IMF STAFF DISCUSSION NOTE

March 09, 2011
SDN/11/05

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INTERNATIONAL MONETARY FUND

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Monetary and Capital Markets Department and Research Department

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JEL Classification Numbers:	G01; G18; G32; G33; H12
Keywords:	Financial crises; crisis management; resolution; moral hazard; too big to fail; stress tests; asset restructuring; burden sharing; financial stability
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[1] We are grateful for guidance provided by Olivier Blanchard and José Viñals, inputs from Luis Cortavarria and very useful comments from internal and external reviewers, including during an informal discussion at the IMF Executive Board.

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EXECUTIVE SUMMARY

This paper compares the policy choices in recent and past crises, explains why those choices varied, and assesses the current state of financial and operational restructuring and institutional reform. While acknowledging the unique and global nature of the recent crisis and varying country circumstances, analysis suggests that the diagnosis and repair of financial institutions and overall asset restructuring are much less advanced than they should be at this stage and that moral hazard has increased. Consequently, vulnerabilities in the global financial system remain considerable and continue to threaten the sustainability of the recovery. These conclusions point to a number of steps to finish the business of financial sector repair and reform.

Establishing the long-term viability of the financial system requires recognizing nonperforming assets at financial institutions and a deeper operational restructuring of debts of enterprises and households. Regarding the persistent weaknesses in bank balance sheets, in-depth diagnoses still need to be conducted, including through strict and transparent stress tests. When the diagnoses call for credible recapitalization plans or restructuring of liabilities, they should be carried out swiftly in ways that do not worsen sovereign debt burdens. Conditions in some countries require government interventions, including targeted programs to alleviate debt overhangs in the household and commercial real estate sectors. More broadly, asset restructuring needs to be driven by market forces, supported by tighter regulations—including in the areas of loan-loss classification, provisioning, and disclosure—and enhanced supervision.

In most countries, more-effective resolution tools are required to preserve financial stability in an increasingly complex and interconnected global system. Progress is being made at national levels, but many challenges remain, also at the international level. These include the design of infrastructures to wind down nonbank financial institutions that are of systemic importance and banking organizations that operate across borders and the design of mechanisms to ensure that the losses are borne by the creditors of the institutions rather than by taxpayers. Enhanced supervision of cross-border exposures and related systemic risks is also needed. Moving expeditiously on this reform agenda, including adopting rules for cross-border burden sharing, requires more political commitment.

Confidence in financial systems is still highly dependent on explicit and implicit central bank and government support. Moral hazard has increased, in part as sectors have become more concentrated, while financial systems are still prone to stress and turmoil. Measures are needed to restore proper incentives and market discipline. Governments need to rethink how to reduce the threat that large financial institutions pose to systemic stability, including through reduced complexity, better capital structures, and, possibly, restrictions on their scope and activities.

Past crises shed light on the sequencing and mix of policies best suited for the management and resolution of crises. The quick deployment of containment measures during the recent global financial crisis, including accommodative monetary and fiscal policies, helped establish confidence and restore economic stability. But compared with earlier episodes, the response featured less attention to in-depth diagnosis of financial institutions and fewer incentives for an early restructuring of assets. Moreover, the conditions imposed on institutions that received public support were less-stringent than in past crises. The policy mix applied in the recent crisis has come at a high overall cost and has intensified moral hazard. The mix is unlikely to be repeated in response to a future crisis because it would be too costly economically and too controversial politically. In preparing for a future crisis, therefore, we must consider how to apply the constructive aspects of the recent response—early stabilization through accommodative policies—and improve the areas in which it was weakest—the limited conditionality of public support and the gradual restructuring of assets.

I. INTRODUCTION

This paper compares the policy choices in the recent global financial crisis with those in past episodes and draws some preliminary policy lessons focusing mainly on crisis management tools and techniques.[2] Country experiences in recent and past crises are examined with a particular focus on the extent to which policy choices have been affected by initial conditions and the nature of the crisis. The paper reviews the current state of financial and operational restructuring, as well as institutional reforms, in the light of lessons from past episodes, and provides policy implications for the near- and long-term agendas.

The recent crisis was unusual in its speed and breadth and the type of countries affected. Systemic crises—situations of significant stress in the financial sector, followed by significant policy interventions—often affect several countries at the same time. In the past, though, crises have been largely limited to specific regions or types of economies—the Nordic countries in the early 1990s, Latin America in the mid-1990s, Asia in the late 1990s, and the emerging market economies of the early 2000s. The recent crisis has been unusual in its global nature, affecting countries with a speed and virulence not seen since the Great Depression, with major advanced countries and countries recently integrating with the European Union (EU) most affected.

The paper is organized as follows. Section II reviews the initial macroeconomic and financial conditions for two sets of countries, one drawn from past crises and the other from the recent crisis, and documents differences that help explain the choice of policies used by countries in the two samples. Section III reviews the policy choices made in the recent crisis countries in light of outcomes to date and shows how they involved some trade-offs. Section IV concludes with lessons on the best mix of policies for crisis management, the adequacy of current resolution toolkits to deal with systemic distress, and the structural reform agenda to reduce systemic risks.

II. WHAT WAS DIFFERENT THIS TIME?

A. Initial Macroeconomic and Financial Conditions

The study collected and compared two samples of crises—past (1991–2002) and recent (2007–09)—that, for each country, qualified as a "systemic banking crisis" (see Appendix 1). The past crises occurred in 17 countries during the 1991–2002 period. The recent crises were the manifestations of the 2007–09 global financial crisis as it appeared in 12 countries.[3]

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[2] Reinhart and Rogoff (2009), Laeven and Valencia (2008), Honohan and Laeven (2005), Calomiris et al. (2003), Hoelscher and Quintyn (2003), Dziobek and Pazarbasioglu (1998) review the patterns in macroeconomic and financial variables surrounding crises and the policies used in containment and resolution.

[3] Past: *Nordic crises*: Finland, Norway, Sweden (all 1991); *Latin American crises*: Brazil (1994), Mexico (1994), and Jamaica (1996); *Asian crises*: Indonesia, Japan, Korea, Malaysia, and Thailand (all 1997); and the *emerging markets crises*: Colombia (1998), Ecuador (1998), Russia (1998), Turkey (2000), Argentina (2001), and Uruguay 2002). Recent (as of end-2009): Austria, Belgium, Denmark, Germany, Iceland, Ireland, Latvia, Luxembourg, the Netherlands, Ukraine, the United Kingdom, and the United States (see Appendix 1).

Table 1. Pre-Crisis Indicators

	Past Crises		Recent Crises	
	All[1/]	Advanced[1/]	All[1/]	Advanced[1/]
Number of episodes	18	4	12	10
	Medians, in percent of GDP unless indicated otherwise			
Institutional and Macroeconomic				
Overall fiscal balance	-0.7	3.0	0.0	0.0
Gross public debt	32.7	28.9	42.0	43.0
Current account	-3.1	-0.6	-0.9	1.8
Private credit growth (median [t-1,t-4])	6.1	2.9	8.9	8.9
Real estate prices (median growth [t-1,t-4])	-2.8[2/]	2.0	5.2	5.2
Stock prices (MSCI in US$, median growth [t-1,t-4])	18	21	26	26
Stock market capitalization	29	34	86	102
Private bond market capitalization	8	39	45	45
Real GDP growth (percent, t-1)	1.9	1.5	3.6	3.2
GDP per capita (constant US$ 2000)	4,520	25,561	27,563	30,425
CPI Inflation	7.0	4.6	3.2	3.1
Creditors' rights (4-best)	2	2.5	3	3
Central bank independence (1-best)	0.63	0.61	0.83	0.83
Governance [3/] (2.5-best)	0.17	1.68	1.57	1.61
Deposit insurance in place (proportion of cases)	50	75	100	100
Financial				
Bank assets	48	80	150	156
Bank credit	43	72	136	160
Bank credit/deposits (percent)	118	126	125	124
Net interest margin (percent of revenues)	5	2	3	2
Size of 5 largest banks (global assets)	23	76[4/]	307	391
Market share of three largest banks	48	97	58	62
Commercial banks/total system assets (percent)	86	76	67	59
Cross-border claims	9	15	91	114
Bank ROE (percent)	7	1	11	11
Bank Z-Score (std. deviations)	6.25	6.25	8.19	8.19
Core capital to assets (percent)	9	5	8	8
Other operating income/average assets (percent)	2	1	1	1
Loans to assets (percent)	49	69	51	47
Liquid assets/customers and ST funding (percent)	23	32	37	37
Other funding/total liabilities (percent)	1.3	9.6	5.2	5

Sources: WEO, OECD, World Bank, Datastream, Djankov, McLiesh and Shleifer (2007) for creditors' rights, Crowe and Meade (2003) for central bank independence, World Bank for governance, Laeven and Valencia (2008) for deposit insurance, BankScope and OECD, *Bank profitability.* World Bank Financial Structure Database.

[1/] See Appendix 1 for data sample and crisis dates. All pre-crisis variables are measured as of one year before the start of the crisis, unless indicated otherwise. Past advanced countries are the Nordic countries and Japan; recent advanced countries are all but Latvia and Ukraine.

[2/] Median for advanced countries and Asian crisis episodes.

[3/] Aggregate of six dimensions of governance.

[4/] Japan only.

Table 1 provides pre-crisis macroeconomic, institutional, and financial data for the two samples of crisis countries ("past crises" and "recent crises"), with data as of one year before each crisis started. The past crises were most frequently among emerging and developing economies, whereas the recent crises were mostly among advanced economies. These advanced economies were at the time generally considered to have relatively strong institutional frameworks, a condition associated with a lower probability of a crisis. At the same time, financial systems in the sample of recent crisis countries were generally larger than those in countries in the sample of past crises, and larger systems imply higher costs in the event of a crisis. Past crises, on the other hand, often involved twin crises (both a banking and a currency crisis), and many involved an IMF program.

Credit growth and asset appreciation were stronger in the recent crises and accompanied by large external imbalances in some cases. Common pre-crisis conditions of the past episodes include large current account deficits (Table 1). Currency mismatches were often a significant source of vulnerability and losses once the exchange rate came under pressure. In the recent crises, fiscal and current accounts were on average close to balance, although there was, as before, ample variation across countries and global imbalances were large in absolute terms. Currency mismatches were important triggering and amplifying factors in some of the recent cases. Common to all pre-crisis periods was the presence of credit or asset price bubbles (Reinhart and Rogoff, 2009; Laeven and Valencia, 2008). More pronounced this time were the sharp increases in leverage for households, also reflected in the higher increase in house prices.

Financial systems were much larger and more concentrated this time, and financial institutions much more complex. Global assets of the five largest banks were typically more than 300 percent of their home country's GDP (Table 1). Many of these institutions enjoyed the benefits of being "too important to fail," that is, borrowing at preferential rates, operating with higher levels of leverage, and engaging in riskier activities. These firms were often highly complex in their balancing of business, tax, and regulatory objectives. For efficiency purposes, management would operate through business lines from the center, with liquidity and treasury functions often centralized. Yet, for tax and regulatory reasons, trades and exposures would be booked wherever most profitable or efficient. Hence, the formal and de facto governance structures of many groups would diverge. In consequence, host and, in some cases, even home supervisors with formal oversight authority were often at best only partially able to identify and assess a group's financial health, including the adequacy of its capital and liquidity arrangements, the nature of risks, and the location of risks within the wider group.

High interconnectedness in the recent crises was facilitated by innovations, especially securitizations and traded credit derivatives, and the expansion of the role of nonbank financial institutions known as the "shadow banking system." Securitization created assets that were packaged, and then re-packaged, into new layers such as collateralized debt obligations (CDOs), and each new layer further spread risks while reducing the clarity of risk exposures. Credit default swaps led to a separation of credit risks on- and off-balance sheets, and facilitated the concentration of risks in single entities that went undetected. And while nonbanks were a cause

of instability in some of the past crises, the role of the shadow banking system in the recent crises was much more important through banks' use of conduits and collateralized transactions. Nonbank institutions like mortgage lenders, broker dealers, and money market funds had grown rapidly, and some became of systemic importance. Large, internationally active financial institutions, large cross-border claims exceeding 90 percent of GDP (six time larger than in past crises), and complex linkages combined to transmit stress rapidly, most notably related to problems in the U.S. subprime mortgage market (Claessens et al., 2010).

As they did in past pre-crisis periods, traditional financial system indicators and favorable macroeconomic conditions obscured risks in the run-up to the recent crises. Conventional indicators of financial soundness based on balance sheet data showed pre-crisis bank profitability, liquidity, and capital to be higher than in the past, at least when comparing across only advanced economies. One exception was the increasing leverage of many large financial institutions, but that was generally thought to be consistent with improvements in risk management that allowed for the more efficient use of capital. An increased reliance on wholesale funding was also not generally considered a concern. Taken together, however, these misinterpretations meant an underestimation both of the risks accumulating outside banks' balance sheets and of large-scale systemic liquidity withdrawals.

B. The Policy Responses

Policy responses in the recent crises were initially similar to those in past crises, but over time they have diverged. Past crisis responses typically involved three phases: first, containment, to deal with acute liquidity stress and to stabilize financial liabilities; second, resolution and balance sheet restructuring, which involves removing insolvent financial institutions from the system and recapitalizing viable ones; and, finally, operational restructuring to restore the financial soundness and profitability of viable institutions and asset management to rehabilitate nonperforming loans. The recent crises followed this pattern through the first phase, but subsequent policy responses have been less forceful, at least for the major countries (other papers reviewing policy responses in past and recent crises, include Claessens, Klingebiel and Laeven, 2003; Ingves and Lind, 2008; Ingves et al, 2009; and Panetta et al, 2009).

The sequencing and range of policy responses in the past crises differed in important respects from those in the recent crises. Figure 1 provides the timing of interventions by depicting the evolution of liquidity support and the timing of guarantees and recapitalizations by governments around the onset of crises. Figure 2 compares the frequency of policies used as of end-2009 (Appendix II provides details on timelines and intervention measures). As in past crises, liquidity support and guarantees were deployed in the early stages, although more extensively relative to GDP. However, this was followed more rapidly in the recent crisis compared to the past crises with recapitalization across the board in many countries, which mitigated the real effects of the crises. After these general interventions, policy approaches in the recent crises became less forceful than those typically followed in the past. In particular, progress with comprehensive operational and asset restructuring has been slower.

Figure 1. Timing of Interventions and Amount of Liquidity Support
Change in claims of central banks on deposit taking institutions (In percent of GDP)

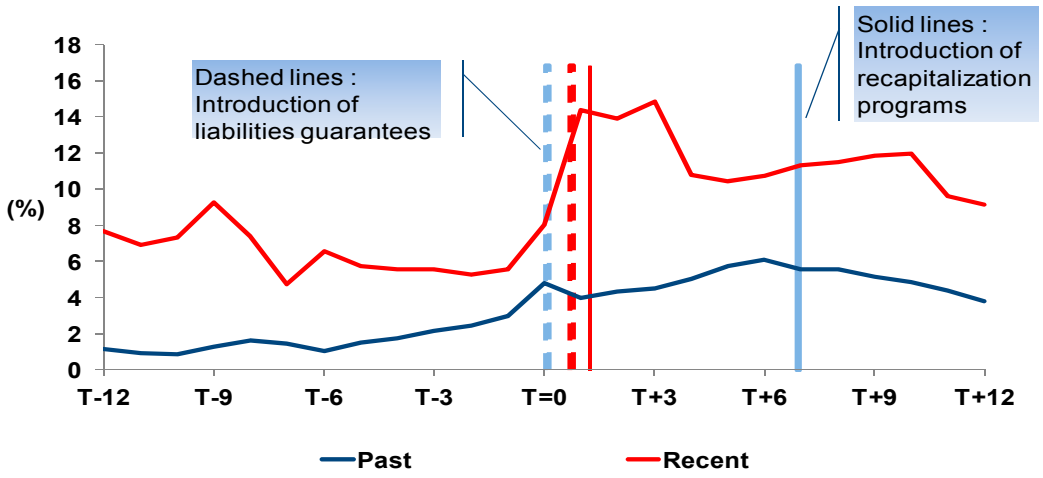
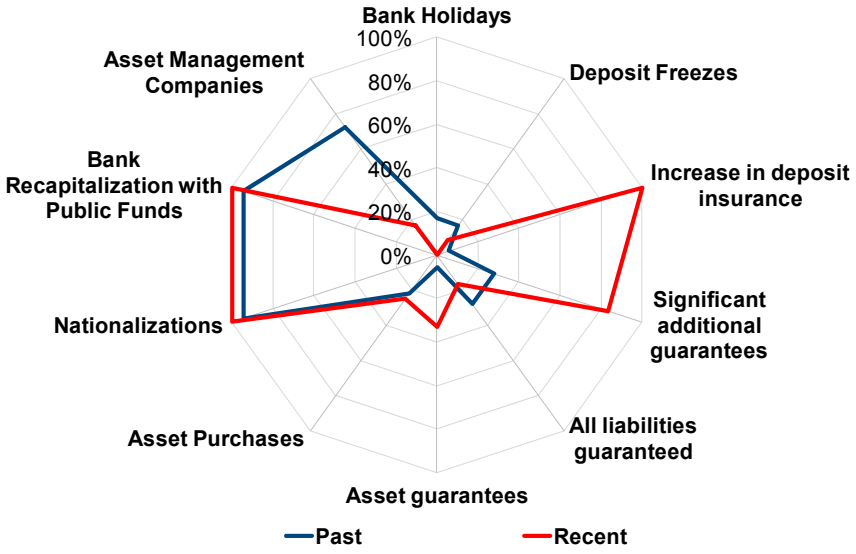


Figure 2. Containment and Resolution Policies
(In percent of sample countries adopting)



Source: Laeven and Valencia (2010). "past" refers to pre-2007; "recent" refers to crises since 2007. All dates are relative to crisis peaks, with periods referring to quarters before or after.

However, in some of the countries affected by the recent crisis, namely Iceland, Ireland, and Ukraine, the sequence and type of responses more closely resembled those of past crises, including due diligence of the viability of financial institutions and quality of assets, public recapitalization, removal of nonperforming assets, operational restructuring, and the adoption of IMF programs. The details of policy mixes varied, in reflection of differences in the causes and severity of countries' respective crises—including whether they also involved a currency or

sovereign debt crisis, types of defunct assets involved, and political economy considerations. In Iceland—and to a lesser degree in Ukraine, where foreign exchange exposures were large—wholesale funding runs and withdrawal of foreign capital led to crises and created pressures on currencies, which then reduced the repayment capacity of borrowers. In Ireland, problems were predominantly real-estate-related and affected largely commercial banks.

Liquidity and Other Central Bank Support Measures

With capital losses, severe funding pressures emerged relatively early on. Losses on securitized assets, reflecting expectations of default and deteriorating economic conditions, quickly appeared on institutions' balance sheets (traded assets are normally marked to market or recorded at fair value). Price declines and ratings downgrades of securitized assets during 2007–08 quickly impacted firms' capital through valuation losses. By end-2007, over 70 percent of banks' losses came from structured products and securitized positions. As reputational risks compelled many banks to take previously off-balance-sheet obligations on their books, liquidity needs rose sharply. Given the large reliance on wholesale funding, liquidity needs rose sharply across many markets, and interbank market spreads widened dramatically. In tandem, asset prices and solvency positions worsened further.

Central banks responded quickly with liquidity support on a more massive and widespread scale than in the past crises (see Stone et al, 2011). They extended the duration of liquidity facilities and eased counterparty and collateral requirements. New facilities were established to alleviate liquidity shortfalls in specific markets. Liquidity support to financial institutions was accompanied or followed by large-scale asset purchases and other unconventional, quantitative interventions. The Federal Reserve and the Bank of England purchased large amounts of securities. The European Central Bank (ECB) introduced a covered-bond program. Coordinated policy responses, unprecedented in many ways, then followed, including central bank swap facilities. Altogether, central banks' balance sheets expanded much more than in previous crises, and support was more flexible.

Funding strains prompted the provision of guarantees, including those extended to shadow banks, but more selectively than in past crises, when they covered a wide set of liabilities and were mostly in the form of blanket guarantees. In the recent episodes, formal guarantees were largely applied to specific banks (such as Northern Rock) or new debt issuance only. With deposit insurance schemes already in place, countries also quickly increased the coverage limits, substantially in some cases.[4] In addition, guarantees were extended to some nonbank financial institutions, notably in the United States, where a run on money market funds, then a $3 trillion industry, led to the provision of guarantees traditionally used to protect bank deposits. And governments made statements expressing their support for the whole sector.

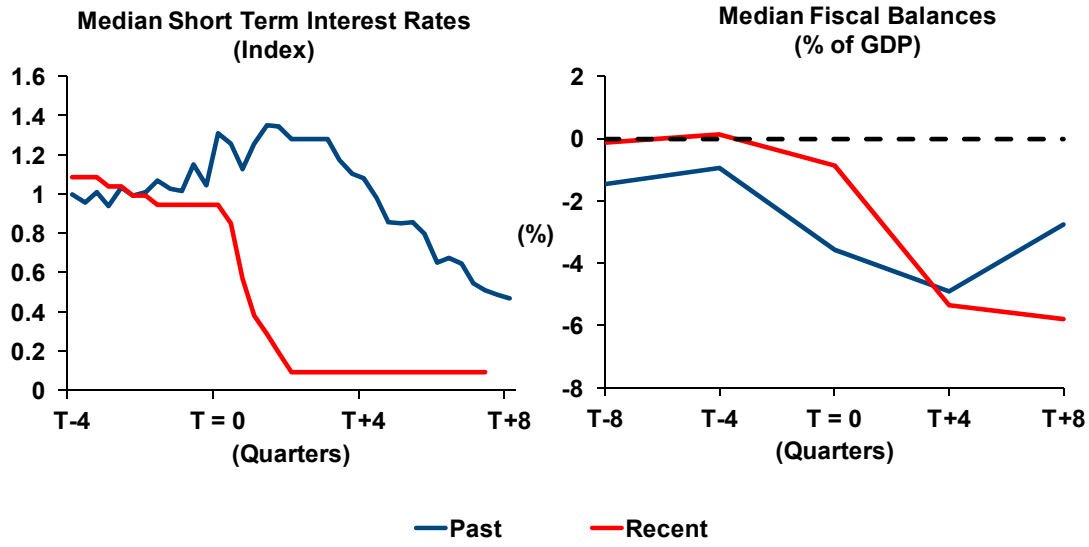
[4] Belgium, Luxembourg, and the Netherlands increased limits from €20,000 to €100,000 as part of an EU-wide decision; the United States more than doubled them; and some countries guaranteed all retail deposits.

Accommodative Monetary and Fiscal Policies

Expansionary monetary policies during the recent crises were critical in supporting banks and markets. Monetary policy was relaxed significantly early on by quickly adjusting short-term interest rates to historical lows (Figure 3), with major central banks taking coordinated actions. Taking advantage of their reserve currency status, several central banks committed themselves, at least conditionally, to maintaining low interest rates for prolonged periods. Those moves were opposite to the efforts of central banks in many past crises in which nominal rates were kept high or sometimes even raised to support currencies. In the recent crises, the low policy rates and ample liquidity allowed banks often to preserve their intermediation margins in spite of higher costs of other funding. Accommodative monetary policy also helped support overall asset values, reduced the risk of an adverse debt-deflation spiral, and limited nonperforming loans, at least initially, thus protecting some of the banks' profit streams and balance sheets despite losses on traded securities.

Accommodative fiscal policies were important in maintaining aggregate demand and asset values, thus indirectly supporting financial institutions. Better initial conditions allowed for larger fiscal deficits than in past crises; most policymakers opted for allowing automatic stabilizers to operate, and many undertook countercyclical fiscal measures. By supporting aggregate demand, fiscal stimulus helped reduce expected defaults on bank loans (fiscal policy has a greater effect on firms that are relatively dependent on external finance—Aghion et al., 2009, and Laeven and Valencia, 2011) and thus reduced banks' recapitalization needs. This approach also differed from that in past crises, when fiscal policy was often contractionary (Figure 3). Furthermore, fiscal policy responses were more coordinated across countries than in the past, further helping to support economies.

Figure 3. Monetary and Fiscal Policies during Crises



Sources: IFS, Haver, WEO.

Capital Support

The private sector (including sovereign wealth funds) contributed much to recapitalizing financial institutions in the recent crises, albeit to varying degrees across regions. From September 2007 to September 2008, private capital injections for U.S., European, and Asian institutions amounted to 71, 78, and 94 percent, respectively, of announced losses (IMF, 2008) and greatly reduced balance sheet pressures during that period. Also, in some smaller countries, recapitalization came from foreign banks that dominated markets. Over the whole 2007–09 crisis period, private investors contributed much capital, about 61 percent, but more so in the United States than in the euro area (about 86 percent versus 47 percent).

Changes to accounting and valuation practices also alleviated capital pressures. It was perceived that fair-value accounting might contribute to a fire sale of assets and exacerbate solvency and liquidity concerns. After much political pressure, accounting standards boards allowed banks in October 2008 to reclassify certain assets, including complex structured securities, as held-to-maturity, which meant they could be reported on a historical or amortized cost basis. Also, firms could rely more on their own assumptions and models in valuing assets, including mortgage-backed securities, during illiquid or inactive market conditions. This greater flexibility in valuing assets also limited the need to raise new capital (Huizinga and Laeven, 2009).

Public recapitalizations were, proportionately, much lower than in past crises. Together with accommodating policies that supported asset values and held down losses, the rapid and large private recapitalization meant that public recapitalizations took place at a point when banking solvency was much stronger than in past crises. Public capital support totaled $441 billion—$245 billion in the United States under the Troubled Asset Relief Program (TARP) and $196 billion in the European Union—which, at only 5 percent of GDP on average, is about one-third of the amount provided in past crises. However, by aiming to have a rapid effect, avoid stigmatization, and support lending, the public recapitalizations were spread too broadly, foregoing the benefits of separating viable from nonviable institutions.

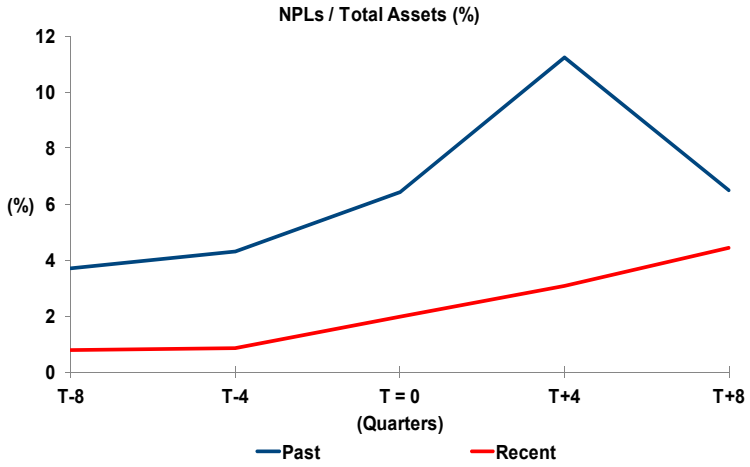
Asset Restructuring

In a typical crisis, nonperforming loans rise steeply, even before its onset, as banks acknowledge the expected deterioration in corporate and household repayment capacity. While the recent crises broadly exhibited the characteristics of a typical collapse following a boom (e.g., Lindgren et al., 1996; Dooley and Frankel, 2003; and Reinhart and Rogoff, 2009), the rise in nonperforming loans was much less pronounced (Figure 4). Write-downs of impaired assets showed up only gradually and have been lower to date than in past crises. This was in part due to the types of assets involved, with the drop in the value of securitized loans occurring earlier than in other crises, before the end of the cycle. Actual defaults followed only when the crisis affected the real economy and corporate sector and household conditions had worsened. Furthermore, corporate sectors were generally not overleveraged.

Partly for these reasons, asset restructuring has been far more limited in the recent crises than in the past. Restructuring refers to two processes. One, diagnosing the value of a bank's loans and investments, stating the value of its securities at market prices rather than acquisition cost, provisioning for and writing off (part of) nonpaying loans, and possibly selling off securities and loans, and deleveraging of the institution. Second, to assure that borrowers' financial conditions are sound and their creditworthiness are restored. This typically involves both financial restructuring (extending the maturity of loans, reducing interest rates and amount owed) and operational restructuring (selling of assets, reducing labor and administrative costs and the like).

In the recent episodes, many countries applied asset restructuring on a case-by-case basis, with public relief provided mainly through guarantees against a large deterioration in asset values; less frequent in the recent crises has been the use of "bad banks" (Table 2). Asset guarantees require little upfront funding and do not involve immediate loss recognition or recapitalization, unlike purchasing impaired assets at a discount. Given the size and complexity of nonperforming assets—including the many securitized portfolios and mortgages to be restructured—guarantees were often the only, or at least, the preferred option. Also, high public debt levels in some countries may have prevented asset transfers. While guarantees reduce uncertainty for financial institutions and help with their funding, the government takes on higher contingent costs.

Figure 4. Nonperforming Loans



Sources: BankScope, IMF, GFSR (2010)

During the recent crisis in comparison to most past episodes, such as the Nordic and Asian crises, fewer assets have been removed from the balance sheets of financial institutions through public asset management companies (public AMCs) or other programs (Table 2). One important exception is Ireland, where distressed loans with a book value equivalent to 44 percent of GDP were transferred to a public AMC. Other asset-targeted programs, like the U.S. Public Private Investment Program (PPIP), amounted to only 0.1 percent of GDP. While the Federal Reserve and other central banks also purchased large amounts of private securities to support targeted markets, those efforts were not directly aimed at asset restructuring.

Table 2. Selected Asset Relief Measures during Recent and Past Crises

Type of Measure	Use	Countries	Beneficiaries	Asset Types	Amount[1/]	
					$ bn.	% of GDP
Asset guarantees	Recent crises	Belgium	Dexia (FSAM) KBC Fortis	Structured assets	10.5 33.5 29.4	2.2 7.1 6.2
		Germany	West LB BayernLB LBBW	Structured assets	7.0 2/ 6.7 21.7 3/	0.2 0.2 0.6
		Netherlands	ING	RMBS, mortgage loans	35.1 4/	4.4
		United Kingdom	RBS Lloyds	Pools of assets	524 483	24.0 22.2
		United States	Citigroup Bank of America	Real estate-related	301 118 5/	2.1 0.8
"Bad banks"	Recent crises	Belgium	Fortis	Structured assets	28.7	6.0
		Germany	WestLB	Toxic and nonstrategic assets	107.8	3.2
		Latvia	Parex	Impaired and nonstrategic assets	1.2	5.1
		United Kingdom	Northern Rock Bradford & Bingley	Mortgage loans and other loans	121 6/ 79.3 6/	5.6 3.6
		United States	Bear Stearns AIG	RMBS, CDOs	30.0 52.3 7/	0.2 0.4
	Past crises	Sweden	Nordbanken Gotabanken	Real estate related and corporate loans	11.5	4.3
AMCs / asset purchases	Recent crises	Ireland	Banks	Distressed real estate-related (purchased by NAMA)	97.8	44.0
		United States	Government Sponsored Entities Banks	New MBS (purchased by asset managers for the Treasury). "Legacy" MBS/loans (PPIFs)	197.6 14.2	1.4 0.1
	Past crises	Thailand	Banks	Bad loans (purchased by TAMC)	17	13.7
		Korea	Financial institutions	Bad loans (purchased by KAMCO)	90	19.5

Sources: Borio et al, 2010; Fung et al, 2004; Boudghene et al, 2010; European Commission State Aid Register; Country authorities; IMF staff.

1/ For asset guarantees, amount refers to guaranteed (book) value of portfolio or otherwise as footnoted. For asset purchases, amounts generally refer the book value of assets transferred, i.e., before any write-downs, except in cases of marketable securities bought, where they refer to the actual market values.
2/ Swap facility.
3/ Includes ABS portfolio and loan to Sealink portfolio.
4/ Backup facility.
5/ The guarantee was provided in January 2009, however, the arrangement was never implemented and Bank of America paid an exit fee in September 2009.
6/ Refers to the total asset size of the institutions as of January 1, 2010.
7/ Represents lending to AIG SPVs by the FRBNY, which is less than the total assets of the "bad bank" for AIG. The loans from FRBNY were repaid from the liquidation of AIG assets.

III. Policy Choices And Preliminary Lessons

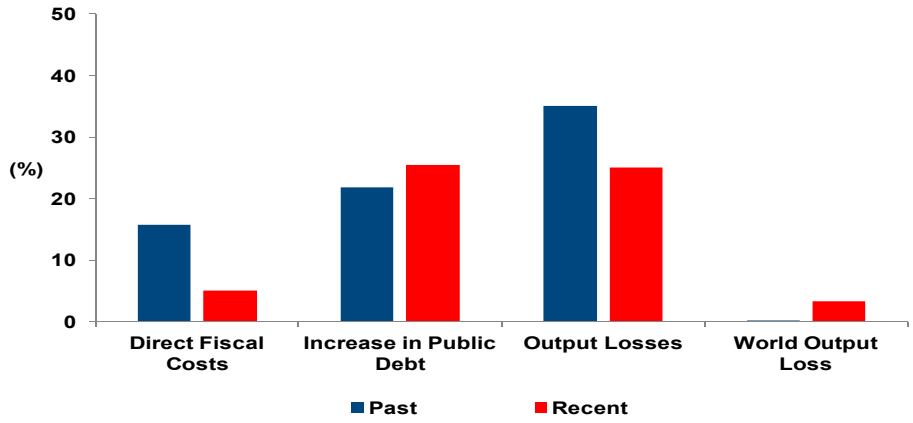
This section reviews policies chosen in light of outcomes and in comparison with both good practice and lessons from past crises. It first assesses the *costs*—using the metrics of output losses, fiscal costs, and increases in public debt—in comparison to past crises. Considering various trade-offs and differences in country circumstances, it then reviews *policy responses* in light of those adopted in the past and in comparison with good practice guidelines for resolving crises (see Appendix III). It provides some preliminary lessons in terms of *effectiveness*.

A. The Costs of Crises

Costs of crises can be assessed in different ways. These include the *direct fiscal costs*, encompassing direct outlays to support the financial system and for resolving nonperforming assets; the *broader fiscal costs*, measured as the increase in public debt over some chosen horizon (which include the direct fiscal costs); and the *real output losses*.

The direct fiscal support, so far, has been lower than in past crises. With the important caveat that the crisis is still unfolding in many countries, especially in EU countries, the fiscal costs attributable to direct support in the recent crises reached 5 percent of GDP on average as of end-2009, against 15 percent for past crises (Figure 5). This lower cost reflects the more accommodative monetary and fiscal policies and the lesser need and use of public recapitalization. The management of distressed assets was more decentralized than in past crises, a reflection of the more limited nature of public interventions and the greater use of guarantees. Guarantees (including liability guarantees, liquidity, and other contingent support) reduce the need for upfront fiscal outlays, but impose higher contingent fiscal costs. Broader fiscal costs, however, have been larger than in past crises. Projected increases in debt for the four-year period after the onset of the crisis are higher for the recent crises (about 25 percent of GDP). These increases come on top of the already large public debt burdens in many advanced countries.

Figure 5. Cost of Recent and Past Crises
(Medians, in percent of GDP)



Source: Laeven and Valencia (2010). Costs are measured as of 2009.

Output losses have been lower than in the past but are still significant. At 25 percent of GDP, cumulative over four years, the median output losses are lower than the 35 percent for past crises, reflecting in great part the beneficial effects of the extraordinary policy measures during the recent crises (and also reflecting the fact that in the recent crisis, the impacted countries had lower growth trends preceding the crisis).[5] Measured for the whole world, however, output losses from the recent crises were 3.3 percent versus 0.2 percent for the past. That global output losses were larger this time is no surprise given the size of the affected economies and the ensuing spillovers.

Costs relative to output in the recent crises vary greatly across countries but are more comparable relative to banking system assets. For major advanced countries, the direct costs have been relatively small, 3 percent to 5 percent of GDP. For some of the smaller countries, however, the direct costs are much larger, up to 17 percent for Iceland (excluding Icesave) and 25 percent for Ireland (as of end-2010). These countries engaged in larger-scale public recapitalizations and removals of bad assets from banks' balance sheets. Furthermore, their banking systems (in terms of assets as a percent of GDP) were relatively larger. Indeed, as a share of banking assets, the direct costs are more comparable across countries. At the same time, while public debt in these smaller countries rose due to recapitalization programs, major countries had larger overall debt increases.

B. The Policy Choices and Preliminary Lessons

The analysis offers preliminary lessons and suggestions for further reforms regarding the policy sequence and mix in crisis management and resolution; the diagnosis of financial institutions; the operational restructuring of weak institutions; the restructuring of assets, in particular of household debt; and measures to restore proper incentives and market discipline.

An Overall Accommodative Policy Mix Should Not Preclude Deep Restructuring

Responses in the recent crises primarily relied on accommodative monetary and fiscal policy to contain the potential spillovers to the real sectors. Affected countries included mostly advanced economies that had the ability to conduct countercyclical monetary and fiscal policy without (initially, at least) undue concern about the impact on their interest rates, exchange rates, or public debt. The accommodative policies contained the crisis by forestalling sharp increases in interest rates and large currency depreciations (indeed, in some cases currencies even appreciated)—which can degrade borrowers' solvency and increase bank losses—and thus by directly and indirectly propping up bank asset quality and values.

This mix of policies may have transferred the costs to the future, however, in the form of higher public debt and possibly a slower economic recovery. While the complexity may have justified

[5] Output losses are defined as the deviation of real GDP from its trend (computed as the HP-filtered series over the 20-year period ending a year before the crisis) over the four-year period beginning with the first crisis year.

more emphasis on the restoration of confidence and less deep restructuring early on, it precluded thorough due diligence of individual banks and might currently reduce incentives to restructure assets. Instead of a policy of targeted, diagnosis-based resolution and early asset restructuring, the current stance is a muddling-through approach that delays addressing nonviable banks and nonperforming assets through a mix of accounting and regulatory forbearance, guarantees, and (implicit) public support. The presumption should therefore remain in favor of deep restructuring early on, even when pursuing accommodative general policies.

Diagnosis of Financial Institutions Should Precede Recapitalization

Thorough, independent examinations were typically conducted in past crises to assess asset values and the viability of financial institutions so as to judge the appropriateness of recapitalization. Nonviable institutions would be closed or viable parts sold off and the rest of the institution liquidated. Once the size of the losses was determined, recapitalization plans for viable institutions would be announced and implemented. This process could take considerable time: in the case of Indonesia, the government announced a blanket guarantee in January 1998, began examinations in August 1998, and implemented recapitalizations in March 1999.

In the recent crises, policymakers in the major advanced economies focused on reducing systemic consequences and therefore often opted for providing quick support to all institutions, including weak and potentially nonviable ones. Governments faced unprecedented complexity, and were hampered by limited information and limited tools to address systemic and cross-border entities. They therefore engaged rapidly in measures, first ad-hoc and then more systematic, to stem contagion and restore market stability. Ad hoc assistance was provided to institutions embodying important counterparty risks (notably, in the United States, to AIG, to specialized municipal bond insurers, and to the two giant government-sponsored housing-related enterprises, Fannie Mae and Freddie Mac, and in Europe to a number of banks).[6]

The more rapid interventions typically did not allow for a separation of viable institutions from less-viable ones. Systematic assessments of institutions were conducted through stress tests and publicly disseminated in the United States and the EU (in May 2009 and July 2010 respectively), but only after initial government recapitalizations (a first round of EU-wide stress tests was conducted in September 2009, but results were not made public). These stress tests restored short-term investor confidence, but their long-term impact has been uneven, in part because market participants had mixed views on the credibility of the assumptions used and the remedial actions announced in conjunction. EU authorities have been compelled to engage in a new round of stress tests. Furthermore, public support of institutions required little in terms of their operational restructuring, in contrast to earlier crises. In the recent crises in Iceland, Ireland, Latvia, and Ukraine, however, the sequence was the more typical one: diagnosis, recapitalization, and the removal of nonperforming assets or the creation of bad and good banks.

[6] In the European Union, key policies were subsequently coordinated, e.g., EU (2008), followed by agreements to coordinate recapitalization, guarantee, asset insurance, and transfer schemes.

The lesson is that diagnosis needs to be conducted, including through strict and transparent stress tests, even while accommodative policies are put in place. Given the circumstances, many governments had no alternative but to apply quick support measures. However, that should have been immediately followed by forward-looking measures, including asset and operational restructuring. Not doing so means the economic recovery is hampered by institutions weighed down by assets yet to be restructured. Due to residual uncertainty, confidence in many systems is still very dependent on implicit and explicit government and central bank support. Stress tests should be conducted in many countries, accompanied as needed by credible recapitalization plans, or restructuring of institutions' liabilities, without adding to sovereign debt burdens.

Dealing With Distressed Institutions Requires Operational Restructuring

While most countries imposed limits on compensation to management and shareholders, more-intrusive measures—including cost cutting, downsizing, changes in management, and forced write-down of shareholder value—have been used less than in the past, except in cases where governments took majority ownership or fully nationalized institutions. Rather, obligations were placed on banks to continue to provide support to the real sector. The less-intrusive measures reflected institutions' stronger solvency and continued majority private ownership, conditions different from those in past crises. But it also reflected the fact that the rapid and broad-based public support was mostly oriented to financial stability and limiting adverse short-term impacts.

In EU countries, additional conditions were imposed on state support measures, whereas in the United States both initial and ongoing conditions attached to state support (TARP) were more limited. For those EU institutions that participated, public guarantees on liabilities carried restrictions on balance sheet growth, dividends, and employee compensation. For institutions benefiting from recapitalization and asset relief, significant balance sheet and operational conditions (e.g., restrictions on acquisitions, refocus on core activities, divestments of businesses and assets) were included for competition policy reasons. In the United States, capital assistance under TARP required that institutions be adequately capitalized. As a result, the only restriction imposed on these institutions was restriction on executives' compensation and prior U.S. Treasury permission for any increase in dividend payments.

Bank solvency has improved in many of the countries affected by the recent crisis, but it has mainly been on the basis of balance sheet restructuring, including recapitalization; the support of abnormally low interest rates, which improve profits from lending and investing; and enormous fiscal stimulus, which supports loan performance. Those conditions cannot, however, be expected to continue. With many financial systems still overextended and subject over coming years to new regulatory requirements,[7] profitability will be under pressure. For institutions faced with limited prospects, the current incentive structures and competition for profits may again

[7] The Basel III agreement on international banking standards reached by the Basel Committee on Banking Supervision calls for a substantial increase in the quantity and quality of capital and liquidity buffers, new regulations and tougher standards for nonbank firms, and other macroprudential rules.

foster risky behavior. Uncertainty about possible further losses and shortage of capital may delay others from lending to the real economy and instead continue to deleverage. While demand and supply effects in the provision of credit are difficult to distinguish, evidence (Laeven and Valencia, 2011) suggests that recapitalization aids the speed and sustainability of recovery.

With fewer public levers to do the job, operational restructuring in the major countries will depend largely on market pressures. For banks with a large public ownership interest, restructuring efforts will directly depend on government actions. And over time, the government stake must be sold off. For other institutions, including those that have benefited from government support, market pressures will force many to rebuild balance sheets and restructure operations. Regulatory reforms addressing gaps and shortcomings can help speed this process along. But the problems are large and complex, market conditions are depressed, and the economic recovery in the advanced economies is still weak. Those challenges underscore the importance of creating appropriate incentives for bank managers and owners and for supervisors and markets to monitor banks and ensure prudent governance.

Dealing With Distressed Borrowers Is Still Often Lagging

Although the across-the-board policies improved conditions at many financial institutions and underpinned economic activity, they may have reduced the incentives for restructuring the asset side of bank balance sheets. In many markets, asset quality remains uncertain. The prices of various financial assets have improved following government support measures, but they remain low in many markets. Incomplete or dubious disclosures of asset quality, attributable in part to accounting changes, hinder market transparency and liquidity. The complexity of the task notwithstanding, asset restructuring is less far along today than at similar stages in past crises. In the Asian and Nordic crises, public asset management companies (AMCs) and bad banks were used to remove non-performing loans—especially real estate loans—from the balance sheets of banks which were taken over by the authorities, thereby incurring upfront fiscal outlays. In this crisis, reflecting the limited public intervention in institutions, asset restructuring has largely been left to the financial institutions themselves in most large advanced countries.

Although loss recognition was not always swift in the past crises either, banks nonetheless underwent a more rapid disposition of their problem assets than in the recent crises. The limited use of AMCs in the recent crises reflects the complex nature of the assets involved, which do not permit easy centralized restructuring. But the chosen alternative route—injection of capital into the banks and nonperforming loans left on their balance sheets—risks continued losses weakening banks' profitability and absorbing management capacity. It may also foster forbearance from formal regulations, as it extends the public safety net and thereby impede a full recovery in confidence. These alternative paths—disposal of bad assets versus capital injections with government funds and delay of clean-up—are illustrated by the experiences of Sweden and Japan in their past crises (Box 1). Sweden took a comprehensive approach to dealing with distressed assets (primarily commercial real estate) and implemented it quickly. In contrast, by taking much longer, Japan showed that such delays can impose enormous costs.

Box 1. Bank Restructuring and Asset Management: Sweden versus Japan

In **Sweden** the authorities responded to the initial signs of financial strain in the fall of 1990 with a series of ad hoc interventions. When these measures failed to restore stability, a new bank resolution agency was established to comprehensively deal with the crisis. The agency evaluated the financial condition of troubled banks on a forward-looking basis, categorized banks as solvent or insolvent, forced shareholders to recapitalize the former, and took control of the latter. Asset management companies (AMCs) were set up for two nationalized banks, and problem assets, conservatively valued—particularly real estate loans— were transferred to the AMCs. The process helped put a floor under real estate prices and facilitated the return of investors. As early as 1993, confidence in the financial system began to recover.

The Swedish experience provides useful lessons for the recent crises but needs to be placed in context (see also Klingebiel, 2000). The ultimate fiscal costs were relatively small, totaling only 4 percent of GDP, partly because of a global economic recovery and the competitive benefits of a 30 percent depreciation in the currency. Problem assets were mainly relatively simple commercial and residential real estate loans, and the banks operated domestically rather than cross-border. These features, which facilitated quick valuation and a centralized approach to restructuring and asset management funded by the state, were not characteristics of the recent crises.

In **Japan** a financial crisis was triggered in 1995 when several regional deposit-takers failed. The authorities responded with emergency liquidity and a government guarantee of bank liabilities. Recapitalization schemes in 1998 and 1999 failed to restore confidence, and while a zero interest rate policy (adopted in February 1999) and quantitative easing (introduced in early 2001 and increased substantially in 2002) ultimately eased liquidity problems, they did not address the root causes of the crisis—uncertainty over the solvency of banks. In the fall of 2002, authorities finally set quantitative targets for the disposal of nonperforming loans and conducted rigorous examinations with more stringent provisioning standards. Along with two AMCs established to underpin asset prices, these measures ultimately helped restore stability.

Their special circumstances notwithstanding, the contrasting experiences of Sweden and Japan offer two key warnings about the management of financial crises: ***Delays in recognizing problem loans may exacerbate a financial crisis and postpone recovery.*** Weak accounting practices and regulatory forbearance may blunt incentives for remedial action, sustain uncertainty about asset values and solvency, and hinder price formation. ***Liquidity provision may mitigate the immediate effects of a systemic crisis while masking fundamental problems in the banking system.*** Without comprehensive measures to recognize losses and address resulting capital shortfalls, the extended provision of exceptional liquidity may delay necessary restructuring.

Sources: Drees and Pazarbasioglu (1998), Ishi (2009), Ingves and Lind (2008), Syed, Kang and Tukuoka (2009).

Unless interventions in the banks accomplish restructuring, especially of household debt, the recovery is likely to lengthen. Prior to the crisis, households in many countries accumulated large debts, especially for home purchases—all told, debts amounting to more than 130 percent of disposable income in the United States and more than 160 percent in some European countries. For many households these debts have become too onerous to service given the unfavorable economic conditions. While low interest rates currently ease the debt servicing burden and reduce the pressure on lenders to adjust borrowers' debt levels, risks will increase as interest rates return to normal levels. Efforts so far by banks to reduce the burden of household loans have not been enough; likewise, government programs to restructure home mortgage loans have been small in scope and largely ineffective as indicated by the recurrent defaults on the restructured loans. The restructuring needs to be accelerated through a more effective mix of private and public actions (see Laeven and Laryea, 2009, for some best practices).

Reducing Systemic Risks and Preventing Moral Hazard Require More Reforms

Many of the structural characteristics that contributed to the buildup of systemic risks in financial sectors are still in place today, and moral hazard has increased. In most countries, the structure of the financial system has changed little. In fact, as large banks acquired failing institutions, concentration has increased on average—for the 12 recent crises countries, the assets of the five largest banks have risen from 307 percent of GDP before the crisis to 335 percent in 2009—complicating resolution efforts. The large-scale public support provided to institutions and markets—a contingent liability equivalent to one-fourth of GDP at the peak of the crisis—has exacerbated perceptions of "too important to fail" (Goldstein and Veron, 2011). Failing firms may be resolved in a number of ways (see Appendix IV), but in the recent crises, few creditors were forced to write down claims because the risk of contagion. The shielding of creditors restored confidence more quickly, but it did so at the cost of more moral hazard and the perpetuation of too-important-to-fail problem (and stretched sovereign balance sheets).

Countries need to implement measures that reduce moral hazard and that lower both the odds of a new systemic crisis and the effects it would have. Governments must now wean banks off their implicit public support, scale down deposit insurance schemes, and restore creditor discipline. For the longer term, they must also begin now, through regulations and supervisory actions, to reduce incentives for complexity so as to facilitate restructuring in a crisis and diminish the expectations of bailouts and their adverse effects. Measures need to be well targeted, globally coordinated, yet flexible enough to reflect local factors. Examples include: living wills and recovery and resolution plans; restrictions on types of activity undertaken (such as the Volcker rule, in the United States, which limits proprietary trading); a capital charge or levy on institutions commensurate with the systemic risk they create; limiting the public support to systemically important banks, including through carefully designed and monitored contingent capital or bail-in instruments, with clear triggers, so that losses are shared fairly; and limiting the proliferation of complex financial instruments. Policy makers will need to be cognizant, however, of possible unintended consequences, in part as many measures remain untested.

The enhanced frameworks and tools adopted by several countries to resolve complex bank, and sometimes nonbank, institutions are only a start; more progress is needed, especially on cross-border resolution. Since the crisis, several countries have adopted more effective resolution regimes for large financial institutions that allow losses to be borne by uninsured creditors, but more countries need to do so.[8] Much is yet to be done in enhancing supervision of cross-border

[8] In the United Kingdom, the Banking Act 2009 allows for early interventions with a wide array of tools to deal with failing banks. In Germany, a temporary regime has been replaced by a permanent resolution framework for systemically important banks. The United States (through the 2010 Dodd-Frank Act) and several European countries (including Belgium) have extended resolution regimes to cover systemically important nonbank financial institutions. Although discussions are under way in the EU (e.g., in January 2011 the EC made proposals for crisis preparedness and cross-border resolution in the European Union), important issues still remain to be agreed upon, including burden sharing, cross-border deposit insurance claims, secrecy laws, and other legal impediments.

exposures and related risks. And in all cases, the ability of the new regimes to deal with actual failures of large (cross-border) institutions remains an unknown.

IV. CONCLUSIONS

The financial upheavals of 2007–09 exposed serious weaknesses in crisis management and resolution. In many ways**,** the crisis is ongoing and further analysis is needed, but this paper provides some preliminary lessons on the basis of experience in 12 countries in the recent crisis and 17 more in past crises going back to 1991. The major lessons and the policies requiring urgent attention include those in the following areas:

- *The overall policy mix and sequencing.* The major advanced countries have dealt with the recent crisis differently, and except for the initial period, less decisively from the ways countries dealt with past crises. In the recent crisis, they quickly enacted accommodative monetary and fiscal policies and sustained them for extended periods of time. That helped to reestablish confidence and stabilize economies. But unlike the responses in past crises, they made little effort at in-depth diagnoses of banks' balance sheets and follow-on restructuring (removal of bad loans and other assets devalued by the crisis). The resulting persistent weaknesses at banks are likely retarding economic recovery. The in-depth restructuring of weak financial institutions and non-performing assets remain on the agenda for dealing with the recent crises. For designing a response to future crises, striking the right balance between containment and restructuring policies is a major policy challenge.

- *Institutional tools for resolution.* In the recent crisis, countries had little ability to orderly wind down large cross-border banks and systemic nonbank financial institutions. The ongoing challenge is to design the framework—the institutional infrastructure—for such resolutions, including principles for burden sharing, so as to reduce moral hazard and enhance financial stability. Measures need to limit government bailouts by providing greater capital and liquidity buffers and better cost-sharing arrangements with creditors in case of distress. Establishing the framework is even more urgent today because concentration in the financial sector has increased.

- *The approaches to reduce systemic risks.* The recent crisis showed that systemic risk had built to cataclysmic levels during the preceding boom. Since the lenses through which markets and supervisors looked for such risk kept it mostly hidden, national and international bodies will need to provide for greater public transparency on exposures and other aspects of systemic risks to facilitate supervisors' work and enhance market discipline. Greater supervisory cooperation, including through supervisory colleges, will be needed. Developing methods for containing the buildup of systemic vulnerabilities will make a systemic crisis less likely and make it easier to deal with should it occur. Measures being considered include those that encourage institutions to reduce complexity or prohibit them from engaging in risky types of activities. The effectiveness of these measures and trade-offs regarding the efficient allocation of resources, however, require further analysis.

APPENDIX I. Definitions, Data Sample, and Fiscal Costs of Crises

Definition of Systemic Banking Crisis

A systemic crisis is defined as an episode of stress in the banking sector followed by significant policy intervention (Laeven and Valencia (2010)). With stress being difficult to measure, a crisis is defined to be systemic when any three out of five commonly used crisis resolution policies are applied extensively: liquidity support, restructuring, asset purchases, significant guarantees, and nationalizations.

Sample of Recent and Past Crises

Episodes in 12 countries during the crisis of 2007–09 have been identified as meeting the definition of a systemic crisis. Annex Table 4 shows the policy measures used in each country (all as of end-2009). Some crisis countries have adopted additional measures since end-2009, and some of these are noted in the text. Also, euro area periphery countries have been facing difficulties recently, but interventions were limited as of 2009 and hence do not as yet serve to qualify those difficulties as systemic crises.

The following systemic crises in emerging and advanced economies that took place between 1991 and the 2007–09 crises are used for illustrative comparisons: Nordic crises: Finland, Norway, and Sweden (all 1991); Latin American crises: Brazil (1994), Mexico (1994), Jamaica (1996); Asian crises: Indonesia, Japan, Korea, Malaysia, and Thailand (all 1997); and emerging markets crises: Colombia (1998), Ecuador (1998), Russia (1998), Turkey (2000), Argentina (2001), and Uruguay (2002). Because these crises are a subset of historical cases, summary statistics reported here can differ from those in cited references.

Annex Table 4. Recent Crises (all measures are as of end-2009)

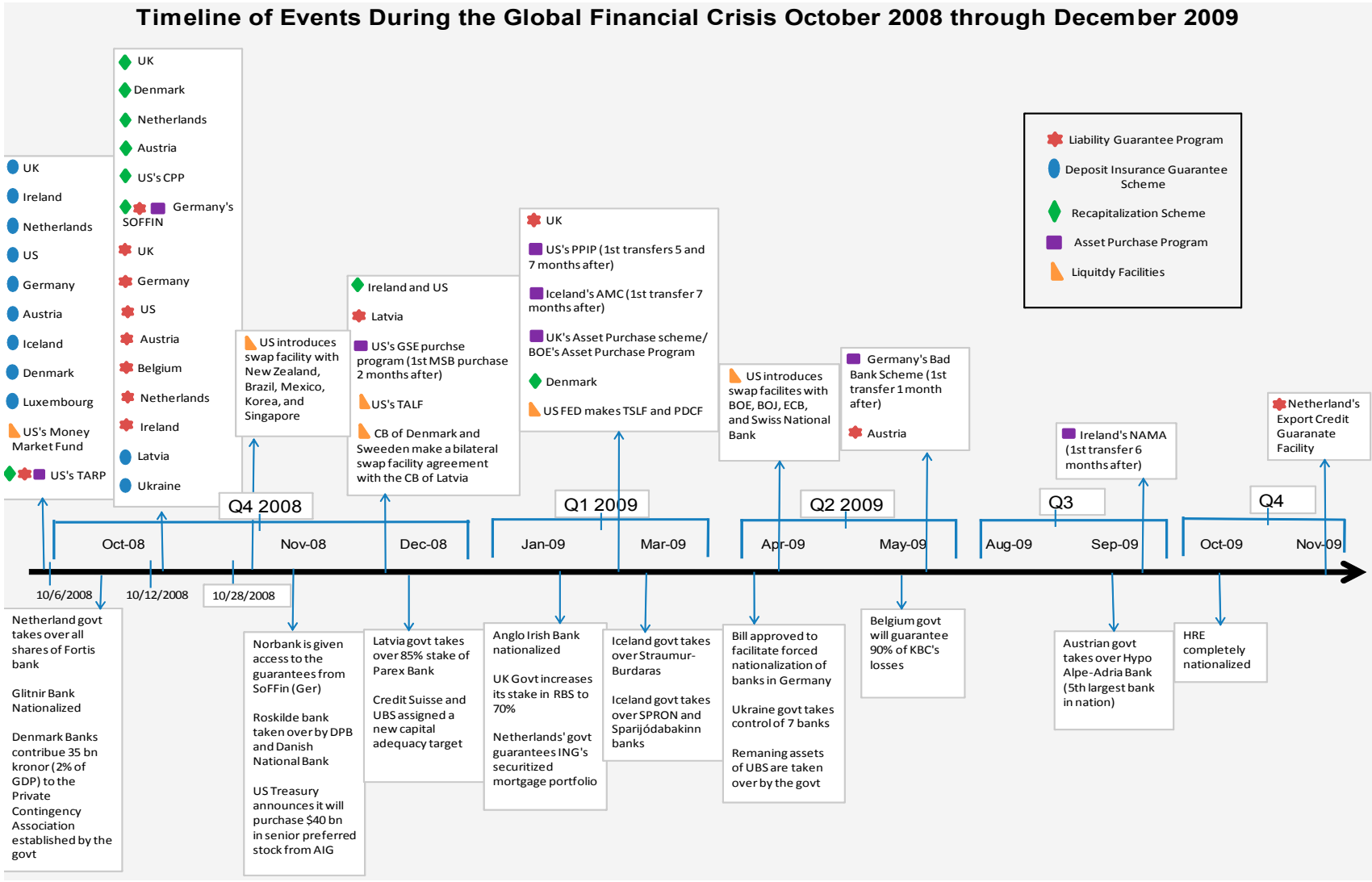
Country	Extensive Liquidity Support	Significant Restructuring Costs	Significant Asset Purchases	Significant Guarantees	Significant Nationalizations	Income Level [1\]
Austria	✓			✓	✓	A
Belgium	✓	✓		✓	✓	A
Denmark	✓			✓	✓	A
Germany	✓			✓	✓	A
Iceland	✓	✓		✓	✓	A
Ireland	✓	✓		✓	✓	A
Latvia	✓			✓	✓	E
Luxembourg	✓	✓		✓	✓	A
Netherlands	✓	✓		✓	✓	A
Ukraine	✓	✓			✓	E
United Kingdom	✓	✓	✓	✓	✓	A
United States	✓	✓	✓	✓	✓	A

[1\] A: advanced economy; E: emerging economy.

Fiscal Costs of Crises

For the crises that started in 2007, direct fiscal costs consist of fiscal outlays committed to the financial sector up to end-2009. For each past crisis, direct fiscal costs are the total fiscal outlays during the episode. See Laeven and Valencia (2010) for country-specific figures.

APPENDIX II. Timeline of Events and Policy Responses



APPENDIX III. The "ABCs" of Crisis Resolution and Experiences in the Recent Crisis

ABCs of Crisis Resolution	Experiences in the Recent Crisis
Leadership and transparency: Appoint a single, accountable body with a clear mandate for financial stability and formal arrangements for cooperation with other agencies. Announce measures and procedures on a timely basis.	**Countries had a variety of different arrangements for coordination amongst authorities but improvements were needed.** Inadequacies were exposed in all regimes with respect to identifying systemic risks, managing information flows, assigning decision making responsibility and transparent and prompt communication. In most countries, clear responsibilities for financial stability were neither collectively nor individually assigned to agencies. Recent legislation in several countries has been drafted/enacted to set up specific bodies to identify and respond to financial stability risks (such as the Financial Stability Oversight Council in the United States).
International coordination: For crises with cross border incidence, policy responses should be coordinated as much as possible across the spectrum of measures from intervention on individual institutions, through to sector wide programs and macroeconomic policy responses.	**Crisis containment measures were initially uncoordinated, and while coordination improved at the macro policy level, cross-border resolution remains problematic.** Deposit guarantees were raised to different levels on an uncoordinated basis across countries in the fall of 2008. However, it was soon followed by joint interest rate cut by several major central banks and a G20 announcement on coordinated fiscal stimulus. Currency swap lines were provided by the Federal Reserve to the central banks of 14 countries. The resolution of cross border firms proved to be very difficult, in most cases leading to uncoordinated decisions and suboptimal outcomes.
Diagnosis and analysis: Undertake comprehensive and intrusive diagnostics of the depth and breadth problems in the financial sector and identify insolvent banks. Continue to monitor through the crisis, including where necessary strengthening regulatory reporting.	**Publishing the results of system-wide stress tests was a new feature of the recent crisis.** But many firms in the United States and Europe received capital injections from the public sector prior to the stress tests, suggesting they may have been used more as a crisis containment tool to address information asymmetries and uncertainty than as diagnostic exercise to inform decision makers.
Protection of depositors: In addition to the protection of insured depositors, targeted and credible guarantees of creditors may be necessary to prevent contagion and facilitate the closure of weak banks. Wide creditor guarantees incur risk for the state.	**Targeted guarantees were widely deployed.** All of the twelve sample countries announced measures to enhance protection for retail depositors. Countries either fully guaranteed the majority of retail deposits or increased the coverage of their deposit insurance schemes. Eight out of the twelve countries additionally guaranteed other liabilities such as wholesale deposits. Blanket guarantee of all creditors was only adopted in Ireland whereas they were deployed in half of all previous crises in advanced economies.
Equitable and time consistent burden sharing: Subject to preserving financial stability, the authorities should ensure consistent treatment of creditors independent of the size, complexity, and ownership of failed firms. This requires effective resolution regimes, intrusive supervision, and effective contingency planning.	**As with past crises the treatment of creditors was inconsistent with stated ex ante policy, with ongoing moral hazard consequences.** Although there were a small number of notable exceptions, many large financial institutions had to be nationalized with creditors (other than shareholders) made whole. Studies suggest that the too big to fail subsidy increased as a result of these bailouts.

ABCs of Crisis Resolution	Experiences in the Recent Crisis
Conditionality: Public support should include conditions to address operational failure and ensure proper incentives, including improving banks' risk management; replacing management and owners; rigorous audit followed by prudent write-down of assets; measures to cut cost and eliminate excess capacity; and where necessary closing or transferring part or an insolvent firm to another firm.	**Conditions attached to recapitalization programs seem were initially less extensive than those applied during past crises, except in cases where State Aid rules applied**. Limits were placed on compensation to management and shareholders but 'traditional' restructuring measures such as cost-cutting measures, downsizing, and forced write-down of shareholders reportedly were less prevalent at least initially. In EU countries such conditions were subsequently imposed as part of state aid approval. What was new during the recent crisis were the conditions placed on banks to extend new lending to support the economy, including targets on net lending to business customers.
Impaired asset management: Early action on impaired assets is essential to prevent creditor discipline from further eroding. A variety of institutional arrangements and techniques can be chosen to balance rapid resolution and recovery of the value of impaired assets. Removing nonperforming loans from banks' balance sheets may be necessary to address banks' stock problem.	**Traditional asset management companies have been less frequently deployed to date in the recent versus past crises.** However, the asset management phase of the recent crisis is arguably incomplete and AMC's may be less relevant for dealing with complex structure products. Instead asset guarantees have been used extensively in recent crisis. Asset guarantees have been provided on both 'good' and 'bad' assets and were seemingly deployed primarily as a crisis containment tools to reassure creditors that banks were sufficiently capitalized rather than to restructure banks balance sheets.
Resolution regimes: Strengthen resolution regimes to ensure that failing financial institutions (including nonbanks of systemic importance), can be resolved promptly and in ways which minimize risks to financial stability and public sector cost.	**Resolution tools for dealing with failing financial firms were inadequate.** Most countries did not have special administration regimes, to allow early intervention prior to insolvency. Resolution options were therefore limited to liquidation, bailout or nationalization if private sector solutions failed. Special resolution regimes which did exist generally did not extend to nonbank entities. Consequently, the U.S. authorities were unable to prevent Lehman going into liquidation after efforts to sell the firm failed, and were forced to nationalize AIG days later.
Corporate insolvency regimes: Orderly and effective insolvency regimes are needed to ensure predictable and equitable outcomes. Reforms may be needed in crisis to establish fast-track procedures to deal with many failures.	**Corporate insolvency regimes have largely proven adequate to date.** The majority of the crisis countries are advanced economies with well established and funded judicial systems. However, economic recovery is incomplete and further corporate insolvencies may follow.

APPENDIX IV. Resolution Approaches, Restructuring and Moral Hazard

Type of Resolution	Costs Borne by	Implications for Moral Hazard	Comments
Liquidation of the whole bank and insured depositors paid out	Shareholders, uninsured creditors and the Deposit Guarantee Fund (DGF)	No moral hazard	This tool has been rarely used in recent (and in past) crises) and only for small banks due to concerns about contagion.
Good/bad bank split of the firm into liabilities which are protected to prevent contagion/ preserve financial stability plus good assets; and other liabilities and 'bad assets.' The former are sold to another firm and the latter go into liquidation	Shareholders, creditors, the DGF, and the authorities if significant wider liabilities are rescued	To the extent that all (or most) uninsured creditors are left behind in the liquidation, the effect on moral hazard will be zero (or low). Shareholders and creditors left behind will receive what they would have earned in whole company liquidation (typically zero for shareholders). But if significant noninsured creditors are rescued, e.g. wholesale deposits, then moral hazard will rise.	This transaction is called a purchase and assumption in the United States. The rescued liabilities and the good assets are sold to a third party perhaps via the intermediate step of a bridge bank. This tool has mainly been used for small banks in the recent crisis with some exceptions.
Recapitalization by the government / **nationalization** of a failing bank	Shareholders and the authorities. It is very unlikely that the creditors incur losses, unless the recapitalization fails and the firm is subsequently put into insolvency.	Creditors are bailed out, creating significant moral hazard. If shareholders are only diluted or receive compensation this will further exacerbate moral hazard.	This tool has been used extensively in the recent crisis (as in past crises).
Open bank assistance which allows a failed firm to survive under original ownership. Assistance can take the form of: • Subsidized funding • Subsidized asset guarantees or asset purchases • Liability guarantees	The authorities and shareholders depending upon the terms of the assistance. E.g. if assets are purchased at less than book value, or asset guarantees include a first loss piece for the firm, shareholders incur losses.	Significant moral hazard. Creditors will only incur losses if not guaranteed and the firm is subsequently placed into liquidation. Worse still, shareholders remain owners of the firm and may not face significant losses depending upon the degree of subsidy in the government assistance.	These measures have been extensively deployed in the recent crisis. Typically these measures have been deployed in conjunction with recapitalization by the authorities.

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