Bank Deleveraging

Causes, Channels, and Consequences for Emerging Market and Developing Countries

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Abstract

Just before the 2008–09 global financial crisis, policymakers were concerned about the rapid growth of bank credit, particularly in Europe; now worry centers on a potential global credit crunch led by European banking institutions. Overall, credit conditions across Europe deteriorated markedly in late 2011. Spillover effects are being felt around the globe and imply significant channels through which deleveraging could have disruptive consequences for credit conditions in emerging markets, particularly in emerging Europe. Significant liquidity support provided by the European Central Bank was a “game changer,” at least in the short term, as it helped revive markets and limited the risk of disorderly deleveraging. However, the extent, speed, and impact of European bank deleveraging remain highly dependent on the evolution of economic growth and market conditions, which in turn are guided by the ultimate impact of European Central Bank liquidity support, resolution of the sovereign debt crisis within the Euro Area, and the ability of the European rescue fund to provide an effective firewall against contagion.
Bank Deleveraging: Causes, Channels, and Consequences for Emerging Market and Developing Countries

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Sector Board: Financial Sector (FSE)
I. INTRODUCTION

1. Just before the crisis hit the global financial system in 2007–08, policymakers were concerned about the rapid growth of bank credit, particularly in Europe; now, the worry is about a massive credit crunch with damaging spillover effects to the rest of the world.¹ Preceding the global crisis, massive amounts of easy credit flowed from domestic and international sources to doubtful parts of the private sector, such as risky mortgages and real estate projects, triggering credit booms and asset bubbles across the world (figures 1a and 1b). Many financial institutions were operating with small amounts of high quality capital buffers (that is, high leverage), and relied heavily on an unsustainable wholesale funding model to support the rapid growth of credit (figure 2). At the same time, growing volumes of capital flows across borders (figure 3), particularly those from European banks, created increasingly complex and interconnected financial systems, while national supervisors missed deficiencies in banks’ ability to manage risks taken. Furthermore, effective mechanisms for cross-border supervisory coordination and burden sharing were largely absent to address the risks and failures of cross-border banking groups.

Figure 1. Global Credit Growth

| a. Nominal Private Credit Growth in Emerging Markets and Developing Economies (Median) | b. Nominal Private Credit Growth in Europe and Other Advanced Economies (Median) |
|----------------------------------|----------------------------------|

![Graph of Global Credit Growth](image-url)

Source: IMF, International Financial Statistics.

Note: AFR: Africa; EAP: East Asia and Pacific; LCR: Latin America and the Caribbean; MNA: Middle East and North Africa; ECA: Emerging Europe and Central Asia.

2. Regulators around the world responded to the crisis by launching extensive reforms to create more resilient financial systems. Banks responded by repairing their balance

¹ For an in-depth analysis of the global financial crisis, see, for example, Claessens, Dell’Ariccia, Igan, and Laeven (2010), Brunnermeier (2009), Diamond, Douglas, and Rajan (2009), and Adrias and Shin (2008).
sheets and adjusting their business models to varying degrees. European banks gradually started deleveraging as part of the process of cleaning up their balance sheets and shrank by 10–15 percent. Risk-weighted assets (RWAs), which stood at 12.4 times capital in 2007, fell to 9.5 times in 2010 (figure 4). Banks also sought more stable sources of funding such as retail deposits to substitute for more fickle, short-term wholesale funding sources, which helped reduce their loan to deposit (L/D) ratios from 175 percent to 138 percent from 2007 to 2010 (figure 5). Banks also bolstered capital cushions by 20 percent on average to ease solvency concerns, in part in response to market pressures, as well as to prepare for the phasing-in of the tighter Basel III capital rules over the 2013–19 period.

**Figure 2. Leverage and Reliance on Wholesale Funding**

Source: Bankscope, Bureau van Dijk. EUR data from European Central Bank (ECB) Consolidated Banking Data
Note: ASIA: Asia. CEE: Central and Eastern Europe MENA: Middle East and North Africa. LATAM: Latin America. EUR: Euro Area. SSA: sub Sahara Africa. OTHER: Other developed economies.

3. **Against this background, further reduction in European bank leverage is necessary, particularly because leverage levels are still high.** Some degree of deleveraging is desirable if it is carried out in an orderly fashion and if it involves exiting activities of doubtful economic value, thereby enhancing the soundness of the banking system. Moreover, despite some
adjustment, European bank leverage and reliance on wholesale funding remain relatively high compared to other regions where deleveraging also took place but started from lower levels. For many global European banks, the L/D ratios were above 100 percent and median asset values stood at almost 19 times equity, compared to around 10 times for their U.S. counterparts at end-2010 (figure 2).²

**Figure 3. Foreign Claims of European Banks on Emerging and Developing Countries**

Source: Bank for International Settlements (BIS), Consolidated Banking Statistics, table 9D.

**Figure 4. European Consolidated Banking System Leverage, 2007–11**

**Figure 5. European Consolidated Banking System Loan to Deposit Ratios, 2007–10**

Source: ECB Consolidated Banking Data.

² The limited decline in loan to deposit ratios may also be due to declining deposits as a result of flight to quality, as experienced by Greece, Ireland, Italy, and Spain.
4. Deliveraging becomes a cause for concern, however, to the extent that it occurs simultaneously across many banks and thus triggers a massive credit crunch with global spillover effects. Bank plans to scale back their activities can be sound and justified on an individual level, but raise concern if they are executed simultaneously and induce fire sales, with adverse cycles of liquidity and solvency problems that in turn could impede productive credit.

5. Such concerns about excessive deleveraging and a credit crunch have emerged as the Euro Area crisis intensified in the latter part of 2011. Since fall 2011, European banks have experienced increasing pressure to strengthen their funding and capital conditions; thus many observers feared that a simultaneous and disorderly deleveraging through massive sales of bank assets and reduced loans would trigger a severe credit crunch around the world. Such a possibility reinforced fears that a massive retrenchment by European banks would further dampen economic prospects around the world at a time when fiscal or monetary space in some countries is limited. Indeed, combined with the regulatory requirements to increase their capital and liquidity buffers ahead of the gradual phasing in of the Basel III requirements and the difficulty to raise fresh capital in a low valuation environment, banks have continued the process of deleveraging since the start of the financial crisis in 2008.

6. The purpose of this paper is to discuss the dynamics of European bank deleveraging and its potential implications for emerging market and developing economies (EMDEs). It discusses the factors driving deleveraging, its extent and channels of transmission to EMDEs, and the impact on global credit conditions. While massive liquidity support from the European Central Bank (ECB) is believed to have avoided an extreme scenario of massive global deleveraging, at least in the short term, the risk of deleveraging continues to occupy the minds of policymakers, financial market participants, and international financial institutions, as Euro Area tensions persist and European banks continue to face limited availability, and higher cost, of funding and concerns about the adequacy of their capitalization.

7. The paper argues that deleveraging and associated risks remain, but the severity of the impact will depend on the evolution of economic and market conditions as well as the actions of the policymakers. Overall, credit conditions across Europe deteriorated markedly in late 2011 and spillover effects are being felt around the globe, creating significant channels through which deleveraging could have disruptive consequences for credit conditions in emerging markets. Significant liquidity support provided by the ECB may have been a "game changer," at least in the short term, as it helped revive markets and limited the risk of disorderly deleveraging. However, the extent, speed, and impact of further deleveraging will be guided by the ultimate impact of ECB liquidity support, the resolution of the sovereign debt crisis in the Euro Area, the credibility of the European rescue fund as an effective firewall against contagion, and the effective coordination among key regulators and policymakers.
II. **What Is Driving European Bank Deleveraging?**

8. A combination of supply-side factors underlies the deleveraging pressure on European banks; namely, market pressures, bank funding and solvency problems, and regulatory requirements (figure 6). Banks that received state support during the crisis are required to shrink their balance sheets and are expected to accelerate the deleveraging trend. Others that did not receive state support have also been deleveraging, in some cases due to market pressures to clean up their balance sheets and to rebuild capital and liquidity buffers. In addition, some regulatory measures adopted by national and regional regulators have underscored the deleveraging pressures. Demand for bank loans has also been weak given fragile economic prospects in the Euro Area and continued deleveraging by borrowers themselves.

**Figure 6. Adverse Feedback Loops Associated with Disorderly Deleveraging**

9. Funding pressures have played a particularly important role in synchronizing deleveraging efforts across Euro Area banks (figure 7, panels a–d). Increased sovereign risks on bank balance sheets led to heightened concerns about bank solvency and counterparty risks. This put pressure on banks to shrink assets and boost capital ratios, including by selling sovereign bond holdings that, until recently, had been perceived as risk-free. As these events increasingly cast a long shadow on sovereign debt sustainability, borrowing costs reached all-time highs for peripheral Euro Area sovereigns in late 2011 (panel a). These cost levels were deemed unsustainable by the market and concerns spilled over to the core Euro Area sovereigns and banks through a dense network of pan-European financial linkages. Simultaneously, sovereign bid-ask spreads and the cost to insure against default rose sharply (panels b and c). Several waves of credit rating downgrades of sovereigns and banks (appendix table A.1) and their 2012 projected refinancing needs added to funding pressures. European banks could need about €1.7 trillion of funding during 2012-2015, and sovereigns need about €1.3 trillion in 2012 (based on Bloomberg, Morgan Stanley Research, SNL, and UBS Investment Research).
Figure 7. Liquidity and Funding Conditions in Europe

a. Bond Spreads over Bund

b. Country CDS

c. 10-Year Sovereign Bond Bid-Ask Spread

d. Market Funding Conditions

e. ECB Marginal Lending Facility and Deposit Facility

Sources: Bloomberg; ECB.
10. As a result, liquidity in dollar and euro funding markets tightened sharply, raising borrowing costs significantly (figure 7d). Interbank market lending came to a halt, as Euro Area banks refrained from lending to one another and preferred to park their excess cash at the ECB, forcing weaker banks to borrow at penalty rates (figure 7e). European banks also faced dollar shortages, as illustrated by a sharp retrenchment of U.S. money market funds in the latter half of 2011 and elevated dollar-euro swap costs (figures 7d and 8). The increase in the risk aversion of money market funds’ toward European banks has been reflected in the growing share of repos in their total euro-zone exposure. This has put pressure on dollar-denominated operations of European banks, including trade finance, which account for an average of around 15 percent of bank assets, and are often very short term (and hence susceptible to funding shocks).

**Figure 8. Declining U.S. Money Market Fund Exposure to European Banks**

![U.S. Money Market Fund Exposure to European Banks](image)

Source: Fitch Ratings, January 26, 2012.

*a Exposure measured in terms of money market funds’ exposure to bank CDs, CPs, repos, and other instruments as percent of the funds’ total assets under management.

11. The European firewall, a key instrument to prevent contagion and dampen the adverse feedback loops, has been unable to calm the markets. After months of debate, in March 2012, euro leaders increased the capacity of European bailout fund to about €800 billion, with the ability to provide €500 billion in fresh capital that would be available to support sovereign debt markets or bank recapitalizations. However, the increased amount has been viewed as insufficient for the refinancing needs of large peripheral countries such as Spain and Italy, if market conditions in the periphery were to deteriorate and trigger investor anxiety.

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3 The source of contention has been the disagreement between creditor and debtor states over the trade-off between stability considerations and retaining reform incentives in the periphery. The “fiscal compact,” as a first step toward fiscal convergence, agreed on December 2011, imposes budget discipline and provides some reassurance to creditor countries. As such, the compact was likely a necessary condition for an increase in the bailout fund.

4 For example, the uncertainty regarding private sector intervention (PSI) in Greece to contribute to debt sustainability brought about anxiety among market participations facing coercive haircuts on their holdings of sovereign debt and raised expectations that similar events could take place in other troubled economies.
12. Fears about deleveraging gained momentum after the European Banking Authority (EBA) mandated European banks in October 2011 to raise the core tier 1 ratio to 9 percent by June 2012. The EBA called for a buildup of “exceptional and temporary” sovereign capital buffers to address shocks to sovereign debt holdings, as reflected in market prices by end-September 2011, and the creation of an additional buffer to boost the core tier 1 capital ratio. The total shortage of capital to meet this requirement was estimated at about €115 billion, with the largest gaps falling on Greek, Spanish, Italian, and German banks (figure 9). While the EBA recapitalization exercise is part of a plan to improve confidence in the European banking system, it has also likely contributed to synchronized bank behavior and elevated deleveraging concerns. The EBA responded by announcing mitigating measures to limit the extent of deleveraging. For example, manipulation of risk-weighted assets (RWAs) by recalibrating internal models would not be permitted and would be subject to supervisory approval. The EBA would allow some sales of assets to comply with the capital target, provided that the sales do not affect the flow of lending to the economy.

13. Furthermore, a number of national regulators followed the EBA to introduce (additional) measures that would effectively bring forward the implementation of tighter capital requirements under Basel III (appendix table A.2). In late 2011, the regulatory authorities of Austria, Canada, Sweden, the United Kingdom, and the United States asked their large banks to hold a core Tier 1 capital ratio higher than envisaged under Basel III, ahead of the phase-in period of 2013–19. In addition to the tighter capital requirements, some national authorities took additional measures to enhance the resilience of their banking systems, broadly in line with the regulatory reforms considered at the global level. While market participants acknowledge the need to transition to a new, more sustainable banking model with stronger capital and liquidity buffers and greater reliance on self-financing, many have been concerned that the speed of transition and uncoordinated regulatory responses from national and global regulators create an unpredictable and costly regulatory environment, which is not conducive to lending and business planning.

14. Subsequently, many European banks announced plans to meet the EBA capital requirements through means other than raising fresh capital, which has increased the specter of deleveraging. Arguing that acquiring capital from the market is dilutive and difficult in an environment with low profitability, declining asset values (figure 10), and weak investor interest in European banks, many banks reported they would meet the capital target with a combination of: (i) retained earnings; (ii) management of RWAs, including by cutting activities with high risk weights and reassessing the models used to generate risk weights; (iii) engaging in

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For example, capital surcharge based on riskiness of their banks’ business models, living wills, and greater reliance on deposit funding in extending credit (Austria); countercyclical capital buffers and ring-fencing between retail and investment banking (United Kingdom); and heightened liquidity requirements, greater risk management responsibilities, restrictions on counterparty exposure between large financial companies, and living wills (United States).
asset-liability management; and (iv) shrinking balance sheets, including by divesting noncore operations in various jurisdictions to focus on core markets, and cutting jobs in certain locations and business units (box 1). Only a few banks have managed to raise capital through rights issues. Market estimates suggested that a worst-case scenario of meeting the requirement only by shrinking balance sheets would imply shedding €3.6 trillion, or 10.5 percent of total bank assets.\footnote{Assuming total assets are on average 2.8 times RWAs, based on a sample of internationally active European banks, and the estimated aggregate EBA capital shortage of €114.7 billion.}

\textbf{Figure 9. Aggregate and Individual Bank Capital Shortfalls for European Banks (Billion EUR)}

| Banks                  | Oct 2011 | Dec 2011 |
|------------------------|----------|----------|
| Greece                 | 30.0     | 30.0     |
| Spain                  | 26.2     | 26.2     |
| Italy                  | 15.4     | 13.1     |
| Germany                | 5.2      | 5.2      |
| France                 | 8.8      | 7.3      |
| Portugal               | 7.8      | 7.0      |
| Belgium                | 6.3      | 4.1      |
| Austria                | 3.9      | 3.6      |
| Cyprus                 | 1.5      | 1.3      |
| Norway                 | 0.3      | 0.2      |
| Slovenia               | 0.0      | 0.0      |
| Netherlands            | 1.4      | 1.4      |
| Sweden                 | 0.0      | 0.0      |
| Denmark                | 0.0      | 0.0      |

\textbf{Figure 9. Aggregate and Individual Bank Capital Shortfalls for European Banks (Billion EUR)}

\textbf{b. Top 20 Banks with Biggest Capital Shortfalls, Dec 2011}

| Banks                  | Oct 2011 |
|------------------------|----------|
| Banco Santander        | 15.3     |
| UniCredit              | 8.0      |
| BBVA                   | 6.3      |
| Deutsche Bank          | 5.3      |
| Deutsche Bank         | 3.7      |
| Credit Suisse          | 3.3      |
| Bank Austria           | 3.2      |
| Bank Austria           | 2.7      |
| Santander              | 2.6      |
| Erste                   | 2.5      |
| Raiffeisen             | 2.1      |
| Raiffeisen             | 2.1      |
| Raiffeisen             | 2.0      |
| Raiffeisen             | 1.8      |
| Raiffeisen             | 1.6      |
| Raiffeisen             | 1.5      |
| Raiffeisen             | 1.5      |

Source: European Banking Authority (EBA).
III. The Scope of Deleveraging and Associated Risks

15. Information as of early 2012 suggests that many banks have been selling or scaling down their businesses within or across borders. In particular, banks have been adjusting their business strategies to focus on “core” markets of strategic importance, and abandoning activities and locations that require higher capital or that do not offer profitable opportunities going forward: for example, because of adverse regulatory regimes. Appendix table A.3 lists recent actions undertaken by many banks.

16. Data also point to a marked deterioration in credit conditions across the Euro Area in late 2011, with some turnaround in the first quarter of 2012. Driven by more prudent risk management practices, European banks have been tightening lending standards since fall 2011 (figure 11). The ECB’s lending surveys (ECB 2012a, 2012b) show that credit conditions worsened sharply across the Euro Area in the fourth quarter of 2011, but, while remaining tight, the net tightening of credit standards fell substantially in the first quarter of 2012, both for loans to nonfinancial corporations and to households. Key drivers of tightening conditions in 2011 were a deteriorating economic outlook, limited access to market financing, and tight liquidity conditions. The easing of tighter lending conditions in 2012:Q1 mainly reflects milder pressures from cost of funds and balance sheet constraints, in particular regarding banks’ access to funding and their liquidity position. Banks report a sizeable fall in net demand for loans to corporations in 2012:Q1, but expect higher demand in 2012:Q2 and a further decline in the tightening of credit conditions.
Box 1. Deleveraging Strategies to Boost Capital Ratios

Deleveraging—the process whereby a bank reduces its (risk-weighted) assets per unit of capital to reach a higher capital ratio—can occur in various ways. Theoretically, a higher capital-to-RWA ratio can be achieved by keeping capital constant and reducing assets, by holding assets constant and raising capital, or by a combination of the two (see table below). RWA reduction can occur through a cut-back in the financing of projects or rollover of existing loan commitments, particularly those with high risk weights, such as lending to small and medium enterprises (SMEs) and retail lending; sales of nonstrategic operations; exits from riskier businesses subject to tighter capital requirements; or by adjusting the risk weights applied to assets by recalibrating internal models. Capital can be increased through retained earnings (by reducing dividends, raising prices, cutting costs, and the like), raising fresh capital, converting debt or hybrid instruments to equity, or through liability management by buying back a bank’s own debt trading below par values—a process that triggers an immediate capital gain.

### STRATEGIES TO IMPROVE CORE TIER 1 CAPITAL RATIO

- **Increase core capital**:
  - Raise fresh capital
  - Use retained earnings
  - Reduce dividends and bonuses
  - Increase efficiency
  - Pass on higher costs
  - Increase fee income
  - Convert convertible debt/hybrids to equity
  - Transfer capital from subsidiaries
  - Receive government capital support
  - Buy-back own bonds below par

- **Reduce risk-weighted assets**:
  - Adjust risk weights
  - Decrease (riskier) lending
  - Shift to less risky assets
  - Sell securities
  - Sell non-strategic operations

### Options to achieve objective

#### Risk factors

- Weak equity valuations
- Lower profits due to weaker (loan) demand and credit quality
- Higher funding costs
- Lower revenue
- NPLs increase
- Additional sovereign write downs

### Risk factors

- Fire-sale if banks herd
- Forced liquidations if funding conditions remains weak
- Assets held at amortized cost can hit capital when sold
- Credit crunch feeds negative growth/credit quality spiral

Source: Authors.

17. Notwithstanding relatively looser lending conditions, bank lending to firms and households improved only marginally after the record plunge in the last quarter of 2011 (figure 12a). The ECB data show that lending growth to the private sector has continued its downward path, growing at 0.6 percent in March 2012, compared to 2.6 percent in the second quarter of 2011, with nonfinancial corporate credit growing by 0.3 percent from a year ago (ECB 2011a, 2012c). Conducted between February 29 and March 29, but covering the six months from October 2011 when the Euro Area crisis was most intense, the most recent ECB survey of 7,500 SMEs showed a considerable worsening in the access to finance for Euro Area SMEs, especially for Greece, Ireland, and Portugal (ECB 2012d). The balance of SMEs reporting deterioration in

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7 In December 2011, household and firm lending plummeted by €5 billion and €32 billion, respectively.
the availability of bank loans over those reporting an improvement rose to 20 percent from 14 percent in the previous survey, which covered the first half of 2011 (figure 12b). While the deterioration was linked largely to the general economic outlook, companies also complained about the increased unwillingness of banks to provide loans, as well as increased borrowing costs and collateral requirements (figure 12c).

**Figure 11. European Bank Lending Conditions and Drivers**

| a. Net Percentage of Banks Reporting Tight Conditions | b. Factors Affecting Credit Standards |
|------------------------------------------------------|--------------------------------------|
| [Graph showing net percentage of banks reporting tight conditions from 2003 to 2012] | [Graph showing factors affecting credit standards from 2003 to 2012] |

Source: ECB Lending Survey.

18. **Available information suggests that certain areas of banking have been hit harder than others.**

- Less profitable, capital-intensive projects are disproportionately affected, including infrastructure finance and loans to SMEs. As discussed, the most recent ECB SME lending survey suggests that SMEs are experiencing difficulties in accessing bank credit across Europe. High lending rates are also discouraging UK SMEs from borrowing from banks, which reportedly failed to meet their SME lending targets in late 2011 (under “Project Merlin”). Access to credit is particularly difficult for SMEs in Central and Eastern Europe (CEE) and Central Asia.

- Similarly, global trade financing volumes were down 6 percent in the first nine months of 2011 compared to 2010. This decline was in part due to limited access to U.S. dollar funding by European banks, which account for about one-third of the trade financing market.\(^8\) Anecdotal information suggests that trade financing experienced a significant

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\(^8\) Large French banks, in particular, provide a significant share of trade financing in emerging Europe, Asia, Latin America, and West Africa (figure 13).
decline in end-2011 in some regions—such as Singapore and Hong Kong SAR, China—partially reflecting funding difficulties.

- European banks also have significant presence in the typically longer-term risky aircraft and car leasing/shipping business that requires scarce longer-term dollar funding and higher capital. As a result, many banks have reportedly been seeking to sell these operations (appendix table A.3).

**Figure 12. Corporate Lending by European Banks**

| a. Corporate Lending by European Banks, Jan 2010–Mar 2012 | b. Net Fraction of Firms Reporting Tightening Availability Conditions, Mar 2012 |
|----------------------------------------------------------|----------------------------------------------------------------------------------|
| ![Graph](image1.png)                                    | ![Graph](image2.png)                                                           |
| ![Graph](image3.png)                                    | ![Graph](image4.png)                                                           |

**c. Net Fraction of Firms Reporting Tightening Availability Conditions, Mar 2012**

Source: Panel a, ECB Statistics—MFIs Loans to Non-financial Corporations; Panels b and c, ECB Survey (SAFE).
19. Lending cuts by European banks focused primarily on dollar-denominated loans and loans with higher risk weights, as suggested by March 2012 data from the Bank of International Settlements (BIS). In particular, European banks reduced funding contributions to new syndicated, bilateral leveraged- and project-finance loans between the third and fourth quarter of 2011. Banks with EBA capital shortfalls reduced their lending sharply for all categories—especially leveraged loans, aircraft/ship leasing, and project and trade finance (figure 14). Notably, increased financing from other banks, asset managers, and bond market investors largely compensated for the cuts by European banks in the third quarter of 2011, leaving the overall volume of new syndicated and large bilateral loans essentially the same as in the third quarter of 2011. Trade financing, in particular, seems to have been picked up by Asia-based and other lenders, helping to limit its overall decline.

![Figure 13. Potential Impact of Deleveraging on Trade Finance](image1)

![Figure 14. Changes in New Lending by Type of Lender and Loan](image2)

Source: Panel a, Citigroup, Barclays, Deutsche Bank; Panel b, BIS Quarterly Review, March 2012.

20. Additional indications provide some cautious optimism that a disorderly process of massive global deleveraging may have been avoided, at least in the short term:

- Capitalization plans submitted by European banks to the EBA in January 2012 suggest that banks intend to meet the 9 percent core Tier 1 capital target primarily through direct capital impact measures (new capital and reserves, conversion of hybrids, issue of convertible bonds, retained earnings, and the like), and that the shedding of assets will play a small role. More specifically, the plans suggest that 23 percent of the recapitalization amount will be met through RWA reductions: 10 percent of this is expected to come from asset shedding—sale of assets (65 percent), cuts in loan portfolios...
(35 percent), and the rest from risk-weight modeling changes and other mitigating measures (figure 15).

**Figure 15. Capital Impact of Banks’ Planned Capitalization Efforts**

![Pie chart showing capital impact of banks’ planned capitalization efforts.](chart)

- **In percent of aggregate capital shortfall**
  - New capital+Reserves (26%)
  - Conversion of hybrids to equity (22%)
  - Issue of CoCos (6%)
  - Retained earnings 2012 (16%)
  - Other mitigating measures (7%)

- **Source:** European Banking Authority (EBA), February 2012.

- However, while these plans are still being evaluated by the EBA and national supervisors and the implied magnitude of deleveraging as a direct result of the EBA recapitalization requirements was much less than initially feared by the markets, these plans do not eliminate the need for, and possibility of, banks meeting their capital shortfalls through asset reductions, particularly if funding difficulties and economic and regulatory uncertainty persists. The April 2012 *Global Financial Stability Report* (GFSR) of the International Monetary Fund (IMF 2012a) states that its assessment of the potential European bank deleveraging is much larger than suggested by the EBA’s under different policy assumptions, with the baseline forecast suggesting asset sales of $2.6 trillion over the next 18 months.

- The expansion of the Euro Area firewall capacity has been a necessary step to improve market confidence. However, many observers continue to believe that the expanded capacity is unlikely to cover the refinancing needs of the periphery and hence unlikely to provide an effective protection against contagion, given the limited amount of funds that would be available for fresh lending (box 2).
Box 2. The European Bailout Fund as a Firewall Against Contagion?

An essential component of the three-pronged European Union (EU) rescue package announced on October 26, 2011 to resolve the Euro Area debt crisis was the European Financial Stability Fund (EFSF), established by the Euro Area Member States in May 2010 to provide an effective firewall to contain contagion in the Euro Area. The EFSF’s mandate is to safeguard financial stability in Europe by providing financial assistance to Member States in financial difficulties with appropriate conditionality, by intervening in the debt primary and secondary markets, by acting on the basis of a precautionary program, and by financing recapitalizations of financial institutions through loans to governments. The EFSF will be succeeded by the European Stability Mechanism (ESM), a permanent rescue fund to be launched as soon as Member States representing 90 percent of the capital commitments have ratified.

In March 2012, EU ministers reached a decision to increase the capacity of the European bailout fund (EFSF/ESM) to ensure that the fund had sufficient fresh lending capacity after accounting for the already committed resources to Greece, Ireland, and Portugal. After some deliberations, policymakers have reached a compromise solution with the following main components:

- The combined lending capacity of the EFSF/ESM will be €700 billion, the sum of the €500 billion permanent ESM capacity and the €200 billion of long-term EFSF preexisting commitments.
- To reach the full €500 billion ESM capacity, euro leaders agreed to expedite the schedule to transfer paid-in capital. Full capacity will be reached in 2014:H1 faster than five-year period envisioned in the ESM Treaty.
- Residual EFSF capacity will be available until mid-2013—the moment the EFSF will be phased out—to ensure a full fresh lending capacity of €500 billion.
- Member states committed to bilaterally transfer €150 billion to the IMF.
- Thus, together with the existing total of €100 billion from the EFSM and the bilateral Greek loan facility, the overall size of the firewall is now €800 billion (or more than $1 trillion).

As the temporary EFSF vehicle would phase out, policymakers recognize that the permanent ESM facility would only have €300 billion in new lending capacity, given pre-existing commitments to the Program countries. While this amount may be sufficient to deal with problems in smaller countries, the combined funding needs of Spain and Italy for 2012–14 alone are about €860 billion, excluding potential additional needs to finance bank recapitalizations. This raises market concerns that the rescue fund may be unable to play the role of an effective firewall against contagion compared to refinancing needs in the periphery.

The firewall boost has been a source of contention because of the delicate trade-off between stability and retaining reform incentives. The firewall was originally conceived to stem contagion and avoid a self-fulfilling illiquidity/insolvency equilibrium triggered by sovereign market participants who may exit as conditions in the periphery deteriorate. However, the threat of such a run provides a strong incentive to introduce austerity measures to achieve fiscal consolidation. Thus, a strong fire-wall may reduce market pressures which may lead to moral hazard problems and prevent necessary action by peripheral governments. As such, firewall objectives of northern and southern Euro Area members are not completely aligned. The “fiscal compact” was therefore an important step for northern states—Germany in particular—to pave the way for a boost in the firewall.

- Massive amounts of ECB liquidity support since December 2011 are believed to have averted an extreme fire sale scenario and a subsequent credit crunch. In an attempt to short circuit the adverse feedback loops, the ECB provided massive liquidity support to European banks since December 2011. The two 3-year longer-term refinancing operations (LTROs) in December 2011 and February 2012 provided the Euro Area banks with more than €1 trillion of cheap loans (at 1 percent interest rate), which temporarily helped (until about April) improve funding conditions, boost market confidence, and
jump-start lending activity in the frozen term-funding market which is burdened with upcoming refinancing needs of sovereigns and banks. Participation (523 banks and 800 banks in the two operations, respectively) was encouraged by widening the eligible collateral and reducing reserve requirements. The dollar swap facility established by the ECB, along with other major central banks cutting the cost of their dollar swap lines, also helped improve dollar funding costs.

21. As noted, the improvement in funding conditions is yet to materialize in actual credit developments. Loans to the private sector by Euro Area banks continued to weaken in March 2012. Many banks are believed to have used the borrowed liquidity to retire debt to improve funding profiles and finance a profitable bond carry trade. With banks borrowing at 1 percent from the ECB and investing in high-yielding bonds, particularly peripheral government securities, the ECB effectively provided indirect support to sovereign bond markets.9 The positive impact of sovereign bond purchases and improved bank funding conditions were reflected in rising bank equities and declining sovereign bond yields and bid-ask spreads. The supportive impact on lending, on the other hand, is expected to take time to unfold, in part reflecting weak demand for loans, weak economic prospects, and fragile investor and borrower confidence, given the continued tensions in the Euro Area, and in part continued deleveraging by banks and the private sector to reduce the indebtedness built up in the precrisis period.10 Moreover, some peripheral banks are facing noticeable reductions in deposits, which could further inhibit private sector lending.11

22. At the same time, subdued credit conditions also reflect continued worries that while the LTROs have bought time for banks and sovereigns, key underlying problems remain. Market participants are concerned that reduced funding pressures due to ECB support may have diminished incentives to restructure balance sheets and to seek alternative, more sustainable ways to boost capital. Likewise, the LTROs can perpetuate unviable “zombie” banks, which may continue to take risks. For governments, pressures to reform may have eased as borrowing costs decline. A flood of liquidity may also harbor the risk of bubbles in the bond, equity, and real estate markets. The encumbered LTRO collateral that banks put up has increased risk for senior bank bondholders, which might inhibit unsecured market funding going forward. Last, by loading up on sovereign bonds, banks have reversed a selling trend, realigning their fate

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9 Most of the net €190 billion liquidity infusion of the first LTRO is believed to have been used by Spanish and Italian banks to purchase bonds with high yields. The larger LTRO in February (net ~€320 billion) is believed to have improved lending conditions, as more small banks participated and carry trade became slightly less attractive. Spanish banks bought €20.1 billion of government bonds in March (or €81 billion in the preceding four months), and Italian banks bought €24 billion of government debt (or €67 billion in the preceding four months), bringing Euro Area bank purchases to €142 billion in 2012:Q1. With most of the liquidity injection used by Italian and Spanish banks, the sovereign yield curves for Spain and Italy have decreased further, particularly on the short end.

10 Indeed, private credit conditions remained weak in February 2012, and only an estimated €10 billion of the December 2011 LTRO (5 percent) reportedly found its way to the real economy as credit.

11 The ECB data shows that Greek bank deposits fell from a peak of €245 billion in end-2009 to €170 billion in February 2012, while Spanish deposits fell by €6.4 billion in February 2012, after a €17 billion fall in January 2012.
with that of the sovereign. Dependence on ECB funding—particularly by Greek and Portuguese banks, and by smaller banks in Italy and Spain—may, in effect, create unintended consequences down the road.

23. Moreover, there are signs that additional risks may be emerging, partly in response to the tightening of regulatory requirements for banks and reduced bank credit. Signs of bank disintermediation in the Euro Area have become evident, with large European companies faced with markedly higher fees, and margins on bank loans increasing their reliance on bond and capital markets since the crisis.\(^\text{12}\) There is also anecdotal evidence of risk being squeezed out of banks into the “shadow” banking system as banks are discouraged from engaging in certain (riskier) activities. Banks have also been engaging in deals with private equity and hedge funds to preserve bank capital, including by slicing various exposures, repackaging them, and then shifting them from their balance sheets. Despite its growing importance—the sector reached 25–30 percent of the total financial system in 2010 (FSB, 2011a,b)—the shadow banking system is not regulated to the same degree as traditional banking, and can thus be a more fertile breeding ground for risks.

IV. TRANSMISSION CHANNELS TO EMERGING MARKET AND DEVELOPING COUNTRIES

24. Deleveraging pressures on European banks and tight credit conditions have important implications for emerging markets and developing economies in a highly integrated global financial system. The impact of deleveraging and tighter credit conditions is being transmitted to the rest of the world through various channels, including: (i) reduced cross-border claims of European banks on the public, private, and banking sectors of emerging market and developing economies; (ii) sales or downscaling of noncore, nondomestic businesses in host economies; (iii) deleveraging by subsidiaries and branches of foreign banks faced with reduced funding flows from parents, or parent attempts to transfer dividends, capital, or liquidity to headquarters; and (iv) increased cost of borrowing for subsidiaries, either as a result of a general worsening of funding conditions or as investor concerns about parents generate anxiety about the overall health of banking groups.

25. Accordingly, a country’s vulnerability to European bank deleveraging depends on a combination of factors. These include: (i) the size of cross-border claims of European banks relative to the recipient’s economy, particularly where local affiliates play a key role in the

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\(^{12}\) Based on an analysis of 161 large corporates, a Fitch report found that European companies increased their reliance on bond markets since the crisis, as European banks faced a multitude of market and regulatory pressures, resulting in a reluctance to lend to companies without markedly higher fees and margins charged on loans. A more difficult banking environment, coupled with a growing investor appetite for bonds, have, in turn, made bond issuance more attractive, with the median share of bonds in total debt rising from 51 percent in 2008 to 69 percent in 2010.
provision of credit to the private sector but are not systemic to the overall banking group;\textsuperscript{13} (ii) the maturity (hence reversibility) of cross-border claims; (iii) whether the local affiliates rely on a wholesale (cross-border) funding model; and (iv) the capacity and willingness of other institutions and markets to step in. Parent bank retrenchment could destabilize the local financial system and affect economic activity, especially where host countries lack well-developed capital markets and alternative sources of nonbank financing.

26. **Notwithstanding the slowdown in their growth, European banks’ foreign claims on the rest of the world remain large.** This suggests that a disorderly retrenchment can have adverse consequences. Foreign claims\textsuperscript{14} of European banks grew very rapidly from 2005 to 2008 and are a dominant source of international funding relative to the funds provided by other BIS-reporting banks:

- European banks’ foreign claims on EMDEs fell sharply by $230.1 billion to $3.9 trillion in the third quarter of 2011 from the previous quarter. This drop represents the most significant slowdown since the 15 percent contraction during 2008. In relative terms, Sub-Saharan Africa (SSA) (with 9.2 percent drop), Latin America and Caribbean (LAC) (8.7 percent), and emerging Europe (ECA) (7.2 percent) were most affected (figure 16). These claims fell further in the last quarter of 2011 by $188.1 billion to $3.7 trillion, affecting all regions negatively.

- Relative to other banks, European bank claims on EMDEs are large (figure 17a) and currently make up 62 percent of the total $6.0 trillion. However, that share has been declining steadily from its 73 percent peak in 2008:Q1, suggesting European banks’ EMDE claims are decelerating relative to other BIS banks (figure 17b). In terms of the composition of their claims, European banks have shifted out of ECA in favor of East Asia (EAP), although the largest exposure is still to the ECA region (36 percent). European bank claims are also large relative to recipient countries’ GDP, especially in ECA, with a median of 55 percent of GDP. Emerging Europe is therefore particularly exposed to European bank retrenchment.

- Current information suggests that supply side problems for credit have not yet been uniformly felt, but are limited to some countries. Some emerging economies report an accelerated loan contraction by European banks since late 2011: these include Chile; Hong Kong SAR, China; and ECA countries, where the deleveraging European banks are

\textsuperscript{13} For example, for Greece, Austria, and Belgium, 77.5, 30, and 23 percent, respectively, of parent company profits come from profits in the banks’ CEE operations. UK banks obtain 32 percent of parent company profits from Asia, and Spanish banks earn 27 percent of their group profits from Latin America.

\textsuperscript{14} Including consolidated cross-border claims and local claims of foreign affiliates in foreign and local currencies of banks reporting to the BIS. The claims are on a country’s public, private, and banking sectors, with intercompany, parent-affiliate flows netted out.
most active. Withdrawal of European lenders in the Middle East region is also believed to underlie the recent rush to issue Islamic bonds.\textsuperscript{15}

**Figure 16. Change in Cross-Border Claims of BIS reporting Banks by Region and by Country, 2006:Q1–2011:Q4**

Source: BIS, Consolidated Banking Statistics, table 9C.

\textsuperscript{15} See The Economist, “Reshaping Banking,” April 19, 2012, http://www.economist.com/node/21553015/print.
Figure 17. Foreign Claims of European Banks on EMDEs (percent of GDP)

| a. Foreign Claims of European Banks, 2000:Q1–2011:Q4 (Median) | b. European Bank Claims to Total Claims on EMDEs, 2000:Q1–2011:Q4 (percent) |
|---------------------------------------------------------------|------------------------------------------------------------------------------|
| ![Graph](image1.png)                                          | ![Graph](image2.png)                                                        |

| c. Foreign Claims of GIIPS Banks (2000:Q1–2011:Q4) (Median)   | d. Cross-Border Bank Claims (2000:Q1–2011:Q4) (Median)                      |
|---------------------------------------------------------------|------------------------------------------------------------------------------|
| ![Graph](image3.png)                                          | ![Graph](image4.png)                                                        |

| e. Local Claims of Foreign Affiliates in All Currencies, 2000:Q1–2011:Q4 (Median) | f. Loan to Deposit Ratio, 2010 (In percent)                                  |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| ![Graph](image5.png)                                                            | ![Graph](image6.png)                                                         |

Sources: Panels a–e, IMF, *World Economic Outlook*, and BIS, Consolidated Banking Statistics, table 9A, table 9B, table 9C; Panel f, World Bank, FinStats.
27. **Countries that are heavily dependent on banks from the European periphery—Greece, Ireland, Italy, Portugal, and Spain (GIIPS)—are also exposed.** The subsidiaries of GIIPS banks, which are active in a number of CEE countries and have large capital gaps under the EBA stress tests, are also particularly vulnerable to parent bank retrenchment. Although GIIPS claims are generally under 1 percent of GDP for most countries, the country median exposures for CEE (to Greek and Italian banks) and for Latin America (to Spanish banks) are relatively significant, at a median 7.7 percent and 5.6 percent of GDP, respectively. The rapid growth of CEE claims of GIIPS banks since 2006 is particularly striking (figure 17c).

28. **Dependence on cross-border flows from European banks is an important channel of contagion.** Cross-border bank flows (foreign claims excluding the claims of local offices of foreign banks in a given host country) are relatively large and have been growing in some regions since 2005, particularly in CEE (figure 17d). The claims have declined since 2008, especially in the last quarter of 2011, across most regions: amounting to US$48 billion in Asia, US$40 billion in CEE, US$20 billion in MENA and SSA, and US$6 billion in Latin America. Meanwhile, rollover risk has increased along with a reduction in the maturities of claims. Flows to advanced European countries have also decreased, driven by a retrenchment from the European periphery. At least 50 percent of median cross-border claims across regions have less than a two-year maturity.

29. **Local affiliates of foreign banks play a large role in many emerging markets; recently their claims declined, particularly affecting the regions that rely on a wholesale cross-border funding model.** Claims of foreign affiliates have grown rapidly since 2005, particularly in emerging Europe (figure 17e) where foreign bank ownership is prevalent (figure 18), with median claims of affiliates around 30 percent of host country GDP, compared with a low 10 percent in Asia and Latin America. After 2009, the role of foreign affiliates gradually declined in the Middle East and in Africa. However, foreign affiliates are almost back to 2009 levels in Africa. The level of local claims dropped in most regions in 2011:Q4, making foreign affiliates of global European banks that are dependent on parent funding particularly vulnerable. In Latin America, the regional average of country median L/D ratios of European bank subsidiaries is 92 percent, compared with 123 percent in CEE, indicating that Latin American banks are less dependent on parent funding. In early 2012, European officials, private banks, and international financial institutions (IFIs) agreed on a set of principles in Vienna to reduce the CEE region’s vulnerability to European parent bank retrenchment as capital and funding pressures increase.16

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16 The meeting, dubbed Vienna Initiative 2.0, followed the first phase of the initiative launched in 2009 at the height of the global crisis to help maintain financial sector stability in emerging Europe, including by encouraging cross-border banking groups to maintain their exposure to the region and adequate solvency levels for their subsidiaries. (See World Bank, 2012.)
30. The impact of deleveraging could be particularly significant for those countries that lack well-developed capital markets and alternative sources of stable nonbank financing to substitute for bank credit. The CEE region, in particular, has been experiencing a tightening of credit standards and a sharp slowdown in loan growth, given strong ownership links with Euro Area banks, an overreliance on nondeposit funding to finance credit expansion (figure 17f), and relatively shallow capital markets. Constrained credit could particularly affect SMEs because only the largest companies would likely be able to deflect some of the impact by relying on bond market financing.

Figure 18. Foreign Bank Ownership, 2010

Source: World Bank. AS: Asia; CEE: Central and Eastern Europe; MENA: Middle East and North Africa; WH: Western hemisphere; AE: Advanced economies; OA: Other advanced economies.

V. IMPACT ON EMERGING MARKET CREDIT CONDITIONS

31. Euro Area problems are already producing ripple effects around the globe. Recent lending surveys by the Institute of International Finance (IIF) suggest that emerging markets have also been facing tighter credit conditions since the third quarter of 2011. Moreover, survey respondents explicitly stated that they had been adversely affected by the fallout of the euro debt crisis. Although less drastically than in the last quarter of 2011, the deterioration in lending conditions has continued for the third consecutive quarter in 2012:Q1 (figures 19a and 19b). While tighter underwriting standards, reduced loan demand, and rising nonperforming loans (NPLs) have all contributed to the deterioration of credit conditions in emerging markets, the most significant factor appeared to be an erosion of local and global funding conditions (most markedly in CEE, Africa, and Middle East).17

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17 Of the banks surveyed, 63 percent of the banks in emerging Europe reportedly acknowledged a tightening of credit standards due to the financial strains in the euro area in the last quarter of 2011 (IIF 2012).
32. Policy measures taken by central banks in emerging and mature economies in recent months (especially by the ECB) are believed to have improved funding conditions markedly, but lending conditions still remain weak. The slowdown in the associated deterioration of lending conditions in the first quarter of 2012 seems most pronounced in CEE, which has the tightest funding links with the European banks. Nonetheless, while improving, credit conditions continue to remain tight, reflecting economic uncertainty in the local and advanced country economies. In fact, a number of CEE, Asian, and Latin American subsidiaries of European and U.S. banks have seen their credit ratings downgraded following rating actions on the parent banks, including BBVA, Citigroup, Goldman Sachs, HSBC, KBC, Santander, and Unicredit (see appendix table A.3).

Figure 19. Emerging Market Lending Conditions and Drivers

33. Host country banking systems may also be vulnerable to parent bank attempts to cut back their host operations and transfer resources from subsidiaries. In addition to affecting local credit conditions, such attempts may trigger mutually harmful policy responses from host authorities, hurting the banking group in turn—a source of tension that requires close coordination and cooperation between home–host regulatory and supervisory authorities:

- As noted, some European banks have been withdrawing, to varying degrees, from CEE, Latin America, Asia, and the Middle East: for example, by cutting back on capital-intensive activities; reducing jobs; and withdrawing from jurisdictions with less profitable operations and higher dollar funding costs to focus on “core” markets, including the home market as well as strategically important host markets (see appendix table A.3). While “home bias” has emerged, in part, as a result of the need to shrink balance sheets
and shore up capital and liquidity for the parent bank, it also reflects home regulators’ preference that the banks under their oversight have limited exposure across borders and preserve the available funding and capital for stressful times at home.

- The parent’s efforts to cut back its host operations and transfer resources from its affiliates may, in turn, threaten the financial condition of its affiliates. Such divestments had an impact on the value of the subsidiaries’ share prices. Moreover, where global banks are systemically important in a host country and support provision of credit through their local offices (such as in CEE and, to some extent, in Latin America and Africa), scaling down a banking group’s operations could destabilize the local financial system and, in turn, force the subsidiaries to deleverage and contract credit. The resulting credit crunch would harm corporate prospects, slow growth, and trigger a rise in nonperforming loans and corporate failures, which ultimately undermine the asset quality of the overall banking group.

- Moreover, nationalistic regulatory responses by host regulators to parent withdrawals (for example, in the form of ring-fencing or heightened scrutiny and constraints on intra-group capital and liquidity movements), in turn, make host operations less attractive, while hindering the group’s ability to manage liquidity and credit risks. Some host countries are considering making foreign banks operate as subsidiaries, rather than branches, in order to have better control over local affiliates and to enhance their self-sufficiency (Fiechter et al. 2011). Some parent banks are reportedly planning to sell (parts of) these host operations. For EMDEs with shallow capital markets and weak deposit bases, such exits could have significant implications for credit and the economy, which would compound the impact of slowing capital inflows since 2011 (figure 20).

**Figure 20. Net Capital Inflows to Developing and Emerging Market Countries**  
(Percent of GDP, 2004-2011)

![Figure 20](image_url)
34. Some illustrative computations provide a sense of the potentially significant magnitude by which European bank deleveraging could affect EMDE credit. Subject to a number of assumptions and caveats associated with the limited availability of granular data, the computations attempt to get a suggestive estimate of the effects of the deleveraging, using the regional credit distribution of European banks under various scenarios. Starting from the situation where European banks collectively have €1.64 billion of EMDE credit, or about 7.3 percent of their total loan portfolio (table 1, figure 21), we consider two deleveraging objectives: (i) a short-term objective, to comply with the EBA recapitalization requirements by June 2012; and (ii) a longer-term objective, to reduce the assets/equity ratio to a desirable level.

We account for the following drivers: (a) the ability of banks to raise capital (through rights issues, retained earnings, and the like); (b) the extent to which deleveraging is necessary through asset reduction; and (c) the extent to which necessary asset reduction occurs through the loan book. Simplifying assumptions are discussed in box 3.

**Box 3. Simplifying Assumptions Underlying the Simulations of the Credit Impact of Deleveraging**

- All factors mentioned above are taken equally across European countries. For example, it might be assumed that all countries are able to raise their capital levels by 20 percent. However, banks in core European countries are likely better positioned to raise capital than their peers in the periphery.

- Any reductions in credit occur proportionately across regions. This assumption ignores the possibility that emerging markets might be hit disproportionately due to home biases. On the other hand, foreign bank branches and subsidiaries of European banks that are funded in local markets might be able to better absorb loan deleveraging pressures.

- Assets are 2.8 times RWAs. This figure is based on the median in a recent sample of internationally operating banks.

- The relative regional credit distribution of some countries is equal to the distribution average of all other countries, given the lack of information on regional distributions of emerging market credit for some countries.

35. In the short term, banks need to adjust their balance sheets to comply with EBA requirements. A worst-case scenario implies a €245 billion reduction in EMDE credit.

Banks that were identified as having a capital shortfall in EBA stress tests in 2011 have €1.35 trillion outstanding in EMDE credit (about 8.3 percent of their total loans). In a worst-case scenario (Scenario 1), if banks need to meet the full €114.7 billion capital shortfall fully through deleveraging and if the deleveraging occurs fully through the loan book, the estimated decline in EMDE credit could be as much as €245 billion, or 19 percent of the outstanding EMDE credit (figure 22). If banks are able to raise capital to cover half the shortfall (Scenario 2), the estimated short-term impact on EMDE credit would be lower, at €131 billion (10 percent of their

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18 These figures are taken from IMF Financial Soundness Indicators.
19 Given the simplifying assumptions used in the simulations (box 3), the results should be interpreted as suggestive.
outstanding EMDE credit). The impact is smaller (€68 billion) if only 50 percent of the necessary asset deleveraging occurs via the loan book (Scenario 3).

36. The information contained in banks’ submitted capital plans to the EBA suggests a much smaller impact on EMDE credit in the short term. The plans imply that only 23 percent of the shortfall comes from asset reduction measures, with only 10 percentage points of the total covered by asset sales. As a result, the impact is much smaller because a large portion of the shortfall is covered by capital-raising measures. A range of scenarios analyzed imply a decline of €11 billion to €27 billion (1–2 percent of banks’ EMDE credit), concentrated mainly in Europe and Latin America. The impact would be €27 billion if deleveraging occurs fully via the loan book (Figure 22, Scenario 4). If around 40 percent of deleveraging occurs via loan cuts (as the EBA capital plans imply), the impact would be an €11 billion cut in credit (Scenario 5).

Table 1. Regional Breakdown of European Bank Credit in Emerging Countries (€Billion)

| Country          | Africa | Central and Eastern Europe | CIS | Developing Asia (incl. China) | Middle East | Western Hemisphere | Total EM credit |
|------------------|--------|----------------------------|-----|-------------------------------|-------------|--------------------|-----------------|
| Greece           | 0.0    | 9.4                        | 0.3 | 0.4                           | 0.0         | 4.4                | 14.5            |
| Spain            | 1.2    | 29.2                       | 1.8 | 3.0                           | 1.9         | 293.9              | 331.0           |
| Italy            | 2.1    | 128.9                      | 0.0 | 0.0                           | 0.0         | 0.0                | 131.1           |
| Germany          | 4.9    | 25.9                       | 10.7| 13.1                          | 6.8         | 48.0               | 109.6           |
| France           | 56.1   | 74.7                       | 40.2| 76.4                          | 58.2        | 51.2               | 356.8           |
| Portugal         | 7.0    | 11.3                       | 0.1 | 0.1                           | 0.3         | 6.6                | 25.6            |
| Belgium          | 0.9    | 53.9                       | 2.3 | 2.4                           | 1.7         | 10.3               | 71.5            |
| Austria          | 0.6    | 101.2                      | 14.9| 3.5                           | 3.0         | 0.8                | 123.9           |
| Cyprus           | 0.5    | 2.2                        | 6.5 | 0.9                           | 0.4         | 0.4                | 10.8            |
| Slovenia         | 0.0    | 0.0                        | 0.0 | 0.0                           | 0.0         | 0.0                | 0.0             |
| Netherlands      | 1.6    | 45.6                       | 9.7 | 20.3                          | 6.3         | 26.3               | 109.8           |
| Denmark          | 0.2    | 1.6                        | 0.2 | 0.4                           | 0.2         | 0.3                | 2.9             |
| UK               | 47.8   | 20.6                       | 7.9 | 117.1                         | 51.4        | 65.5               | 310.4           |
| Hungary          | 0.0    | 0.0                        | 0.0 | 0.0                           | 0.0         | 0.0                | 0.0             |
| Ireland          | 0.1    | 1.6                        | 0.0 | 0.1                           | 0.2         | 0.6                | 2.6             |
| Luxembourg/      | 2.5    | 22.4                       | 4.4 | 3.2                           | 2.0         | 10.5               | 45.0            |
| Total (€Billion) | 125.47 | 528.70                     | 99.08| 241.11                        | 132.75      | 519.08             | 1646.19         |
| Percent          | 7.6    | 32.1                       | 6.0 | 14.6                          | 8.1         | 31.5               | 100.0           |

Source: ECB Consolidated Bank Statistics; IMF, Financial Soundness Indicators; Authors’ calculations.

37. Given that European bank leverage ratios remain high, deleveraging will likely continue, with an additional impact on EMDE credit. European bank assets are still around 18 to 20 times equity, which is high internationally and may need to come down (to, say, 12 times equity). A further decline in leverage could happen through capital increases, but asset reduction may also be needed to reach a desired level. In a worse-case scenario (Scenario 1), banks would deleverage fully through loan reduction, in which case the impact on EMDE credit could amount to €978 billion, or 59 percent of outstanding EMDE credit (figure 23). If 50
percent of deleveraging were to occur via the loan portfolio, the impact would be €501 billion, or 30 percent of EMDE credit (Scenario 2). If banks are able to raise equity by 20 percent—as they did after the 2007–08 crisis—and the residual deleveraging occurs fully by loan reduction, the estimated decline in EMDE credit could amount to €676 billion, or 41 percent of EMDE credit (Scenario 3). Scenario 4 shows the impact if half of the asset shedding occurs through loans (€338 billion, or 21 percent).

Figure 21. European Banks' EMDE Credit (€billion and percent)

Figure 22. EBA Recapitalization Impact on EMDE Credit across Simulation Scenarios

### Table: Result of EBA Capital Shortfall (€billion)

| Scenario | Fraction of shortfall reached via deleveraging (%) | Fraction of deleveraging via loans (percent) |
|----------|--------------------------------------------------|---------------------------------------------|
| 1        | 100                                              | 100                                         |
| 2        | 50                                               | 100                                         |
| 3        | 50                                               | 50                                          |
| 4        | 10                                               | 100                                         |
| 5        | 10                                               | 40                                          |

Source: Authors’ calculations.
38. The ongoing risks associated with European banks and sovereigns, as well as the long-term adjustment need in bank balance sheets, therefore, imply that adverse credit conditions may continue for some time, for Europe as well as EMDEs. The risk of substantial deleveraging therefore has an important bearing on the level of economic activity and recovery in a given region. A review of country experiences with crises and recoveries suggests that economic recovery without credit growth is possible; in fact, “creditless recoveries” are not all that uncommon (box 4). Experience also suggest, however, that creditless recoveries tend to be weaker and take longer to return to trend growth, particularly when they are preceded with a credit boom and banking crises—as in the current crisis.

Figure 23. Longer-Term Deleveraging Impact on EMDE Credit across Simulation Scenarios

VI. CONCLUSIONS AND POLICY IMPLICATIONS

39. The true extent of European bank deleveraging and its potential implications for the rest of the world have continued to occupy the minds of policymakers and financial market participants. European banks tightened their lending terms and conditions, reduced cross-border lending to EMDEs, put assets on sale across various business lines and geographies, and slowed down their credit extension to the private sector since the last two quarters of 2011, with the lending cuts focused primarily on dollar-denominated loans and riskier assets. Tighter lending conditions have spilled over to EMDEs as a consequence of tight funding conditions and credit standards, European bank retrenchment, and increasing borrowing costs. While many observers acknowledge that deleveraging is inevitable and even desirable as financial institutions clean up and restore the health of their balance sheets, concerns have centered on the possibility of simultaneous and disorderly balance sheet adjustments that could result in massive deleveraging at a global scale and undermine the already weak prospects of a global economic recovery.
Banking crises and systemic banking crises are not just a thing of the past. Recent analysis on the countries in Central Europe (CEE) (UniCredit 2012) also finds that some of the countries in the region that have been hard hit by large banking shocks and/or experienced a significant deleveraging process have a relatively high probability of seeing a creditless recovery, reflecting supply side or financial sector factors (figure 2).

**Creditless recoveries tend to be weaker and take longer to return to trend growth.** On average, output growth is about a third lower in creditless recoveries than in recoveries accompanied by credit growth, Abiad, Dell’Ariccia, and Li (2011) found. As a consequence, output tends to be slower to return to trend: within three years from the end of the recession in less than half of the creditless recoveries, compared to over two-thirds of recoveries with credit. A study by McKinsey Global Institute (2010), which analyzed and categorized 32 historical episodes of deleveraging, also found that those deleveraging episodes associated with “belt tightening” (deleveraging in which credit growth lags behind GDP growth) tend, on average, to return to a lower trend growth in the period after deleveraging (figure 3).

**In principle, weaker growth associated with creditless recoveries reflects subdued demand or supply side factors due to financial market difficulties or imperfections.** Analysis by Abiad, Dell’Ariccia, and Li (2011) supports the hypothesis that, in general, creditless recoveries are associated with financial market difficulties or supply side problems, and that those components of aggregate demand most dependent on credit (consumption and investment) also contribute to the difference in growth rates between the two types of recovery (figure 4). However, in relative terms, the contribution of investment falls by much more. Similarly, a growth accounting exercise finds that creditless recoveries are associated with lower capital accumulation (consistent with the results of the demand decomposition) and total factor productivity (TFP) growth. The lower TFP growth may reflect the fact that younger start-up firms, which typically have higher productivity growth, find it more difficult to obtain credit during these episodes.
Figure 3. Impact of Deleveraging on GDP Growth

| Average annual growth (percent) |  |  |  |  |
|---------------------------------|---|---|---|---|
| 1                               | 4.7| 0.6| -0.6| 4.8| 3.2|
| 2                               | 4.3| -1.7| -1.4| 4.1| 4.2|
| 3                               | 4.3| -1.8| -3.0| 5.7| 4.8|
| 4                               | 7.9| 0.8| <----------12.8 -----------| 2.3|

Source: McKinsey Global Institute (2010).

a. Deleveraging driven by off-trend growth is not linked to a recession. Types of deleveraging are considered: those associated with: 1) “belt tightening” or lagged credit growth; 2) massive defaults; 3) high inflation; 4) growing out of debt through very rapid GDP growth caused by a war effort, oil boom, or peace dividend following war.

Figure 4. Demand and Factor Input Contributions during Recoveries with and without Credit

Source: Box prepared by Swati Ghosh (World Bank), based on Calvo, Izquierdo, and Talvi (2006); Claessens, Kose, and Terrones (2009); McKinsey Global Institute (2010); Abiad, Dell’Ariccia and Li (2011); Bijsterbosch and Dahlhaus (2011); IIF (2011); UniCredit (2012).

a. Nevertheless, only about half of banking crises are followed by a creditless recovery.

b. In particular, the hypothesis is that in the presence of financial market imperfections, bank credit is an imperfect substitute to other sources of funds (such as the issuance of bonds and equity) so that when the supply of bank credit is disrupted, firms and industries that are more reliant on credit perform relatively worse.

c. They analyze industry-level data from the manufacturing sectors and find that industries more reliant on external finance seem to grow proportionately less during creditless recoveries, supporting the notion that creditless recoveries usually stem from disruptions in the supply of bank credit.

d. Note that net exports, on average, do not contribute to output growth during the recoveries regardless of credit dynamics, since during recovery both exports and imports tend to increase, resulting on average in a roughly zero contribution to growth.
40. Starting from early 2012, there have been some encouraging signs to suggest that a disorderly process of deleveraging may not materialize. The ECB’s massive liquidity injections in December and February likely reduced the odds, at least in the short term, of a disorderly shedding of assets that could be followed by a credit crunch. In a regional context, European officials, international financial institutions, and banking groups have also agreed on a set of principles to help avoid disorderly deleveraging in emerging Europe—the region most vulnerable to a massive bank retrenchment. Abundant liquidity helped unfreeze interbank markets and enabled better-positioned European banks to issue unsecured debt. Markets became more optimistic as a result, as reflected in stock prices, bond yields, and CDS spreads. These developments were underpinned by the efforts of European policymakers, including steps toward a pan-European fiscal compact, a second bailout package and debt restructuring for Greece with significant private sector involvement, an expanded rescue fund, and the recapitalization plan to strengthen the European banking system in the longer term.

41. However, despite the encouraging signs of improved conditions and many steps taken by policymakers, risks for further deleveraging remain in the system, in part reflecting the underlying weaknesses that remain, as well as the piecemeal and reactive approach taken to address them.

- **Weak credit continues.** Only a limited amount of the substantial liquidity provided to the banks has so far found its way as credit to the real economy. While this may simply be a normal delay in economic agents’ response to policy, considering fragile investor, borrower, and lender confidence, the uncertain economic and regulatory environment may keep credit demand and supply in check for some time, particularly for certain sectors that are essential for economic growth, such as SME and project financing.

- **Easier funding conditions owing to ECB liquidity support were relatively short-lived.** Renewed tensions surrounding peripheral Europe and risk of contagion to the rest of the Euro Area keep market participants on edge, given persistent market concerns about the adequacy of the expanded rescue fund as an effective firewall and weakening sovereign and banking conditions in peripheral countries. As Euro Area sovereigns and banks remain highly exposed to one another, delays in policy implementation to put a definitive end to the Euro Area crisis and break the negative feedback loop between bank, sovereign, and real sector risks imply a continuation of significant funding difficulties, for banks, sovereigns, and nonfinancial borrowers alike.

- **Bank capital and liquidity pressures remain.** Banks remain under market and regulatory pressure to boost capital and liquidity buffers, to improve and shrink their balance sheets, and to adjust their business models toward a more sustainable, yet profitable, new equilibrium.
• **Growth has slowed, with spillover effects.** Continuation of deleveraging risks undermines growth prospects in the Euro Area and around the world, which further reduces the fiscal room available to cope with future shocks. A slowdown in emerging market economies is of particular concern, since these countries have been the engine of global growth over the past several years while western economies were contracting sharply in order to cope with the crisis in their countries.

42. **At the same time, additional risks could be accumulating in the system:**

• **Lasting reliance on official support.** The massive amounts of ECB funding may increase some banks’ dependence on ECB support, while encouraging others to use the funds to search for higher returns given the low interest rate environment. Dependence on the ECB may also have diminished incentives to repair and restructure balance sheets for banks, thereby only serving to postpone the pain rather than eliminating it. Unsecured market funding may continue to be limited going forward.

• **Growing shadow banking risk.** Systemic risk is also likely rising, as some nonbank institutions and markets have started to fill the gap created by European bank retrenchment. While the latter suggests that nonbank sources of financing have been able to support the credit needs of the global economy, at least for some categories of loans, supervisors and regulators are not yet equipped to identify, assess, and regulate the potential risks emerging in the increasingly more significant shadow banking system.

• **Regulatory uncertainty.** In the meanwhile, delays in, and diverging views on, implementing certain measures (such as tighter capital requirements for systemically important institutions, living wills, Solvency II regime for insurance companies, and the Dodd-Frank Act), along with insufficient policy coordination among national and global regulators, introduce confusion and uncertainty to the financial system that are not conducive to lending to the real economy.

43. **These risks have important implications for policymakers:**

• **Most notably, restoring market confidence on a sustained basis is key.** not only to ease funding pressures and phase out ECB liquidity support, but also to reinvigorate credit to the private sector and induce the necessary economic growth to put fiscal balances on a sustainable path in the region. In this context, commitment to medium-term fiscal prudence, structural reforms to enhance competitiveness of the peripheral economies, and restructuring of weak institutions across Europe is essential, as is strengthening the crisis firewall (see IMF 2012a).
Careful and urgent consideration should be given to expanding the regulatory perimeter, particularly to include shadow market participants that compete with banks to extend credit or are willing to absorb bank risk. This is already a top policy agenda for the Financial Stability Board, in coordination with other international institutions (see FSB 2012a, 2012b). Urgent progress is also needed to improve the understanding of the shadow banking system and to finalize the regulatory approaches to identify and address any emerging risks.

Regulatory and supervisory coordination across jurisdictions needs to better align incentives of home-host authorities toward global financial stability. The need for coordination is essential in a world where financial systems are closely interconnected and the actions of one country can have wide-ranging implications for others. Effective supervisory coordination, information sharing, and resolution arrangements between home and host authorities is essential to make sure the parent bank’s actions do not create financial and macro stability risks in host countries, where the foreign bank affiliates have systemic importance. Similarly, the tendency of a host authority to ring-fence its subsidiary may be a natural reaction to protect the subsidiary from the parent bank’s attempts to fill its capital or funding gap. But such policies have adverse consequences both for the parent and the subsidiary, as the banking group’s ability to manage its liquidity and credit risks is undermined by intragroup restrictions. Building firewalls around a subsidiary may also undermine resilience of a subsidiary in case of future financial stress, especially where local markets are not sufficiently well-developed.

Despite the challenging economic and financial environment, rapid progress should be made in implementing the key financial sector reforms aimed at building resilient financial systems (see Narain, Ötker-Robe, and Pazarbasioglu 2012). Regulatory uncertainty and the potential for conflicting regulatory requirements need to be minimized through greater coordination among regulators and policymakers, in order to create an environment that is conducive to bank lending and medium-term decision-making.

Finally, for EMDEs, the ongoing global crisis and its implications provide valuable lessons going forward. EMDEs need to create robust fiscal space to cope with a potential worsening of global market and credit conditions; strengthen their financial systems with sufficient capital and liquidity buffers; and establish contingency planning frameworks to absorb and respond to potential adverse shocks. EMDEs also need to develop and deepen their financial markets to provide alternative but safe sources of funding to the private sector and reduce excessive reliance on (foreign) banks to support their economies.
### Appendix Table A.1. Rating Agency Actions, September 2011–April 2012

| Date    | Rating action                                                                                                                                                                                                 |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sep 2011| **France** ▼ Société Générale, Crédit Agricole, and subsidiaries of BNP Paribas in Greece and CEE (Moody’s, Fitch)                                                                                             |
| 14      | **Top 5 central banks to increase liquidity in Europe**                                                                                                                                                      |
| 15      | **Peripheral Europe** ▼ Greece: 8 banks (Moody’s); Italy: Sovereign (S&P), foreign and local currency (S&P), and 7 banks’ ratings (S&P)                                                              |
| 20–29   | **Slovenia** ▼ Sovereign (Fitch)                                                                                                                                                                             |
| Oct 2011| **Europe Core** ▼ UK: 12 banks including RBS and Lloyds, Bank of Ireland operations (Moody’s); France: BNP Paribas (S&P); Germany: 4 banks (Fitch); Switzerland: UBS; Belgium/France: Dexia Group (Moody’s) |
| 7–25    | **Periphery Europe** ▼ Italy: 24 financial institutions (S&P, Fitch); Portugal: 9 key banks (Moody’s); Spain: Sovereign (S&P, Moody’s), foreign and local currency (Fitch), and 10 financial institutions (S&P, Fitch) |
| 20–29   | **CEE** ▼ Slovenia (S&P); Ukraine: Sovereign outlook-Positive to Stable, and 9 banks (Fitch)                                                                                                                                 |
| 26      | **Other** ▼ Chile: Banco del Estado de Chile (Moody’s), Banco Santander (Fitch, S&P); Norway: Storebrand (Moody’s)                                                                                             |
| Nov 2011| **Europe Core** ▼ UK: Santander UK, Crown Agents, and 3 building societies (Fitch); Germany: 12 Landesbanken (Fitch); Belgium: Sovereign (S&P) and KBC Bank (Moody’s); Austria: Kommunalkredit (Fitch) |
| 2–29    | **Periphery Europe** ▼ Italy: 12 Banks and Unicredit subsidiaries in Slovakia, Austria, and Germany (Fitch, Moody’s); Portugal: Sovereign (Fitch)                                                                 |
| 20–29   | **CEE** ▼ Lithuania: Snoras Bank (Fitch); Kazakhstan: BTA Bank (Fitch, S&P); Poland: Bank Millenium (Fitch).                                                                                               |
| 26      | **Latin America** ▲ Peru (Fitch); Brazil: ▼ 2 banks (Fitch, Moody’s), ▲ Banco Industrial do Brasil (Fitch)                                                                                                       |
| 20–29   | **Other** ▼ Cyprus: Sovereign and 3 banks (Moody’s); Hong Kong SAR, China: CITIC Bank Int.(Fitch)                                                                                                            |
| Dec 2011| **Europe Core** ▼ France: BNP Paribas, Société Générale, Crédit Agricole (Moody’s) and subsidiaries in Greece, Morocco, and Poland; Germany: 3 banks (Moody’s); UK: Bradford and Bingley’s and Northern Rock Asset Management (Fitch); Belgium: Sovereign (Moody’s), Dexia Local and Banque Internationale (Moody’s, S&P) |
| 1–22    | **Periphery Europe** ▼ Italy: Unicredit Spa (Fitch); Spain: CECA (Fitch)                                                                                                                                   |
|         | **USA** ▼ Citigroup (Fitch)                                                                                                                                                                                   |
|         | **CEE** ▼ Hungary: Czech Republic; Bulgaria (Fitch); Bulgaria: 3 banks; Armenia: Crédit Agricole ACBA; Poland: 1 bank (Fitch); Ukraine: 13 banks (Moody’s)                                                             |
|         | **Global Trading and Universal Banks** ▼ Barclays Group, Bank of America, BNP Paribas, Credit Suisse, Société Générale, Deutsche Bank, Goldman Sachs, and Morgan Stanley.                                             |
| 22      | **Other** ▼ Brazil: 2 banks; Korea, Dem. Rep.: Citibank; Taiwan, China: Citibank (Fitch).                                                                                                                   |
| 22–29   | **ECB first LTRO** ▼ Ireland: Ulster Bank (Moody’s); Italy: Banca Sai (S&P); Portugal: Banif (Fitch)                                                                                                         |
| 26      | **Slovenia** ▼ 5 banks (Moody’s); Hungary: 4 banks (S&P)                                                                                                                                                   |
| 26      | **Other** ▼ Belgium: Dexia (Moody’s); Brazil: Banco Sofisa (Moody’s)                                                                                                                                         |
| Date       | Rating Action                                                                 |
|------------|-------------------------------------------------------------------------------|
| Jan 2012   |                                                                              |
| 9–27       | **Europe Core** – ▼ France; Malta (S&P); Cyprus (S&P, Fitch); Belgium (Fitch); Austria: Sovereign and Volksbanken Verbund (including OeVAG) (S&P, Fitch); EFSF (S&P) |
|            | **Periphery Europe** – ▼ Italy (S&P, Fitch); Portugal (S&P); Spain: Sovereign (S&P, Fitch) and 5 Caja Banks (Fitch) |
|            | CEE – ▼ Slovakia (S&P); Slovenia (S&P, Fitch); Poland: BRE Bank (Moody’s) |
| 30th       | **25 EU members join a fiscal treaty to enforce budget discipline**            |
| Feb 2012   |                                                                              |
| 1–29       | **Periphery Europe** – ▼ Greece (Fitch); Ireland: 4 banks and subsidiaries (Fitch); Italy: Sovereign (Moody’s), 5 banks (Fitch) and 32 banks were given a negative outlook (S&P); Portugal: Sovereign (Moody’s), 7 banks and 1 subsidiary (S&P); Spain (Moody’s) |
|            | CEE – ▼ Slovenia; Slovakia (Moody’s)                                          |
|            | **Other Europe** – ▼ Malta (Moody’s); Cyprus: 3 banks (Fitch); Finland: 1 bank (Moody’s); Austria: 6 banks (Fitch) |
|            | **Latin America** – ▼ BBVA subsidiaries in the region (Fitch); Belize (Moody’s, S&P) |
|            | **Other** – ▼ South Africa: 5 banks (Fitch); Japan: 5 REITs (Moody’s)          |
| 29         | **ECB second LTRO**                                                           |
| Mar 2012   |                                                                              |
| 1          | CEE – ▼ Bulgaria: First Investment Bank (Fitch); Ukraine: Savings Bank of Ukraine (Moody’s) |
|            | USA – ▼ Wells Fargo Bank N.A. (Moody’s)                                        |
| 2          | **EU fiscal treaty to enforce budget discipline signed**                       |
| 2 – 29     | **Periphery Europe** – Greece: ▼ Sovereign (Mar 9), △ Sovereign (Mar 13); ▼ Portugal: 7 banks (Moody’s); Spain: Unnim Banc, Banco de Valencia (Fitch), and CECA (S&P) |
|            | CEE – ▼ Slovakia: Banking System; Latvia: PrivatBank AS; Russia: Uniastrum Bank (Moody’s) |
|            | **Other Europe** – ▼ Belgium: Dexia Credit Local (S&P); Cyprus: 3 banks (Moody’s) |
|            | **Brazil** – ▼ Banco BMG (Fitch, Moody’s) and Banco Cruceiro do Dul (Moody’s) |
|            | **Other** – ▼ Canada/Australia: Macquarie Group (Moody’s, Fitch); Canada: CIBC Mellon Trust Company (Moody’s); Hong Kong SAR, China: Dah Sing Bank Limited (Fitch); India: Bank of India (Moody’s), South Africa: Standard Bank of South Africa, First Rand bank (S&P) |
| 30th       | **Expansion of EFSF and ESM**                                                 |
| Apr 2011   |                                                                              |
| 26 – 30    | **Spain** – ▼ Sovereign and 16 banks, including Santander, BBVA, Sabadell, and CECA (S&P) |
|            | **US** – ▼ Santander Holdings USA and subsidiaries (S&P)                       |
|            | **UK** – ▼ Santander UK PLC in the long term; affirmed in the short term (S&P) |
| May 2011   |                                                                              |
| 1–26       | **Periphery Europe** – ▼ Spain (4 cajas) (Fitch); Spain (4 regions and 16 banks, including BBVA and Santander) (Moody’s); Greece (3 banks and sovereign) (Fitch); Italy (26 banks) (Moody’s) |
|            | **Sweden** – 5 Swedish banking groups (Moody’s)                                 |
|            | **Belgium** – ▼ Dexia group (Moody’s, S&P)                                     |
|            | **Cyprus** – ▼ 3 Cypriot banks (Fitch)                                         |
|            | **North and South America** – ▼ BBVA subsidiary in Paraguay (Moody’s); Santander subsidiaries in NA (Moody’s) |
|            | **CEE** – ▼ Unicredit subsidiaries in Poland, Slovakia, Kazakhstan (Moody’s); Turkey (sovereign) (S&P) |

Source: Standard and Poor’s, Moody’s, and Fitch Ratings.
### Appendix Table A.2. Recent National Measures to Tighten Capital and Liquidity Buffers

| Country                      | Measure                                                                                                                                                                                                                                                                                                                      |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Switzerland (July 2011)      | • Lawmakers in the Swiss upper chamber of parliament approved the so-called "Swiss finish," which will force the Swiss SIFIs (Credit Suisse and UBS) to raise more than Sfr150bn (£108bn) in new capital by increasing their core Tier 1 equity ratio to 19 percent.                                                                                                         |
|                              | • A proposal, championed by parliamentarians from the Social Democrats Party and Swiss People's Party, to split foreign operations from the domestic arms of the two banks in the event of a collapse was also put to a vote. However, this was voted down, with 26 members of Switzerland's upper chamber against the proposal, compared with 14 in favor of it.                                      |
| Austria (Nov 21 2011)        | • For the three largest Austrian banks active in the CEE region (Bank Austria Unicredit, Erste, Raiffeisen International), credit growth in the future will be conditional on the growth of sustainable local financing in the host country, with new loans limited to 110% of new local financing (local deposits, local issuance, and IFI funding). The measure will apply only to new business. Austria will continue to be supportive of financial growth “provided it is supported by adequate capital.” |
|                              | • Basel III capital rules will be implemented fully ahead of the gradual phase-in period of 2013–19, with banks asked to meet the 9 percent core Tier 1 capital ratio from Jan 1, 2013.                                                                                                    |
|                              | • From Jan 2016, banks will hold an additional common equity Tier 1 ratio of up to 3 percent, depending on the risk inherent in their business model.                                                                                                                       |
|                              | • Banks will be required to draw up resolution and recovery plans (RRPs) by end-2012 to prepare for possible crisis situations.                                                                                                                                             |
| Canada (Nov 23 2011)         | • Office of the Superintendent of Financial Institutions told banks that they should plan to hold enough capital to meet the 2019 requirements in the first quarter of 2013. Canadian banks are currently well positioned to meet or exceed this expectation.                                                                                       |
| Sweden (Nov 27 2011)         | • Like Austria, Sweden introduced an accelerated implementation of Basel III capital rules.                                                                                                                                                                                                                                       |
|                              | • Sweden’s largest four banks (Handelsbanken, Nordea, SEB, and Swedbank) will have to hold at least 10 percent of their RWAs in common equity Tier 1 capital by January 2013, and 12 percent from January 2015. The Swedish authorities said the banks are well capitalized and should not have difficulty in meeting these requirements. |
| Norway (late Nov 2011)       | • Norway’s Finance Minister supported Swedish authorities’ call to go beyond the EU capital requirement, and noted that the EU regulations should act as a minimum, and it should be possible for individual nations to go further.                                                                                                                                         |
| United Kingdom (late-2011)   | • The UK government reported that recommendations of the UK Independent Commission on Banking (ICB) have been accepted and will be implemented.                                                                                                                                                                                    |
|                              | • For leading UK banks, retail banking will be ring-fenced from investment banking and retail banks will face higher equity capital ratios and loss-absorbing ability than required under Basel III. Ringfencing legislation will be enacted by May 2015.                                                       |
|                              | • All leading banks with a RWA to GDP ratio over 3% — the largest banks — will be required to have at least 10% core Tier 1 capital plus a counter cyclical capital buffer of 2.5%, plus a layer of bail-in bonds — taking the primary loss-absorbing capacity to at least 17% of RWAs. |
|                              | • The estimated aggregate cost of the measures, based on bank models and excluding the possible mitigating actions of the banks themselves, will range from £3.5 billion to £8 billion (compared with ICB estimates of €4 billion to €7 billion).                                                                                               |
|                              | • A major concession has been made for banks with overseas arms (e.g., Standard Chartered and HSBC), provided they can demonstrate that they do not pose a threat to the U.K. taxpayer and had credible plans to wind up their business in a crisis. The overseas assets of HSBC are already held in overseas subsidiaries underpinned by the capital required by the local regulator. |
| United States (Dec 20 2011)  | • The U.S. Fed proposed new rules requiring the largest financial groups to hold more capital                                                                                                                                                                                                                                    |
|                              | • By 2019, the biggest banks (more than $50 billion in assets) will be required to hold a 9.5% ratio of core capital to RWAs, mirroring proposals by global regulators.                                                                                                                                                                      |
|                              | • The highest capital ratios would be reserved for the largest banks (Bank of America, JP Morgan, and Citigroup are expected to be hit with the most stringent capital requirements).                                                                                                                                                  |
|                              | • Foreign banks with large U.S. operations are excluded, but the Fed would issue separate rules for roughly 100 foreign-based financial institutions at a later, unspecified date.                                                                                                                                               |
|                              | • The draft rules call for heightened liquidity requirements, greater risk management responsibilities for bank boards of directors, tougher restrictions on counterparty exposure between financial companies with more than $500 billion in assets, and a four-point plan for dismantling large distressed banks. |
|                              | • For liquidity, Fed would rely on banks' internal modeling of their liquidity needs rather than its quantitative projections; banks will need to measure liquidity needs in potential times of stress at least monthly.                                                                                                                   |
## Appendix Table A.3. Recent Changes in Banks’ Business Strategies to Increase Capital Ratios, October 2011–April 2012

| Bank                                      | Changes in business strategies                                                                                                                                                                                                 |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| **Banco Popolare** (Italy)                | • Selling operations (in Hungary)                                                                                                                                                                                                 |
| **Banco Santander** (Spain)               | • Selling assets (stakes/parts of Latin American subsidiaries—Colombia, Chile, Brazil); Asset-liability operations (debt to equity swaps, debt buybacks); Using retained earnings (reducing dividends); RWA model adjustments |
| **Bank of America** (USA)                 | • Selling assets (noncore assets); Cutting jobs (equities division)                                                                                                                                                              |
| **Bankia** (Spain)                        | • Asset-liability operations (exchange preferred shares and subordinated debt for Bankia shares); possibility of demerging (after being launched from the merger of 7 savings banks) or taking over another government-supported savings bank |
| **Barclays** (UK)                         | • Selling operations (retail banking in Russia)                                                                                                                                                                                  |
| **BBVA** (Spain)                          | • Cutting jobs—global markets staff in Singapore; Hong Kong SAR, China; and Japan; wholesale banking staff—; Changing asset-liability operations (issue bonds that automatically convert into shares to exchange for preferred shares) |
| **BNP Paribas** (France)                  | • Offloading assets (stake in nonstrategic Klépierre); Cutting jobs in corporate and investment banking); Sales of operations (independent retail banking presence in Russia to cut RWA) |
| **Commerzbank** (Germany)                 | • Freezing new lending (except in Germany and Poland); Focusing on core operations (supporting the domestic economy); Cutting RWA and staff compensation; Using retained earnings; Suspending new business |
| **Crédit Agricole** (France)              | • Shrinking and cleaning up balance sheet; Exiting 21 of 53 markets; Shrinking financial services loan book; Reducing RWAs and selling private equity and investment banking assets; Restructuring/cutting costs; Cutting jobs (investment banking); Withholding dividends |
| **Credit Suisse** (Switzerland)           | • Quitting certain unprofitable businesses (fixed income); Moving toward a client-focused strategy; Reducing RWAs more quickly to meet Basel III; Restructuring assets and cost base with conservative funding and liquidity |
| **Deutsche Bank** (Germany)               | • Managing RWAs more “efficiently;” Reducing investment banking activities; Focusing on core markets (UK, Germany, Singapore, Latin America, and Poland); Speeding up the sale of assets (up to €3 billion) to reduce risky assets and "maintain an optimal business mix" |
| **Erste, Hypo A.A., Raiffeisen** (Austria)| • Given the measures adopted by the Austrian authorities and lack of enough capital to support the operations of their major banks in CEE, prioritization is being done across CEE markets to focus on the “core markets”; Asset-liability operations (Erste); Some subsidiaries asked to reduce holdings of local government bonds |
| **French and Belgian banks**              | • Scaling back activities (e.g., 10 percent of their investment units by reducing dollar-dependent activities, such as financing of shipping, aircraft, and real estate, trade finance, and selling assets lending in dollars); Sales of noncore businesses at unimpressive prices (provided their value has not fallen below book value); Selling assets (in Persian Gulf project finance and corporate loan books) to Arab banks (e.g., Qatar, Kuwait) |
| **HSBC** (UK)                             | • Retreating from unprofitable operations as part of a global overhaul; Considering selling retail banking unit in the Democratic Republic of Korea; Restricting retail operations to more profitable markets; Selling credit card/retail units in Thailand; Focusing on key fast growing markets (withdrawn from Russia, Poland, and Chile and pulled back in the United States). Expected to pull out of at least one-third of the approximately 80 countries in which it had operations |
| **ING** (Netherlands)                     | • Sale of business (the group’s Asian insurance and investment management business) as part of a deleveraging strategy in the context of the bank’s reorganization plan, Repaying state aid, and changing geographical focus |
| Bank                          | Changes in business strategies                                                                                                                                                                                                                                                                                                                                 |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Intesa Sanpaolo (Italy)      | Changing asset-liability management (subordinated debt buyback scheme); Selling assets (in Persian Gulf project finance and corporate loan books) to Arab banks                                                                                                                                                                                                                         |
| Monte dei Paschi (Italy)     | Changing RWA management (by applying its "internal model" to reevaluate RWAs); retaining earnings; partial deleveraging (sale of stakes)—considering possible ways to raise the capital ratio. Some analysts expect the bank to issue CoCos to raise its core Tier 1 capital ratio to 9 percent.                                                                                       |
| Natixis (France)             | Overhauling its investment bank; Cutting jobs                                                                                                                                                                                                                                                                                                                                                                             |
| Portuguese banks (5 largest) (Portugal) | Reducing loans to meet the 120% L/D ratio target by 2014 (commitment in the official bailout package)                                                                                                                                                                                                                                                                                                                                 |
| Royal Bank of Scotland (RBS) (UK) | Refocusing on its UK High Street and corporate banking operations; Running off its non-core business (deleveraging and derisking—investment banking, global banking and markets business); Reducing RWAs; Pulling back from certain markets (particularly in Asia) and products (selling aviation leasing business to Sumitomo Mitsui) |
| Sabadel (Spain)              | Raising capital                                                                                                                                                                                                                                                                                                                                                                                                       |
| Société Générale (France)   | Planning to offload assets; Planning cuts to its networks in Russia, Romania, the Czech Republic, and Egypt; Restructuring its corporate and investment bank; Cutting jobs in the corporate and investment division                                                                                                                                                                                                 |
| UniCredit SpA (Italy)        | Restructuring its investment banking operations, and reorganizing its CEE businesses; Launching a €7.5 billion capital increase; Planning to narrow its geographic focus in Eastern Europe, retreating from less profitable markets and focusing on its profitable markets (Poland, Turkey, Russia and Croatia); Cutting its reliance on funding from abroad at their units in CEE countries and focusing more on local funding |
| Volksbank (Austria)          | Selling its subsidiaries from its diversified presence in nine CEE countries (except for its Romanian operation) to a Russian bank (Sberbank), reflecting the reduced ability of diversified banks to move resources across their operations in different jurisdictions as national regulators try to prevent outflows of capital and liquidity (through ring-fencing of their subsidiaries) |
| Wells Fargo (USA)            | Acquiring loan and securities portfolios being sold off by ailing European lenders Purchased $2.6 billion worth of loans from Irish banks                                                                                                                                                                                                                                                                                   |

Sources: ECB and IIF Survey of Lending Standards; JP Morgan Analyst Reports, various news sources (including the Financial Times, the Wall Street Journal, The Economist, Reuters.)
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