

## CHAPTER 3

# Restructuring bank, corporate, and household debt

Nonperforming loans picked up during 2009 in many ECA countries—up to 20 percent of all loans—particularly construction and mortgage lending.

With a few exceptions, the indebtedness of nonfinancial corporates is not higher than that in comparable countries.

A distinctive feature of ECA's crisis is household debt, which in some new member states of the EU and in Croatia has reached levels comparable to those of Ireland, Spain, and Portugal in the late 1990s.

Household debt is concentrated in the upper-income quintiles.

### Questions

- Why is it imperative that ECA countries recognize nonperforming loans without much delay?
- What can be learned from past banking crises about the best way to restructure corporate and household debt?
- What are the main challenges for the future of finance in the region?

### Findings

- The outlook for ECA's growth is weak. So, there is urgency to recognizing and restructuring nonperforming loans to ensure that the region's economic recovery is not held back by weak loan portfolios.
- Credit losses (even in a worsening scenario) should be manageable and could range from 7 to 19 percent of country GDP.
- Past crises offer guidance on how to conduct corporate and household debt restructuring. Governments should consider establishing voluntary out-of-court workout mechanisms to avoid overwhelming the judicial system with a large number of debt restructurings.
- Capital adequacy ratios for transition and developing countries should take into account the greater volatility of the shocks affecting them—and thus err on the side of financial stability, even at the expense of some loss in financial intermediation.

Financial institutions, corporations, and households are facing difficulties servicing their debt contracts on the original schedules.<sup>1</sup> Banks are seeing their

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1. Laeven and Valencia 2008.

loan portfolio deteriorate as firms are hit by the collapse of demand and unemployment rises. Two of ECA's hardest hit countries (Latvia and Ukraine) had nonperforming loans (defined as substandard, doubtful, and lost) at around 20 percent of all loans at the end of the first quarter of 2009. Although the lower income countries of the CIS have not been directly affected by a sudden stop in capital flows, their banking sectors are also hurting: nonperforming loans stood at over 6 percent in the Kyrgyz Republic and nearly 14 percent in Georgia in early 2009. By comparison, nonperforming loans in earlier capital account crises peaked at 32 percent of total loans in Indonesia, 35 percent in Korea, 30 percent in Malaysia, and 23 percent in Thailand during the East Asian crisis—and at 20 percent in Argentina, 40 percent in Ecuador, and 36 percent in Uruguay during their crisis earlier this century.<sup>2</sup>

Nonperforming loans are particularly high in trade and construction. This is due to the devaluation of the local currency and a plunging real estate market, and the impact of these developments on mortgage loans. For instance, 25 percent of all mortgages in Ukraine were in default in mid-2009, up from 1 percent in late 2008. In Latvia, the proportion of loans to companies that have real estate as their business and are more than 90 days overdue was nearly 30 percent in March 2009.

On the liability side of the balance sheet, banks with high loan-to-deposit ratios have seen their funding dry up. This is particularly evident in the wholesale and interbank markets (chapter 2). And in most countries, banks have faced a withdrawal of resident deposits because of a loss of confidence. In Ukraine, for example, there was a deposit flight of 25 percent from hryvnia deposits and 18 percent of foreign exchange deposits between October 2008 and April 2009. In other countries, the shift has been from local to foreign exchange deposits.

### **Financial systems need to be fixed**

As in previous capital account crises, restoring the financial system to health is important because both consumption and investment depend on credit. Policy responses to systemic banking crises typically distinguish between a containment phase (primarily related to the liability side of banks' balance sheet), where the priority is to restore confidence by depositors and investors in the banking system, and a resolution phase (primarily related to the asset side of banks' balance sheets) focusing on the financial restructuring of banks

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2. The increases observed in past capital account crises reflect increased and widespread corporate distress, as well as the introduction of better loan classification standards for financial institutions.

and their borrowers. The distinction is not hard and fast, since steps to contain the crisis shape the landscape for formulating resolution policies.

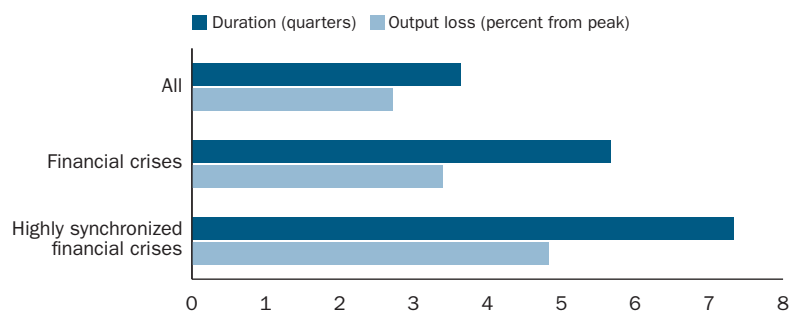
*... particularly when growth is expected to be sluggish*

Restoring the financial system to health is more difficult when the profile of recovery and growth is likely to be sluggish. The expectation of weak growth is based on three considerations.

- First, recessions associated with financial crises that are synchronized across the world, as they are today, have had declines in real GDP from the previous peak that are deeper (5 percent), take longer to arrive at the trough from the previous peak (almost 8 quarters), and require more time for real GDP to recover from the new trough to the previous peak (about 7 quarters). This is the case both when compared with recessions caused by other types of shocks (fiscal policy contractions, monetary policy tightening, oil shocks) or those following financial crises that are not synchronized across the world (figures 3.1a and 3.1b). The reasons are simple. Net trade is much weaker and exports are thus less likely to be a source of recovery. In addition, credit growth and the increase in prices of assets, such as real estate and equities, during the expansion preceding a financial crisis are higher than during other expansions, and household savings out of disposable income in the pre-crisis period is lower. These factors necessitate a large increase in savings rates after the crisis strikes, which in turn implies a much deeper decline in private consumption. Indeed, private consumption typically grows more slowly than during other recoveries, while private investment actually continues to decline even after passing the recession's trough.

FIGURE 3.1A

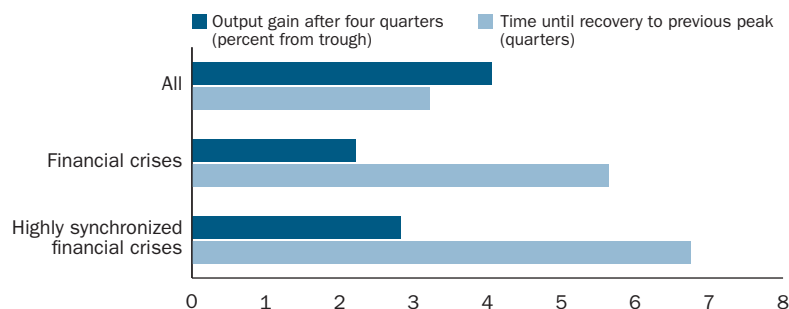
**Average duration and change in output of recessions, by type**



Source: IMF *World Economic Outlook*, April 2009.

FIGURE 3.1B

**Average duration and change in output of recoveries, by type**



Source: IMF *World Economic Outlook*, April 2009.

- Second, writedowns remain to be fully recognized in the Western European financial sector, and leverage ratios in the banking sector are high. The IMF estimates that financial institutions in Western Europe (including the United Kingdom) will face around \$1.5 trillion in writedowns through 2010, but just around 40 percent had been recognized by the end of the second quarter of 2009.<sup>3</sup> The leverage of Western European banks prior to the crisis was also too high. A reduction of leverage to reach a ratio of tangible common equity to tangible assets of 4 percent would require a capital injection of around \$550 billion for Western European (including United Kingdom) banks.<sup>4</sup> However, high fiscal deficits in Western Europe may constrain governments' ability to do so rapidly.
- Third, growth in ECA was underpinned by abundant liquidity that is unlikely to continue at the pace in the pre-crisis years. This implies inter alia a possible slowing of convergence to Western European living standards. Since recognizing losses in Western European banks will require substantial deleveraging, which would typically include some retrenchment from subsidiaries, the growth of credit to some ECA countries is likely to be more limited—so too the excess of imports over exports. In this context, if financing is not rapidly restored, this could compromise growth. There is room to run public imbalances without crowding out private activity—public debt is low and the private sector needs to adjust. But public imbalances cannot be maintained for long without raising sustainability issues (box 3.1).

3. IMF 2009c.

4. Tangible common equity is total equity less preferred shares and intangible assets; tangible assets are total assets less intangible assets.

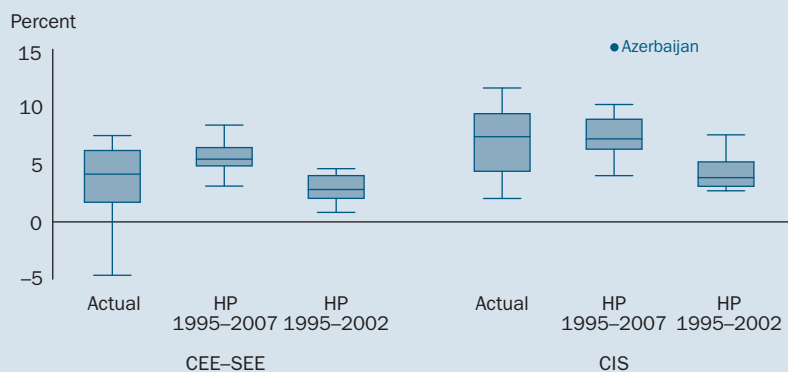
BOX 3.1

**ECA's growth prospects—green shoots? Maybe. High growth rates? Unlikely**

How can one assess the region's growth prospects? Quantifying potential growth is always difficult, more so in a region where the role of unusually high external financing in growth is not well understood. Moreover, the full impact of this crisis on GDP in 2009 and 2010 is still playing out. Notwithstanding the caveats, a crude estimate of potential growth can be derived by using filtered series, such as Hodrick-Prescott techniques. This is far from a theory of growth, but it highlights the unusual features of growth in the region over the past five years. Specifically, the box figure presents two estimates in addition to the actual GDP growth rate for 2008.<sup>1</sup> The first estimate is based on growth rates interpolated from country-specific data for 1995–2007. The second estimate is based on growth rates interpolated from 1995–2002. Among the CEE-SEE group, there is a 3 percentage point difference between the interpolated growth rate derived using HP filtered series based on different sample periods. Among the CIS, this difference is even higher—slightly more than 4 percentage points. Clearly, the concern that growth rates might not rapidly return to past levels is valid. The potential effects on fiscal sustainability remains to be seen, but they could obviously be important as the revenue performance of recent years benefited from the unexpectedly high growth rates in real GDP.

BOX FIGURE 1

**Potential growth (in percent)**



**Note**

1. The full distribution for CEE and SEE countries (including Turkey) and CIS countries is represented through the use of box-and-whiskers charts. The whiskers represent minimum and maximum values. The boxes represent the 25th and 75th percentile. The line in the box is the median for the group. An observation beyond the whisker occurs when there are outliers in the data (more than 1.5 times the interquartile range away from the neighboring observation).

Source: World Bank *World Development Indicators* and authors' calculations.

Against this background, this chapter attempts to answer three questions. First, what can be learned from past banking crises about the best way to contain and resolve problem banks? Second, why is it important to recognize non-performing loans without much delay, and what is the best way to restructure corporate and household debts? Third, what are the more important aspects of bank regulation and supervision that need to be reformed to absorb the lessons from the present crisis and make banking sectors in ECA countries less vulnerable to future crises? Issues include strengthening capital requirements and cross-border banking supervision.

## **For the lenders: bank restructuring**

### *Containment: restoring confidence*

The containment phase is intended to restore public confidence in the banking system and limit its adverse effects on the real sector. Numerous instruments are available to the authorities, most targeted at stabilizing the liability side of banks' balance sheets. These policy measures include:

- *Liquidity support in local currency.* Liquidity support includes a reduction in reserve requirements, access to overdraft facilities, and the use of repos and reverse repos against broader types of collateral. But this needs to be done under closely monitored conditions to prevent recipient banks from shifting assets abroad. And liquidity support should not be extended to banks that are reportedly insolvent. Both have occurred in some middle-income CIS countries. For the poorer countries of the former Soviet Union, liquidity injections were put in place in Georgia and Tajikistan, reserve requirements were reduced in Georgia, and deposit insurance coverage was extended in the Kyrgyz Republic. Monetary policy will need to stand ready to sterilize excess liquidity where liquidity support put pressure on the exchange rate, though the risk of currency depreciation has been reduced with global monetary easing and associated declines in world interest rates.
- *Liquidity support in foreign currency.* The ability of the central bank to provide liquidity support in foreign exchange is limited by the availability of reserves. Countries can benefit from temporary arrangements, such as a swap line to provide euro liquidity. For instance, this was made available to Estonia by the Swedish Riksbank, and to Poland by the IMF's approval of a flexible credit line, which is extended only to countries with a track record of sound macroeconomic management. Countries without access to such swap lines have opted for high-access IMF arrangements that require policy reform.

- *Government guarantees.* Some countries have introduced guarantees for third-party funding of banks. For example, guarantees have been extended for interbank credits in Hungary and Latvia, bank-issued securities used to roll over or refinance domestic banks' funding needs in Hungary, and new debt issuance by banks in Slovenia.
- *Deposit insurance.* Countries have raised maximum limits on bank deposits covered by deposit insurance and increased deposit insurance premia—the uncoordinated increase in deposit insurance in the eurozone in 2008 and its effects on the new member states of the European Union that do not belong to the eurozone were addressed later.

The provision of liquidity support and deposit and government guarantees should be accompanied by intervention in banks deemed insolvent. This was the case, for example, with the second largest domestically owned bank in Latvia, where liquidity support was not enough to stop a bank run—and with 17 banks in Ukraine, where temporary administrators imposed a freeze on household deposits and a moratorium on repayment of liabilities to allay concerns about the banking system's soundness.

#### *Resolution: restructuring banks*

The resolution phase of a systemic banking crisis seeks to restore the normal functioning of the credit system and calls for the restructuring of financial institutions. The response to a crisis requires that banks be recapitalized to protect depositors and taxpayers from losses arising from deteriorating asset quality. Bank supervisors must make a judgment about the viability of individual banks based on the best available, if typically incomplete, information and a view of its future prospects. This forms the basis for a triage depending on capital adequacy ratios and bank viability, with banks classified as those that are viable and meet regulatory requirements, those that are viable but undercapitalized, and those that are nonviable and insolvent. Solvent and undercapitalized banks need to be capitalized on a timetable agreed with regulators. Unless market players are prepared to absorb the assets of fragile banks prior to bankruptcy, nonviable and insolvent banks need to be taken over by regulators (or “intervened”) and a decision taken on their future.

- If a bank is to be closed: Deposits need to be transferred to a healthy bank, and creditors should share in the losses based on existing banking and bankruptcy laws.
- If a bank is to be kept open: The range of options includes recapitalizing the bank with public funds, selling it, possibly with some government

guarantee on asset values, and merging it with a healthy bank, possibly with some enhancement of the balance sheet.

While recapitalization of private banks should be done using private funds, crisis situations might call for public capital. In such cases, the government should acquire preferred shares in return for representation on the board, and existing shareholders should suffer a dilution. For undercapitalized subsidiaries of cross-border banks in ECA, the burden of recapitalization should rest with parent banks. For example, Romania has asked parent banks to preemptively recapitalize their subsidiaries.

Countries have also used the crisis to give supervisors the broad authority to respond to systemic risks in the banking sector. Kazakhstan now has a banking resolution framework that allows regulators to intervene, with appropriate powers, in cases of bank distress. Latvia has sought improvements in the legal framework for bank resolution, including intervention in troubled banks. Hungary has strengthened bank regulation and supervisory powers to allow forward-looking actions to preempt systemic distress. It also seeks to renew the focus on onsite verification of banks' safety and soundness and requires onsite inspections of the largest banks to evaluate asset quality, loan loss provisions and reserves, collateral values, capital solvency and governance; to calculate required adjustments to capital and provisions; and to recommend corrective action.

In Ukraine, legislation is being sought to allow revaluating shareholder capital; transferring the assets and liabilities of a bank, whether before or after revocation of its license without the prior approval of creditors, including depositors; simplifying the grounds for introducing temporary administrators in problem banks; and giving the central bank the authority to charter a bridge bank, tasked with administering the assets and liabilities of failed banks.

Similar actions are being taken in the low-income and lower middle-income countries of the former Soviet Union—with regular stress-testing of banks in Armenia and Georgia, increased provisioning in Georgia, requiring existing shareholders to inject capital in banks in the Kyrgyz Republic, with the authorities taking equity stakes when needed. Bank supervision is being strengthened in Armenia, the Kyrgyz Republic, and Tajikistan. All the low-income and lower middle-income countries of the former Soviet Union have made sure that the supervisory authorities have necessary powers of intervention.

#### *Avoid regulatory forbearance*

Some previous episodes of systemic banking distress, such as Argentina 2001, Bulgaria 1996, Ecuador 1999, Indonesia 1997, Korea 1997, Malaysia 1997,

Mexico 1994, the Russian Federation 1998, and Thailand 1997 have also seen regulatory forbearance. Specifically, to help banks recognize losses and allow corporate and household restructuring to go forward, the government might exercise forbearance either on loss recognition, which gives banks more time to reduce their capital to reflect losses, or on capital adequacy, which requires full provisioning but allows banks to operate for some time with less capital than prudential regulations require.

But regulatory forbearance has risks. First, a financial institution might use the period of forbearance to engage in risky lending in an effort to recover its capital position, increasing the costs of an eventual failure. So, forbearance should be allowed only for financial institutions whose long-term viability seems reasonably assured, and progress toward capital adequacy should be time-bound and monitored. Second, some types of forbearance on loss recognition may encourage the overvaluation of restructured debt or converted equity and thus discourage follow-on operational restructuring. It could also discourage loss-averse financial institutions from liquidating nonviable companies, selling to a strategic investor, or making forced sales of overvalued collateral. Third, forbearance on loss recognition may impede private recapitalization of banks since investors might be reluctant to invest in an institution with murky loan classifications and unclear provisioning rules. So, forbearance should focus on capital adequacy instead of loss recognition, be limited in applicability and duration, and be closely monitored.

More important, postponing bank restructuring has little to recommend it, since the global recession is expected to be more protracted than its recent predecessors. The likelihood of capital inflows recovering to pre-crisis levels is low, so there will be greater reliance on domestic savings. If problem loans are not recognized early and addressed swiftly, this could discourage efficient financial intermediation and hold back the region's growth recovery.

#### *ECA's credit losses: substantial but manageable*

Given that the full impact of the crisis on asset quality is still unknown, past banking and currency crises offer a rough guide to assess underlying risks. The focus is on banking crises, accompanied by a currency crisis that had GDP declines exceeding 5 percent in the year following the onset of the crisis. In such cases, the nonperforming loans on average rise to 30 percent (table 3.1). These are assumed to be a proxy for the probability of default. In addition, recovery rates are assumed to be roughly 40 percent on mortgages, in line with the marked declines in housing prices, and 15 percent on loans to firms, which broadly

matches the average assumption by the Swedish Riksbank on the exposure of Swedish banks to the Baltic states.<sup>5</sup> A preferable approach no doubt would be to calibrate the recovery rate by sector and country depending on country-specific bankruptcy resolution frameworks and other institutional characteristics that impact recovery rates, but such data are only available to banking supervision authorities of each country. The shares of households and firms in the total loan portfolio—a measure of exposure—are provided by a broad characterization of the consolidated banking sectors in ECA countries. Expected credit losses are the product of exposure, the probability of default, and the recovery rate.

TABLE 3.1

**Countries with banking and currency crises and nonperforming loans as a share of total loans**

| Country                     | Crisis year | Nonperforming loans (percent of total loans) | Country             | Crisis year | Nonperforming loans (percent of total loans) |
|-----------------------------|-------------|--|---------------------|-------------|--|
| Banking and currency crisis |             |  | Banking crisis only |             |  |
| Argentina                   | 1980        | 9.0  | Argentina           | 1995        | 17.0   |
| Argentina                   | 1989        | 27.0   | Bolivia             | 1994        | 6.2  |
| Argentina                   | 2001        | 20.1   | Colombia            | 1982        | 4.1  |
| Brazil                      | 1994        | 16.0   | Colombia            | 1998        | 14.0   |
| Bulgaria                    | 1996        | 75.0   | Croatia             | 1998        | 10.5   |
| Chile                       | 1981        | 35.6   | Czech Rep.          | 1996        | 18.0   |
| Dominican Republic          | 2003        | 9.0  | Finland             | 1991        | 13.0   |
| Ecuador                     | 1998        | 40.0   | Japan               | 1997        | 35.0   |
| Estonia                     | 1991        | 7.0  | Latvia              | 1995        | 20.0   |
| Indonesia                   | 1997        | 32.5   | Lithuania           | 1995        | 32.2   |
| Jamaica                     | 1996        | 28.9   | Nicaragua           | 2000        | 12.7   |
| Korea, Rep.                 | 1997        | 35.0   | Norway              | 1991        | 16.4   |
| Malaysia                    | 1997        | 30.0   | Paraguay            | 1995        | 8.1  |
| Mexico                      | 1994        | 18.9   | Sri Lanka           | 1989        | 35.0   |
| Philippines                 | 1997        | 20.0   | Thailand            | 1997        | 33.0   |
| Russian Federation          | 1998        | 40.0   | Vietnam             | 1997        | 35.0   |
| Sweden                      | 1991        | 13.0   | Average             |             | 19.4   |
| Turkey                      | 2000        | 27.6   | Median              |             | 16.7   |
| Ukraine                     | 1998        | 62.4   |                     |             |  |
| Uruguay                     | 2002        | 36.3   |                     |             |  |
| Venezuela                   | 1994        | 24.0   |                     |             |  |
| Average                     |             | 28.9   |                     |             |  |
| Median                      |             | 27.6   |                     |             |  |

Source: Laeven and Valencia 2008.

5. Sveriges Riksbank 2009.

The results of the analysis suggest that credit losses could, in a worsening scenario, be substantial but manageable. They vary from 7 percent of GDP in Belarus and Turkey to 21 percent in Estonia, with an average of some 13 percent for the financially integrated ECA countries (table 3.2). The variation across countries is largely accounted for by the size of the loan portfolio—that is, the share of credit in GDP. Note that despite sharp declines in real estate prices, this is somewhat compensated for by the better recovery rates for these loans given the collateral underlying mortgage lending—and indeed despite the sharp declines in real estate prices of the past year. Of course, the scenario could be more optimistic about recovery rates. For example, housing prices in many countries in the region have not declined as much, and banks might choose not to proceed immediately to sell these assets to avoid worsening the housing market. In a scenario with recovery rates in mortgages averaging 75 percent, credit losses would range from 6 to 16 percentage points of GDP.

## **For the borrowers: corporate and household debt restructuring**

### *Corporate debt: how much of a problem?*

With a few exceptions, nonfinancial corporates in ECA are only moderately indebted. Indirect evidence comes from these facts:

- Financial development (private credit to GDP) was still lagging economic development (GDP per capita)—but the gap has closed only recently relative to 1995 (see annex 1.2).
- Small and medium-size enterprises in ECA's transition countries (excluding Turkey) relied more on retained earnings and informal finance than external finance to fund fixed investment, than did developing market economies, a gap that closed for the richer transition economies only in 2008, on the eve of the crisis.<sup>6</sup>
- The growth of credit to nonfinancial corporates was considerably lower than that to households in many financially integrated ECA countries (see table 1.3).

Direct evidence comes from the evolution of corporate leverage—the ratio of total debt to total assets—for large nonfinancial corporates (table 3.3). Although leverage increased sharply in Hungary and, to less extent, in Turkey in 2008, it was still about half the elevated levels in East Asia during its crisis in

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6. The sample of firms is drawn from the World Bank's Investment Climate Assessments for 2000–08 for developing countries and the Business Environment and Enterprise Performance Surveys for 1999–2008 for the ECA transition countries (see chapter 5).

TABLE 3.2

## Credit losses—extrapolating from past crisis events

| Country                         | Share of lending to |       | Outstanding private credit       |                | Assumptions   | Losses (including nonperforming loans) |                |
|---------------------------------|---------------------|-------|----------------------------------|----------------|---|--|----------------|
|                                 | Households          | Firms | Billions of local currency units | Percent of GDP |   | Billions of local currency units       | Percent of GDP |
| Belarus <sup>a</sup>            | 0.25                | 0.75  | 37,159                           | 29             | Nonperforming loans <sup>b</sup>                    | 8,632                                  | 7              |
| Bulgaria                        | 0.35                | 0.65  | 50                               | 74             | 29.50   | 11                                     | 17             |
| Croatia                         | 0.50                | 0.50  | 222                              | 65             |   | 48                                     | 14             |
| Czech Rep.                      | 0.40                | 0.60  | 1,947                            | 53             | Loss recovery given default, household <sup>c</sup> | 431                                    | 12             |
| Estonia <sup>d</sup>            | 0.50                | 0.50  | 245                              | 99             | 0.40  | 52                                     | 21             |
| Hungary                         | 0.40                | 0.60  | 18,527                           | 69             | Loss recovery given default, firms <sup>e</sup>     | 4,099                                  | 15             |
| Kazakhstan <sup>a</sup>         | 0.25                | 0.75  | 7,972                            | 50             | 0.15  | 1,852                                  | 12             |
| Latvia <sup>d</sup>             | 0.50                | 0.50  | 15                               | 90             |   | 3                                      | 19             |
| Lithuania <sup>d</sup>          | 0.45                | 0.55  | 70                               | 63             |   | 15                                     | 14             |
| Macedonia, FYR                  | 0.40                | 0.60  | 175                              | 44             |   | 39                                     | 10             |
| Montenegro                      | 0.40                | 0.60  | 3                                | 81             |   | 1                                      | 18             |
| Poland                          | 0.40                | 0.60  | 633                              | 50             |   | 140                                    | 11             |
| Romania                         | 0.40                | 0.60  | 194                              | 38             |   | 43                                     | 9              |
| Russian Federation <sup>a</sup> | 0.30                | 0.70  | 17,102                           | 41             |   | 3,910                                  | 9              |
| Serbia                          | 0.40                | 0.60  | 1,072                            | 38             |   | 237                                    | 8              |
| Turkey <sup>a</sup>             | 0.30                | 0.70  | 310                              | 33             |   | 71                                     | 7              |
| Ukraine <sup>a</sup>            | 0.30                | 0.70  | 700                              | 74             |   | 160                                    | 17             |
| Average                         |                     |       |                                  | 58             |   |  | 13             |
| Median                          |                     |       |                                  | 53             |   |  | 12             |

a. Assumes a lower share of household lending; loans to corporates still dominate.

b. Nonperforming loans are assumed to match the levels observed in the Laeven and Valencia database for cases with a currency crisis; in effect this is broadly equivalent to cases where the decline in GDP in period t+1 is at least 5 percent.

c. Assumes loan-to-value ratios of 1 and a recovery rate of only 40 percent given the decline in housing prices.

d. Assumes somewhat higher role of mortgage lending given developments in housing prices.

e. The loss recovery given default is set at the average level observed during the Asian crisis.

Source: IMF *International Financial Statistics* and authors' calculations.

1997–98 and was also generally lower than in Argentina (2001), Brazil (1998), Mexico (1995), and Turkey (2001) in the years of their crisis. Corporate leverage is notably higher in Greece, Ireland, Portugal, and Spain (the EU cohesion countries), reflecting their deeper and more liquid financial markets.

TABLE 3.3

**Median nonfinancial corporate leverage, Europe and Central Asia countries and EU cohesion countries, 1999–2008, and comparator countries for years of crisis (percent)**

| Country            | Number of firms <sup>a</sup> | 1999–2008                 |      |      |      |      |      |      |      |      |      |
|--------------------|------------------------------|---------------------------|------|------|------|------|------|------|------|------|------|
|                    |                              | 1999                      | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
| Czech Rep.         | 31                           | 23.9                      | 18.0 | 12.8 | 10.3 | 8.9  | 10.1 | 10.8 | 9.7  | 8.9  | 11.6 |
| Hungary            | 33                           | 11.1                      | 17.4 | 11.7 | 12.8 | 17.2 | 17.1 | 15.7 | 21.1 | 13.2 | 27.6 |
| Poland             | 167                          | 11.7                      | 13.0 | 16.5 | 17.7 | 18.3 | 15.9 | 15.6 | 15.9 | 15.5 | 17.1 |
| Turkey             | 182                          | 25.5                      | 27.5 | 26.2 | 25.1 | 19.7 | 16.7 | 16.7 | 19.2 | 16.5 | 21.7 |
| Greece             | 268                          | 20.2                      | 20.4 | 26.8 | 28.0 | 29.5 | 29.2 | 31.9 | 30.2 | 32.6 | 34.4 |
| Ireland            | 68                           | 25.5                      | 27.4 | 30.6 | 29.3 | 28.7 | 23.5 | 27.0 | 29.3 | 28.4 | 34.7 |
| Portugal           | 64                           | 29.3                      | 32.4 | 35.6 | 37.1 | 35.2 | 35.2 | 34.8 | 38.9 | 40.8 | 46.3 |
| Spain              | 163                          | 20.4                      | 23.2 | 24.0 | 26.0 | 27.7 | 28.1 | 31.9 | 33.0 | 33.3 | 34.1 |
|                    |                              | Period (t is crisis year) |      |      |      |      |      |      |      |      |      |
|                    |                              | t-3                       | t-2  | t-1  | t    | t+1  | t+2  | t+3  |      |      |      |
| Korea, Rep. (1997) | 442                          | 44.1                      | 45.1 | 46.1 | 50.5 | 44.6 | 33.4 | 31.1 |      |      |      |
| Thailand (1997)    | 273                          | 32.6                      | 37.7 | 40.9 | 53.1 | 45.1 | 41.1 | 43.4 |      |      |      |
| Indonesia (1997)   | 171                          | 28.6                      | 31.6 | 34.7 | 51.8 | 61.3 | 50.3 | 47.1 |      |      |      |
| Argentina (2001)   | 78                           | 33.4                      | 30.6 | 31.2 | 27.7 | 31.4 | 25.8 | 23.1 |      |      |      |
| Brazil (1998)      | 257                          | 18.0                      | 24.3 | 26.1 | 27.3 | 26.2 | 26.1 | 31.4 |      |      |      |
| Mexico (1995)      | 82                           | 28.7                      | 29.9 | 31.1 | 31.9 | 28.3 | 28.7 | 28.0 |      |      |      |
| Turkey (2001)      | 158                          | 24.1                      | 25.5 | 27.5 | 26.2 | 25.1 | 19.7 | 16.7 |      |      |      |

a. Average over period.

Note: DataStream (WorldScope) includes companies which meet some of the following criteria: market capitalization equal to or greater than \$100 million; company belongs to the FTSE ALL World, Dow Jones Global, MSCI World, MSCI EMF, S&P Global, or S&P/Citigroup; company has an ADR listed on the NYSE, ASE, or NASDAQ, or a sponsored ADR that trades over the counter; companies included in EASDAQ or EURO.NM.

Source: DataStream (WorldScope).

Data for other countries in the region (taken from the Bloomberg database, which has a wider country coverage) confirm this view (table 3.4). Corporate leverage in 2008 was among the lowest in Bulgaria, the Czech Republic, Poland, and the Slovak Republic; intermediate in Romania, Turkey, and Ukraine; and among the highest in Croatia, Estonia, Latvia, Lithuania, and Slovenia. But even the countries with the highest leverage have a total debt to total assets ratio broadly similar to those in East Asia and somewhat less than in the cohesion countries in 2008. In particular, corporate leverage in the ECA countries is much lower than that in East Asia during its crisis in 1997–98. The comparison, which focuses on the largest firms, is meant to be suggestive, and the small sample size in ECA's smaller countries in particular

TABLE 3.4

**Median nonfinancial corporate leverage, by country, 2008 (percent)**

| Country                           | Number of firms | Corporate leverage |
|-----------------------------------|-----------------|--------------------|
| Europe and Central Asia countries |                 |                    |
| Bulgaria                          | 142             | 16.4               |
| Croatia                           | 201             | 26.5               |
| Czech Rep.                        | 13              | 10.8               |
| Estonia                           | 14              | 26.2               |
| Hungary                           | 24              | 19.5               |
| Latvia                            | 23              | 25.6               |
| Lithuania                         | 34              | 29.4               |
| Macedonia, FYR                    | 30              | 18.6               |
| Poland                            | 247             | 14.8               |
| Romania                           | 151             | 18.5               |
| Russian Federation                | 713             | 23.5               |
| Slovak Rep.                       | 11              | 13.7               |
| Slovenia                          | 41              | 31.9               |
| Turkey                            | 219             | 20.6               |
| Ukraine                           | 193             | 17.5               |
| Other countries                   |                 |                    |
| Korea, Rep.                       | 116             | 27.8               |
| Thailand                          | 364             | 24.9               |
| Indonesia                         | 244             | 30.2               |
| Argentina                         | 78              | 21.2               |
| Brazil                            | 313             | 28.0               |
| Mexico                            | 83              | 23.5               |
| Portugal                          | 53              | 41.1               |
| Ireland                           | 44              | 26.9               |
| Greece                            | 255             | 33.5               |
| Spain                             | 115             | 27.5               |

Source: Bloomberg.

should be recognized. But it should be placed alongside the indirect evidence cited earlier about ECA's financial shallowness, the importance of households rather than nonfinancial corporates in rapid credit growth in many ECA countries, and the dominance of retained earnings as a source of financing for fixed investment giving way only recently to bank financing in a large sample of small and medium enterprises from across the region (chapter 5).

The sustainability of corporate financial structures during the year of crisis is of somewhat more concern in some countries. Some indication of the extent to which nonfinancial corporates have a sustainable financing structure is the

TABLE 3.5

**Median interest coverage in nonfinancial firms, Europe and Central Asia countries and EU Cohesion countries, 1999–2008, and comparator countries for years of crisis (percent)**

| Country                   | Number of firms <sup>a</sup> | 1999–2008 |      |      |      |      |      |      |      |      |      |  |
|---------------------------|------------------------------|-----------|------|------|------|------|------|------|------|------|------|--|
|                           |                              | 1999      | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |  |
| Czech Rep.                | 33                           | 1.7       | 4.0  | 3.8  | 4.6  | 6.1  | 8.1  | 6.6  | 11.7 | 14.1 | 22.3 |  |
| Hungary                   | 34                           | 5.5       | 5.9  | 5.7  | 4.7  | 4.8  | 3.4  | 4.1  | 5.1  | 4.2  | 1.3  |  |
| Poland                    | 240                          | 3.6       | 2.1  | 1.5  | 2.1  | 3.7  | 6.0  | 6.4  | 9.4  | 11.5 | 4.8  |  |
| Turkey                    | 194                          | 1.7       | 2.3  | 1.2  | 1.8  | 3.2  | 3.1  | 3.7  | 3.3  | 4.5  | 2.2  |  |
| Greece                    | 281                          | 6.0       | 5.8  | 3.9  | 3.1  | 2.9  | 3.2  | 2.9  | 3.1  | 3.0  | 1.7  |  |
| Ireland                   | 70                           | 4.4       | 3.8  | 2.0  | 1.4  | 2.6  | 3.1  | 3.7  | 4.0  | 4.4  | 1.5  |  |
| Portugal                  | 65                           | 4.1       | 2.9  | 2.4  | 1.8  | 2.0  | 3.1  | 3.2  | 3.0  | 2.5  | 1.3  |  |
| Spain                     | 166                          | 7.2       | 5.8  | 4.5  | 3.8  | 5.0  | 5.8  | 5.9  | 4.6  | 3.5  | 2.3  |  |
| Period (t is crisis year) |                              |           |      |      |      |      |      |      |      |      |      |  |
|                           |                              | t-3       | t-2  | t-1  | t    | t+1  | t+2  | t+3  |      |      |      |  |
| Korea, Rep. (1997)        | 436                          | 1.4       | 1.4  | 1.2  | 1.1  | 1.1  | 1.7  | 1.8  |      |      |      |  |
| Thailand (1997)           | 259                          | 4.1       | 3.2  | 2.2  | 1.2  | 1.6  | 1.0  | 1.5  |      |      |      |  |
| Indonesia (1997)          | 169                          | 4.2       | 3.3  | 2.6  | 1.0  | 0.1  | 1.8  | 0.6  |      |      |      |  |
| Argentina (2001)          | 468                          | 3.3       | 1.9  | 1.4  | 1.2  | 0.1  | 1.6  | 2.2  |      |      |      |  |
| Brazil (1998)             | 255                          | 1.6       | 1.6  | 1.8  | 1.3  | 0.9  | 1.4  | 1.2  |      |      |      |  |
| Mexico (1995)             | 73                           | 3.2       | 2.7  | 1.1  | 1.8  | 3.1  | 3.1  | 1.7  |      |      |      |  |
| Turkey (2001)             | 170                          | 2.4       | 1.7  | 2.3  | 1.2  | 1.8  | 3.2  | 3.1  |      |      |      |  |

a. Average over period.

Source: DataStream (WorldScope).

interest coverage ratio—the ratio of EBIT (earnings before interest and tax) to total interest expense (table 3.5). It fell sharply in Hungary between 2007 and 2008 to reach a low of 1.3 in 2008, a figure comparable to the lows in East Asia during its crisis and in Turkey in 2001. For a wider set of countries, it is the lowest in Croatia, followed by Slovenia, Turkey, Latvia, and Hungary (table 3.6). The highest interest coverage ratios are for the Czech Republic, the Russian Federation, Estonia, Poland, Romania, and the Slovak Republic (table 3.6). The table also reports the proportion of firms that had interest coverage less than unity—that is, where EBIT did not cover interest costs.

#### *Household debt: the crisis hits home*

Much of the rapid expansion of credit in the years preceding the crisis was driven by the household sector.<sup>7</sup> The ratio of household lending to corporations

7. Part of the material in this section draws on Tiongson et al. (2009).

TABLE 3.6

**Median interest coverage ratio in nonfinancial firms, by country, 2008 (in percent; median values)**

| Country                           | Number of firms | With interest coverage ratio less than 1 <sup>a</sup> | Interest coverage ratio (percent) |
|-----------------------------------|-----------------|---|-----------------------------------|
| Europe and Central Asia countries |                 |   |                                   |
| Bulgaria                          | 123             | 34  | 2.1                               |
| Croatia                           | 204             | 52  | 0.8                               |
| Czech Rep.                        | 16              | 6   | 33.3                              |
| Estonia                           | 13              | 15  | 5.5                               |
| Hungary                           | 14              | 50  | 1.5                               |
| Latvia                            | 24              | 38  | 1.5                               |
| Lithuania                         | 31              | 32  | 2.8                               |
| Macedonia, FYR                    | 30              | 50  | 1.1                               |
| Poland                            | 319             | 28  | 4.2                               |
| Romania                           | 186             | 28  | 3.5                               |
| Russian Federation                | 705             | 19  | 5.5                               |
| Slovak Rep.                       | 9               | 33  | 3.3                               |
| Slovenia                          | 38              | 32  | 2.0                               |
| Turkey                            | 214             | 45  | 1.3                               |
| Ukraine                           | 46              | 41  | 2.0                               |
| Other countries                   |                 |   |                                   |
| Korea, Rep.                       | 1,550           | 39  | 2.2                               |
| Thailand                          | 397             | 33  | 3.5                               |
| Indonesia                         | 243             | 20  | 2.7                               |
| Argentina                         | 83              | 24  | 3.1                               |
| Brazil                            | 157             | 27  | 2.6                               |
| Mexico                            | 96              | 19  | 3.9                               |
| Portugal                          | 49              | 37  | 1.5                               |
| Ireland                           | 51              | 35  | 2.1                               |
| Greece                            | 256             | 31  | 2.1                               |
| Spain                             | 81              | 23  | 3.1                               |

a. Proportion of firms with an interest coverage ratio less than 1.

Source: Bloomberg.

doubled in most countries between 2005 and 2008 (see table 1.3). And mortgage lending as a share of lending to households increased sharply in some countries. Despite this growth, household indebtedness is still significantly lower than in the EU15 and reflected a pattern similar to that in the cohesion countries during their financial integration.

- Household debt represents on average more than a quarter of GDP in the new member states of the European Union (EU10), but there is significant

cross-country variation, with the number reaching more than 40 percent in some countries (figure 3.2). These ratios are below the average of about 65 percent of GDP among EU15 countries, and closer to those for Ireland, Italy, Portugal, and Spain in the late 1990s (figure 3.3).

- As household financial positions have grown, there has been a shift toward housing loans or mortgages on the liability side of the balance sheet and an increasing share of equities and pension and mutual funds on the asset side. Still there is much variability. Housing loans accounted for the bulk of

FIGURE 3.2  
Household debt, by country, 2008

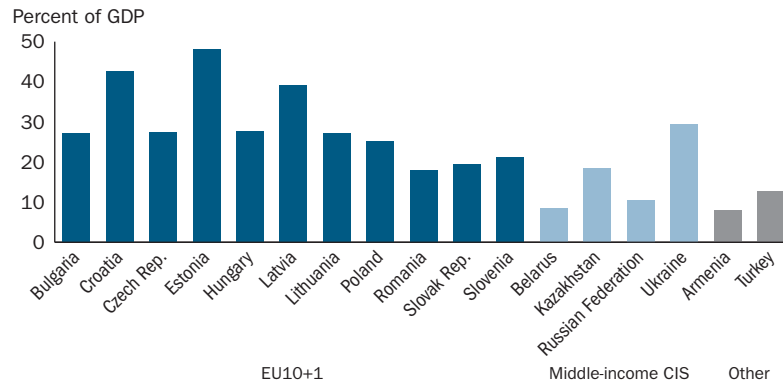
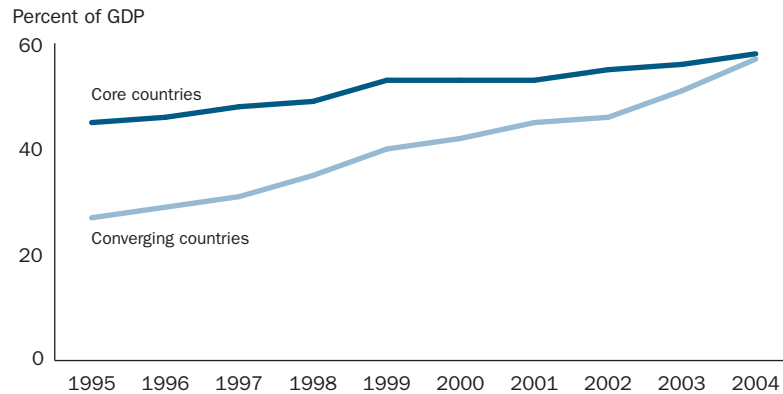


FIGURE 3.3  
Household debt, earlier EU members, 1995–2004

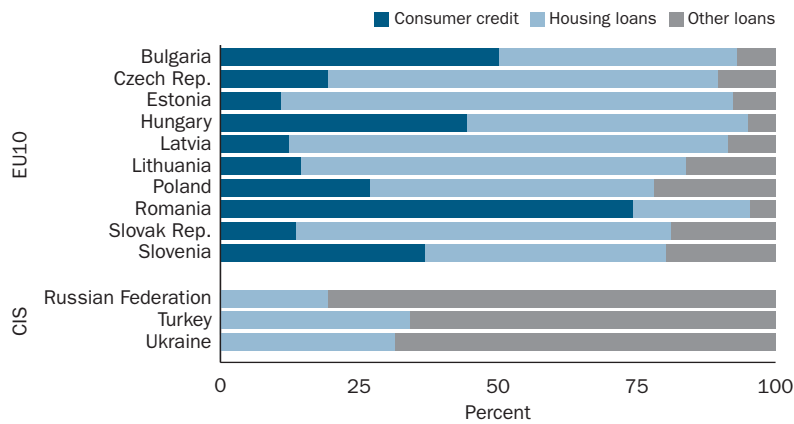


Note: The chart displays averages for each country group. Core countries includes Austria, Belgium, Finland, France, Germany, Luxembourg, and the Netherlands. Converging countries include Ireland, Italy, Portugal, and Spain.  
Source: Gaspar and Fagan 2006.

household credit in the Baltic states, the Czech Republic, Hungary, and the Slovak Republic, while the opposite was the case in Romania, the Russian Federation, Turkey, and Ukraine (figure 3.4).

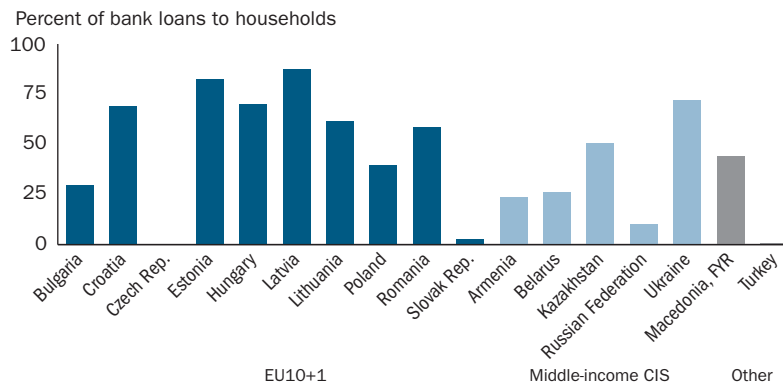
- A large share of household debt is denominated or indexed to foreign currencies. This has exposed households to recent exchange rate depreciations to the extent that the currency composition of their assets, particularly

FIGURE 3.4  
Composition of household debt, by country, end-2008



Source: European Central Bank and other national central banks.

FIGURE 3.5  
Foreign currency-denominated loans, by country, 2008



Note: Foreign currency-indexed loans are included for Croatia and FYR Macedonia.  
Source: MNB and other national central banks.

labor income flows, leaves them unhedged. But again, there is considerable variation across countries (figure 3.5).

- In some EU10 countries, mortgages with variable (adjustable) interest rates account for the largest share of lending, thus exposing households to interest rate shocks (figure 3.6).

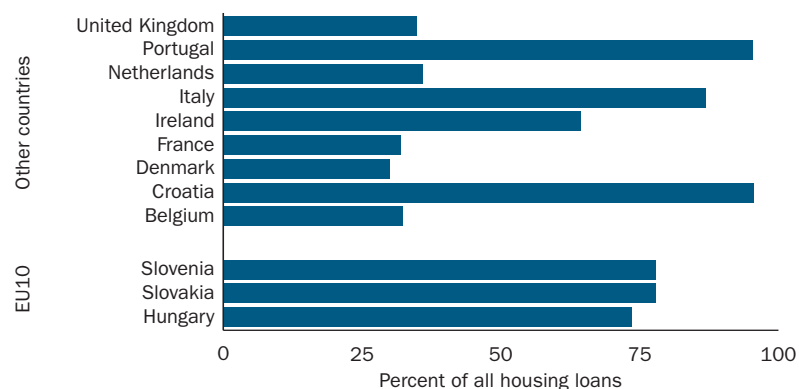
More detailed information on the characteristics of household debt across income quintiles, including the burden of servicing these debts, can be derived from household surveys. These surveys contain information on either interest debt service or total debt service (interest and principal payments combined). Some surveys cover only mortgage debt and some refer only to total debt (mortgage plus consumer debt). For example, the columns per income quintile in figure 3.7 report data for new EU member states on mortgage interest payments from the EU Survey of Income and Living Conditions (EU-SILC) for 2007. The lower lines show the share of income devoted to mortgage interest payments. In contrast, figure 3.8 is derived from household budget surveys issued by statistical offices and jointly reports principal and interest debt service. In particular, it refers to total household debt. Here, too, the columns reflect the percentage of households holding debt at each income quintile, and the lower line in each figure is the share of income devoted to servicing debts—except that in this case this refers to both interest and principal payments.

Two patterns to highlight from figures 3.7 and 3.8 are:

- *Share of indebted households.* Only a fraction of households in each quintile hold debt, and that share expectedly increases in the higher quintiles.

FIGURE 3.6

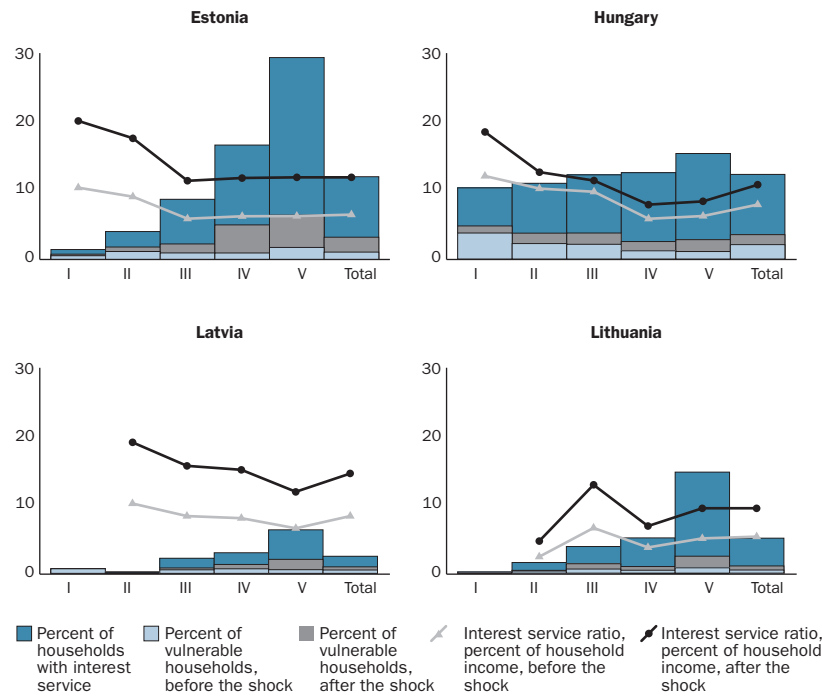
**Mortgage loans with adjustable interest rates, by country, 2006**



Source: IMF, OECD, and national central banks.

FIGURE 3.7

**Mortgage interest service and interest rate shock, by income quintile (vulnerability defined by a 20 percent income threshold)**



Note: The quintile distribution of the household survey in Latvia and Lithuania has few households in the lowest quintile and thus provides unreliable results for the interest service ratio—it is thus excluded.

Source: EU Survey of Income and Living Conditions.

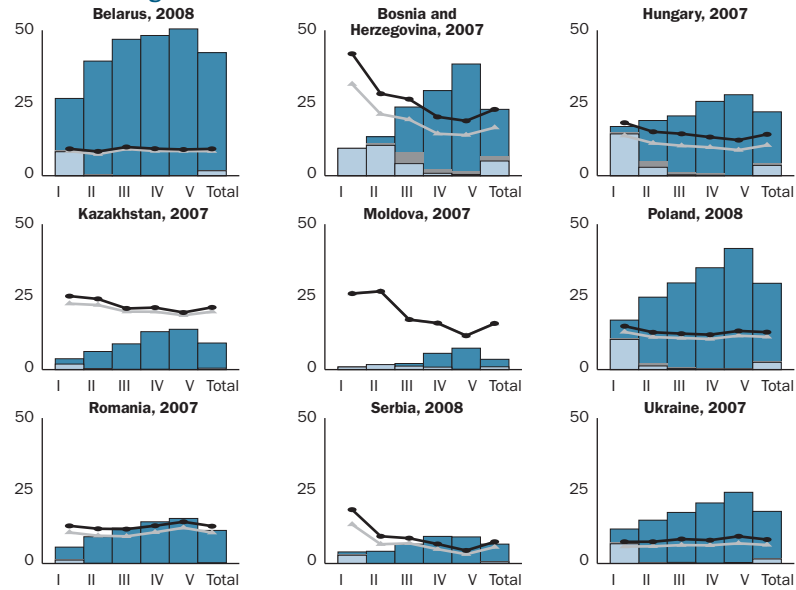
Among the new EU member countries (except in Hungary), fewer than 5 percent of households in the first quintile appear to have a mortgage, suggesting that few low-income households would benefit from mortgage restructuring schemes that include use of public funds. The pattern for total debt in figure 3.8 suggests great variability across countries, with more than 40 percent of households holding some debt in Belarus and some 20 percent in Bosnia and Herzegovina, Hungary, and Poland. So, financial deepening has so far been concentrated in relatively few households.

- *Burden as a share of income.* Debt service (mortgage interest service in figure 3.7 and total debt service in figure 3.8) as a share of income generally decreases with income. More important, debt service (total or mortgage only) is a small share of income. But there are some exceptions. Debt service is 5 percent of household income in the poorest quintile in Ukraine but 13 percent in Serbia, 25 percent in Moldova, and 30 percent in Bosnia

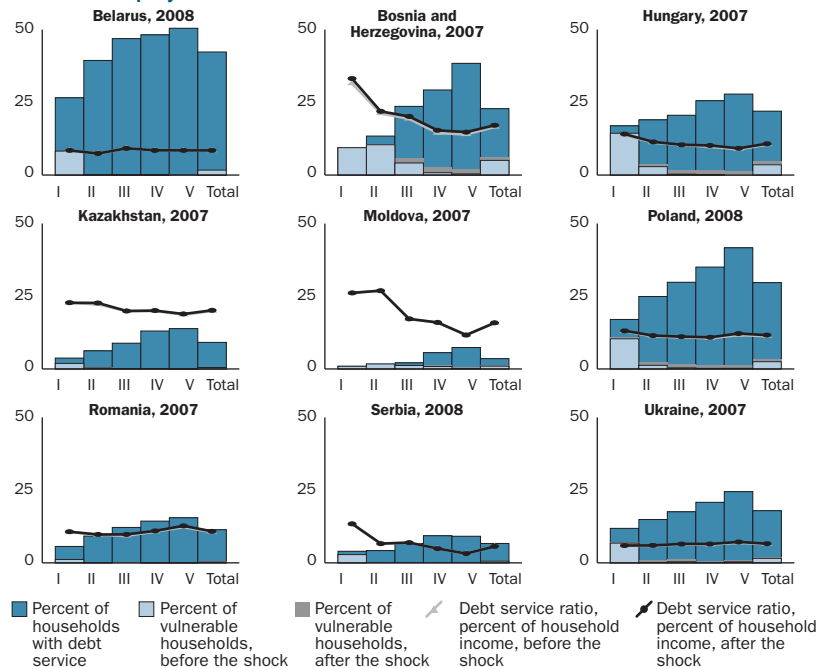
FIGURE 3.8A

**Total debt service under shocks (vulnerability defined as a financial margin)**

**Panel A: Exchange rate shock**



**Panel B: Unemployment shock**



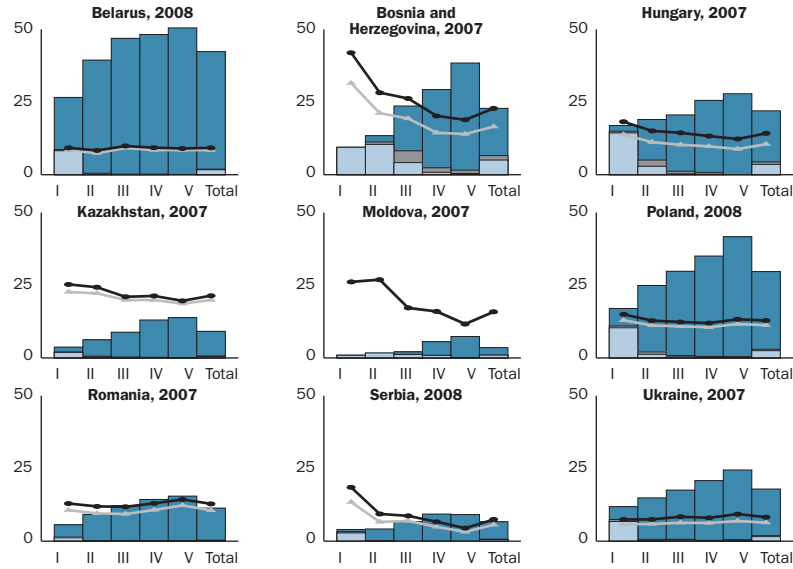
Note: In the case of Bosnia and Herzegovina, the results of the simulation are the results of abandoning the exchange rate peg.

Source: Household Budget Surveys.

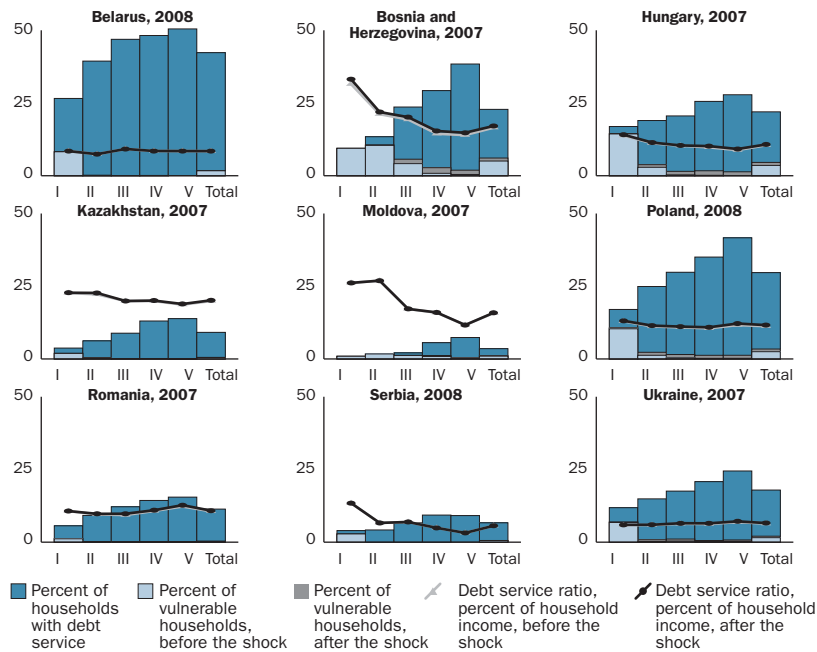
FIGURE 3.8B

**Total debt service under shocks (vulnerability defined as a 30 percent income threshold)**

**Panel A: Exchange rate shock**



**Panel B: Unemployment shock**



Note: In the case of Bosnia and Herzegovina, the results of the simulation are the result of abandoning the exchange rate peg.  
 Source: Household Budget Surveys.

and Herzegovina. But only a small fraction of these households carry such a burden in Moldova (2 percent) and Bosnia and Herzegovina (10 percent). In contrast, mortgage interest is 7–13 percent of household income in the poorest quintile in the EU countries, but the fraction of households with mortgages is similarly small.

Figures 3.7 and 3.8 also estimate the effects of economic shocks on households' capacity to service their debt obligations. The simulations affect household welfare and shed light on the probability of loan default. Three shocks are assessed.<sup>8</sup>

- An increase in 5 percentage points in the interest paid on mortgages with variable interest rates. This shock is more accurate when applied only to data on mortgage interest debt service, so it is limited to the EU-SILC (figure 3.7).
- A change in the foreign currency–local currency exchange rate of 35 percent. This is best applied to figure 3.8 because it affects both the interest and principal components of debt service.
- The effect of unemployment on the combined income of working household members. An increase of 5 percentage points in the unemployment rate is used for all countries. This shock has a limited impact on debt service capacity because it is applied to household members without taking into account that these households may or may not hold debt.

Assessing the impact of economic shocks on a household's capacity to service its debt obligations depends on the threshold for vulnerability—and this choice is specific to each survey.<sup>9</sup>

An arbitrary mortgage interest debt burden threshold (interest debt service payments in percent of income) is used for the calculations based on the EU-SILC database. The threshold is based on work for advanced economies.<sup>10</sup> A household is considered vulnerable at 20 percent debt service as a share of income, and this is applied without distinction across quintiles—clearly a limitation.<sup>11</sup>

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8. In all three cases the shock is relative to the country-specific level in 2007. Because data on loan characteristics are not household-specific, random draws are needed to assess the impact of economic shocks on a household's debt service capacity. More precisely, 1,000 random draws are used to choose which loans are foreign currency–denominated or have variable interest rates, and which household members become unemployed.

9. The methodology on stress testing household debt holdings and on assessing the share of vulnerable households follows Holló 2007, Żochowski and Zajączkowski 2008, Johansson and Persson 2006, and Vatne 2006. The analysis here extends work by Tiongson et al. (2009) by introducing income quintiles.

10. Johansson and Persson 2006, among others.

11. This is not justified because higher income households can devote higher shares of their income to housing services. The differences become clearer when comparing the results for the EU-SILC and the household budget survey in Hungary. Thresholds specific to income quintiles would be worth pursuing further.

In contrast, two different thresholds are applied when using household budget surveys: an arbitrary total debt burden threshold of 30 percent<sup>12</sup> and a financial margin threshold given by

$$\text{Financial margin (FM)} = \text{disposable income (DI)} - \text{basic living costs (BLC)} - \text{total debt service expenditure (DSE)}.^{13}$$

A household is considered at risk if its financial margin is negative.

What are the findings? Both figures 3.7 and 3.8 show the impact of different shocks under different assumptions on the threshold values defining vulnerability. The lowest area within each column is the percentage of households within each quintile considered vulnerable even before any economic shock simulation occurs, referred to as vulnerable at origination. The shaded area on top of this lower area reflects the households in each income quintile that become vulnerable after an economic shock is applied; and the remaining area of each column shows the households that are not vulnerable. So, vulnerable households after the simulation include those that were already at risk before the shock plus those that became vulnerable after the shock. Note that vulnerability depends on the threshold that best applies to each type of household survey. Only a 20 percent income threshold for mortgage interest debt service is applied in figure 3.7, and both the financial margin and a 30 percent threshold on total debt service are applied in figure 3.8. The higher lines reflect the interest (or total) debt service ratio after the shocks.

The results of the analysis of EU-SILC data (figure 3.7) suggest that an interest rate shock can expand the pool of households unable to service their mortgage debt obligations. Specifically, a severe 5-percentage point interest rate shock in Estonia increases the share of total vulnerable households or borrowers at risk from less than 2 percent of all households to 4 percent, and raises the average interest debt service (interest service ratio) from 10 percent of income to almost 20 percent. Although many of the vulnerable households are in higher income quintiles, the proportion of vulnerable households is smaller than in lower quintiles. Also, vulnerability is partly tied to the choice of threshold. Indeed, high-income households are more likely than poorer households to spend a larger share of their income on housing services. In

12. This follows work by Beer and Schürz 2007.

13. The basic living costs data reflect what is referred to as subsistence level income. This is adapted to household size following a classification used by EU-SILC where an equivalized household size is the sum of the first adult plus 0.5 times the number of other adults in the household plus 0.3 times the number of children, where adults are defined as people aged 14 years and over, and children are those aged 13 years and younger. The BLC is monthly and per person, and is converted for each household  $j$  by  $BLC_j = BLC * \text{equivalized household size in household } j * 12$ .

contrast, Hungary appears to have a large share of vulnerable households in lower income quintiles, perhaps reflecting the more even distribution across all five quintiles of households with mortgage debt. Latvia and Lithuania are more mixed, though the lower quintiles are proportionally more vulnerable.<sup>14</sup> More worrying is that low-income quintiles with such debt can be considered vulnerable even before the shock. For example, the few households in the first quintile are all vulnerable in Latvia and Lithuania, and about half of households in the first quintile are vulnerable in Estonia and Hungary. But very few of these households are at risk due to an interest rate shock. Instead, they are risk borrowers at loan origination, suggesting that compensating government financial support might fail to restore repayment capacity.

The analysis of household budget survey data in figure 3.8 provides additional insights. First, the effect of exchange rate shocks suggests a more limited impact on household welfare when using a financial margin threshold—and, as would be expected, vulnerability declines with income (figure 3.8a). The financial margin remains positive given that the BLC is applied to all households irrespective of their income quintile—and, by definition, BLC might be quite small, allowing households to avoid financial distress as income rises. Second, as with mortgage debt, many lower quintile households are vulnerable before the shocks. Indeed, vulnerability appears to change little once shocks are imposed. This does not mean that households in the bottom quintile are unaffected. Figures 3.7 and 3.8 show only a change in household status from nonvulnerable to vulnerable so, even though few households become vulnerable in the lowest quintile, many of them were already vulnerable before the shocks are simulated. Finally, using a 30 percent arbitrary threshold suggests more households at risk among the higher income quintiles (figure 3.8b). Yet, very large economic shocks seem to affect proportionally more households in low-income quintiles.

The premise that all households should be compensated for the increase in debt service burden arising from economic shocks is not justified by the distribution of indebted households across quintiles. In fact, the evidence suggests that households have room to confront important economic shocks—with one caveat. It might be worth developing a simulation for simultaneous shocks to incomes and liabilities—such as sharper increases in unemployment and declines in nominal wages—to sharp depreciations of the exchange rate. Notwithstanding these caveats, it would be sensible to target eligibility of a government financial support program based on loan size and to households

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14. As noted in the notes to figure 3.7, however, the data for the lowest-income quintile is not reliable.

with incomes below a certain income threshold—and it would be best to keep income eligibility criteria simple and monitorable. Also, the cost of compensating households for their income losses is modest. For instance, the largest estimate of the household income losses in the poorest quintile in Central Europe is about 6 percent for the interest shock. Bearing in mind that 10 percent of that quintile’s households would be affected, and using a share of that quintile’s income in GDP of 2.5 percent, yields 0.015 percent of GDP as the necessary compensation for this subgroup of poor households.

What have countries done to alleviate household debt distress? In Hungary, the authorities entered “gentlemen’s agreements” with banks to convert foreign currency–denominated loans to households into local currency loans without penalty, capitalize the increase in mortgage payments arising from the conversion, and possibly extend the term of the loan for creditworthy borrowers. But the option has not been widely exercised because forint interest rates are substantially higher than euro interest rates. Hungary has introduced legislation to provide temporary state guarantees for mortgage payments of the unemployed and also to expand the mortgage debt servicing guarantee scheme for the unemployed to other debtors whose payment capacity has been impaired by the financial crisis because of either a reduction in income or an increase in debt service burden due to revaluation effects. In such cases, the lender would be asked to rephrase the loan to temporarily lower the payment burden, and the government would guarantee the rephased portion of the loan, subject to restrictions. Romania has sought an agreement with commercial banks to facilitate the restructuring of debt contracted in foreign currency by adjusting the maturity and repayment schedule of the debt, including offering the option to voluntarily convert it into domestic currency. In Latvia, a partial state guarantee for restructured mortgage loans is being considered under guidelines intended to relieve borrowers’ debt service to a level commensurate with their capacity to pay. And banks participating in Serbia’s financial sector support program have been asked to facilitate the voluntary conversion of foreign currency and foreign currency–linked loans into local currency loans and work with the central bank to develop loan workout programs.

### **Lessons on restructuring from previous banking and capital account crises**

The East Asia and Latin America crises saw a sharp increase in nonperforming loans, reflecting increased and widespread corporate distress as well as the introduction of better loan classification standards for banks and other

financial institutions.<sup>15</sup> In fact, it took considerable time for firms in East Asia to reduce corporate leverage and build more viable financial structures. Banks were weakly capitalized and had limited incentives to write off debts and could continue to carry loans at low provisioning requirements. Asset management companies were not much more effective. The experience from earlier crises suggests that these companies were useful for taking distressed debt off banks' books but not always at engaging in corporate restructuring.

Commercial banks and asset management companies, lacking the skills to manage equity, opted for rolling over claims rather than reducing principal, converting debt to equity or proceeding with more active operational restructuring. So, high rollover rates, while creating breathing space when confidence is being rebuilt, can subsequently mask a reluctance to restructure among creditors as well as debtors.

It is appropriate for financial sector restructuring to precede corporate restructuring in order to arrive at an assessment of the ability of banks to absorb losses, but it is also important that corporate restructuring not be delayed. Banks have two options in dealing with nonperforming assets: to financially restructure the loans or to take a total or partial writeoff on these loans early on. The latter could also involve selling their claims to a specialized institution, such as an asset management company for more efficient management and resolution. The operational restructuring that follows, at least for corporate-related assets, depends on the management control that emerges from the transfer of assets. In some cases, the earlier involvement of outside investors can facilitate operational restructuring. The challenge in ECA is also unique in that bank distress is linked in part to household debt, which was not so in previous crises.

#### *Facilitating debt restructuring*

Countries typically have insolvency frameworks to deal with bankruptcy, reorganization, and liquidation, but fledgling judicial systems can be overwhelmed in a systemic banking crisis. To expedite debt restructuring, governments in countries as diverse as the Czech Republic, Indonesia, Korea, Malaysia, Mexico, Thailand, and Turkey have been active in setting up out-of-court voluntary workouts between debtors and creditors. While the workouts lie outside the formal insolvency framework, their success depends on the quality of that framework.

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15. The reader interested in the experience with debt restructuring is directed to work by Claessens (2005), Lieberman et al. (2005), and Lieberman and Mako (2009), who examine in particular the experience during the East Asia crisis and more recent experiences.

### *The “London approach” . . .*

In the variant directed at dealing with corporate restructuring, the so-called “London approach” is based on three broad principles. It seeks, first, to minimize losses to creditors from unavoidable company failures through well prepared workouts. Second, it aims to avoid unnecessary liquidation of viable companies, through reorganization and preservation of employment and productive capacity. Third, it finds ways to provide financial support to companies deemed viable in cases where creditors cannot agree to the terms for concluding a workout.

Armed with these principles, creditors cooperatively—likely in the form of a coordinating lead bank and a steering committee comprising those with the largest exposure to the borrower—agree to a limited standstill (30–90 days in Korea, 90 days in Malaysia, and a maximum of 90 days plus three 30 day extensions for a total of 180 days in Turkey). During this period, the debtor can continue to operate normally, and information about the debtor’s assets, liabilities, and prospects can be collected and shared with all creditors, with a view to developing proposals that can resolve the debtor’s financial difficulties. During the standstill, creditors refrain from taking steps to realize their claims against the debtor while the debtor refrains from taking actions that would adversely affect any creditor. Proposals to resolve the debtor’s financial difficulties and the order of addressing creditors’ claims are in accord with the law.

Any new money needed in the event of a liquidity shortfall during the standstill may be provided by all existing lenders, by specific lenders with priority arrangements, or through the release of asset disposal proceeds subject to priority considerations. A workout plan agreed to by a majority of creditors—the thresholds for agreement can vary—is then implemented. In the event of disagreement, an arbitration committee set up as part of the workout resolves differences between the debtor and creditors, as well as disputes among creditors on the allocation of losses and risks.

### *. . . adapted to mortgage restructuring*

The resolution of widespread household debt distress—which has a negative social impact and threatens to overwhelm the existing legal and institutional framework for individual restructuring—may call for governments to establish a mortgage restructuring protocol. A model applied in industrial economies is known as the UK preforeclosure protocol. The goal is to facilitate negotiations between creditors and debtors by setting clear objectives and options on how to restructure mortgage loans. Discussions between the parties may

include extending the term of the mortgage, changing the type of mortgage, deferring the payment of interest due, or capitalizing arrears. Assessing the creditworthiness of borrowers should be left to banks since they are better placed to judge a household's repayment capacity. The protocol should set out minimum requirements for restructuring loans, define which restructuring methods should not be pursued, and provide guidelines for the regulatory treatment of restructured loans.

Programs of support to mortgage holders (such as government guarantees) should be limited and well targeted, adequately assessing the incidence of subsidy. State guarantees should be looked at very carefully to avoid excessive costs and abuse and stress-tested to a variety of scenarios—for eligibility—to avoid unsustainable liabilities. In addition, any default should remain recoverable by the banks. In sum, government support instruments, should be a possible option where other solutions do not work and where households meet rigorous criteria. In particular, they should be informed by the depth of the beneficiaries' poverty and not distort the incentives of banks and borrowers to perform.

#### *The insolvency framework matters . . .*

The success of an out-of-court system of voluntary workouts depends on the ability of creditors to impose losses on debtors. Without the threat of a court-imposed loss under the country's insolvency laws, there is not enough incentive for corporate debtors to agree to such measures as asset sales, dilutions of equity, and diminution of management control. Indeed, an important requirement for an out-of-court process is a credible threat of seizure of assets and liquidation under a normal insolvency or bankruptcy regime. Creditors cannot otherwise force debtors to participate in workouts in good faith.

But a workable insolvency framework also needs to balance carrots and sticks. Debtors should feel encouraged to seek protection in court-supervised restructuring as an alternative to liquidation. The courts should also allow a mutually satisfactory restructuring plan—worked out between a debtor and a majority of its creditors—to be “crammed down” on a holdout minority of creditors and then converted into a court-supervised liquidation if interim milestones and reasonable deadlines are not met.<sup>16</sup>

Insolvency laws did not always have these features.<sup>17</sup> The lack of adequate protection made court-supervised restructuring unattractive for creditors

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16. Kawai, Lieberman, and Mako 2000.

17. A variant on the theme is a prepackaged bankruptcies (“prepacks”), workouts agreed to by a debtor and its creditors and then taken to the courts for approval, usually through an expedited procedure. They

during the East Asia crisis. But in countries where insolvency frameworks were functioning well, the out-of-court systems were stronger as well. The crisis and its aftermath in East Asia gave countries an opportunity to improve on their insolvency legislation, including the introduction of specialized bankruptcy courts. Informed by the experience in past systemic banking crisis, the authorities in Latvia and Romania have begun legislative and regulatory reforms aimed at removing obstacles to out-of-court corporate restructuring, allowing pre-packaged recovery and settlement agreements between debtors and creditors, and introducing further flexibility and easier access to insolvency proceedings.

*. . . and any approach should be adapted to local conditions*

Countries should look at many options in deciding the way forward. Whether voluntary out-of-court mechanisms are appropriate will vary from country to country, depending on the quality of the insolvency legislation, but also on the availability of specialized and skillful mediators who can broker deals between debtors and creditors. Indeed, countries that have used out-of-court workouts have adapted the London approach to suit local circumstances. Some industrial countries with greater human resource capacity have chosen to work instead with specialized creditor courts that are easier to implement within their existing legal frameworks. Both approaches require specialized skills and the institutional infrastructure of accounting, classification, and provisioning rules that provide incentives for restructuring.

*Incentives to restructure: banks*

Since most creditors are either domestic or foreign headquartered banks, corporate and household debt restructuring efforts in ECA are likely to be bank-led. Foreign-owned banks, by engaging in restructuring and better risk management, have been reducing the share of nonperforming loans in ECA, maintaining high capital adequacy ratios, and increasing provisioning against loan losses up to 2007, before the crisis (table 1.2). If that track record is maintained, those banks can be expected to be adequately recapitalized in the light of the undertakings provided by parent banks during the European Banking Coordination initiative—and to increase provisions in the light of crisis-induced increases in nonperforming loans. In such a situation, foreign-owned banks have every incentive to collect what they can on provisioned loans, since that adds to their profits.

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prevent dissenting creditors or minority shareholders from using the courts to sue over the outcome of a workout, as in some countries in East Asia during the 1990s.

Foreign creditors have generally resisted participating in the voluntary workout between debtors and creditors in previous crises. In Turkey, foreign banks did not join the Istanbul process and were paid off instead. In Korea, the government negotiated a medium-term repayment agreement with foreign bank creditors of Korean banks that had been intervened by the banking supervision authorities. This is different from the situation in emerging Europe, where a substantial proportion of corporate and household debt is owed to in-country subsidiaries of foreign-owned banks—and, to less extent, directly to cross-border banks in home countries.

It is to be expected is that subsidiaries would fall within the ambit of insolvency laws in the host country and thus be covered by voluntary workout processes set up by the government. But the host government may not have the power to require cross-border banks to submit to in-country processes, whether court-supervised or voluntary. Since cross-border banks for the most part are from Western Europe, a supranational authority such as the European Commission could consider establishing a framework that can facilitate the participation of cross-border banks, with a view to ensuring broad uniformity of treatment across member states and discouraging cross-border banks from shopping across borders to secure more favorable treatment.

The incentives for restructuring are less clear for domestically owned banks. Those banks could delay recognizing losses from interest rate concessions or grace periods, debt equity conversions that leave banks with illiquid or low value shares, and sales of the noncore assets of borrowers. The incentive to do so is that recognizing losses could push their capital below regulatory requirements. Recapitalizing banks will dilute existing shareholders and risk ceding management control to others or, if public funds are used, the government.

#### *Incentives to restructure: corporates and households*

It is not only creditors who need to be nudged by the government into taking losses. Debtors may also delay entering restructuring inasmuch as the insolvency laws that govern a court-supervised process or backstop a voluntary out-of-court process might lead to asset sales, dilution of equity, and diminution of management control. So, a country's insolvency laws, or a threat of their invocation, will be needed to force debtors to accept losses as well. As in some crisis-hit countries in East Asia, insolvency legislation may need to be strengthened. But the difficulty of strengthening laws to provide more credible threats to debtors in the middle of an economic downturn should not be underestimated. For households, recognizing losses is complicated by the fact that this might also represent foreclosure on their home. Furthermore,

operational restructuring is not in the lexicon, highlighting the importance (and difficulty) of the systemic banking crisis challenges facing ECA countries.

#### *Incentives to restructure: small and medium-size enterprises*

Much of the restructuring in previous crises took place outside voluntary workouts and formal in-court processes. Small and medium enterprises typically lose access to finance during the credit crunch that follows a period of rapid credit growth and have to dispose of their assets, shed labor, or close down. Inasmuch as many low-income families depend on such enterprises, governments may wish to roll over credits, recapitalizing interest past due, extending grace periods for repayment, and injecting liquidity for working capital. The financial costs of stabilizing small and medium enterprises are modest relative to the social and political costs of allowing thousands of them to fail. But restructuring small and medium enterprises case-by-case is not viable either, due to the high transaction costs relative to the value of the firm..

Capacity constraints in the number of bankruptcy judges, bank workout staff, and government employees limit the scope of a systemic out-of-court workout process. Apart from small and medium enterprises, corporate distress may have to be segmented into:

- Mid-cap and large companies, which produce the bulk of employment and exports and which can be helped to realize a supply response through the provision of working capital, and which generally form the core of a voluntary workout program.
- Very large firms that must be dealt with case-by-case to prevent a secondary crisis spilling over into the banking sector.

International workout teams will typically be needed to help major banks build capacity in this area. The specialty is also required in confronting household debt restructuring where the complications are many and the political economy of a systemic banking crisis is more important.

### **Lessons for strengthening bank regulation and supervision**

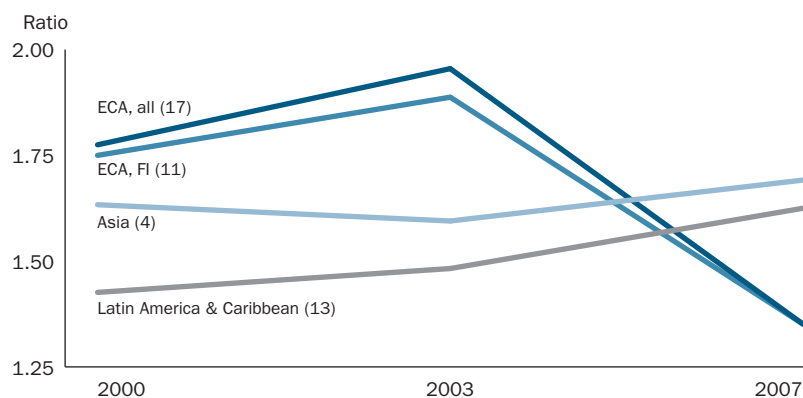
The ECA countries need to strengthen bank regulation and supervision to reflect the lessons learned from the crisis.<sup>18</sup> Better bank regulation and supervision would not have averted the crisis owing to the abundance of global liquidity and the buildup of external imbalances. But by arresting the

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18. The material in this section was contributed by James Hanson.

FIGURE 3.9A

**Ratio of actual to minimum required capital-asset ratio (median, risk-weighted)**



Note: The number of countries within each group is in parentheses. ECA FI refers to the financially integrated countries discussed in chapter 1 that also responded to the Barth, Caprio, and Levine questionnaire.

Source: Barth, Caprio, and Levine 2008.

deterioration in lending standards, they might have put countries in a stronger position to deal with its consequences. Banks in most ECA countries were neither exposed to toxic assets, although some parent banks were, nor part of a shadow banking system. This implies that improvements in regulation and supervision should be tailored to the problems facing ECA countries at their current stage of development and likely to arise as their systems of financial intermediation develop further. While this agenda does not apply immediately to many low-income and lower middle-income countries in the region, they have much to learn from early comers into transition.

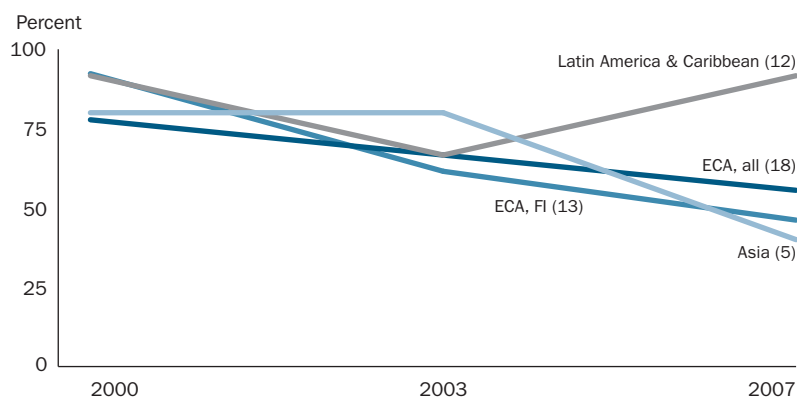
With progress in banking supervision and regulation issues until the early 2000s, it is surprising that reform efforts then weakened. ECA countries experienced declines in the ratio of actual to required capital adequacy ratios (figure 3.9a) and in the share of countries responding that the supervisory agency has legal authority to declare a bank insolvent (figure 3.9b). And many of them still face a basic agenda of supervisory and institutional improvement, which owes little to the crisis but nevertheless needs to be addressed (box 3.3 discusses some of these institutional features).

**Strengthening capital requirements**

Higher capital requirements for financial institutions—an integral part of the proposed regulatory changes in industrial countries—would be desirable in

FIGURE 3.9B

**Supervisory agency can legally declare a bank insolvent (percent of countries that answered yes)**



Note: The number of countries within each group is in parentheses. ECA FI refers to the financially integrated countries discussed in chapter 1 that also responded to the Barth, Caprio, and Levine questionnaire.

Source: Barth, Caprio, and Levine 2008.

ECA countries.<sup>19</sup> Higher overall required ratios of capital to risk-weighted assets—larger than the minimum 8 percent under Basel I and Basel II—have been recommended for countries that face volatile capital movements and corresponding volatile output and relative prices (see box 3.4 for definitions of capital). These requirements apply to foreign bank subsidiaries and domestic banks alike and thus do not conflict with EU requirements that specify a minimum capital adequacy ratio for member states.

*Protect against operational and capital risk.* Capital to protect against operational risk and market risk is part of Basel II and would also be desirable for the ECA countries. Operational risk, such as losses from failures of systems and internal processes and from fraud, is an issue in most developing countries. Currently, market risk and capital requirements against it do not appear to be an important issue in most ECA countries. Even so, capital requirements against market risk may prove desirable as the financial system becomes more complex. Moreover, harmonizing capital requirements for market risk, if not already in effect, is probably desirable in the near future, to prevent the risk of a shift of a foreign bank's

19. For example, de Larosière, Recommendation 1, page 8; also in Financial Services Authority 2009, Recommendation 1, page 7.

### BOX 3.3

#### **An agenda for modern banking sector institutions in ECA countries**

Although there is no painless route to institutional reform, transforming the ownership of banks has been important. And it is at times quite useful to have a policy anchor. For instance, accounting and auditing standards were driven in Central Europe by the EU accession process and by foreign banks' demand for information for basing credit decisions. Similarly, credit registries have had a positive effect on firm financing by increasing availability and lowering costs. The remainder of this box focuses on three sets of institutional reforms: building credit information systems, improving the framework for collateral and the associated legal framework, and strengthening accounting and auditing.<sup>1</sup> The box also includes some summary findings of the many FSAPs and ROSCs in the region.

#### **Building credit information systems**

A good credit registry makes important contributions to financial development and credit access. It provides easy, prompt, reliable access to a potential borrower's credit history, both positive and negative. This reduces the cost of obtaining such information by an individual bank, especially for small borrowers, and thus reduces the costs of financial intermediation as well as nonperforming loans. A good credit registry also increases competition for creditworthy borrowers. And it creates important incentives that improve sustainable financial development—increasing the cost of default and allowing borrowers to build up a nontangible asset, a good credit record. All these reasons may explain why there is some evidence that credit registries give a better return than improving the contractual framework, for example,<sup>2</sup> and that banks in transition countries with credit registries face lower default risk.<sup>3</sup>

ECA countries initially lagged somewhat in the worldwide trend to set up credit registries, but in recent years there has been a rush to establish credit registries across the region. In 2004, only 13 countries in the region had credit registries; now all but two have one. Most registries include positive information (whether a borrower has repaid loans) and negative information (defaults). But the young life of many of these registries means that credit histories are short and that the coverage of the credit bureaus is low (box figure 1). These problems can be addressed by: broadening coverage by including nonfinancial payments (such as utilities and cell phones and including data from nonbank financial intermediaries), allowing the existence of private credit bureaus (many ECA countries have done so), and strengthening the system's reliability by assigning each potential borrower a unique identifier number.

#### **Improving the collateral framework and the associated legal framework**

Collateral can be crucial in lending. Indeed, its definition and the quality of its execution—creditor rights—determine how well the financial system functions. Firms, whether large or small, provide collateral. Similarly, mortgages

*(continued)*

BOX 3.3 (CONTINUED)

### An agenda for modern banking sector institutions in ECA countries

involve the collateral of the building and associated land as a guarantee of the loan—in other words, an incentive to pay and a guarantee for the lender.

The problem with collateral begins with titles in the ECA countries. Land is the main collateral, but land titling is often weak, and cadastres still need reform in many ECA countries. Furthermore, land to which the state may still have title cannot be used as collateral. Many land registries are updated infrequently, and registries of other types of collateral are usually nonexistent. Registries for movable property would expand the types of assets that could be collateral.

A second problem with collateral is the weakness and cost of the execution of collateral in a default. Creditor rights have improved substantially in many ECA countries, as measured by the laws and regulations, but some countries still have room for improvement (box figure 2).

More important than the laws is how they work. An indicator of how laws work with respect to collateral is provided by the estimates of the cost of contract enforcement relative to the cost of a debt contract (box figure 3). Costs vary widely across the countries. It appears that lenders in some countries with high legal creditor rights nonetheless encounter high costs in enforcing a contract. These costs reflect the slow execution of collateral through the courts.

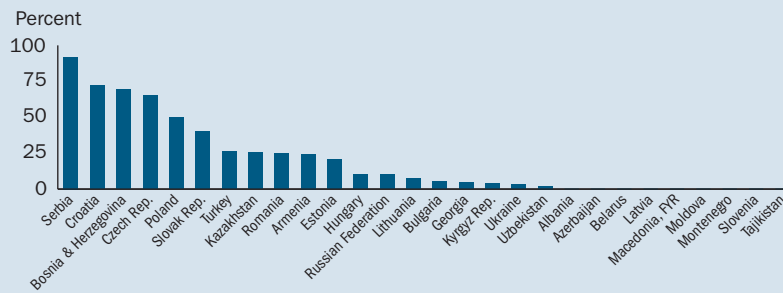
A related issue is the unsatisfactory bankruptcy procedures in many countries, frequently noted in FSAPs and ROSCs. Problems occur in the length of the process, which often allows the firm owners to strip the firm assets. There are also problems with the treatment of creditors, minority shareholders, and, in the case of banks, depositors.

### Improving accounting and auditing

Financial statements are a second element of the information framework that needs to improve. They are critical in assessing creditworthiness of the larger potential borrowers, since small and medium borrowers generally have weak

BOX FIGURE 1

### Private credit bureau coverage, by country, 2008



Note: Percentage of adult population covered.  
Source: IFC and World Bank 2008.

(continued)

BOX 3.3 (CONTINUED)

An agenda for modern banking sector institutions in ECA countries

BOX FIGURE 2

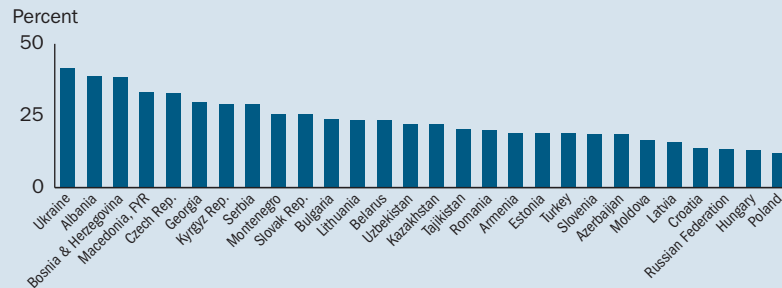
Legal rights index, by country, 2008



Note: This figure measures the rights of secured and unsecured creditors vis-à-vis enterprises. Higher numbers indicate stronger protection.  
Source: IFC and World Bank 2008.

BOX FIGURE 3

Cost of contract enforcement, by country, 2008



Note: This measure indicates the cost of enforcing a contract through the court system, relative to the average amount of a debt contract.  
Source: IFC and World Bank 2008.

accounting and usually need help to even bring it to reasonable levels. Financial statements are also critical in any development of capital markets. Yet another problem is that the accounting statements, like many other pieces of financial information, do not identify the true controllers and owners of firms. Lack of this information complicates financial development in many ways, from raising risk on loans that are excessively concentrated in interlinked conglomerates, to reducing investor interest in funding parts of these firms.

There has been international support for improving the accounting standards, and many ECA countries report adopting the International Financial Reporting Standard (IFRS). But firms and banks often maintain their own systems and have been slow to fully adopt this standard. Accounting and auditing are considered weak, and local auditing firms are often small and considered

(continued)

BOX 3.3 (CONTINUED)

### **An agenda for modern banking sector institutions in ECA countries**

unreliable by foreign investors. Some progress has been made through pressures from EU accession, at least in Central and Eastern Europe, and from foreign banks, which require good information.

#### **Recommendations from World Bank and IMF FSAPs and ROSCs**

The World Bank-IMF Financial Stability Assessment Program (FSAPs) and the Reviews of Standards and Codes (ROSCs) provide numerous recommendations on how to improve bank supervision in ECA countries—and many of these are identified in the “de Larosière” report as also being necessary for industrial countries in the EU. Among those recommendations:

- Bank supervisors need greater legal powers to monitor compliance with rules.
- Bank supervisors must have independence, legal protection and adequate safeguards against malfeasance.
- Supervision departments need to be funded better.
- Pay for bank supervisors has to be more competitive to avoid losing talent to the banking industry.
- Technical capacity of bank supervisors to evaluate solvency and liquidity risks needs to be strengthened.
- Evaluation of loans and liquidity needs should be carried out both statically as well as looking forward.
- Bank supervision should include an evaluation of banks’ internal risk and liquidity management systems.
- An improved regulatory structure for dealing with weak banks (and their intervention and closure) is an important part of bank regulation and has a major role in limiting the future impact of crises.
- Transparent, prompt, and monitorable corrective actions are needed—should be applied automatically.
- Corrective actions need to be time-bound requirements to force the owners to put in new capital, or to merge or close down such banks in order to prevent the problem from spreading.
- Institutional responsibilities and triggers for intervening a bank need to be defined and provided with legal backing—in some countries the courts have intervened to reverse interventions.
- Consolidated supervision needs strengthening—for example, to ensure that regulatory limits on single exposures by banks and exposures to bank owners can be enforced.
- Improve the ability to identify bank and corporate owners—existing ownership structures are often opaque and preclude an assessment of fit and proper when issuing banking licenses.

#### **Notes**

1. A recent survey of finance in the transition countries provides valuable analysis and information (Beck 2009).
2. Djankov, McLeish, and Shliefer 2007.
3. Haselmann and Wachtel 2007.

*Source:* Based on background work by Thorsten Beck and James Hanson.

BOX 3.4

**Capital—what is it and why require it?**

Capital consists of owners' equity and retained earnings (Tier I) and general provisions, revaluations of assets, subordinated debt, hybrid equity-debt instruments, and other funding instruments (Tier II). Tier I must be at least as large as Tier II. Both the de Larosière and Turner reports recommend a harmonization of instruments considered to be capital.

Capital requirements on banks represent a buffer against shocks for depositors and the deposit insurance agency. They limit owners' leverage and thus reduce risk. They also represent an incentive to owners to monitor activities as their own funds are at risk. Without such requirements, owners would be tempted to leverage massively, leaving depositors and deposit insurers at risk. Furthermore, the collapse of undercapitalized institutions would have systemic effects. Regulation and supervision attempt to ensure that banks, which are difficult institutions for investors to analyze, maintain the required capital. A bank's market access to loans and capital may depend on maintaining capital in excess of required levels.

Under Basel II, total capital must be at least 8 percent of risk-weighted assets, plus, effectively, the estimated value at risk in the institution's proprietary market activities and the estimated operational risk, which cover the probability of loss from internal fraud, failures of systems, internal processes, and the like.<sup>1</sup> The Basel II standard approach suggests risk weights for various types of assets; for example, 100 percent for standard loans, 150 percent for substandard loans, 0 for government debt.<sup>2</sup> The ratio of capital to assets may be greater or less than the ratio of capital to RWA depending on market and operational risk.

**Notes**

1. Specifically, the definition of risk-weighted assets is adjusted to require capital, in addition to the capital for risk-weighted assets, that is equal to the amounts of market and operational risks.
2. Basel II includes two other ways to calculate risk-weighted assets, but the experience of the crisis has led most observers to recommend a return to the standard approach.

activities to a subsidiary in a country with lower requirements—international regulatory competition—a shift that might prove costly to the host country.

*Protect against foreign currency loans.* Additional capital requirements, through higher risk weights, may be desirable for bank loans in foreign currency (or indexed to it), which are important in many ECA countries. These loans are financed from the banks' substantial liabilities in foreign exchange, whether in large loans from parents of subsidiary banks, borrowing in the wholesale and interbank markets, or foreign currency deposits. Countries in Latin America and East Asia also have a large fraction of their loans in foreign

currency, But the funding source is more likely to be domestic deposits in foreign currency.<sup>20</sup>

Current experience and that from earlier crises in Latin America and East Asia suggest that bank lending in foreign currencies is risky. Foreign currency loans imply that the borrowers take a currency risk and the banks a credit risk, assuming that the loans are funded by foreign currency liabilities. The borrowers accept the currency risk because the lower interest rates on foreign currency loans make loans more affordable and offer a better cash flow profile.<sup>21</sup> Exchange rate risk was viewed as small either because the countries had hard pegs and an exit strategy (euro adoption) or because the countries were expected to experience an appreciation of the exchange rate as part of the convergence process.<sup>22</sup> However, a devaluation increases their debt service burden relative to their incomes because they are in local currency. Even if there is no devaluation, a stabilization program to maintain an exchange rate can generate significant unemployment and losses of income, making it difficult to cover the debt service.

Given these risks on loans in foreign currency, it would be desirable to establish higher risk weights for them, implying that more bank capital would be required to make such loans. This policy would increase the buffer against these risks, force the banks' owners to have more at stake on such loans, and raise the cost and reduce the attractiveness to the borrower of such loans. Some ECA countries imposed such a risk weighting toward the end of the credit boom. In some cases, they exempted loans to borrowers with access to foreign exchange. Although this idea seems attractive, it is difficult to measure access to foreign exchange. In addition, a borrower's access may drop suddenly, or the borrower may simply refuse to use this access to repay an obligation in a sharp devaluation, as in East Asia for exporters who sold foreign exchange forward. Another option to create a buffer against the risks of such loans, reduce their attractiveness, and raise their cost would be to increase required general provisions on such loans, which would imply an increase in Tier II capital.

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20. In Latin America, depositors wished to hold foreign currency (FX) deposits as insurance against inflation. Beginning in the 1980s, foreign currency deposits were legalized because without them, deposits (and bank loans) would have been even lower than their comparatively low ratios to GDP; in East Asia, the foreign currency deposits can probably be explained as insurance against currency risk—the share of such deposits in East Asia is much smaller than in Latin America.

21. Less of the loan plus interest obligations needs to be repaid in the earlier years of the loan, though the present value of the payments is the same.

22. These risks are not eliminated by using a currency board to maintain the exchange rate, as Argentina suggests. Even Hong Kong suffered substantial shocks as a result of maintaining its currency board.

. . . and parent bank funding in foreign currency. Although foreign currency inflows from parent banks to their subsidiaries present a risk, the use of capital requirements on such liabilities would be unusual. These inflows could be withdrawn in the event of problems in the parent bank or concerns that the subsidiary may prove unprofitable because of macroeconomic developments.<sup>23</sup> But capital is a buffer to protect the providers of funds. Instead, as suggested above, reserve requirements could be and have been used to limit such capital inflows, especially if they are short term. A differential reserve requirement would reduce the interest rate paid on such deposits or loans and thereby reduce their attractiveness and the risks to banks. Such policies for foreign currency loans and deposits would tend to slow overall credit growth only temporarily, until borrowers shift to less regulated parts of the financial system or go to offshore banks directly.

*Monitor liquidity.* Consideration could also be given to introducing a “core funding ratio.” Banks that rely heavily on volatile finance and market funding are risky in terms of liquidity, as the current crisis has indicated once again. One approach might be to adapt the proposals for the industrial countries, suggesting that regulators and supervisors should monitor liquidity carefully and consider defining a “core funding ratio” to ensure the sustainability of balance sheet growth.<sup>24</sup> Such measures would be desirable in ECA countries that have large foreign inflows relative to GDP.<sup>25</sup>

#### *Provisioning goes dynamic*

Another set of proposals involve making the capital adequacy regime countercyclical.<sup>26</sup> Since a constant capital to risk-weighted asset ratio, whatever the state of the business cycle, could create a sudden credit crunch and add to problems in the event of a slowdown in the economy, the proposal is to vary the capital adequacy over the cycle. One approach would be to use dynamic provisioning, as in

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23. Note that the incentive of taking currency exposure by lending in local currency and borrowing from abroad would be curbed by capital requirements against net foreign currency exposure.

24. G20 Communiqué, Tasking of Ministers and Experts; de Larosière, Recommendation 1; and Financial Services Authority 2009, page 7.

25. Regulatory actions may substitute or complement monetary policy to limit credit volatility. Requiring higher ratios of capital to lending will limit bank lending. To some extent, such regulatory actions have similar effects on credit growth as limits on capital inflows, and thus may be at least a temporary solution to the “trilemma” problem of the inconsistency between fixed exchange rates, open capital accounts, and effective monetary policy. All the various proposals try to create barriers against the international flow of capital into banks; these are motivated by the desire to limit risk in banks, but do not involve barriers to capital flows.

26. G20 Communiqué: Tasking of Ministers and Experts; de Larosière, Recommendation 1; and Financial Services Authority 2009, page 7.

BOX 3.5

### Taking the rough with the smooth—dynamic provisioning in Spain

Dynamic provisions are a mechanism to accumulate reserves in the good times so that they can be spent in the bad times. In the standard system, bank provisions depend on contemporary bad loans: in the good times, when credit grows and there are few bad loans, provisions tend to be low, and this fuels further credit growth. In the bad times, credit declines and bad loans increase, so that banks have to make a greater provisioning effort, which ultimately feeds back into credit contraction.

In contrast, the idea behind dynamic provisioning is very simple: to reduce the tendency of the financial system to amplify credit fluctuations, it makes sense to smooth the provisioning effort along the cycle. Until recently, this system had been adopted only in Spain. The Bank of Spain introduced this mechanism in 2000, shortly after euro adoption. Having lost monetary policy and the exchange rate as macroeconomic tools, the central bank saw with concern how higher economic growth than in other Euro area economies induced high credit growth and further inflationary pressures. Unable to use the traditional instruments of monetary policy, the Bank of Spain used a “macro-prudential” tool to try to fight the overheating of the economy.

The system, introduced in 2000, was initially based on three types of provisions: specific (a function of contemporary bad loans), generic (a function of the credit stock), and the new statistical provision (depending on credit growth). A fund was accumulated, with the intention of using it in the downturn. In 2004 the statistical provision was subsumed in the generic provision according to:

$$\text{Generic provisions} = \alpha \Delta \text{Credit} + \beta \text{Credit} - \text{specific provisions}$$

where the parameters  $\alpha$  and  $\beta$  vary with the riskiness of the assets:  $0 \leq \alpha \leq 2.5$  and  $0 \leq \beta \leq 1.64$ .

The 2004 reform also introduced limits to the Fund between 33 percent and 125 percent of credit weighted by  $\alpha$ . These limits were a response to concerns that the accumulation of provisions could become excessive, and put Spanish banks at a competitive disadvantage in the single European market.

How has the system worked compared to expectations? In a context of very strong growth and low risk aversion, dynamic provisioning hardly discouraged credit growth between 2000 and 2007. After the 2004 reform, most entities rapidly reached the ceiling of the Fund, and in 2006 credit grew again above 25 percent. While the dynamic provisioning had little impact on credit growth, it helped create a buffer that was useful when the crisis hit in 2008—specifically, the ratio of provisions to bad loans in December 2007 was above 200 percent in Spain, compared with an EU average of 70 percent. After the crisis started, the Spanish banking system used the funds to mitigate the impact of delinquencies on total provisions. The decrease in generic provisions fully compensated for

*(continued)*

BOX 3.5 (CONTINUED)

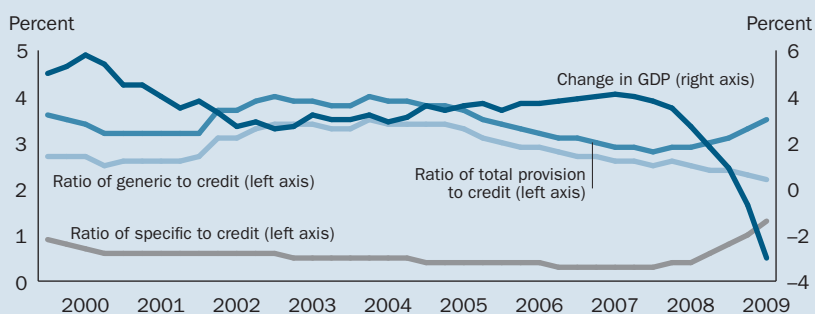
### Taking the rough with the smooth—dynamic provisioning in Spain

the increase in specific provisions. For the period as a whole dynamic provisions did not eliminate the procyclical pattern of total provisions (box figure 1).

In sum, the Spanish dynamic provisioning model did not prevent the credit and housing boom or the subsequent bust. But it allowed financial institutions to distribute the provisioning effort more evenly along the cycle. The system can certainly be improved as more information is accumulated in calibrating the economic cycle. But it is preferable to the standard model, which explains why the Financial Stability Board has opened a discussion on dynamic provisioning, including the possibility that capital requirements (Basel II) should also be designed more countercyclically.

BOX FIGURE 1

### Provisions over credit and GDP, 1999–2009



Note: Provisions are corrected for the impact of the new accounting regulation in 2004.  
Source: Fernandez de Lis and Herrero 2009; Fernandez de Lis, Pagés, and Saurina 2001; and Financial Stability Board 2009.

#### Note

1. In late 2008, the Peruvian banking regulator adopted a similar system aimed at smoothing provisions along the cycle. The Peruvian system is based on GDP growth instead of credit growth and is thus systemwide as opposed to institution-specific.

Spain (box 3.5). The required annual rate of general provisions would increase during periods of rapid credit growth, and the stock of such provisions—part of Tier II capital—would be run down during slowdowns. Countercyclical capital requirements might also be considered. In either case, care would be needed in defining the appropriate cycle for the measures to take effect.

Strengthening capital requirements should be phased in carefully to avoid sudden declines in bank lending as the current crisis winds down. Parallelism with EU requirements will occur naturally for the new member states.

### *Supervising foreign banks*

The dominant role of cross-border banks in many ECA countries raises important issues of supervision for both the host and home countries as well as parent banks. Host country supervision is important since, at the most basic level, bank supervisors must have legal powers, including sanctions, to ensure that banks comply with applicable rules. Moreover, subsidiary banks represent a potential obligation to the deposit insurance agencies and the government budget of their host countries, in the event of failure of either the subsidiary or the parent bank. Even so, there is probably a tendency for many ECA host countries to rely on the effectiveness of supervision in the home country, in part because of the difficulties of supervising a bank belonging to a bank in another country. This is quite complicated, however, because supervisors of different countries may have different views on major issues.

Improving the supervision of subsidiaries is difficult for several reasons.<sup>27</sup> First, home country supervision depends on the quality of its consolidated supervision, including supervisor scrutiny of the subsidiaries, both of which may vary across states. Second, the subsidiaries may generate much of the income of banks that own them.<sup>28</sup> Correspondingly, they represent potential problems if there is an economic deterioration in one or more of the subsidiaries' host countries. Problems in the home country or with the subsidiaries could affect not only the home country but also other ECA host countries, through removals of funds from the host countries by the parent bank or deposit shifts away from subsidiaries in the host countries.

A typical approach to improving the supervision of international banks is to improve the exchange of information. Cross-border supervision has traditionally focused on improving information-sharing through memoranda of understanding between supervisors. The World Bank-IMF FSAPs in various ECA countries have often noted the lack of such memoranda of understanding. But memoranda of understanding may not always lead to sharing critical information.

If an institution is systemically important in both countries, countervailing incentives that will help supervision are at work. To some extent, incentives exist to share information and reach common solutions to problems. But there are also incentives keeping the supervisors apart—for host countries

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27. See also de Larosière, annex III.

28. For example, Raiffeisen Zentralbank Österreich AG (RZB) holds 70 percent of the shares of Raiffeisen International Bank Holding AG that operates fully consolidated bank subsidiaries in fifteen transition countries. In 2008, according to its annual report, the non-Austrian subsidiaries accounted for about 75 percent of RZB's income.

to “ring fence” subsidiaries to protect depositors and ultimately to limit the potential costs to the deposit guarantee system and the government budget, which may represent a legal obligation, and for home countries to centralize a bank’s assets and keep liabilities decentralized. These issues will worsen as the situations of the parent and the subsidiary bank diverge. Both authorities may need to rely on the incentives and willingness of the other authority, which may not have the flexibility to provide a solution, because the home and host countries are not accountable to each other in an insolvency. The management of the Fortis-group serves as real example of this case.<sup>29</sup> These cross-border issues are even more complicated for ECA countries outside the EU.

The cost to the host countries’ deposit guarantee scheme could be substantial in the extreme case of a failure of a group with a large subsidiary. The legal obligations of consolidated groups to foreign subsidiaries vary even among EU member states. The group owner may simply choose to withdraw funds from or abandon a failing large subsidiary, again at a cost to the host country’s deposit guarantee scheme. This option is complicated for the subsidiary owner by the risk that such a failure would lead to deposit runs against other subsidiaries and perhaps even in the home country. But the group might view this risk as less important than the cost of resolving the subsidiary. In any case, the cost of a failing bank subsidiary can be high, and improved national regulation and supervision of them will be important, particularly for non-EU member states, as well as participation in coordinated actions to the extent possible, as in the current crisis.<sup>30</sup> Finally, the fiscal support for weak or failing global institutions has so far been organized in the current crisis by the home country, and this support may be constrained by both national and EU laws.

The global character of the current crisis has led to numerous proposals for improving supervision across borders. The de Larosière report has gone beyond simply recommending better sharing of information and proposed a new financial architecture for the EU, comprising:

- A new EU body, the European Systemic Risk Council (ESRC), to pool information relevant for financial stability and issue macro-prudential warnings for the EU and to deal with national supervisors.

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29. See a discussion in de Larosière, p. 73.

30. One example is the “gentlemen’s agreement” of the European Banking Coordination Initiative (see box 2.1), which has signed up international banks to maintain their exposure in host countries and set up stress testing arrangements. Another is the EBRD, World Bank, and EIB initiative to lend to banks in the region, in addition to the various measures for greater international exchange of supervisory and macro-prudential information. These initiatives are in addition to the various proposals for greater international sharing of information.

- A European System of Financial Supervision—for banks, nonbanks, and financial markets. It would also intensify efforts in training and coordinate the application of national supervisory standards. It would set up supervisory colleges for major cross-border financial firms. And it would develop a consistent, strengthened set of supervisory standards; and ensure that appropriate information flows to the ESRC.

National supervisory authorities would remain responsible for day-to-day supervision, but the proposal would eventually entail adoption of binding supervisory standards, legally binding mediation between national supervisors, and licensing specific EU institutions such as credit rating agencies and trading infrastructures. But the issue is complicated because legally binding arbitration and burden sharing among the countries would have implications for fiscal expenditures. The EU is considering these proposals, and it remains to be seen how they will develop and apply to ECA countries.