase in the asset share of foreign banks appears to reduce the outflow by about 1.4 percentage points. When compared to an average outflow of about 6 per cent of Q3 2008 asset stocks in the fourth quarter (see Chart 5), this is quite a large effect. A one notch deterioration of the credit rating is associated with a larger average outflow of about the same magnitude (1.5-1.9 percentage points).

Although the coefficients for foreign bank ownership are very similar in the broad sample and the transition sample, it turns out that the effect in the broad sample is driven by the presence of the transition group. When this is dropped, the coefficient is much reduced in size and no longer statistically different from zero (regression 3). Regression 4, in which an interaction between foreign bank ownership and a “transition dummy” was added to the regression in the broad sample, confirms that foreign bank ownership seems to have had a significantly stronger effect in mitigating the outflow of cross-border debt in transition countries than in non-transition countries. A possible interpretation is that the foreign owners in the transition group are mostly European banking groups with stronger long-term commitments to emerging Europe than may be typical in other cross-border banking settings, perhaps due to the presence of a formal institutional structure (the European Union), and/or expectations of long-term European integration.

When a transition dummy is included in the regression in addition to the foreign bank ownership variable and the interaction term, then all three variables lose statistical significance (regression 5). This reflects the fact that higher foreign bank ownership and membership in the transition group are highly correlated, but it also raises the question whether there are other structural factors that are picked up by the transition dummy which may be driving the results on foreign bank ownership in regressions 1 and 4. While the presence of such factors could not, of course, explain why the bank ownership effect prevails even *within* the transition group (regression 2), it is nonetheless important to check the robustness of this effect to the inclusion of other variables that could be related both to the decision of international banking groups to acquire banks in a country, and outflows in the crisis. Because the transition-only sample is so small (only 25 observations), the only way of doing this is to sequentially include potentially omitted variables individually in the baseline regression, to see how this affects the coefficients of the remaining variables (particularly our main variable of interest, foreign bank ownership).

Table 2 presents the results from this exercise for a total of almost 100 potential covariates (regression 1). It also checks the robustness of the results along two other dimensions: first, using the *deviation* of the percentage change in BIS asset stocks in the fourth quarter of 2008 from the pre-crisis (2001-07) inflow as the dependent variable; and second, using the total outflow in both Q4 2008 and Q1 2009 rather than just in Q4 2008. The main result is preserved in all these cases. The coefficient on foreign bank ownership retains its positive sign in all regressions, though it sometimes loses statistical significance. For example, in the Q4 2008 sample (regression 1 in Table 2), the 98 estimated coefficients are all in the interval between 0.04 and 0.20, compared with a baseline coefficient of 0.14.

Table 2. Bank lending flows and foreign bank ownership in transition economies:
robustness checks
(coefficient estimates, p-values in parenthesis)

	Dependent variable: per cent changes in cross-border lending ¹		
	Q4 2008	Q4 2008, deviation	Q4 2008 - Q1 2009 ²
	(1)	(2)	(3)
Foreign bank ownership	[0.04, 0.20] [0.602, 0.002]	[0.01, 0.22] [0.93, 0.009]	[0.02, 0.27] [0.767, 0.001]
Country credit rating	[-3.86, 0.21] [0.000, 0.759]	[-4.49, 0.49] [0.002, 0.619]	[-2.65, 0.08] [0.014, 0.972]
GDP per capita PPP, log	[-35.16, -6.14] [0.000, 0.31]	[-36.90, -10.29] [0.000, 0.43]	[-23.13, -6.48] [0.001, 0.424]
Number of countries	[18,25]	[18,25]	[18,25]
R-squared	[0.31, 0.77]	[0.23, 0.69]	[0.08, 0.75]

Source: EBRD staff analysis based on data from the sources listed below.

Note: Ranges refer to coefficients from a total of 98 regressions in which 98 potential covariates (see list of variables below) were “rotated through” the baseline specification presented in columns 1 and 3. These included variables from three groups:

- (i) macroeconomic indicators were taken from the IMF’s International Financial Statistics and *World Economic Outlook* (current account, GDP per capita PPP-adjusted, openness, fiscal sector measures, inflation, domestic and external total and private debt); the World Bank Development Indicators 2008 (reserves to GDP, external debt and (in month of imports), M2 or M3 in per cent of GDP and reserves, real interest rates, and real effective exchange rates); and the CEIC database for transition countries;
- (ii) financial variables were sourced from Beck et al (2009) (variables relating to financial development and liquidity); Claessens and Van Horen, (2007) (foreign bank ownership); Lane and Milesi-Ferretti, (2006) and Abiad et al (2009) (external financial assets and liabilities); the BIS (cross-border flows and stocks); the IMF’s Global Financial Stability Report (bank capital to assets, non-performing loans); the World Bank Development Indicators 2008 (short-term debt as a share of reserves); and Rose and Spiegel (2009) (liquid assets to total assets, countries ratings); and
- (iii) institutional variables were taken from the Economic Freedom of the World 2008 Project; the World Bank Doing Business 2009 report; Rose and Spiegel (2009); the EBRD/World Bank Business Environment and Enterprise Performance Survey (2008/09); and the Polity IV database. A full list of variable definitions is available upon request.

¹ In per cent of 2008 Q3 stock.

² Deviation from average percentage Q4 inflow, 2001-07 (in per cent of Q3 stock).

4. EXPLAINING CROSS-COUNTRY VARIATIONS IN GDP DECLINES

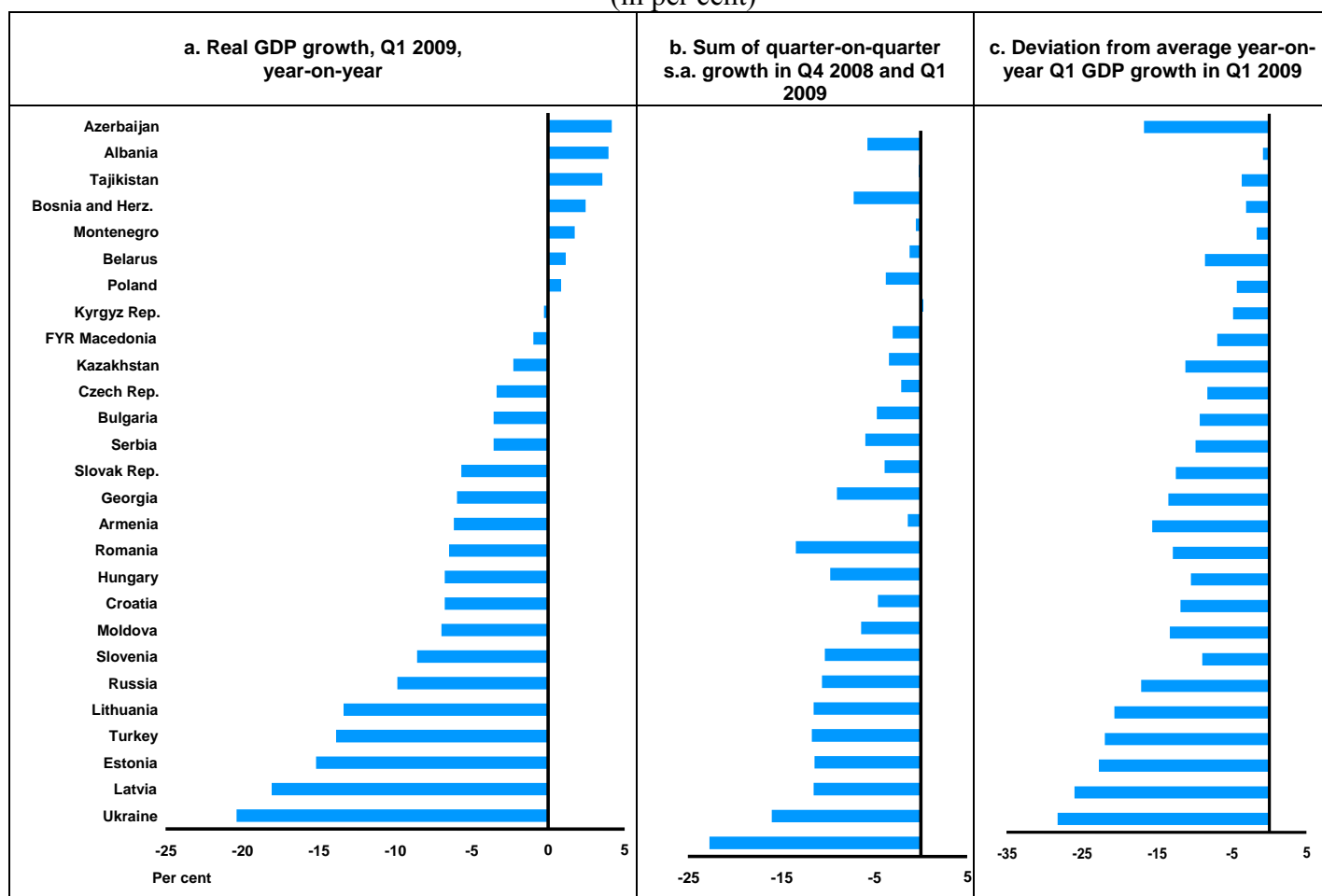
EMERGING EUROPE

We now turn to the second salient fact of the 2008-09 crisis in emerging Europe: the large cross-country variation in crisis-related output declines. Chart 8 documents this variation using three different measures.

- Chart 8a: year-on-year output growth in the first quarter of 2009 (compared to the first quarter in 2008). This measure has the advantage of being widely available and does not require any seasonal adjustment. Its disadvantage is that it reflects the cumulative effect of still positive quarter-on-quarter growth in the second and third quarters of 2008 and the generally negative growth of the fourth quarter of 2008 and first quarter of 2009. Strong growth at the beginning of the period may therefore obscure sharp declines at the end.
- Chart 8b: the sum of seasonally adjusted quarter-on-quarter declines in the fourth quarter of 2008 and first quarter of 2009. This is the best measure in so far as it captures the effect of the shocks suffered by the European transition region in terms of output in the two main crisis quarters. The main disadvantage is that official seasonally adjusted quarter-on-quarter data are not available for most countries in the sample, so it is necessary to apply an alternative seasonal adjustment in these cases.⁸
- Chart 8c: year-on-year growth in the first quarter of 2009 compared to trend – that is, subtracting average first quarter year-on-year growth over the seven-year period ending in the first quarter of 2009. This measure is preferable if one believes that the effect of the crisis is to slow GDP from a country-specific trend (or potential) growth rate.

⁸ Quarterly data are adjusted using five-quarter moving averages.

Chart 8. Output growth during the crisis
(in per cent)



Source: CEIC Data Company and national sources.

Note: Mongolia, Turkmenistan and Uzbekistan are not shown due to incomplete data. S.a. means seasonally adjusted.

In Chart 8, countries are ranked in a decreasing sequence of output growth according to the first measure. It is clear that there is a large variation across countries no matter which measure is used. The correlation coefficient between the first and each of the other two measures is 0.84; and between the second and third 0.88. For the statistical analysis that follows we focus on the second measure (cumulative output decline in the fourth quarter of 2008 and the first quarter of 2009). Using the other two measures would lead to broadly similar conclusions.

We now explore the statistical relationship between cumulative output declines in the crisis and pre-crisis fundamentals. Doing so requires confronting similar problems as mentioned in the previous section:

- many potential fundamentals could matter. In the context of a cross-sectional regression with around 25 observations, it is impossible to analyse them all at the same time
- countries suffered shocks of different magnitudes. In addition to controlling for the effect of export shocks, one would ideally also want to control for

financial shocks. However, the latter cannot be measured directly (as bank debt inflows, for example, could be responding to differences in output declines rather than the other way around).

To address these problems (although imperfectly), potential determinants of the output decline are divided into two groups. The first group contains export growth, external debt at the end of 2007 as a basic measure for macroeconomic vulnerability, and corruption perceptions (taken from the 2008 Business Environment and Enterprise Performance Survey conducted by the EBRD and the World Bank) as a basic measure of institutional quality.⁹ The second group comprises a set of additional pre-crisis fundamentals: the credit-to-GDP ratio as a measure of financial development; changes in this ratio during 2005-08 as a measure of the pre-crisis credit boom; the loan-to-deposit ratio as a measure of foreign financing; openness to trade; reserves as a share of short-term debt; the asset share of foreign banks in the banking system; the stock of foreign direct investment liabilities; the current account deficit in 2007; the share of foreign currency debt in total liabilities of the banking system; and a dummy variable for the different exchange rate regimes.

The potential relevance of these measures is investigated in two steps. First, sequentially, by adding them to the first group containing the three basic controls (Table 3). Second, the robustness of the results is checked by running regressions that include two to three of these variables at the same time, and by controlling for debt inflows and trade finance (Table 4).

Column 1 in Table 3 shows the results of a regression containing only the three core control variables (export growth in the fourth quarter of 2008 and the first quarter of 2009, private external debt and the corruption variable). Only one of them – pre-crisis external debt-to-GDP ratio – exhibits a statistically significant association with the decline in output. In columns 2 to 10, nine additional controls are added individually to the regression. In most cases, the statistically significant relationship between the output decline and pre-crisis debt survives these additions. Among the additional variables, only four – credit growth during 2005-08; a dummy representing hard pegs, FDI as a share of GDP; and foreign bank ownership (measured as in the previous section) – turn out to be statistically significantly associated with the output decline.¹⁰ Note that FDI and foreign bank ownership enter with positive signs, suggesting that they had a stabilising effect.¹¹

⁹ Previous research – particularly Johnson et al. (2000) in the context of the Asian financial crisis – points to the role of governance in explaining differences in output performance in emerging market crises. For this reason, we use corruption perceptions as a control rather than a general reform or transition proxy such as the EBRD transition indicators, although the latter have been shown to work well in accounting for cross-country differences in growth performance over longer periods (Falcetti et al., 2006).

¹⁰ For some variables, such as the average current account deficit, this may be due to a high correlation with external debt, which is always controlled for in the regressions. The lack of significant correlation between the share of foreign currency debt and the output decline may be attributable to the fact that only a few economies with high foreign currency shares of debt (primarily, Hungary and Ukraine) experienced large depreciations during this crisis.

¹¹ In addition to the variables shown in Table 3, the loan-to-deposit ratio, the level of financial integration (external assets and liabilities as a share of GDP) and reserves as a share of GDP were also individually added to the regression model, but were not significantly associated with the output decline when controlling for external debt and export shocks.

Table 3. Relationship between the output decline and macroeconomic fundamentals
(Regression coefficients, p-values in parentheses)

Dependent variable: Sum of quarterly real GDP growth, Q4 2008 + Q1 2009, s.a., in per cent										
Covariate ¹	none	FD	CG	STDR	FXL	FDI	FBO	CA	Openness	HPd
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Covariate ¹		-0.08 (0.425)	-0.20 (0.090)	-0.01 (0.370)	0.03 (0.188)	0.04 (0.029)	0.04 (0.079)	-0.03 (0.613)	0.02 (0.603)	-4.42 (0.011)
Exports, Q4 2008-Q1 2009 ²	0.16 (0.123)	0.15 (0.132)	0.10 (0.273)	0.14 (0.182)	0.16 (0.133)	0.15 (0.168)	0.12 (0.259)	0.15 (0.149)	0.15 (0.157)	0.2 (0.059)
External debt to GDP (2007)	-0.10 (0.0137)	-0.05 (0.330)	-0.07 (0.122)	-0.08 (0.145)	-0.12 (0.011)	-0.11 (0.006)	-0.10 (0.014)	-0.10 (0.021)	-0.11 (0.006)	-0.07 (0.095)
Corruption perception ³	-2.62 (0.349)	-3.37 (0.261)	-3.59 (0.089)	-2.98 (0.284)	-2.99 (0.319)	-1.95 (0.495)	-2.26 (0.435)	-2.56 (0.371)	-2.32 (0.446)	-3.42 (0.183)
Observations	25	25	25	25	25	25	25	25	25	25
R-squared	0.31	0.33	0.42	0.33	0.33	0.34	0.35	0.31	0.32	0.38

Note: Constant is included in all regressions but not shown.

¹In columns (1-10) variables FD (private credit to GDP), CG (private credit to GDP change over 2005-2008), STDR (Ratio of short-term external debt to reserves), FXL (Share of FX lending in total lending), FDI (Level of foreign direct investment to GDP),

²Measured as sum of 2008 Q4 and 2009 Q1 export growth, seasonally adjusted quarter-on-quarter, in per cent.

³Corruption as an obstacle to doing business, measured on a scale from 0 (not an obstacle) to 4 (very severe obstacle). (Source: 2008-2009 EBRD-World Bank Business Environment and Enterprise Performance Survey; see EBRD 2009, Chapter 5).

Table 4 shows what happens to these results when several of these variables are included simultaneously in the regression and extra controls are added. Columns 1 and 2 suggest that domestic credit booms (negatively) and foreign bank ownership (positively) are the two most robust pre-crisis predictors of the output decline. This is true even when the percentage change in trade credits (column 3) and the percentage change in cross-border bank lending are added to the regressions (columns 3 and 4).¹² An increase of 5 per cent of GDP in the magnitude of the credit boom during 2005-08 (when the credit-to-GDP ratio in central and eastern Europe rose by about 20 percentage points, see Chart 1) is associated with a deeper cumulative output decline of approximately one percentage point; while a 10 percentage point increase in the share of banking system assets owned by foreign banks is associated with a smaller output contraction of approximately 6 percentage points.

Finally, in Table 4, perceived corruption also appears to be economically and statistically significantly associated with output declines. A one-grade increase in perceived corruption – for example from “minor obstacle” to “moderate obstacle” or from “moderate obstacle” to “severe obstacle” – is associated with a larger cumulative output decline of 4-5 percentage points.

Table 4. Output decline and macroeconomic fundamentals: robustness
(Regression coefficients, p-values in parentheses)

	Depended variable: Sum of quarterly real GDP growth, Q4 2008 + Q1 2009, s.a., in per cent			
	(1)	(2)	(3)	(4)
Domestic credit to GDP growth ¹	-0.21 (0.095)	-0.2 (0.099)	-0.19 (0.010)	-0.2 (0.088)
FDI in per cent of GDP (end -2007)	0.02 (0.444)			
Foreign bank ownership (end - 2007)	0.06 (0.028)	0.07 (0.005)	0.09 (0.000)	0.06 (0.008)
Dummy for "hard peg"	-2.66 (0.373)	-3.35 (0.152)	-3.04 (0.117)	-2.94 (0.265)
Cross-border lending, Q4 2008 - Q1 2009 ²				0.05 (0.678)
Trade credits growth, Q4 2008 - Q1 2009 ²			0.26 (0.000)	
Exports, Q4 2008-Q1 2009 ³	0.04 (0.711)	0.05 (0.617)		0.04 (0.777)
External debt to GDP (2007)	-0.07 (0.135)	-0.06 (0.200)	-0.03 (0.394)	-0.06 (0.208)
Corruption perception, 2008 ⁴	-4.56 (0.029)	-4.81 (0.016)	-4.2 (0.012)	-4.71 (0.014)
Observations	24	24	24	24
R-squared	0.58	0.57	0.78	0.58

Note: Constant is included but not shown. For sources, see notes to Table 2.

¹ Domestic credit to private sector in per cent of GDP growth over 2005-08.

² In per cent of Q3 2008 stock.

³ Measured as sum of 2008 Q4 and 2009 Q1 export growth, seasonally adjusted quarter-on-quarter, per cent.

⁴ Measured on a scale from 0 (lowest) to 4 (highest).

¹² Trade credit flows turn out to be highly correlated with the output decline, but this is likely to reflect the effect on output declines on trade as well as the impact of trade credit on exports and hence output.

WORLD-WIDE SAMPLE

As in the analysis of the determinants of cross-border outflows performed earlier, it is interesting to study the determinants of output declines in a broader cross-country sample that includes countries outside emerging Europe, both to provide some reassurance in light of the small set of observations used in the previous section and to check whether the findings for the emerging Europe region differ from those for the rest of the world.

In addition, a broader sample enables one to look at the effects of additional pre-crisis fundamentals on which the transition country sample did not provide sufficient information. In particular, we are interested in two questions. First, what was the role of commodity exports in crisis-related GDP declines – were commodity-rich countries hit harder, given a decline in oil and other commodity prices of approximately 70 per cent between July 2008 and January 2009?

Second, what role did financial development play? The previous section suggested that rapid financial *deepening* – as proxied by the rise in the credit-to-GDP ratio in the three to four years before the crisis – exacerbated the bust. But the effects of the *level* of financial development may well be different, as deeper financial systems should make it easier for economic agents to insure against external shocks. Using a broader sample, it may be possible to distinguish between the effects of the level of financial development and recent changes in it.

However, moving to a global sample also brings some complications. First, there are differences in the quarterly timing of the crisis across countries. Second, comparing realised growth in the quarters with the highest output contractions may not be very meaningful across countries with vastly different potential growth rates (for example, China on the one hand and mature western European economies on the other). We address these issues by measuring growth declines in terms of the deviation of expected real economic growth in 2009 from the annualised average over the period 1999–2008.¹³ The forecasts are taken from the October 2009 IMF *World Economic Outlook*.

Table 5 first confirms that, controlling for the average growth during the preceding period and per capita income (adjusted for PPP differentials), countries in the transition region on average experienced a more severe output decline, by about 5 percentage points, than the average non-transition country (column 1). Furthermore, richer countries and countries that experienced faster growth during the boom years were generally hit harder.

Columns 2 and 3 examine the effects of commodity resources, proxied either by the value of produced oil (at international prices) as a share of GDP or, more broadly but at the cost of losing observations, by the share of commodities in merchandise exports. In addition, these regression models include pre-crisis credit growth, measured as in Tables 2 and 3; the pre-crisis loan-to-deposit ratio as a measure of banking sector reliance on external financing, and the credit-to-GDP ratio in 2007 (as reported in the World Bank New Dataset

¹³ Using a long-term average of past growth to construct the left-hand-side variable could give rise to an endogeneity problem. For example, the correlation between external financing and the output decline relative to “trend” could be a result of the fact that higher average growth during 1999–2008 pulled in bigger capital flows. However, using the difference between 2009 growth as expected in October 2009 and IMF projections for 2009 growth made several years earlier (for example, in 2004), which aim to identify steady state rather than cyclical growth, would give similar results.

on Financial Development) as a measure of financial development. The results suggest that the commodity revenues, regardless of how they are measured, appear to have had a stabilising effect on output.

Table 5. Output declines and economic fundamentals: global regressions
(Regression coefficients, p-values in parentheses)

Models	Dependent variable: difference between 2009 growth forecast and 1999–2008 average							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Average growth, 1999–2008 (per cent a year)	–0.625 (0.001)	–0.881 (0.000)	–0.914 (0.004)	–0.895 (0.001)	–0.878 (0.002)	–1.216 (0.003)	–1.087 (0.008)	–0.962 (0.018)
GDP per capita Log, PPP	–1.605 (0.000)	–2.994 (0.000)	–3.270 (0.000)	–2.560 (0.000)	–2.536 (0.000)	–3.432 (0.000)	–3.569 (0.000)	–3.086 (0.002)
Oil rents (in per cent of GDP)		0.074 (0.001)				0.176 (0.021)	0.176 (0.021)	0.163 (0.034)
Share of commodities in merchandise exports			0.044 (0.011)	0.037 (0.002)	0.034 (0.005)			
Private sector credit-to-GDP		0.052 (0.000)	0.059 (0.000)	0.037 (0.004)	0.033 (0.005)	0.060 (0.051)	0.071 (0.011)	0.060 (0.035)
Loan-to-deposit ratio		–0.023 (0.005)	–0.022 (0.012)	–0.016 (0.040)	–0.013 (0.103)	–0.035 (0.033)	–0.039 (0.041)	–0.037 (0.058)
Credit growth, 2003–07 (in per cent of GDP)		–0.079 (0.001)	–0.091 (0.000)	–0.055 (0.014)	–0.050 (0.022)	–0.102 (0.074)	–0.101 (0.049)	–0.083 (0.136)
Financial integration				0.00002 (0.798)		–0.006 (0.552)	–0.028 (0.074)	–0.027 (0.073)
Financial integration * transition dummy				–0.017 (0.005)				
Financial integration * presence of foreign banks							0.024 (0.060)	0.023 (0.052)
External debt (in per cent of GDP)					–0.0001 (0.898)			
External debt * transition dummy					–0.083 (0.010)			
FDI liabilities stock (in per cent of GDP)					0.0003 (0.796)			
FDI liabilities stock * transition dummy					0.027 (0.261)			
Share of foreign banks in banking assets, %						0.004 (0.853)	–0.032 (0.259)	–0.027 (0.359)
Index of rule of law			0.072 (0.910)					
Share of higher-value-added manuf and food in exports			–0.003 (0.892)					
Transition region dummy	–5.212 (0.000)							–1.666 (0.332)
R ²	0.51	0.56	0.57	0.62	0.65	0.62	0.65	0.66
Number of observations	176	142	107	108	108	59	59	59

Note: Financial integration is measured by the ratio of assets and liabilities to GDP.
Sources: see Tables 1 and 2.

As in the transition-only sample, a rapid *increase* in the credit-to-GDP ratio during the boom years before the crisis is associated with a larger output decline, as is a higher loan-to-deposit ratio. At the same time, the level of financial development (higher credit-to-GDP ratio) has the opposite, positive, effect on growth performance during the crisis. Note that financial development appears to have a significant stabilising effect, notwithstanding the inclusion of two factors commonly associated with financial deepening: per capita income and institutional quality (proxied by the rule of law index taken from the World Bank Governance Indicators). Hence, it is unlikely that the significance of level of financial development merely reflects other characteristics of economic and institutional development.¹⁴

Next, we examine the effect of financial integration and external liabilities. When financial integration is added to model 3, its effect is small and statistically insignificant. At the same time, model 4 shows a pronounced negative effect within the transition region: the interaction term between the transition dummy and financial developments has a statistically significant coefficient, reflecting mainly the association between external debt and output growth (column 5). In this crisis, this association was negative both in the transition and non-transition samples, but statistically significant only in the former.

In a smaller sample of emerging markets it is also possible to look at the impact of foreign bank ownership on growth declines. The coefficient on the share of foreign banks in total banking assets is positive but not statistically significant (column 6). Column 7 suggests that the mitigating effect of foreign bank ownership “works” by offsetting the destabilising effect of high external debt. The interaction term between financial integration and the dummy variable for significant presence of foreign banks (defined as a market share by assets above 32 per cent – the median value in the sample) is positive and statistically significant. At the median value of financial integration (164 per cent of GDP), the interaction term suggests a softening impact of foreign bank ownership on output decline of between 0.7 and 2.8 percentage points.

Finally, column 8 shows that when the main macroeconomic fundamentals explored in column 7 are taken into account, the transition region dummy variable is no longer statistically significant, suggesting that the vulnerabilities included in the column 7 model go a long way in accounting for the strikingly larger output declines in the transition region compared to other regions.

¹⁴ Note also that results regarding financial development are not sensitive to the presence of industrial countries in the sample: if advanced countries are dropped, the coefficient on financial development is somewhat lower but retains its positive sign and statistical significance.

CONCLUSION

Despite large output declines, the crisis in the transition region involved a comparatively mild reversal in capital flows and has so far stopped short of systemic currency and banking crises. In light of large pre-crisis vulnerabilities in many countries in the region, this is surprising.

This paper interprets this fact as reflecting offsetting strengths that are specific to emerging Europe, including a high degree of integration with western Europe. Controlling for a large set of fundamentals, we show that countries with the higher shares of foreign-owned banks in the financial system tended to suffer smaller bank lending outflows in the fourth quarter of 2008 and first quarter of 2009. Higher foreign bank ownership is also associated with milder output declines in the transition region. In contrast, the size of pre-credit credit booms, higher external debt and hard pegs are predictors of larger declines.

Since foreign banks contributed to credit booms and external debt accumulation in emerging Europe, the overall effect of financial integration on the crisis in emerging Europe appears to have been mixed. While foreign banks had a stabilising effect in the crisis, this mainly took the form of neutralising imbalances that they themselves had helped create in earlier years.

Looking forward, the continued ability of emerging Europe to contain the crisis – and in particular to ride out the inevitable rise in unemployment and non-performing loans over the next few quarters – will largely depend on two factors.

The first is dealing with the increasingly daunting fiscal fallout of the crisis. In line with much higher than expected output declines, the crisis is tearing much larger than expected holes in government budgets. These will require a combination of additional external and fiscal adjustment, particularly through structural fiscal measures, which will bring benefits not only during the crisis but also in the medium term.

The second is preparing for, and mitigating, the coming wave of corporate defaults and non-performing loans. If not addressed, these could threaten financial stability and trigger a new round of output declines. An effective response is likely to require additional action on two fronts: encouraging efficient corporate and household debt restructuring (or in some cases, liquidation); and ensuring adequate capitalisation of banking systems even after non-performing loans rise sharply. This, in turn, may require recapitalisation by international banking groups and, if necessary, by home country authorities at the bank group level. All this has to happen in a way consistent with evolving European Union rules for state aid to the banking sector. It is also the European competition authority that, by default, has been charged with restructuring the large banking groups using these rules. The biggest challenges for European cooperation may still be ahead of us.

REFERENCES

- A. Abiad, D. Leigh and A. Mody (2009), “Financial integration, capital mobility, and income convergence”, *Economic Policy*, Vol. 24, No. 4, pp. 241-305.
- T. Beck, A. Demirguc-Kunt and R. Levine (2009), “Financial institutions and markets across countries and over time – data and analysis”, World Bank Policy Research Working Paper Series No. 4943.
- S. Claessens, N. Van Horen, T. Gurcanlar, and J. Mercado Sapiain (2008), “Foreign bank presence in developing countries 1995-2006: data and trends”. Available at the Social Science Research network web site: <http://ssrn.com/abstract=1107295>.
- R. De Haas and I. Van Lelyveld (2006), “Foreign banks and credit stability in central and eastern Europe. A panel data analysis”, *Journal of Banking & Finance*, Vol. 30, No. 7, pp. 1,927-52.
- R. De Haas and I. Van Lelyveld (2010), “Internal capital markets and lending by multinational bank subsidiaries”, *Journal of Financial Intermediation*, Vol. 19, pp. 1-25.
- EBRD (2009), *Transition Report 2009*.
- E. Falcetti, T. Lysenko and P. Sanfey (2006), “Reforms and Growth in Transition: Re-examining the evidence”, *Journal of Comparative Economics*, Vol. 34, No. 3, pp. 421-45.
- A. García Herrero and M. Martínez Pería (2007), “The mix of international banks’ foreign claims: determinants and implications”, *Journal of Banking & Finance*, Vol. 31, No. 6, pp. 613-31.
- S. Johnson, P.Boone, A. Breach and E. Friedman (2000), “Corporate governance in the Asian financial crisis”, *Journal of Financial Economics*, Vol. 58, pp. 141-86 .
- D. Mihaljek (2009), “The spread of the financial crisis to central and eastern Europe: Evidence from the BIS data”, BIS, mimeo.
- P. Lane and G. Milesi-Ferretti (2006), “The external wealth of nations mark II: revised and extended estimates of foreign assets and liabilities”, *Journal of International Economics*, Vol. 73, pp. 223-50.
- J. Peek and E. S. Rosengren (2000), “Implications of the globalisation of the banking sector: the Latin American experience”, *New England Economic Review*, September, pp. 45-62.
- A. Rose and M. Spiegel (2009), “Cross-country causes and consequences of the 2008 crisis: early warning”, Centre for Economic Policy Research Discussion Paper 7354.