

## HOUSEHOLD CREDIT GROWTH IN EMERGING MARKET COUNTRIES

Credit to households is growing rapidly, albeit from a low base, across many emerging market (EM) countries.<sup>1</sup> In most countries, the growth rates of household credit outstrip those of corporate credit. The contributing factors include lower inflation and interest rates, higher income levels, higher asset (particularly housing) prices, financial liberalization, reduced corporate credit following recent EM financial crises and greater capital market access by EM corporates, and increased presence of retail-lending-oriented foreign banks. Given the likely persistence of these factors and the current low levels of household credit in EM countries, these growth rates are likely to remain high.

Better access to credit reduces household consumption volatility, improves investment opportunities, eases the constraints on small and family businesses, and diversifies household and financial sector assets. The welfare gains from such expansion can be sizable, making further growth of household credit desirable. Although we do not explore this dimension in detail, greater access to consumer credit in some emerging markets could also help alleviate some of the current account imbalances.

At the same time, a rapid growth in household credit, especially in weak macroeconomic environments that lack adequate prudential regulation and are characterized by weak risk management or legal and institutional infrastructure, can create systemic vulnerabilities. The key challenge for EMs going forward is to ensure that the pace of household credit expansion, while desirable, is consistent with

the underlying macroeconomic, prudential, and institutional infrastructure to avoid costly credit boom-bust cycles.

Household credit has grown across the EM universe during highly favorable global liquidity and economic conditions; household balance sheets may, therefore, come under greater pressure when global interest rates rise or global growth slows. Under more adverse circumstances, the weaknesses in household balance sheets could affect the financial sector as a whole, weaken property prices, and reduce consumption. Similar concerns about the sustainability of household debt during the turning credit and growth cycles, and possible implications for financial and macroeconomic stability, have been expressed for mature market (MM) countries (BIS, 2006).

Within EM countries, several localized concerns have emerged. In Korea, a rapid growth of poorly structured household credit led to a systemic rise in nonperforming loans (NPLs) and massive personal bankruptcies in 2002. In some emerging European economies, credit-driven consumption has led to a deterioration of external balances, and to high and unhedged exposure to interest and exchange rate risks by households. Also, rising house prices and mortgage indebtedness in parts of Asia, South Africa, and Hungary may need to be monitored carefully.

The well-known weaknesses in some EM financial institutions, regulatory capacity, and legal and institutional infrastructure may also create vulnerabilities in an environment of rapid credit growth. In some EMs, financial institutions' skills in originating and monitoring household credit are at an early stage of development, and excessive competition may lead to poor origination. Infrastructure (such as credit bureaus) is often inadequate, and collateral enforcement is frequently expensive or

<sup>1</sup>In this chapter, we focus on mortgages, credit cards, auto loans, consumer durable financing, and other similar loans intended for some form of consumption. Although credits may be used fungibly, we do not study loans such as broker loans or margin lending for securities investment, because of data limitations.

ineffective. The legal framework for securitization of consumer loans is also weak and inadequate in many EM countries. Frequently, the EM regulators' capacity to monitor the excesses of such credit and their macroeconomic or systemic impact is limited by availability of data and analytical capacity. Such limitations may also constrain policymakers from conducting appropriate interest or exchange rate policy if such policy affects a large number of households.

Therefore, although household credit expansion may be highly desirable for growth, smoothing consumption, and improving diversification of credit risks across most EM countries, EM policymakers should simultaneously act in four key areas to prevent a buildup of associated vulnerabilities. These include prudent macroeconomic management to minimize income, exchange rate, and interest rate shocks; introducing sound prudential norms for household credit and encouraging good origination standards and information sharing by banks; developing a comprehensive legal and regulatory framework and infrastructure; and improving the availability of information that enables better assessment of systemic risks and their mitigation. If undertaken in a timely fashion, these measures will allow EMs to reap the substantial welfare benefits of developing this market, while minimizing the potential costs of boom-bust cycles.

These considerations make it timely to examine the benefits and potential problems of household credit at this juncture. This discussion also complements the analyses in recent issues of the *Global Financial Stability Report* (GFSR) on EM sovereign debt, corporate finance, and corporate bond markets. The next section in this chapter reviews the factors affecting the supply and demand for household credits, including macroeconomic and financial sector linkages, and related literature. It is followed by a description of the recent trends in household credit in a sample of 23 EM countries, using data gathered from a special country survey, recent IMF missions,

and existing literature and data. The last three sections discuss approaches to managing risks stemming from household credit and risk transfer mechanisms, the legal and regulatory framework, and some conclusions and policy implications.

## Macroeconomic, Financial, and Policy Linkages

Greater access to a varied range of household credit products improves the consumption and investment opportunities for households and enables better diversification of household wealth. According to the life cycle income hypothesis, the availability of credit allows households to overcome liquidity constraints and permits consumption to be smoothed over periods of high and low income (Ando and Modigliani, 1963). Availability of household credit also frees household equity tied in housing and other consumer durables, and enables its possible reinvestment in proprietary businesses, corporate bonds, or equity. Indeed, in most EM countries, for small or family-owned businesses, home mortgages may be the cheapest and most long-term source of funding available, and perhaps the only source of fixed-rate borrowing.

Household loans allow diversification of bank portfolios and the granular nature of such loans may reduce systemic risks. Evidence from mature market countries suggests that household loans are subject to lower default rates, and losses from such loans tend to be smaller and more predictable than from larger corporate loans. Thus, a balanced portfolio of household and corporate loans may decrease the overall risks of the banking system, relative to risks from comparable portfolios dominated by business loans.

Several recent studies (including BIS, 2006) have identified macroeconomic performance, financial sector developments, and government policies as the key factors that affect the supply of and demand for mortgage and other household credits.

### Macroeconomic Performance

Macroeconomic stability reduces uncertainty about future incomes and consumption and promotes financial sector development and intermediation.<sup>2</sup> Low inflation and interest rates, combined with economic growth, stimulate the demand for credit. Lower interest rates reduce borrowers' debt service costs, enable more borrowers to qualify for larger credits, and lower the amount of future consumption that borrowers must sacrifice to repay current borrowings. Expectations of sustained growth lead more households to borrow against future income growth (Antzoulatos, 1996) and may, in turn, inflate asset values that, by serving as collateral, allow higher borrowing and spending. Higher incomes and low volatility of future growth rates, inflation, and default rates enable lenders to lend more to households, for longer terms and at fixed rates. Ample global liquidity also augments funding to the banking sector and thus the supply of credit.

### Financial Sector Development

Financial sector development and liberalization improve competition, efficiency, and access to credit (Claessens, Demirgüç-Kunt, and Huizinga, 2001; Clarke, Cull, and Shirley, 2005), and lead to greater participation of foreign banks. Cross-border financial investment and the associated transfer of know-how on consumer lending can improve risk management of portfolios of household credit. Technology and financial innovation also contribute to the growth in household credit. New consumer lending technologies permit lenders to reach more consumers, better assess market and lending risks, price loans more accurately, and reduce the cost of lending. Complementary market developments (e.g., in securitization and derivatives) enable

<sup>2</sup>Favara (2003); King and Levine (1993); and Levine (1997) provide evidence regarding the link between macroeconomic stability and financial sector development.

better funding and risk management of household credit portfolios.

### Government Policies

In many MM countries, government policies related to the housing market in the areas of taxation, price and rent regulation, land use, and construction have provided an impetus to mortgage lending. Recent trends in EM government policies have also facilitated greater allocation of credit to households. Directed credit requirements (generally favoring industrial credits) and restrictions on consumer credits have been reduced, and interest rates are becoming more liberalized. Greater openness to foreign banks has permitted entry of many lenders with well-developed consumer-lending strategies. Although EM governments retain an important presence in housing finance, restrictions on lending by commercial banks and finance companies are being lowered. In some countries (e.g., Brazil and Malaysia), commercial banks are encouraged or required to make housing loans of a certain amount, usually to low-income borrowers, while others (e.g., Korea) have pursued a policy of encouraging consumption and, in turn, consumer credit.

### Recent Trends, Issues, and Potential Vulnerabilities

This section analyzes the recent trends and potential vulnerabilities related to household credit in a sample of 23 larger EM countries that have widely varying levels and growth rates of household credit. For comparison, we also present data on nine MM countries. Availability of data varies greatly across the EM sample. It should be highlighted that there are differences between countries in terms of coverage, types, composition, and sources of household credit. This makes it difficult to make general observations across countries. The chapter Annex provides details on the sample and data used in the subsequent analysis.

### Level and Growth Rate of Household Credit

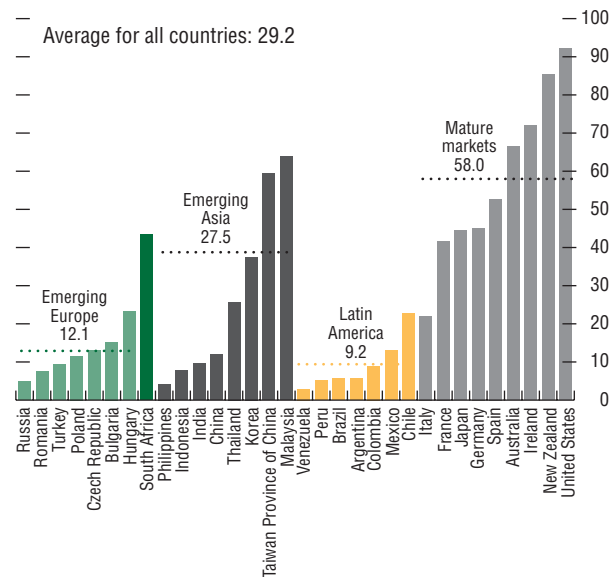
The average household-credit-to-GDP ratio in EM countries is about 18 percent but ranges widely from about 3 percent to 64 percent (Figure 2.1). On average, household credit has attained the highest levels in Asia, followed by emerging Europe and Latin America. However, penetration rates for consumer credit, housing loans, and usage of credit cards are still well below those reached in MM countries (Figure 2.2).

These differing trends can be explained by several factors. In MM countries, consumer credit has grown historically with income; there is a positive relationship between the household-credit-to-GDP ratio and per capita income (Figure 2.3). Financial liberalization is another important factor. In the United Kingdom, for example, secured lending to individuals rose by 25 percentage points of GDP during the 1980s, following the liberalization of the domestic mortgage market, which had experienced widespread rationing prior to 1981 (Muellbauer and Murphy, 1997). Similarly, bank lending to households grew by 98 percent in 2004 in Iceland, following the commencement of mortgage lending by private commercial banks in early 2004. EM household credit growth has also been encouraged by the restructuring of banks' asset portfolios and business models following recent financial crises. In several Asian and Latin American countries, postcrisis resumption of bank lending has been led by household credit rather than by corporate credit (Coricelli, Mucci, and Revoltella, 2006).

Interestingly, the share of private sector credit allocated to households in total credit to private sector (on average around 35 percent) does not differ dramatically between EM and MM countries (Figure 2.4), suggesting that the lower levels of household credit to GDP in EM countries are primarily a function of their lower level of total private sector credit.

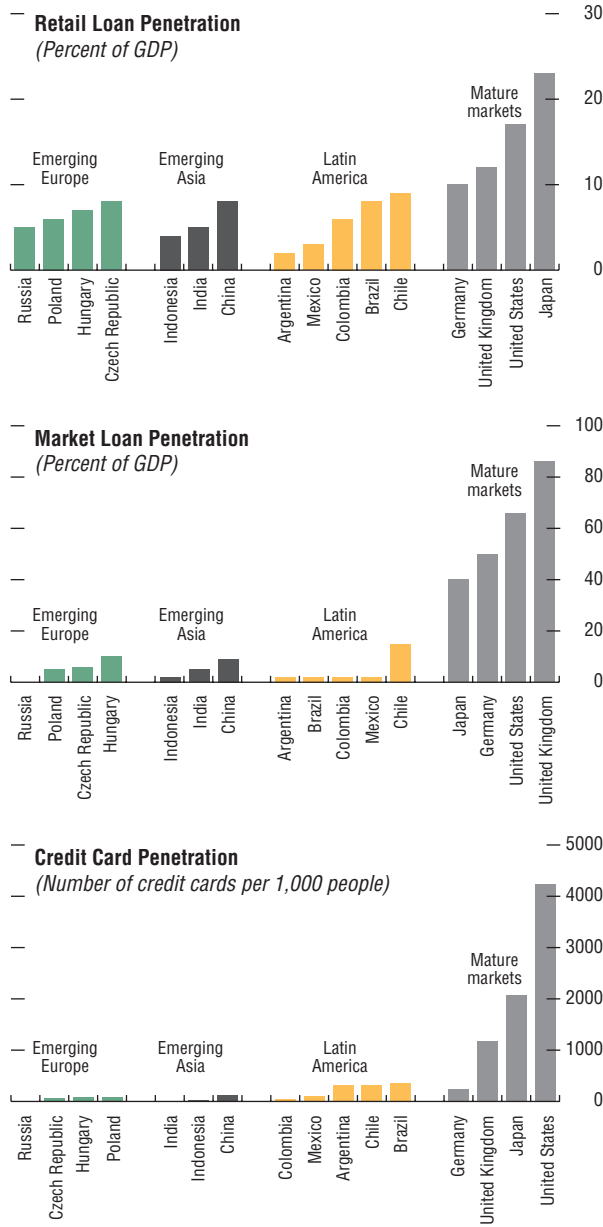
Among EM countries, growth rates have been particularly high for countries starting from a very low base in terms of household-credit-to-GDP ratios (Figures 2.5 and 2.6). For example,

**Figure 2.1. Household Credit, End-2005**  
(In percent of GDP)



Sources: IMF, *World Economic Outlook*; CEIC; and IMF staff estimates based on data from country authorities.

**Figure 2.2. Credit to Households: Market Penetration, End-2005**



Source: Merrill Lynch (2006).

as emerging Europe’s financial sector develops and converges with that of the EU, the growth rate of household credit is very high (close to 50 percent per year in real terms), but the levels are still significantly below those within the EU. In Latin America, the growth rate of household credit has been accelerating in the last two years.

**Composition and Structure of Household Credit**

In MM countries, housing loans account for about 70–80 percent of total household credit, while the average share of housing loans in total household credit is substantially lower for some of the rapidly growing markets (Figure 2.7). This low share in total household credit reflects several factors such as a still-high and volatile interest rate environment, in addition to hindrances such as an inadequate legal framework for enforcing mortgages.

Consumer loans in EM countries are generally extended at fixed rates, while housing loans are extended at both fixed and floating interest rates (see Table 2.1). As in MM countries, this reflects the large maturity differences between these two types of loans.

Although limited information is available on interest rates for household loans in EM countries (Table 2.2), it nonetheless indicates that interest rates on EM household loans are generally higher than on their MM counterparts. Higher nominal interest rates in EM countries may reflect the higher risk-free rates, a larger risk premium vis-à-vis comparable MM credits, and possibly lower competition relative to MM countries.

Although a significant share of household credit is denominated in foreign currency in emerging Europe, it is almost entirely denominated in local currency in most of emerging Asia and most of Latin America (except in highly dollarized countries).<sup>3</sup> In emerging Europe, the foreign currency exposure is predominantly in the mortgage market, while

<sup>3</sup>Data on household loans indexed to foreign currency are not available.

**Table 2.1. Predominant Types of Household Mortgage Interest Rates**

Fixed Rate	Variable Rate	Mixed
France	Australia	Czech Republic
Germany	Brazil	Hungary
United States	Ireland	India
	Korea <sup>1</sup>	Italy
	Malaysia <sup>1</sup>	Japan
	Spain	
	Thailand <sup>1</sup>	
	United Kingdom	

Source: Country authorities.  
<sup>1</sup>Most loans are fixed in the initial period, most often, for one to five years, and then float.

consumer loans tend to be denominated in local currency. Even though some lenders offer downside protection to borrowers against a depreciation of the domestic currency, most household loans in foreign currency remain unhedged. The growth in the foreign currency exposure in recent years (mainly in euros and Swiss francs) could be attributed to the lower interest rates in Switzerland and the euro area<sup>4</sup> and foreign banks' access to cheap external financing. The share of foreign currency debt is particularly high in Bulgaria, Hungary, Poland, Romania, and Russia (Figure 2.8). With the rise in MM interest rates in 2006 and some depreciation of EM currencies, and as foreign banks increase their deposit base in host countries, these patterns could change.

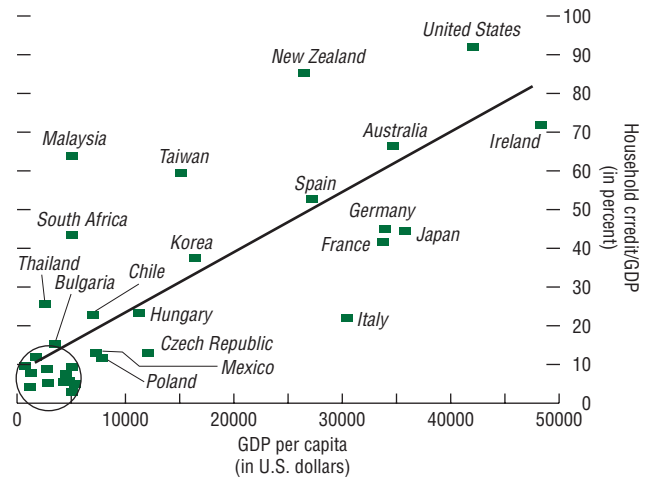
Longer maturities for housing loans are becoming more common in most EM countries. However, loan tenors remain somewhat shorter than is common in most MM countries, and the tradition of short-term loans is strong in many EM countries (notably in Korea) despite moderate inflation expectations.

**Providers of Household Credit**

Banks are the largest providers of household credit in most EM countries. Foreign banks

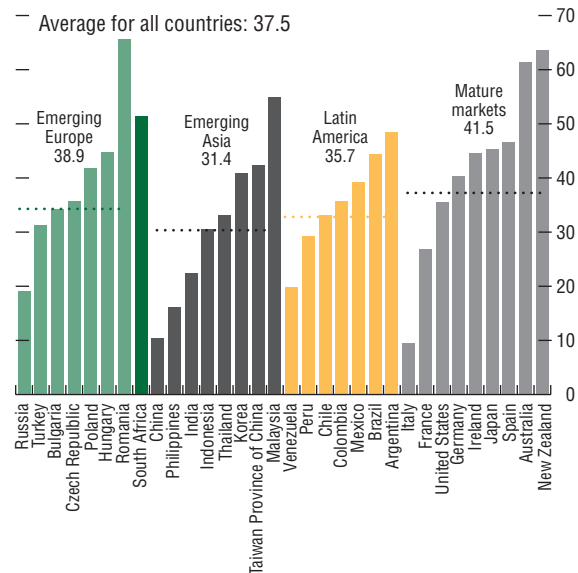
<sup>4</sup>As an illustration, as of June 2006, a housing loan in Hungary can be financed at a 12.9 percent variable rate for a forint loan, at a 4.8 percent six-month fixed rate in euros, or at a 3.3 percent six-month fixed rate in Swiss francs.

**Figure 2.3. Household Credit/GDP and GDP per Capita, End-2005**



Sources: IMF, *World Economic Outlook*; CEIC; and IMF staff calculations based on data from country authorities.  
 Note: The circled cluster of countries includes Argentina, Brazil, China, Colombia, India, Indonesia, Peru, Philippines, Romania, Russia, Turkey, and Venezuela.

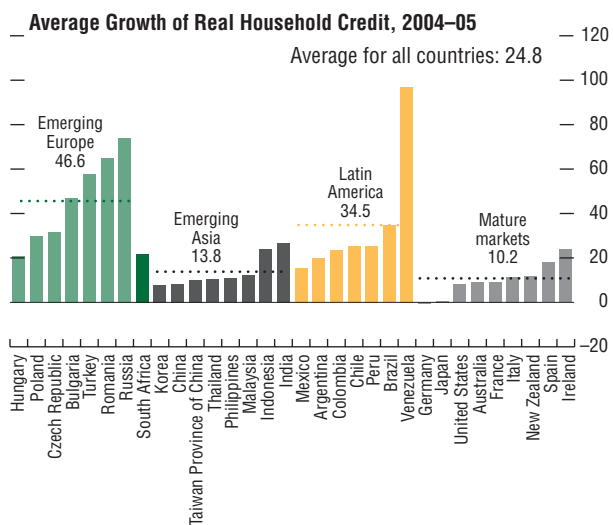
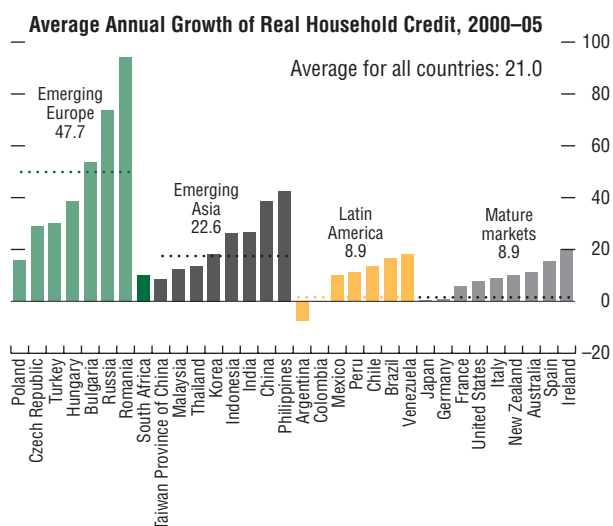
**Figure 2.4. Share of Household Credit in Total Private Sector Credit, 2005<sup>1</sup>**  
*(In percent of total private sector credit)*



Sources: CEIC; and IMF staff estimates based on data from country authorities.  
<sup>1</sup>Private sector credit does not include credit to nonbank financial institutions.



**Figure 2.5. Annual Growth of Real Household Credit**  
(In percent)



Sources: IMF, *World Economic Outlook*; CEIC; and IMF staff estimates based on data from country authorities.

**Table 2.2. Average Household Loan Interest Rates (in Local Currency)**  
(In percent)

	2002	2003	2004	2005
<i>(In nominal terms)</i>				
Bulgaria	14.8	14.0	12.3	9.8
Hungary	...	18.1	16.1	13.8
Poland <sup>1</sup>	...	...	12.1	10.3
Romania	...	27.4	26.7	12.9
Russia	21.3	22.0	20.5	20.4
Indonesia	20.2	18.7	16.6	16.8
Korea	7.1	6.3	5.5	5.6
Taiwan Province of China	4.6	2.9	2.8	2.8
<i>(In real terms)</i>				
Bulgaria	9.0	11.8	6.0	4.8
Hungary	...	13.5	9.3	10.2
Poland <sup>1</sup>	...	...	8.5	8.2
Romania	...	12.1	14.8	3.9
Russia	5.5	8.3	9.6	7.7
Indonesia	8.3	12.1	10.3	6.4
Korea	4.4	2.8	1.9	2.9
Taiwan Province of China	4.8	3.2	1.2	0.3

Sources: IMF staff estimates are based on data from the CEIC database, central banks, *International Financial Statistics* (IFS), and *World Economic Outlook*.

<sup>1</sup>Data for 2004 are end of period and for 2005 are for November.

have played a particularly important role in the expansion of household credit in EM countries (Box 2.1 on p. 60, and Figure 2.9). Moreno and Villar (2005) point to a strategic shift by foreign banks from internationally active clients to domestic retail clients. In several Asian countries, foreign banks still face important restrictions, including branch limitations. As a result, foreign banks have focused on credit cards and personal loans and, in many countries, have the major share of these markets. In several emerging European economies, foreign banks have expanded their asset base faster than deposits, resulting in rising external and foreign currency debt, and an accumulation of currency risks by unhedged household borrowers.<sup>5</sup>

Several EM countries have government-sponsored lending institutions, particularly in

<sup>5</sup>Foreign-owned banks (with parent banks from Austria, Germany, and the Nordic countries in the lead) accounted for 70 percent or more of banking sector assets in Albania, Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Lithuania, and the Slovak Republic in 2004.

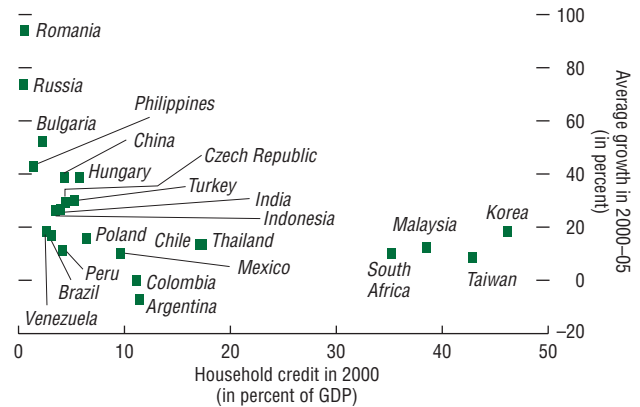
the housing market. Over time, institutions such as Thailand’s Government Housing Bank, Mexico’s INFONAVIT, or the Philippines’ PAG-IBIG are increasingly competing with commercial banks, retaining their remit to provide loans to low-income households that would not be served by commercial banks. In some instances, specialized secondary market institutions purchase or refinance mortgage loans from originators to provide them long-term funding (e.g., Cagamas in Malaysia or National Housing Bank in India).

In many developing countries, the nonbank finance companies and, to a lesser extent, the informal credit sector play an important role, often as the only available source of household credit. In Mexico, following the “Tequila” crisis and the retreat of commercial banks from mortgage lending, nonbank mortgage originators (Sofoles) have grown with funding from the Federal Mortgage Society and, more recently, from mortgage-backed securities (MBS). The informal sector in many EM countries is often an important source of credit to low-income households. In the Philippines, for example, limitations on banks to lend only to taxpayers leave many households with no access to the formal credit sector. In Chile, a significant share of credit is provided by department stores. Such nonbank lending is not always formally supervised or reported, leading to an underestimation of aggregate credit growth to households.

**Potential Vulnerabilities**

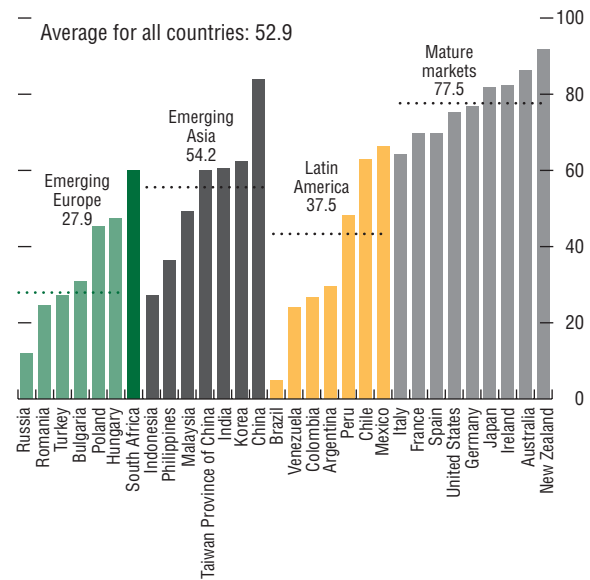
As with most forms of credit, a high level or rapid development of household credit can create vulnerabilities. In particular, if credit to households grows too rapidly without adequate infrastructure (see discussion below), household debt may reach unsustainable levels and, if sufficiently large, can in turn jeopardize the stability of the financial system and overall economic growth. Excessive mortgage lending could contribute to the inherent vulnerability of property markets to boom-bust cycles and the attendant

**Figure 2.6. Household Credit: Level in 2000 and Real Growth Rates, 2000–05**



Sources: IMF, *World Economic Outlook*; CEIC; and IMF staff estimates based on data from country authorities.

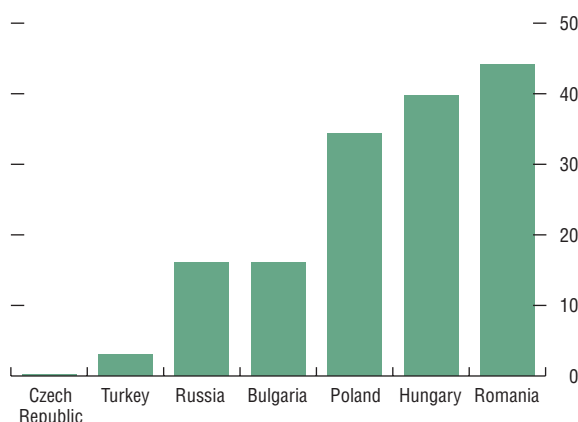
**Figure 2.7. Share of Housing Loans in Total Household Credit, End-2005 (In percent)**



Sources: CEIC; and IMF staff estimates based on data from country authorities.

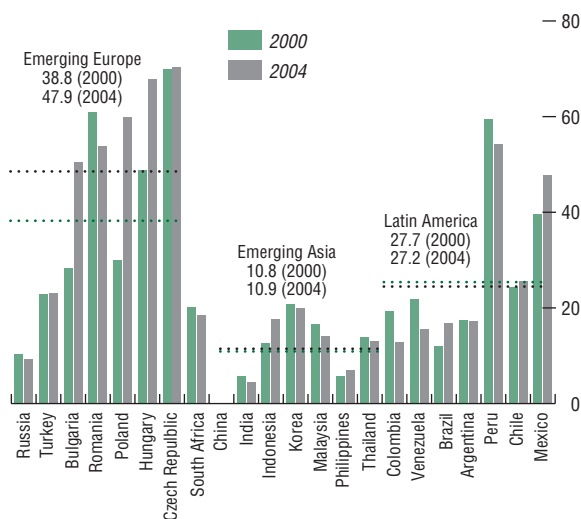


**Figure 2.8. Share of Foreign-Currency-Denominated Household Credit, End-2005**  
(In percent of total household credit)



Sources: CEIC; and IMF staff estimates based on data from central banks.  
Note: Data for Bulgaria do not include overdraft.

**Figure 2.9. Share of Foreign Bank Assets in Total Bank Assets<sup>1</sup>**  
(In percent)



Source: IMF staff estimates based on Bankscope.  
Note: Dotted lines are regional averages for 2000 and 2004.  
<sup>1</sup>Foreign banks are all banks with combined foreign ownership exceeding 50 percent.

cyclicality in the banking system. Credit expansion financed by cross-border flows can raise concerns about sudden stops and contagion. The rapid pace of credit growth can also lead to macroeconomic imbalances such as a rapid deterioration of the external current account balances. This section discusses such vulnerabilities in the context of the EM countries that have experienced rapid growth in household credit in recent years.

**Household and Financial Sector Vulnerabilities**

Deterioration in household repayment capacity and net worth due to income, interest rate, or exchange rate shocks may translate into higher NPLs. In turn, a rise in NPLs may impair the balance sheet of the financial sector. That said, the sustainability of household debt depends upon the corresponding level of household assets as well as the steadiness of future income (Box 2.2 on p. 61).

Data on EM countries' aggregate household balance sheets, net worth, and debt-servicing costs are generally not available. Partial data, however, suggest that many EM countries with rapidly rising household debt also have significant positive net financial assets (Figures 2.10 and 2.11; and Table 2.3). The ratio of household debt to disposal income varies across EM countries and, except for some of the highest-income EM countries (Korea and Taiwan Province of China), it is generally still substantially lower than in MM countries (Table 2.4). However, debt-servicing costs in EMs could rise quickly if interest rates go up.

Using macrolevel data to assess household debt sustainability, however, has limitations. A high level of indebtedness (household debt to GDP) at an aggregate level may not mean there is a risk to financial stability, especially if the distribution of debt is biased toward the households that have a higher payment capacity and a buffer to withstand shocks. Similarly, low aggregate household indebtedness may mask vulnerabilities if the debt accumulation is skewed toward the low-income groups. Indeed, most mature market countries undertake a

**Table 2.3. Financial Assets and Liabilities of Households, End-2004<sup>1</sup>**  
(In percent of GDP)

	Financial Assets	Financial Liabilities	Net Financial Wealth
Bulgaria	42.2	12.0	30.2
Czech Republic	65.0	13.8	51.2
Hungary	55.0	20.0	35.0
Poland	55.8	13.2	42.6
Turkey	50.8	6.5	44.3
South Africa <sup>2</sup>	260.6	33.8	226.8
Korea	144.6	76.6	68.0
Thailand	97.7	33.7	64.0
Mexico	32.1	11.6	20.5
United States	310.2	95.5	214.7
EU-15 <sup>3</sup>	185.0	63.0	122.0

Sources: UniCredit Group (2005); Aron and Muellbauer (2006); and IMF staff estimates.

<sup>1</sup>Data for Korea, Thailand, Mexico, and the United States are as of end-2005.

<sup>2</sup>Financial asset estimates for South Africa are based on preliminary data from South Africa Reserve Bank.

<sup>3</sup>Includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

more detailed analysis of the household balance sheets (Box 2.2).

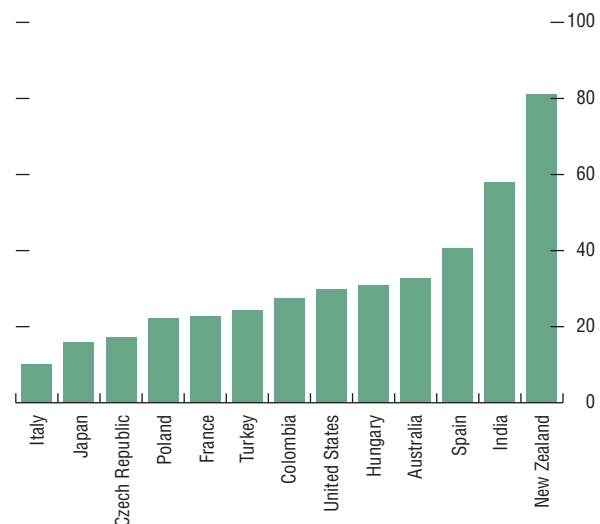
A number of emerging European economies have a relatively high share of household credit denominated in foreign currency. Such loans are attractive in periods of local currency appreciation and low foreign currency interest rates but the risk of a large depreciation may not be fully understood by unhedged household borrowers.<sup>6</sup> In several emerging European countries, deposit growth has been lagging and there is some evidence that credit growth is being financed mainly by foreign borrowing. In its *Bank Systemic Risk Report*, Fitch (2006) has warned that some countries now exhibit either moderate or high vulnerability to potential systemic stress due to rapid lending growth.<sup>7</sup>

Although reported data suggest a sufficient cushion to absorb credit losses in many EM

<sup>6</sup>See the Central Bank of Hungary’s April 2006 *Report on Financial Stability*.

<sup>7</sup>The countries ranked as highly vulnerable include several MM countries (Iceland, Ireland, and Norway) and Azerbaijan, Russia, and South Africa. Many of the emerging European countries are ranked as moderately vulnerable.

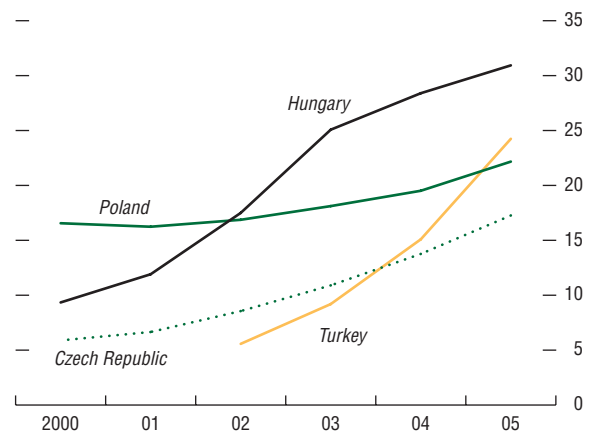
**Figure 2.10. Household Financial Leverage in Selected Countries, 2005<sup>1</sup>**  
(In percent)



Sources: CEIC; and IMF staff calculations based on data from central banks. Note: Data for Colombia, India, and Japan are as of end-2004.

<sup>1</sup>Household leverage is defined as the ratio of household liabilities to household assets.

**Figure 2.11. Household Financial Leverage in Selected Countries in Emerging Europe<sup>1</sup>**  
(In percent)



Sources: CEIC; and IMF staff calculations based on data from central banks.

<sup>1</sup>Household leverage is defined as the ratio of household liabilities to household assets.

**Table 2.4. Ratio of Household Credit to Personal Disposable Income**  
(In percent)

	2000	2001	2002	2003	2004	2005
<b>Emerging Markets</b>						
Czech Republic	8.5	10.1	12.9	16.4	21.3	27.1
Hungary	11.2	14.4	20.9	29.5	33.9	39.3
Poland	10.1	10.3	10.9	12.6	14.5	18.2
India	4.7	5.4	6.4	7.4	9.7	...
Korea	33.0	43.9	57.3	62.6	64.5	68.9
Philippines	1.7	4.6	5.5	5.5	5.6	...
Taiwan Province of China	75.1	72.7	76.0	83.0	95.5	...
Thailand	26.0	25.6	28.6	34.3	36.4	...
<b>Mature Markets</b>						
Australia	83.3	86.7	95.6	109.0	119.0	124.6
France	57.8	57.5	58.2	59.8	64.2	69.2
Germany	70.4	70.1	69.1	70.3	70.5	70.0
Italy	25.0	25.8	27.0	28.7	31.8	34.8
Japan	73.6	75.7	77.6	77.3	77.9	77.8
Spain	65.2	70.4	76.9	86.4	98.8	112.7
United States	104.0	105.1	110.8	118.2	126.0	132.7

Source: IMF staff estimates based on data from country authorities, CEIC, OECD, and Bloomberg.

countries, such indicators often reflect market averages and mask pockets of weaknesses within banking systems. Capital adequacy ratios in banks in EM countries range between 11 and 20 percent, with an unweighted average of 13 percent (see Chapter I). The level of NPLs varies across EM countries but the evidence does not generally suggest sizable credit quality problems in household loan portfolios (Figure 2.12).<sup>8</sup> However, NPL ratios are backward looking and may not fully reflect the lending to more marginal customers in the early stages of rapid credit expansion.

Financial innovation in EM household credit has created its own challenges. Easier access to financing by marginal customers through lower origination standards may have amplified some of the vulnerabilities. Product innovations, such as lengthening the maturity of some of the mortgages in Poland to 45 years and constant payment loans in countries such as Malaysia and Thailand, may result in larger interest rate, refinancing risks, or exposure to household income shocks. Households in the lowest income brackets may be particularly vulnerable to a “debt trap” as they have very little financial

<sup>8</sup>The criteria for classifying a loan as nonperforming may vary across countries.

buffer and may face large penalties from delinquent payments. In Korea, the 2003 credit card crisis led to a severe capital shortage for the credit card industry and resulted in 10 percent of the adult population becoming delinquent on their debts (Box 2.3 on p. 64). For MM countries, BIS (2006) has warned that lenders in countries that are experiencing a rapid growth of subprime markets may be underestimating households’ probability and severity of default.

### Macroeconomic Vulnerabilities

In addition to creating systemic problems within the financial sector, rapid growth of household credit can lead to several macroeconomic risks. These include fueling consumer price inflation, property price inflation, higher imports and thus current account deficits, and, as discussed above, if funded by capital inflows, vulnerability to sudden stops.<sup>9</sup> It is worth noting that past episodes of balance of payments or banking currency crises were preceded by rapid growth of corporate credit, most often in the

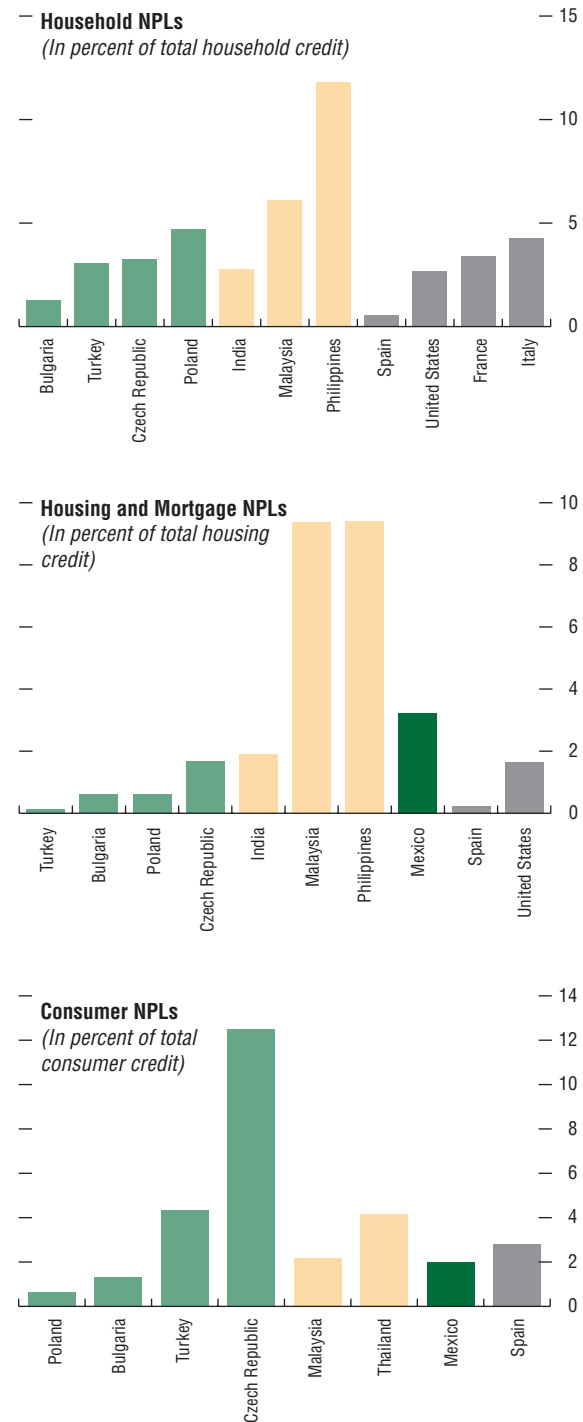
<sup>9</sup>See Kaminsky and Reinhart (1999); Kaminsky, Lizondo, and Reinhart (1997); Borio and Lowe (2004); Mendoza (2001); Gourinchas, Valdes, and Landerretche (2001); Mihaljek (2006); and Duenwald, Gueorguiev, and Schaechter (2005).

context of fixed-exchange-rate regimes; there is limited evidence of systemic problems caused by rapid household credit growth.

The experience of several industrial countries illustrates the complexity of the issues revolving around credit booms, causes thereof, and their interaction with other financial sector and macroeconomic variables. In the latter part of the 1980s, Finland, Norway, and Sweden experienced a rapid increase in household debt, driven in part by financial liberalization.<sup>10</sup> All three countries experienced higher consumer spending, inflationary pressures, and rapid growth, followed by large current account deficits, exchange rate pressures, and interest rate hikes. The ensuing recessions exacerbated household indebtedness and precipitated a banking currency crisis. More recently, Iceland experienced large short-term capital inflows to a booming economy fueled by exceptionally rapid credit expansion. Private commercial banks entered the mortgage market in 2004, which led to increased competition. The sharp rise in house prices, the associated withdrawal of housing equity, and the surge in consumption contributed to the large current account deficit. The turning point was reached in early 2006, when the tightening of global liquidity conditions triggered significant capital outflows and resulted in increased financial volatility and severe pressure on exchange rates.

In the sample of EM countries, there is some evidence suggesting that the fast growth of credit to households may be linked to increased imports of goods and to deterioration in current account balances (Figures 2.13 and 2.14). Four countries—Bulgaria, Hungary, Romania, and Turkey—had deficits that exceeded 5 percent of GDP in 2005; all these countries experienced large capital inflows and a rapid growth in credit to households (at least twice as fast as nominal GDP growth). Recent studies show that the sharp increase in credit to households explains in part the increase in imports and the

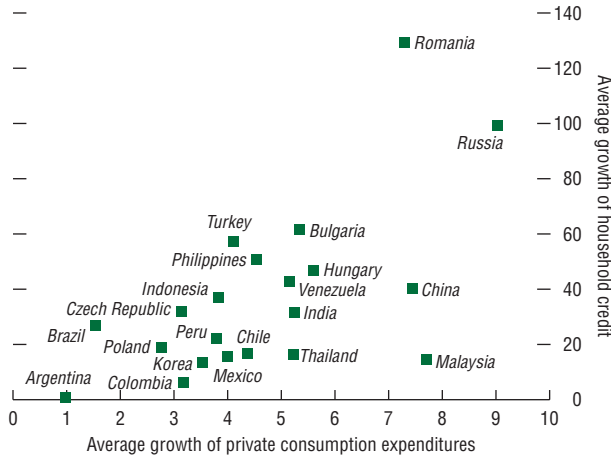
**Figure 2.12. Nonperforming Loans, 2005**



Source: IMF staff calculations based on data from the *World Economic Outlook* and data from central banks.

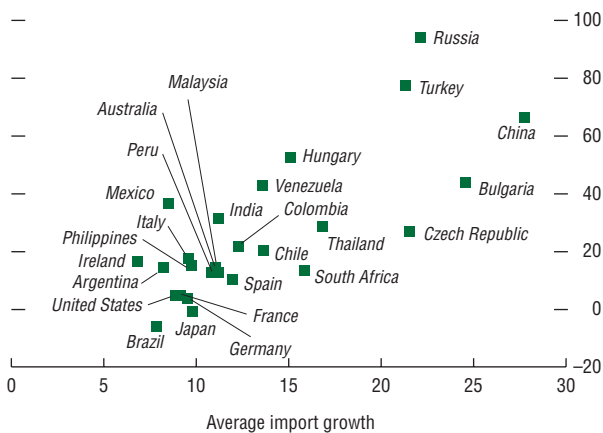
<sup>10</sup>See Drees and Pazarbasioglu (1995); and Brunila and Takala (1993).

**Figure 2.13. Nominal Growth of Household Credit and Private Consumption Expenditures, 2000–05**  
(In percent)



Sources: IMF, *World Economic Outlook*; CEIC; and IMF staff estimates based on data from country authorities.

**Figure 2.14. Nominal Growth of Consumer Credit and Merchandise Imports, 2000–05**  
(In percent)



Sources: IMF, *Balance of Payments Statistics*; CEIC; and IMF staff estimates based on data from country authorities.

Note: Average merchandise import growth is based on 2000–04 data for Malaysia and Argentina, and on 2001–03 data for India. Consumer credit growth is based on 2002–05 data for Turkey and on 2001–05 data for Indonesia, the Philippines, and Venezuela.

deterioration in current account balances of emerging European countries (Coricelli, Mucci, and Revoltella, 2006; Hilbers and others, 2005; and Menegatti and Roubini, 2006). Duenwald, Gueorguiev, and Schaechter (2005) estimate that a percentage point of GDP of additional credit leads to a deterioration in trade balance by about 0.4 and 0.7 percentage points of GDP for Bulgaria and Romania, respectively.

Rapid credit growth to households can also feed asset price inflation; rising asset prices can encourage further credit growth by raising collateral values, and an eventual decline in inflated property prices may result in a boom-bust cycle. While house prices have risen far faster in MM than in EM countries, some EM countries have seen substantial increases in house prices over the last few years (Table 2.5 and Figure 2.15). Financial stability reports of some emerging European countries that are experiencing rapid growth in household credit have already warned about house price inflation and potential vulnerabilities for the financial system.<sup>11</sup>

### Risk Management and Risk Transfer

Depending on the terms of the loans, lenders of household credit can face significant interest rate, exchange rate, refinancing, and credit risks. Nonetheless, risks in household credits are more amenable to monitoring and managing than are commercial credits, which require a more complex assessment of business financials, management, and industry trends. The strong personal incentives of borrowers to preserve their homes and to maintain future access to credit generally reduces NPLs. Because of its homogenous nature, a portfolio of household credit is more stable and predictable. Moreover, household credits can typically be repackaged

<sup>11</sup>See the *Financial Stability Report* of the Czech National Bank (2005); the *Financial Stability Report* of the Central Bank of Hungary (April 2006); and the *Financial Stability Review* of the National Bank of Poland (first half of 2005).

**Table 2.5. House Price Changes**  
(Year-on-year change in percent)

	End-2003	End-2004	End-2005
<b>Emerging Markets</b>			
Hungary	26.5	-5.6	7.5
Korea	5.7	-2.1	4.1
Malaysia	4.0	4.8	2.4
South Africa	16.2	25.0	34.9
Thailand	17.8	9.3	7.2
<b>Mature Markets</b>			
Australia	19.4	0.2	2.2
France	12.4	16.0	14.8
Ireland	13.7	8.6	9.3
Japan <sup>1</sup>	-10.3	-9.5	-7.0
Netherlands	1.7	3.6	4.2
New Zealand	25.0	11.6	15.4
Spain	18.5	17.2	12.6
United Kingdom	8.3	10.7	2.9
United States	7.9	12.0	13.3

Sources: Economic and Social Research Institute (ESRI), Ireland; Ministerio de Vivienda, Spain; Office of Federal Housing Enterprise Oversight (OFHEO), United States; Reserve Bank of New Zealand (RBNZ), New Zealand; Nederlandse Vereniging van Makelaars (NVM), Netherlands; Office of the Deputy Prime Minister (ODPM), United Kingdom; Australian Bureau of Statistics (ABS); Central Bank of Malaysia; Central Bank of Hungary; Amalgamated Banks of South Africa (ABSA); CEIC; and Bloomberg.

<sup>1</sup>In Japan, year-on-year changes are as of September of each respective year.

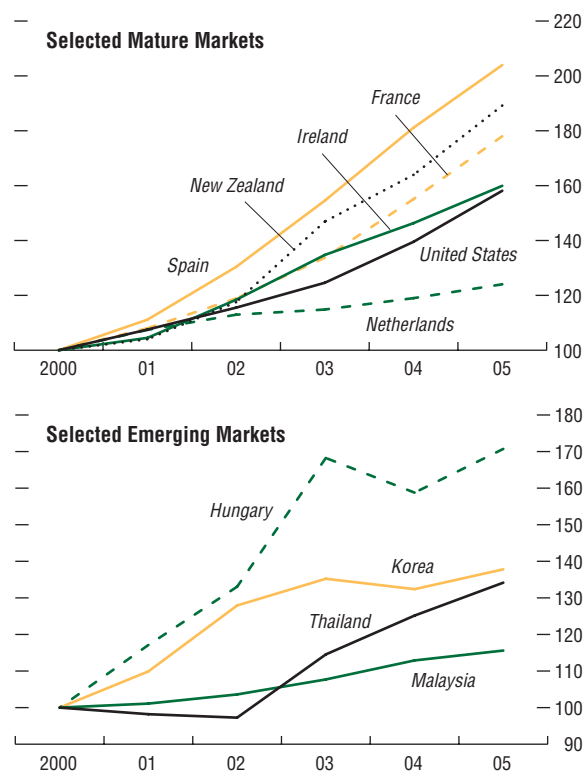
and sold to capital market investors, allowing transfer of risks. This section discusses some mechanisms for the management and transfer of household credit-related risks.

### Securitization

Securitization can play a particularly important role in managing interest and rollover risks of household credit. It allows banks to obtain long-term funding and transfer the credit risks of a pool of household credits to capital market investors. It also allows originators to conserve regulatory capital, diversify asset risk, and structure products to reflect investors' preferences. A related technique—mortgage bonds—allows originators to obtain long-term funding at competitive rates, but without reducing credit risks. Box 2.4, on p. 67, compares the features of these two alternatives for long-term financing of household credit portfolios.

Securitization is a complex structured financing technique, and its implementation suffers

**Figure 2.15. House Price Indices**  
(2000 = 100)



Sources: Economic and Social Research Institute, Ireland; Office of Federal Housing Enterprise Oversight, United States; Reserve Bank of New Zealand; NVM, Netherlands; Australian Bureau of Statistics; Bank Negara Malaysia; CEIC; and Bloomberg L.P.



### Box 2.1. Extension of Emerging Market Household Credit by Foreign-Owned Banks

Foreign banks have increased their presence in all emerging market (EM) countries over the past several years. These banks have spearheaded the growth of lending to households in several EM countries, attracted by high margins and using the expertise they have developed in this area in their home markets. This box discusses the benefits and challenges of foreign bank participation in EMs and policies to manage such challenges.

The presence of foreign banks in a country appears to be conducive to stability, efficiency, and improved regulation and governance. Claessens, Demirgüç-Kunt, and Huizinga (2001) show that, in developing countries, increasing the number (even more than the market share) of foreign banks reduces overhead expenses of domestic banks. Several studies show that foreign banks tend to curtail lending by less than domestic banks during adverse economic times (De Haas and Lelyveld, 2002 and 2003). They also find that foreign banks' credit growth is related positively to the health of the parent bank and negatively to the home country macroeconomic conditions. During crises in Latin America and Asia, foreign banks maintained higher loan growth rates than did domestic banks, with lower volatility of lending (Goldberg, Dages, and Kinney, 2000).

For countries with rapidly growing household credit, foreign banks could present some new challenges for surveillance and policy. Potential contagion may arise if foreign banks active in several countries in the same region cut their exposure across the region following a shock that affects their exposure in one country. Buildup of exposures to common risk factors in a region may also increase the potential for contagion. During the Asian crisis, for example, foreign banks significantly reduced their lending to countries that had not been affected by the crisis, contributing

to contagion. However, a large share of such reduction can be attributed to Japanese banks experiencing problems in their home market. Host countries need to assess the potential for such contagion and how to address contagion if it occurs.

Foreign and local bank lending in some countries is often denominated in, or indexed to, a foreign currency. This may reflect existing practices in the host country or a legacy of macroeconomic instability. Lending in foreign currency transfers the foreign exchange risk to borrowers, especially to households that often lack income or assets in foreign currencies, thereby contributing to a buildup of indirect credit risk. The banks may not fully internalize, and price and provision for this risk, especially if they underestimate the risk of devaluation, due to the expectation of joining a regional currency bloc or a perceived guarantee of a currency board.

Risk measurement and management systems used in industrial countries may need to be appropriately recalibrated when applied in the EM context. In most EM countries, data quality is poor and, some countries have shorter experience in lending to households. As experience is gained and the quality of information gets better, risk management should improve. In the meantime, home supervisors should (and do) encourage parent banks to exercise more conservative lending practices.

Strong cross-border supervisory cooperation is needed to assess the vulnerability of foreign financial institutions and to minimize disintermediation in response to external shocks. There are established mechanisms for coordination that involve the exchange of information and a structured dialogue between home and host country supervisors. Regional dialogue between host country regulators in emerging Europe and home country regulators from industrial European countries may be particularly useful in cases where the exposure of foreign banks to individual host countries may be very small, but still be significant for host countries.

Note: The main authors of this box are Sean Craig and Paul Ross.

### Box 2.2. Using Macro- and Microlevel Data to Analyze Vulnerability of the Household Sector

Although the notion of sustainable household debt is conceptually tractable, a practical formula is much harder to come by. Household debt is “sustainable” if two broad tests (related to the household’s balance sheet and income position) are met over a relevant medium term: (1) the borrower has positive net worth and (2) the borrower can service debt at contractual terms. Determinants include future income; savings, interest, and exchange rates; access to refinancing; and whether loans are used purely for consumption, durable assets (such as housing), or productivity-enhancing investments (e.g., education). Household debt sustainability assessment suffers from the difficulty of estimating future variables, and from two additional problems. First, if debt is contracted to increase assets, that is, net worth is maintained, a wide range of debt levels may be sustainable. Second, the refinancing ability largely depends on financial market development and efficiency. The usual aggregation problem exists, namely, the aggregate household debt level may not fully represent the distribution of sustainable debt across households.

These difficulties imply that household debt sustainability may not be amenable to cross-country comparisons. For policymakers, it may be useful to look at such comparisons between “peers,” in addition to the trend in key variables, and exercise judgment. It may be that the sustainable household debt in emerging market (EM) countries might be lower than in industrial countries, as in the case of public debt, because of the higher volatility and uncertainty of income, interest costs, and exchange rates. Reinhart, Rogoff, and Savastano (2003) show lower debt tolerance for EM than for mature market (MM) countries, in particular for previous defaulters. Empirical work at the macro level has sought to link equilibrium levels of *private* (household and corporate) credit to economic fundamentals and can be empirically estimated by using a matrix

Note: The main author of this box is Mangal Goswami.

of explanatory variables. However, parameter instability of the estimated model is the main constraining factor in using such frameworks for EMs.

Using macrolevel data to assess household debt sustainability, however, has limitations because the aggregation may mask vulnerabilities if the debt accumulation is skewed toward a particular income group. Indeed, most MM countries undertake a more detailed analysis of household balance sheets. The central bank of Sweden, the Riksbank, has been using microlevel data to supplement the analysis of the balance sheet of the household sector. This approach also allows for stress testing of the household sector’s ability to pay. We draw on the forthcoming paper by Johansson and Persson on how the Riksbank uses microlevel data for analyzing household vulnerabilities. It uses a detailed annual survey that covers household income, debt, and wealth. For the analysis, households are divided into five categories based on their level of disposable income. The distribution of financial assets, real assets, and debt is obtained for each income category.

First, the debt-servicing capabilities and indebtedness across income categories are measured by the ratio of interest expenditures to disposable income and the ratio of debt to disposable income. Second, the Riksbank supplements the basic tools with measures to assess the vulnerability of households to changes in income or expenditure.

The Riksbank also conducts stress tests to assess whether household indebtedness poses a risk to the financial sector. Different scenarios are used to study the effects of

- *higher interest rates*: this test first analyzes the short-term effects of a change in interest rates, followed by the long-term effects that arise if the entire stock of debt is affected by the rate change, assuming that all the loans are at the new higher rate; and
- *increased unemployment*: based on Monte Carlo simulation, the Riksbank assigned an equally large probability of becoming unemployed to all gainfully employed persons in order

**Box 2.2 (concluded)**

to derive the new estimates of disposable income of all households in each category. In sum, a range of analytical tools that exploit both macro- and microlevel information should be used to assess household sector vulnerabilities in EM countries. Empirical estimation of an equilibrium level of *private* debt can provide a guide in determining whether the level of debt is consistent with economic fundamentals. This assessment can

be supplemented at the macro level by debt sustainability analysis using aggregated data for households to assess whether they portend potential vulnerabilities to the financial system. It can be complemented by micro-level information (where available) on the distribution of household assets and debt to assess whether a particular group or subset of households is vulnerable and poses a risk to the financial system.

from several regulation- and infrastructure-related impediments across EM countries (some of which are also present in the MM context). Some of the serious problems include legal limitations regarding true sale treatment of securitization transactions, excessive transfer taxes, an underdeveloped legal framework, requirements of borrowers' prior consent to structure securitized deals, lack of clarity in capital adequacy requirements related to securitization or pricing thereof, lengthy and cumbersome approval process, and lack of standardization (Box 2.4 on p. 67). Although a large number of EM countries have introduced the basic legal framework for securitization, the volume of transactions still lags far behind that in MM countries (Table 2.6).

A variety of economic factors, incentives, and infrastructure gaps have also contributed to a slow take-off of securitization in EM countries. The current high liquidity and regulatory capital of the banking system make many EM issuers eager to add and hold on to assets, while the somewhat unsophisticated investor base prefers plain bonds. Also, many EM countries have a generally underdeveloped base of institutional investors who would otherwise be the primary investors in asset-backed securities. In addition, institutional investors in some EMs face certain regulatory constraints that may discourage investment in securitized products.<sup>12</sup>

<sup>12</sup>See Gyntelberg and Remolona (2006).

These teething troubles are likely to be resolved gradually and securitization of household credit, particularly of mortgages, is likely to grow. That said, the lack of standardization embedded in the current stock of household credit is a more lasting hindrance. It would be beneficial to promote cooperative efforts by banking associations or other industry bodies to standardize such credit in terms of maximum loan-to-value (LTV) ratios, maximum debt-service-to-income ratios, documentation requirements, and interest rate conventions.

**Payroll Deductions**

In some countries, the collection of household credits has been linked to payroll deductions. Payroll deductions may help reduce technical defaults, inculcate a habit of prompt debt service, and adjust consumption to post-debt service disposable income, thereby enabling lenders to offer more household credit. For example, credit to households increased sharply in Brazil after the introduction of payroll-linked loans in 2004. Moreover, interest rates charged on these loans are about half of those charged on regular consumer loans. The extent to which payroll deduction can reduce delinquency, however, depends on the degree of formal employment in the economy, the use of bank account deposits for salary payments, the availability of electronic

**Table 2.6. Gross Annual Issuance of Mortgage-Related Securitization***(In percent of outstanding stock of housing and mortgage debt)*

	2004	2005
<b>Emerging Markets</b>		
Malaysia <sup>1</sup>	1.1	2.6
Mexico	0.3	0.5
India	1.9	2.6
<b>Mature Markets</b>		
United States		
Agency-backed MBS	11.7	10.6
Private label MBS	5.1	10.1
Total	16.8	20.6
Europe		
Private label RMBS	1.9	...
Of which: United Kingdom	3.6	...
Covered mortgage bonds	2.9	...
Of which: France (obligation foncière et communale)	3.3	2.9
Germany (Pfandbrief)	14.1	15.0
Spain (cédula hipotecaria)	3.2	6.2
Total	4.8	5.7

Sources: Bond Market Association; European Securitisation Forum; Dealogic Bondware; Thomson Financial Securities Data; Structured Finance International; central banks of Mexico and Malaysia; National Housing Board of India; European Mortgage Association; and IMF staff calculations.

Note: MBS = mortgage-backed securities; RMBS = residential mortgage-backed securities.

<sup>1</sup>Data include RMBS issued by Cagamas Berhad (Malaysia) only. No private label RMBS are considered.

or automated clearinghouse payments, and the judicial treatment applied to such loans.

### Credit Insurance

For mortgages, credit insurance may permit transfer of risks to specialized institutions. Certain high risks in mortgages could be covered through mortgage insurance. For example, in Poland, such insurance is required for mortgage loans when the LTV ratio exceeds 70 percent, for bridge financing (before a formal mortgage is established), and for protecting against unemployment. Mortgage insurance provides incentives for borrowers to accept a modest LTV ratio, and encourages fuller assessment of the riskier credits by an unrelated insurer. Such insurance still has considerable potential for growth, possibly with some participation of international financial institutions

(IFIs) and government institutions together with the domestic insurance industry and other investors, and is a useful evolution for government housing finance programs. However, as with all forms of insurance, mortgage insurance must be properly priced and monitored to reduce moral hazard on the part of originating banks.

### Legal and Regulatory Framework

The development of household credit suffers from several general weaknesses in the legal and regulatory framework in EM countries. In some countries, laws and regulations still require directed credit to household sector, especially for low-income housing. The laws and legal systems in many countries often provide excessive protection to borrowers, resulting in time-consuming, expensive, or ineffective enforcement of creditors' rights, and a weak credit culture. Pervasive under-reporting of property values or income may also make it difficult to adequately assess credit risk.

The prudential regulation of household credit generally poses fewer problems than corporate credit. Household borrowers may not typically provide formal accounts, and their antecedents may often be more difficult to verify, especially in countries with underdeveloped credit bureaus, small taxpayer populations, or high levels of informal employment. On the one hand, as a general rule, assessing a household credit is far simpler than assessing a business credit, which may require greater knowledge of business, financial analysis, and monitoring. On the other hand, a large number of household credits requires greater diffusion across branch networks, and more laborious effort to process loans, monitor delinquency, and collect delinquent accounts. Thus, it is important that banks invest in adequate origination systems, risk monitoring, and staff training.

Household credit requires the same broad regulatory approach as does institution-specific and systemic risk management. This entails capital adequacy requirements and risk weights

### Box 2.3. Korean Credit Card Crisis and Its Resolution

#### *Origins of the Crisis*

After the 1997 crisis, Korea's large industrial groups sharply reduced their demand for credit. Credit providers looked for new growth areas. The government was seeking to mitigate the impact of the information technology bubble crash in 2001, expand consumption, and broaden the tax base by bringing the informal sector into the tax net by replacing cash with credit card transactions. The authorities encouraged the creation of a consumer-lending industry, with little regulation and a somewhat unusual product design. The credit card industry expanded massively from 1999 to 2002. In this short period, the number of cards issued by credit card companies more than doubled to over 100 million, an average of three cards for every adult. Annual card usage, including overdrafts and loans, increased sixfold to 114 percent of GDP.

Credit cards were provided with undemanding requirements from borrowers; with little regulation of the maximum limit with respect to income; and with gifts, other incentives, and official lotteries offered with credit card purchases. The structure of the loans extended on the cards was a problem. In Korea, credit cards represented not a revolving loan, but a credit repayable in *full* at the end of one month. Moreover, borrowers who could not repay (and should not have been issued a card) found it rather easy, given the lack of good information on borrower payments histories and lax screening, to transfer balances between different cards until limits were eventually hit. This resulted in a large number of individuals delinquent on multiple credit cards. Financial supervisors, lacking experience with credit card companies, also underestimated the risks, especially as the companies appeared well capitalized.

Note: The main authors of this box are Edward Frydl and Jack Ree.

Already in 2002, delinquency rates had begun to rise, as credit bureaus began accumulating information about the debts of clients to multiple credit card companies. In response, the authorities tightened prudential regulations and the companies began cutting credit lines and selling impaired assets. The industry's problems were aggravated in March 2003, when the SK Global scandal triggered a run on corporate bonds and a collapse of the market for credit card company bonds. By November 2003, total impaired assets, including rescheduled loans, reached 37 percent (see the table), and 2.3 million card borrowers were delinquent, representing 6 percent of the population aged 15 or more—out of a total of 3.7 million persons delinquent on household loans (10 percent of the adult population). In December, the largest company, LG Card, lost access to the capital market, creating a liquidity crisis; the government-owned Korean Development Bank rescued the company, averting the threat of bankruptcy, which could have cascaded through the entire credit card company sector.

#### *Resolution*

The aftermath of the crisis implied severe capital shortages for the entire credit card industry. The resolution of the capital shortage was made through (1) converting existing debt to equity, in the case of LG Card; (2) capital injection by affiliated industrial groups; and (3) merging into parent banks. The authorities further strengthened prudential regulations on card issuance and cash advances, introduced prompt corrective action clauses (to maintain and improve capital adequacy ratios), and concluded management improvement agreements with remaining institutions.

As a result, the average impaired assets of six existing credit card companies declined to 10.1 percent at end-2005, largely because of write-offs; their capital adequacy ratio increased from -3.3 to 19.0 percent between 2004 and end-2005; and all six credit card companies posted profits in the first quarter of 2006.

**Impaired Credit Card Assets<sup>1</sup>***(In percent of total assets)*

	2002		2003		
	December	March	June	September	December
I. Overdue receivables	6.0	9.4	9.4	11.2	14.3
II. Rescheduled loans	5.2	8.0	13.2	20.7	22.3
III. Total distressed loans (I + II)	11.2	17.4	22.6	31.9	36.6

Sources: Korean authorities; and IMF staff estimates.

<sup>1</sup>Credit card companies excluding Kookmin Card.

The extent of the mismanagement of the Korean credit card debacle is illustrated by the fact that 6 percent of the adult population became delinquent on their debts. Delinquencies were concentrated among the young borrowers. Half of the delinquents were under 40 years and almost 20 percent were under 30. Many of these debtors were effectively insolvent and incapable of servicing even rescheduled debt. Resolution of delinquent debt is an ongoing process and involves the following main elements.

- *Credit Counseling and Recovery Service*. CCRS, a consortium of financial companies, runs the largest workout program. It serves those with debts to more than two institutions of not more than 500 million won (around \$500,000). Debt reduction of up to one-third of total debt and waiver of past due interest are obtainable when rescheduling is agreed. By the end of May 2006, the CCRS had provided restructuring to some 556,060 debtors.
- *Hanmaeum finance (the “bad bank”)*. In May 2004, the government-run Korean Asset Management Corporation established Hanmaeum to restructure small individual debts (less than 50 million won or \$50,000) from creditor institutions. Qualifying participants (about 211,000) have up to eight years to repay written-off loan principals and can be instantly delisted as credit delinquents.
- *Personal debtor recovery system*. Effective September 2004, rehabilitation procedures, more flexible than personal bankruptcy

procedures, were established. To qualify, debtors must meet the insolvency criteria and a least-cost principle requiring the value of restructured debt to exceed its liquidation value. Restructured debt is valued using a court-supervised measurement of ability to pay and participants have to surrender their entire residual income to creditors for up to five years.

These measures have contributed to a slow decline in the number of total delinquent borrowers to below three million. The fear that the debt overhang would depress consumption resulting in a deep recession did not materialize, although credit card debts among the poorest groups, which do not have regular employment, remained unresolved. The bailout of LG Card and small credit delinquents were made under government initiatives. The moral hazard implications of these programs remain to be seen.

**Lessons**

The Korean credit card crisis demonstrates some key lessons. Financial innovations should be carefully introduced to promote efficient intermediation rather than achieve macroeconomic policy objectives, and with adequate regard to credit assessment and prudential regulation. Credit cards could have been introduced with better safeguards, and measures should have been taken to promote an adequate infrastructure to assess creditworthiness. An overly generous bailout of defaulting borrowers can damage the establishment of a responsible credit culture.



**Table 2.7. Regulation of Household Credit in Selected Emerging Markets**

Measure	Examples
	<b>Residential Mortgages</b>
Maximum loan-to-value ratio	Thailand: 70 percent for property value exceeding 10 million baht; Korea: Maximum ranges from 40 to 70 percent with tighter limits in “overpriced” areas; Philippines: 70–80 percent.
Maximum debt-service-to-disposable-income ratio	Korea: Debt service must be less than 40 percent of the household income for high value apartments (with prices exceeding 0.6 billion won) in designated areas.
Minimum lending	Brazil: Housing loans (individual mortgages and to construction sector) of minimum 65 percent of savings accounts, of which 80 percent at below-market rates.
Risk weight	50 percent for owner-occupied residential properties under Basel I. India: Increased from 50 to 75 percent in December 2004; Malaysia: Increased risk weight on NPLs for housing loans secured by first charge from 50 to 100 percent.
	<b>Credit Cards and Personal Loans</b>
Maximum credit-to-income ratio and eligibility rules	Philippines: No loans without an income tax return (limits the potential applicants to 6 out of 55 million); Thailand: Credit cards can only be issued to applicants with monthly income of at least 15,000 baht (\$350), maximum loan five times the monthly income.
Minimum monthly repayment	Emerging Europe: 10 percent of outstanding balance; Turkey: 20 percent of outstanding balance.
Maximum interest rate	Malaysia: Interest rates on credit cards are capped at 18 percent; Poland: Four times the Lombard rate; Thailand: Interest rate on personal loans is capped at 28 percent and interest charges and other fees on credit cards at 18 percent.
Risk weight	Usually 100 percent. India: Raised to 125 percent in December 2004.
	<b>Auto Loans</b>
Eligibility criteria	India: Minimum gross annual salary of Rs. 100,000.
	<b>Qualitative and Other Measures</b>
Loans in foreign currency	Brazil: Prohibition on household credits in foreign currencies, but foreign-currency-indexed loans allowed; Chile: Approval by the regulator of internal policies to manage foreign exchange loans required prior to commencing such business; Croatia and Romania: Higher liquidity requirements for foreign currency loans; Poland: 20 percent higher reserves for foreign currency loans as opposed to domestic currency loans; Singapore: Higher capital requirement of 10 percent for foreign exchange credits.
Stress testing	Czech Republic, Hungary, and Poland: Regular stress tests to check robustness to large exchange rate depreciations; Thailand: Stress tests with respect to large fall in property prices.
Special reporting and analyses	Korea: Special diagnostic report on mortgage lending practices and compliance with tighter regulation; Thailand: Quarterly reports on approvals of real estate loans of over 100 million baht.
Inspection and supervision	Hungary: Increased risk management requirements for foreign currency lending, enhanced supervision (more frequent off-site and on-site inspections) of banks with dynamic foreign currency lending or banks in a weak financial position.
Restrictions on aggressive marketing	Thailand: Regulations on specific marketing strategies, hours during which prospects may be approached, incentive gifts; Korea: Street soliciting and signing gifts banned.
Moral suasion, education	Croatia, Hungary, and Poland: Media campaigns to educate borrowers on risks of foreign currency borrowing; Malaysia: Credit Counseling and Debt Management Agency.

Sources: Country authorities; and IMF staff.

### Box 2.4. Securitization of Household Credit: Approaches and Problems

Household credit can be refinanced in the capital markets through either covered mortgage bonds or asset-backed securitization. The former are simply bonds of the issuer (e.g., a bank) but collateralized with a pool of mortgage or other credits. Thus the issuer retains the risks of the underlying loan, while bond investors are exposed to the risk of the issuer. Under a mortgage-backed securities (MBS) or an asset-backed securities (ABS) transaction, the issuer transfers mortgages (or other receivables) to a special purpose vehicle (SPV) or a trust, which then issues MBS or ABS to investors. An SPV is structured to ensure “bankruptcy-remoteness,” so that investors have a legal claim only on principal and interest payments from the underlying credits, and other creditors of the originator cannot access such payments in case of originator bankruptcy. Typically, MBS transactions are “tranching” in a subordinated structure, with different tranches having different tenors, priorities in debt servicing, claims on specific debt service flows, and thus ratings. Unlike mortgage bonds, ABS permit issuers to shrink their balance sheets, reduce their capital requirements, and divest the risks of the underlying credits to capital markets, which can materially contribute to systemic stability.

Given this potential for efficient risk transfer, most EMs have taken measures to develop an adequate infrastructure for securitization. This includes a complete law on securitization and SPV and trust structures, elimination of multiple transaction taxes on transfer of assets, promotion of rating agencies, good practice origination and standardization, and full articulation of regulatory and tax treatment. Nonetheless, a review of these initial attempts reveals several important problems.

#### *True Sale Treatment*

In several countries, the current legal frameworks do not achieve a full true sale treatment for legal, regulatory, and accounting purposes.

Note: The main authors of this box are Andy Jobst, Bozena Radzewicz-Bak, and Hemant Shah.

Complexities of bankruptcy and contracting laws may allow creditors of the originators, under certain circumstances (e.g., in case of fraud in Colombia), to challenge, nullify, or override the asset transfer, or permit an SPV to transfer the assets back to the originator (e.g., in the Philippines), thus threatening the debt service to ABS investors. These weaknesses or uncertainties may prevent securitization or make it risky.

#### *Requirements to Notify Borrowers*

Several countries (e.g., Indonesia, Thailand, and Taiwan Province of China) have actual (or legally unclear but potential) requirements for notifying borrowers whose loans may be securitized and thus transferred to an SPV. These requirements add to the costs and uncertainties of the collection of securitized credits and need to be judiciously removed while protecting borrowers’ reasonable interests.

#### *Excessive Transfer Taxes*

In many countries, the underlying laws relating to taxation of transfer of assets generally precede the advent of securitization. Thus, without specific exemptions, they result in multiple taxation of the same financial intermediation, making securitization unviable. For example, in India, stamp duty varies between 0.1 percent and 8 percent depending on the state and asset, which causes some geographical concentration in SPVs and ABS. In Hong Kong SAR, stamp duty is payable on transfers of land and mortgages at up to 3.75 percent, but regulations allow MBS structures to avoid such taxes. Many countries (Malaysia, Poland, Russia, the Slovak Republic, Taiwan Province of China, and Ukraine) have exempted securitization transactions from stamp duties. However, in Russia and the Slovak Republic, tax implications depend on the type of receivables and whether the transaction is domestic or cross border.

#### *Lack of Standardization*

Standardization of underlying credits is essential to minimize the cost of understanding and assessing risks of ABS, but is frequently

**Box 2.4 (concluded)**

lacking across most EMs. For instance, loan-to-value ratios, and origination and documentation standards differ considerably, and such variations are indeed used as marketing tactics. In many EMs, there is no common interest rate benchmark, with mortgages and credit cards linked to a bank's own lending rate or deposit rate. These variations make it difficult or expensive to pool credits from different issuers and price ABS.

***Underdeveloped Legal Framework***

In some EMs, such as Thailand and Turkey, the legal framework does not allow for the securitization of future receivables and does not fully ensure bankruptcy remoteness (i.e., the SPV and its assets are not fully protected from attachment by the creditors of the originator in the event of insolvency of the originator). In some countries, basic trust law is underdeveloped, requiring SPVs to be corporations, attracting many of the provisions of the standard corporate law unsuitable or onerous to securitization. In Thailand, a trust law is awaiting parliamentary approval.

***Lack of Clarity***

As relatively new products, securitized assets are often insufficiently recognized in existing law. For example, the risk weights for the MBS and ABS have not yet been fixed in some EM countries, preventing investment by banks in such products. In some countries (e.g., India), ABS products are inadequately defined as "security" for stock exchange listing purposes. In most EMs, ABS are also infrequently traded and hence lack daily quotations. In the absence of well-developed rules for price estimation or extrapolation, certain investors (such as mutual or pension funds) subject to mark-to-market find it difficult to invest in such securities.

***Lengthy Approval Process***

In many EMs (e.g., Chile), securitization issuance entails a somewhat lengthy process. In some countries, such as Malaysia and Turkey, the approval of both the bank supervisory authority and the securities commission is required when assets originated by financial institutions are securitized.

for normal and impaired loans, standards for classification and provisioning, and adequate supervision. Several EM countries have supplemented these measures with a variety of approaches to limit imprudent household credit extension (see Table 2.7). These include setting interest rate caps, standards restricting loan amounts and eligibility (e.g., debt-service-to-income ratio, maximum lending limits, maximum LTV ratio, and maximum debt service ratios), dynamic provisioning, documentation requirements, guarantee requirements, prohibition of special promotion, and higher capital adequacy requirements or risk-weights for foreign exchange or nonperforming loans (see Hilbers and others, 2005). Qualitative measures may include setting limits on aggressive marketing practices, gaining prior approval of banks' household credit risk management systems, and

establishing programs for consumer education and protection.

There are no easily identifiable global "best practice" parameters with respect to prudential regulation of household credit. Nonetheless, most regulators regard maximum LTV ratios around 70–80 percent in property markets that are not overheated, maximum debt-service-to-income ratios of around 35–40 percent for all household credit, a minimum repayment rate of 10 percent of outstanding balance for credit cards, and a maximum credit card limit equal to three to four months' income as sensible benchmarks around which to design country-specific rules. Regulators in EM countries should also be vigilant about financial innovations such as interest-only or negative amortization (where payment does not fully cover interest) mortgages, which are obviously

more susceptible to speculative borrowings and higher NPLs.

In some EM countries, *margin lending* to individuals for the purchase of stocks and bonds is becoming an important form of noncorporate credit. Although margin lending increases access to securities markets, diversifies the investor base, and contributes to make markets more liquid, it may also exacerbate asset price fluctuations. These problems can be easily addressed with prudent lending limits. Although not in the same class of household credits as discussed here, margin lending can be easily diverted to personal consumption or housing and can have similar effects as excessive household credit growth.

Conversations with many EM banks suggest that, under competitive pressures, lenders may engage in practices that may prove to be imprudent in the long run. Thus, there may be much to gain through a collaborative dialogue with bankers' associations and consumer advocacy groups to promote the adoption of good practice origination standards, adequate sharing of credit information, standard disclosure of household credit terms, and avoidance of proliferation of terms.

Foreign lenders can significantly enhance the efficiency of the EM domestic banking industry through competition, technology transfer, and new products; but they can also present special regulatory and supervisory challenges. As with any domestic institution, EM regulators should take steps to adequately regulate and supervise foreign bank affiliates, especially because such affiliates may be of marginal importance to the parent bank and its supervisor, but of systemic importance to the host country.

Several MM and EM financial crises have underscored the interactions between the financial sector and the macroeconomic conditions, and regulators are paying increasing attention to such links. However, they also remain handicapped by the lack of a robust conceptual framework that links household credit and macroprudential variables or financial regula-

tion and monetary policy.<sup>13</sup> Nonetheless, central banks of several EM countries have started to incorporate financial stability analysis in their regular tool kits and publish financial stability reports that contain assessment of the risks from a macroprudential perspective.

## Conclusions and Policy Implications

The healthy development of household credit is likely to generate important benefits for borrowers, lenders, the financial system, and the economy. It can also alleviate some of the current global imbalances. The resulting welfare gains could be substantial. Therefore, there is a need to encourage the sound development of this still-nascent market in EM and developing countries.

In most EM—compared with MM—countries, retail credit expansion from relatively low levels is desirable and does not seem to pose a direct threat to financial stability. Nonetheless, minimizing risks that are frequently associated with high credit growth requires action on four related fronts. In addition to ensuring a sound macroeconomic policy environment, authorities need to implement appropriate prudential regulation, create or facilitate legal and institutional infrastructure conducive to sound household credit markets, and improve their capacity to assess vulnerabilities and take preventive action.

First, macroeconomic stability and the resulting reduction in uncertainties related to inflation, interest rates, and exchange rates are indispensable for the healthy development of all credit markets, including household credit. In addition, rapid credit growth can compound the problems of excessive consumption, current account imbalances, and property boom-bust cycles. If credit is predominantly financed by external capital flows, it can heighten the vulnerability to sudden stops and financial crises. These macroeconomic risks cannot be minimized by measures to reduce credit growth

<sup>13</sup>See Caruana (2005).

alone, and require appropriate fiscal and monetary policies.

Prudential regulation is the second critical element to ensure healthy growth of household credit, for which EM regulators are generally well equipped. The regulation of household credit does not entail a fundamentally different approach from that for other credits, and the standard prudential apparatus—risk-weighting, capital adequacy, classification, and provisioning—should suffice. Household credit is also somewhat easier to evaluate and classify than corporate credit. When household credit is growing rapidly, consideration may also be given to ex ante provisioning, recognizing the procyclical nature of household credit. In addition, unlike corporate credit, household credit is more amenable to specific guidelines to ensure conservative origination standards such as LTV ratios, debt-service-to-income ratios, interest rate caps (e.g., for credit cards), documentation, and guarantee requirements. As a general rule, regulators should refrain from direct intervention in product design; it may be appropriate to limit the riskier forms of credit, such as negative amortization mortgages, through more stringent capital and provisioning requirements. In addition, the large number of household credits may require regulators to become better equipped to assess the banks' overall retail business models, origination practices at branches, and quality and robustness of credit scoring and other models used.

In countries where household credit is materially dependent on cross-border capital inflows, such as in emerging Europe, prudent macroeconomic policies are of critical importance to prevent boom-bust cycles. In addition, regulators should improve their dialogue and coordination with home country regulators of large foreign banks and other regional recipients of such flows to guard adequately against possibilities of sudden capital flow reversals. Direct controls on lending are often circumvented and distortionary, and should be considered only on an exceptional basis in the face of large systemic risks.

Third, authorities must take several steps to improve the overall legal environment and infrastructure conducive to the healthy growth of household credit and risk management. As discussed in this chapter, these include the need to adopt enabling reforms in the regulatory and legal frameworks for (1) securitization; (2) effective enforcement of collateral; (3) provision and sharing of credit information; (4) promotion of rating agencies and credit bureaus; and (5) transparency in lending, consumer protection, and consumer education. The authorities must also be able to exercise effective moral suasion and facilitate cooperative efforts, for example, through dialogue with industry associations on development of good product standards, fair marketing practices, and information sharing.

Fourth, a key building block to effectively monitor and manage potential vulnerabilities is improving data availability. In most EM countries, there is a need to increase efforts to monitor and assess the buildup of credit, interest rate, rollover, and exchange rate risks within the household credit portfolios at both the aggregate and the individual levels. These risks are closely linked to global and domestic macroeconomic developments, property price movements, and other variables. Thus, risk measurement based solely on bank reporting would need to be complemented with improved measuring and monitoring of household debt and net worth, asset prices, and stress testing of specific shocks. In many EMs, this may require a significant upgrading of the analytical skills that would support regulatory policy and supervision.

Fifth, the authorities should recognize the possible constraints on using traditional policy measures (e.g., higher interest rates and exchange rate depreciation) in the case of systemic distress affecting a large number of households. The political implications of a massive household bankruptcy may be quite different from that of large-scale corporate distress. Accordingly, and depending on country-specific circumstances, a high level of

distressed household credit may require some rethinking of conventional crisis management tools (e.g., how to deal with large numbers of delinquent debtors and how to realize collateral). Countries in which households carry large interest rate and exchange rate exposures should maintain adequate reserves at the level of both the authorities and the commercial banks, and formulate adequate contingency plans in the event of a large interest and/or exchange rate movement.

To summarize, recent growth of household credits in most EMs is a broadly welcome phenomenon that needs to be encouraged and rendered sustainable by appropriate policy actions that would prevent excessive vulnerabilities.

### Annex: Description of Data

This annex provides a summary of the data used in the chapter. The data were obtained from country authorities and public sources. Due to limited data availability, the sample size varies by year and variable; more complete data exist for 2003–05 than for earlier periods.

Household credit data, mainly provided by banks, were collected from 23 EMs and 10 MMs. The EM country coverage was as follows:

- *Africa*: South Africa.
- *Emerging Asia*: China, India, Indonesia, Korea, Malaysia, Philippines, Taiwan Province of China, and Thailand.
- *Emerging Europe*: Bulgaria, Czech Republic, Hungary, Poland, Romania, Russia, and Turkey.
- *Latin America*: Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela.

The MM countries included Australia, France, Germany, Ireland, Italy, Japan, New Zealand, Spain, the United Kingdom, and the United States.

Detailed data on the debt structure, such as the types of household credit (and its composition by maturity, currency, and interest rate structure), the sources (providers) of household credit, securitization of household debt, and the composition and liquidity of household assets

and delinquencies, were requested from country authorities.

Complete data were not available for all countries; a summary of data obtained is provided below. Data were collected on

- the *structure of household debt* (credit product, maturity, currency denomination, and interest rate) for 21 EMs and 7 MMs;
- the *providers of household credit* (by type of lender) for seven EMs and six MMs;
- the *securitization of household debt* for three EMs and five MMs; and
- the *household assets and delinquencies* for eight EMs and seven MMs.

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