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Lessons from World Bank Research on Financial Crises

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Abstract

The benefits of financial development and globalization have come with continuing fragility in financial sectors. Periodic crises have had real but heterogeneous welfare impacts and not just for poor people; indeed, some of the conditions that foster deep and persistent poverty, such as lack of connectivity to markets, have provided a degree of protection for the poor. Past crises have also had longer-term impacts for some of those affected, most notably through the nutrition and schooling of children in poor families. As in other areas of policy, effective responses to a crisis require sound data and must take account of incentives and behavior. An important lesson from past experience is that the short-term responses to a crisis—macroeconomic stabilization, trade policies, financial sector policies and social protection—cannot ignore longer-term implications for both economic development and vulnerability to future crises.

This paper—a product of the Development Research Group—is part of a larger effort in the department to contribute to ongoing discussions on the most appropriate policy responses to the 2008 financial crisis. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at mravallion@worldbank.org.

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

Produced by the Research Support Team

Lessons from World Bank Research on Financial Crises

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[1] This paper was written by the staff of the World Bank's research department, under the overall supervision of the department's director, Martin Ravallion. The encouragement of Justin Lin is gratefully acknowledged. For useful comments, the department is grateful to Jean-Jacques Dethier and Justin Lin. These are the views of the authors, and need not reflect those of the World Bank as a whole, or any affiliated organization.

Crises have been much studied, including at the World Bank. At the time of writing, if one enters the phrase "financial crisis" in the search engine of the Bank's "Policy Research Working Papers" series one gets over 650 research papers, back to 1990.[2] Of course, not all of these papers are relevant to any given crisis and some relevant research does not mention a "crisis;" for example, the literature on famines and natural disasters contains insights for social protection policy responses to a financial crisis. Nor does the Bank have a monopoly over crisis research; financial crises have also been much studied by our sister organization, the IMF, and have also been the subject of much academic research. Nonetheless, as the world enters (as we write in late 2008) what is clearly a truly major financial crisis, it is of interest to take stock of what lessons might be drawn from the Bank's past research on crises. This paper aims to do just that.[3]

The existence of financial crises does not change our assessment that, on balance, financial development and globalization are good for poverty reduction in the longer-term. However, this positive long-run relationship can coexist with a negative short-run relationship through financial fragility. This can reflect fundamental distortions that build up for a long time, largely hidden from view, before a macro shock reveals the underlying vulnerabilities. But financial crises can also strike economies with relatively sound institutions and generally good policies.

Arguably, greater openness in areas such as trade and migration helps countries deal with domestic shocks, but may well increase vulnerability to external shocks. Globalization has probably facilitated contagion of the 2008 financial crisis, although some economies and some people are likely to be more vulnerable than others. Even an economy-wide crisis will have diverse, heterogeneous, impacts that warn against simple generalizations, and also point to the need for a flexible social policy response. It should not be presumed that the poorest will be hit hardest; indeed, some of the same (undesirable) factors that have kept a significant share of the developing world's population in deep and persistent poverty—including a lack of connectivity to markets, and consequent lack of opportunity for economic advancement—will protect them to some degree from the crisis. However, significant welfare impacts can be expected, notably in

[2] The working paper web site is http://econ.worldbank.org/docsearch. If one searches on the phrase "financial crisis" the site returns 657 papers (as of November 7, 2008); just searching on the word "crisis" gives 730 papers.
[3] This paper is not a comprehensive survey of the literature, but rather a distillation of what we see as the key lessons to be drawn from our research on crises over a number of years.

countries, and regions within countries, that have benefited from market-oriented development. A crisis can also have longer-term impacts for some of those affected, most notably through the nutrition and schooling of children in poor families. And crisis responses can lay the seeds of longer-term vulnerability to crises. The extent to which these adverse outcomes materialize will depend in part on the policies adopted by developing-country governments. The record of past policy responses to crises contains both successes and failures.

The paper begins with a review of what we have learnt about the causes of past financial crises. It then looks at what we know about the social impacts of crises in developing countries and policy responses, before offering some conclusions.

Understanding crises

The process of globalization and financial development has been prone to crises. Over the long run, financial development is expected to support economic growth and poverty reduction. But, along the way, even relatively mature financial systems are vulnerable to systemic banking crises, cycles of booms and busts, and financial volatility. [4] This appears to be partly intrinsic and partly due to policy mistakes. It arises as banks expand and capital markets generate new financial products. This entails new, unfamiliar, risks for financial intermediaries and regulators. Furthermore, as countries become more open to capital flows, crises are more easily transmitted across borders. The positive long-run relationship between financial development and growth coexists with a negative short-run relationship through financial fragility.[5]

Don't count on 'decoupling': Given the lessons from the crises of the past 15 years, developing countries have taken measures to become less vulnerable to the sorts of external shocks likely to emanate from the adjustment problems now facing many developed countries, including the US. For example, many developing countries have accumulated large reserves, have tried to switch to long-term and domestic currency borrowing, and have tended to reduce fiscal and current account deficits, thus lowering their debt levels.[6] Some observers have argued that (after the crises of the 1990s) developing countries had learned to avoid risks and, by choosing the right policies, had "decoupled" from turbulence in other parts of the world—effectively insulating themselves from the fate of countries elsewhere.

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[4] For further discussion see Schmukler (2004, 2008).

[5] Loayza and Romain (2006); Kaminsky and Schmukler (2008).

[6] Broner, Lorenzoni, and Schmukler (2007).

Contrary to this view, our research suggests that crises continue to be contagious, due to the real and financial channels that fundamentally connect countries.[7] It is difficult to achieve the benefits of economic and financial integration without being susceptible to contagious effects, although the terms of this important trade off depend on a number of aspects of the financial integration process, including how much the country relies on foreign direct investment (FDI) versus other types of private capital flows, the extent of reliance on short-term debt, and simply whether the country is part of the portfolio of international investors.

The most direct channel linking the developed world to the financial crisis emanating from the developed world in 2008 is through exposure to assets that are at the heart of the crisis, notably (though not only) the sub-prime mortgages. However, the more important channels for most developing countries will probably be indirect, notably through trade (via declining demand for developing-country exports or declining export process, including commodities), investment (as external finance contracts) and remittances (also stemming from the recession in the developed world).[8]

Our research suggests that, amongst the sources of external finance to developing countries, only foreign aid tends to be stabilizing, in the sense that its volume rises when economies contract. [9] Private sources tend to be destabilizing, but some more than others; remittances are the least destabilizing, followed by FDI, while other private capital flows are the most destabilizing. The relative volatility of non-FDI capital reflects the responses of international investors to (amongst other things) default risks. Research has pointed to the importance of a sound legal framework and stable political environment in attracting foreign capital, and to the influence of a country's history of default on capital flows.[10]

Many developing countries are now quite strongly connected to the world economy through these various channels.[11] Their growth prospects will be adversely affected by a slowdown or a recession in industrial countries. This will probably raise debt burdens and create debt servicing difficulties in some countries. Our research shows that, for a given debt burden (as a share of GDP), the risk of debt servicing difficulties is substantially higher in countries

[7] Didier, Mauro, and Schmukler (2008); Kaminsky and Schmukler (1999, 2002); Kaminsky, Lyons, and Schmukler, (2004); Kawai, Newfarmer, and Schmukler (2005).
[8] For further discussion of the likely impacts of the 2008 financial crisis on developing countries see Lin (2008).
[9] Neagu and Schiff (2008).
[10] On these points see Albuquerque (2003), Albuquerque et al. (2005), Eichengreen (2000), Reinhart et al. (2003) and Kraay et al. (2005), Broner et al. (2007).
[11] Claessens and Schmukler (2007); Gozzi, Levine, and Schmukler (2008).

experiencing adverse growth shocks. However, the magnitude of this effect is smaller in countries with better institutions and policies. This research points to the importance of tailoring debt burdens and relief efforts to the debt carrying capacity of a country as measured by the quality of its institutions and policies.[12]

Crises reflect systemic risk: Although much of the academic and policy discussion focuses on how to deal with idiosyncratic risks, crises are typically linked to systemic risk.[13] This has important consequences because financial systems are reasonably well equipped to deal with idiosyncratic risk and financial policies have focused on how to make institutions sound for that purpose.[14] However, neither financial intermediaries nor policymakers are well prepared to deal with systemic risk, which is particularly high in emerging economies. This is related to the fact that developing countries typically suffer larger exogenous shocks than rich countries; their domestic policies often represent an additional source of volatility, and they possess weaker macroeconomic and financial shock absorbers than developed economies.[15]

An economy-wide crisis strains coping strategies for dealing with variability and risk at firm, household and community levels given that the more covariate nature of the shock limits the scope for co-insurance; mutual insurance arrangements may even break down when faced with a large external shock.[16] Research on the impact of the 1995 "Peso crisis" in Mexico (resulting in a 9% decline in GDP in that year) revealed that many of the normal strategies of poor households (such as seeking credit, extra work or private transfers) failed during the crisis.[17] However, connections and support networks still play a role. For example, there is evidence that firms had a lower probability of filing for bankruptcy when they had ownership links to banks and families (controlling for firm and country characteristics).[18]

The tightening of formal credit also limits the scope for households and firms to buffer themselves. Credit growth slows substantially, and recovers more slowly than output.[19] Banks, including healthier ones, reallocate their asset portfolio away from loans. Other sources of credit are also affected. We have studied the effect of financial crises on trade credit. The empirical

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[12] Kraay and Nehru (2006).
[13] Levy Yeyati, Martinez Peria, and Schmukler (2004); de la Torre and Schmukler (2004).
[14] Martinez Peria and Schmukler (2001).
[15] Loayza, Romain, Serven, and Ventura (2007).
[16] Coate and Ravallion (1993); Ravallion (1997).
[17] McKenzie (2003).
[18] Claessens, Djankov, and Klapper (2003).
[19] Demirgüç-Kunt, Detragiache, and Gupta (2006).

findings indicate that, although provision of trade credit increases right after the crisis, it subsequently collapsed in the following months and years.[20] Firms in a weak financial position—for example, those with a high pre-crisis level of short-term debt and low cash stocks and cash flows—are more likely to reduce trade credit provided to their customers. This suggests that the decline in aggregate credit provision is driven by the reduction in the supply of trade credit, which follows the bank credit crunch.

Financial safety nets are common, but bring their own risks: Policymakers typically erect financial safety nets to make systemic breakdowns less likely and limit disruption and fiscal costs. The safety nets include deposit insurance, lender-of-last-resort facilities at the central bank, procedures for investigating and resolving bank insolvencies, strategies for regulating and supervising banks, and provisions for accessing emergency assistance from multinational institutions. The design and implementation of these schemes are important, since mistaken policies also have the potential to erode market discipline, to lead to excessive risk-taking and further undermine financial stability in the long run.[21]

Our research suggests that the benefits from deposit insurance depend on how well it is designed and administered.[22] The design of deposit insurance systems plays a critical role in distorting risk-taking incentives and making systems more vulnerable to macro shocks. One mechanism through which the design of deposit insurance undermines market discipline is that poor design makes bank creditors less sensitive to bank risk-taking.[23] It has also been shown that financial liberalization is unlikely to add to the risk of systemic bank failures provided that the institutional underpinnings are strong and safety nets are well-designed.[24]

Another important component of the safety net that promotes systemic stability is the design of prudential regulation and supervision. Research on prudential regulation and supervision around the world suggests that effective systems empower and rely on market discipline, instead of undermining it.[25] Market participants such as shareholders and depositors of banks and other financial institutions and holders of their subordinated debt must have the

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[20] Love, Preve, and Sarria Allende (2007).
[21] Here we are referring to pre-crisis, steady state arrangements that shape incentives, rather than post-crisis actions such as blanket guarantees of deposits and bail-outs of financial institutions taken to protect the survival of a financial system when policy makers are left with few viable options.
[22] Demirgüç-Kunt, Kane, and Laeven, (2008); Demirgüç-Kunt and Kane (2002).
[23] Demirgüç-Kunt and Huizinga (2004).
[24] Demirgüç-Kunt and Detragiache (1999).
[25] Barth, Caprio, and Levine (2006).

incentive and ability to monitor those institutions. Improving compliance with disclosure and transparency regulations are among the features most robustly associated with bank soundness.[26]

This research is relevant in understanding the causes of the recent financial crisis.[27] It is crucial to evaluate different potential causes of the crisis, and identify the political and bureaucratic incentives that undermine the effectiveness of financial regulation and supervision.

Impacts on poverty, inequality and human development

One of the stylized facts about growth and distributional change in developing countries is that there is little or no correlation between changes in inequality and economic growth.[28] In growing economies, relative inequality falls about as often as it rises during periods of rising average income, though absolute inequality—the absolute gap between "rich" and "poor"—tends to rise.[29] Similarly, in contracting economies, relative inequality increases about as often as it falls, although unusually large contractions in mean household income are associated more often with rising inequality.[30] Absolute inequality tends to fall when economies contract.

There are reasons to expect that financial crises have distributional effects, although these can be quite complex. Richer investors and households are undoubtedly better able to hedge in advance and run faster as crises approach; they also tend to receive compensation as bank bailouts occur.[31] Moreover, the rich may well be better protected than middle-income groups as financial crises spread to the real economy, although some of the poorest (such as subsistence farmers) can also be relatively well protected though their weak connections with the market economy. At times of crisis, wealth transfers take place not only between rich and poor, but also between domestic and foreign investors (and between investors with and without access to foreign financial systems).[32] And redistribution takes place between uninformed and informed investors.

Poverty is very likely to rise in a crisis, though by how much will depend on the extent of the aggregate economic contraction and the rise in inequality (if any). However, an aggregate

[26] Demirgüç-Kunt, Detragiache, and Tressel (2008).
[27] Caprio, Demirgüç-Kunt, and Kane (2008).
[28] For an overview of the evidence and literature see Ferreira and Ravallion (2008).
[29] Ravallion (2004a).
[30] See Figure 1 in Ravallion (2007).
[31] Halac and Schmukler, (2004).
[32] Frankel and Schmukler (1996, 1998); Kaufmann, Mehrez, and Schmukler, (2005); Levy Yeyati, Schmukler and van Horen, (2008).

poverty measure does not tell the whole story. There are likely to be both gainers and losers at any level of living, including among the poor. And there may well be adverse impacts on important non-income dimensions of welfare, including the nutrition and schooling of children.

Diverse welfare impacts can be expected: Initial conditions in specific developing countries and their domestic policy responses to the crisis will jointly determine how its impact is distributed. More export-oriented economies tend to suffer less from homegrown recessions but are likely to suffer more from recessions stemming from abroad, like the 2008 crisis; as a whole, the more open the country, the worse the hit.[33] The extent of trade diversification will probably also influence how vulnerable an economy will be to external shocks. Ironically, the poor living in high inequality countries will tend to be better protected from an aggregate economic contraction than those living in low inequality countries.[34]

An aggregate shock at the country level will also have heterogeneous impacts across households, depending on (inter alia) household demographics, education attainments and location. The largest proportionate income losses need not be amongst the poorest initially, some of whom will be protected by the same factors that have kept them poor, namely geographic isolation and consequently poor connectivity with national and global markets. However, cumulative effects stemming from nonlinearities and multiple equilibria (whereby similar shocks to two identical households can have very different long-run outcomes) can mean that even a middle-class household falls into destitution after a sufficiently large shock.

Our research on the poverty impacts of Indonesia's severe economy-wide crisis of 1998 found sharp but geographically uneven increases in the poverty rate, reflecting both the unevenness in the extent of the economic contraction and the differing initial conditions at local level.[35] Proportionate impacts on the poverty rate were greater in initially better off and less unequal districts of Indonesia. Another study of the welfare impacts of the same crisis found that most households were impacted, but that it was the urban poor who fared the worst; the ability of poor rural households to produce food mitigated the worst consequences of the high inflation.[36] By contrast, the rural poor bore a heavier burden of the macroeconomic shock in Thailand

[33] Loayza and Raddatz (2006).
[34] Ravallion (2007).
[35] Ravallion and Lokshin (2007).
[36] Friedman and Levinsohn (2002).

around the same time, in part because of their greater integration with the urban economy than was the case in Indonesia.[37]

Drawing on thirteen rounds of annual labor force data in conjunction with two waves of a household panel, another study examined the impact of the financial crisis in Indonesia on labor market outcomes. We found that fears of a large collapse in employment rates as a result of the crisis were unfounded and that there was only a modest increase in unemployment.[38] However, real wages in Indonesia declined markedly as a result of the crisis, with the largest declines observed in the urban sector. Earnings from self-employment were also found to decline significantly for women and in the urban sector. But earnings from self-employment among men in rural areas remained stable.

The financial crisis in Argentina in 2002 was also found to have had a dramatic effect on the real incomes of workers and households, with 63% of urban households experiencing real income falls of 20% or more between October 2001 and October 2002. In general, households were not found to offset falling real wages by sending more members to the labor market and working more hours: instead, total household labor hours per week declined on average for all quintiles. In contrast with the evidence found in Indonesia, our research for Argentina found that self-employment did not play much of a role in allowing households to mitigate the effects of the crisis.[39]

Following a period of stormy economic and political reforms in the 1970s and 1980s, inequality in Chile stabilized and remained relatively unchanged. The structural reforms of the Chilean economy, which started in 1974 and were largely completed by the late 1980s, had important implications for, among other things, the regulation of labor markets.[40] The reforms included trade liberalization, privatization of state-owned assets, deregulation of various markets, and reforms in the structure of taxes, subsidies, and benefits. The impact of these changes on income distribution was expected to be profound – and to result generally in a worsening of inequality. However, Chilean inequality remained remarkably stable, albeit high, during most of the period 1987-94.

[37] Bresciani, Gilligan, Feder, Onchan, Jacoby (2002).
[38] Smith, Thomas, Frankenberg, Beegle, and Teruel (2002).
[39] McKenzie (2004).
[40] Ferreira and Litchfield (1999).

The period 1974-94 in Brazil was characterized by persistent macroeconomic disequilibria, the main symptoms of which were stubbornly high and accelerating inflation and a GDP time series marked by unusual volatility and very low positive trend. In addition, substantial structural changes were taking place in Brazilian society, with rapid population growth, high urbanization rates, significant improvements in education outcomes, and growing open unemployment. Casual observation of Brazilian income data suggested, however, that between 1976 and 1996 little changed in the Brazilian urban income distribution.[41] While measured inequality declined only slightly over this period, extreme poverty increased significantly. The existence of a group excluded both from the productive labor markets and from any substantive form of safety net was also identified, and this points to the importance of self-targeted labor programs or other safety nets, which we return to.

In another study using household panel data we examined the impacts of Russia's financial crisis in 1998 and the response of the public safety net.[42] The public safety net helped reduce the adverse welfare impacts of that crisis. We found that the incidence of income poverty would have been two percentage points higher without the response of the safety net. However, higher public spending on the safety net could have prevented the rise in poverty.

In the wake of the 1997 financial crisis in Asia, we undertook a study of the impacts on agricultural households in Indonesia and Thailand.[43] Using detailed household-level survey data collected before and after the crisis, the research concluded that, although the natures of the shocks in the two countries were similar, the impact on farmers' incomes was quite different. In Thailand, poor farmers bore the brunt of the crisis, in part because of their greater reliance on the urban economy (through seasonal off-farm work), than did poor farmers in Indonesia. Urban-rural links are much weaker in Indonesia, and for that reason poorer farmers there were more insulated from the ramifications of the crisis (by the same token, they did not share as much in the fruits of the earlier boom years). Farmers in both countries, particularly those specializing in export crops, benefited from the subsequent currency devaluation. Although there is some evidence that the productivity of the smallest landholders declined over the period in question, it is difficult to attribute this directly to the financial crisis. At least in Thailand, a rural credit crunch does not seem to have materialized. In Thailand, the view that the smallholder sector can

[41] Ferreira and Paes de Barros (2005).
[42] Lokshin and Ravallion (2000).
[43] Bresciani et al.(2002).

serve as a safety net that will absorb poor urban workers who are of rural origin was proven wrong, as the smallholder sector could not have a sufficiently high return for the extra labor from returning migrants.

It can be hard to predict the welfare consequences of crises: In one study we developed a top-down macro-micro model of the Brazilian economy, and used this model to investigate the link between macroeconomic shocks and the distributions of employment, earnings and household incomes.[44] The study examined to what extent counterfactual distributions generated by the model for 1999 compared with the distributions actually observed in 1999. While the shock was expected to have a negative impact, the massive devaluation did not result in a collapse of the financial sector with attendant devastating effects on the credit market and real economy. Even so, incomes fell and poverty rose. Unemployment also rose across the board, but predominantly in urban areas and for more skilled workers. The predictive performance of the top-down macro-micro model was mixed. The model made a number of mistakes even in the direction of employment changes, and the errors were often large. All in all, the study is cautious in suggesting that this approach can predict distributional outcomes of macroeconomic shocks or policy packages with great accuracy.

Heterogeneous impacts on human development can also be expected: Assessments of the effects of aggregate economic shocks have often presumed that they would have negative impacts on education and health outcomes. Empirical findings reveal no such simple regularity. Some recessions have led to reductions in school enrollment, as in Costa Rica in 1981-82, while others have led to increases, as in the United States during the Great Depression. Similarly, negative covariate shocks in Zimbabwe associated with the 1982-84 drought led to persistent losses in height-for-age for young children, while infant mortality declined in the U. S. during the Great Depression.[45]

What explains this variation across countries? In predicting the direction of the short-term impact of economic crises, note that aggregate economic shocks have offsetting income and substitution effects; in the absence of policy interventions, the balance of these two effects determines whether schooling and health outcomes would improve or deteriorate. A contraction of GDP has a negative income effect which, all else being equal, can lead to lower investments

[44] Ferreira, Leite, Perreira da Silva, and Picchetti (2008).
[45] Ferreira and Schady (2008).

in education and health. In the case of schooling, the substitution effect derives from a decline in child wages due to decreased labor demand during such a contraction. This has the effect of reducing the opportunity cost of schooling, thereby leading to higher school enrollment. In the case of health, the substitution effect arises because the decline in labor demand reduces adult wages which, in turn, frees up parents' time for (time-intensive) health-promoting activities (collecting clean water, cooking better meals, or taking children to health check-ups). Given these opposing effects, the aggregate effect of a crisis on education and health outcomes cannot be determined *ex ante*—it is an empirical matter.

In practice, recessions in developed countries are generally associated with better health and education outcomes. In the United States, economic downturns have generally decreased infant mortality.[46] In the countries of the former Soviet Union, research by others has indicated that declining income was associated with dramatic increases in adult mortality, particularly from alcoholism and suicide, but there was no obvious change in child health.[47] This pattern implies that the substitution effect dominates the income effect.

In the poorest developing countries, however, both health and education outcomes deteriorate during economic crises—evidence that the income effect dominates. This pattern is consistent with evidence from Cote d'Ivoire, Ethiopia, Malawi, Tanzania, Zimbabwe and (less clearly) Indonesia, as well as (for health) India. In middle-income countries, health outcomes deteriorate during crises (as found in Mexico, Peru, Nicaragua), while schooling is unaffected or improves (as found in Brazil, Mexico, Nicaragua, and Peru).[48]

For example, in Peru—a middle-income country with high levels of school enrollment—the deep economic crisis in the late 1980s could have decreased schooling outcomes because public expenditures and household incomes fell. However, these reductions seem to have been offset by the lower opportunity cost of attending school. Hence, although public education spending fell by almost 50 percent, children were more likely to be enrolled and less likely to be working during the crisis than in other years.[49] But time series household data show that the infant mortality increased by 2.5 percentage points during the crisis.

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[46] Ruhm (2000).
[47] Brainerd (1998, 2001).
[48] Ferreira and Schady (2008).
[49] Schady (2004).

In Indonesia the 1997 financial crisis decreased enrollment rates among children aged 8-13 and increased enrollment rates among children aged 14-19, but these changes were small—just one percentage point of enrollment.[50]

We have also studied the relationship between GDP per-capita and infant mortality using data births and deaths from 123 Demographic and Health Surveys (DHS) covering 59 countries conducted between 1986 and 2004.[51] We found that a one percent contraction in per-capita GDP was associated with an increase in infant mortality of between 0.18 and 0.44 deaths per thousand children born. This finding means that there were about one million excess deaths during the period 1980-2004 in countries experiencing large economic contractions (10 percent or greater).

Psychological well-being is also affected: In a recent multi-country study, we found that shocks such as illness or an economic crisis can have a greater impact on mental health than the impact on current poverty would suggest.[52] A study focusing on Indonesia found that the 1997 financial crisis had a large adverse impact on population psychological well-being.[53] Over the crisis period, substantial increases were evident in several dimensions of psychological distress among male and female adults across the entire age distribution. In addition, the imprint of the crisis was reflected in its differential impacts on low education groups, the rural landless, and residents in those provinces that were hit hardest by the crisis. Elevated levels of psychological distress persisted even after indicators of economic well-being such as household consumption, had returned to pre-crisis levels. This suggests long-term deleterious effects of the crisis on the psychological wellbeing of the Indonesian population.

Crises can have long-term consequences for human development: In the short run, households might try to smooth consumption by increasing their labor supply and drawing down their savings. But when work opportunities are scarce and families have little or no access to credit, they may have to reduce food intake, even for very young children, or pull out children from school. Evidence from past crises show that children who experience short-term nutritional deprivations can suffer long-lasting effects. Civil war and drought in Zimbabwe seriously affected infants, with effects carrying over to later ages. Panel data indicate that these children had significantly lower height during adolescence, delayed school enrollment, and reduced grade

[50] Thomas and Beegle, Frankenberg, Sikoki, Strauss, and Teruel (2004).
[51] Baird, Friedman, and Schady (2007).
[52] Das, Do, Friedman, and McKenzie (2008).
[53] Friedman and Thomas (2007).

completion equivalent to a seven percent loss in lifetime earnings.[54] In Ethiopian communities experiencing crop damage during a sustained drought, overall child growth was lower, especially among children who were less than two years of age during the drought.[55]

Policy responses to crises

Understanding of past crises and their impacts provides the foundation for appropriate policy responses, spanning macroeconomic policy, the financial sector and social protection.

Fiscal and monetary policies face difficult tradeoffs in a crisis: In theory, smoothing out the output and employment cost of a crisis invites a counter-cyclical relaxation of the macroeconomic policy stance—carefully designed to prevent it from increasing macroeconomic vulnerabilities that could make future crises more likely. In practice, however, policy choices are severely constrained by the fiscal demands imposed by recapitalization of the financial system and the risk that any attempt at macroeconomic relaxation (fiscal or monetary) could weaken investor confidence and fuel deposit and/or currency runs, in effect making the crisis worse.

Indeed, on the fiscal front, some developing countries are unable to engage in countercyclical policy in bad times because they fail to build up (in good times) the credibility, and the fiscal resources, that would be necessary; this is typically a result of weak fiscal institutions. Thus, they are forced to adopt a pro-cyclical fiscal contraction that makes the cost of the crisis even higher.[56] Further, crisis-induced fiscal austerity is often disproportionately biased against growth-promoting public expenditures, such as infrastructure investment, which then hampers long-term growth prospects.[57] (China's planned fiscal stimulus announced in November 2008 is an exception, given its emphasis on infrastructure.)

Monetary policy faces similar dilemmas. In times of crisis, characterized by speculative attacks and sinking currencies, policy makers have often engaged in sharp monetary contractions to defend exchange rates and domestic financial systems. There is little evidence, however, that this strategy is effective. Abrupt monetary tightening can backfire by raising the interest burden on public debt, weakening public finances, and can also have severe adverse effects, both in precipitating the crisis and deepening the real economic downturn, as the asset values of banks

[54] Alderman, Hoddinott, and Kinsey (2006).
[55] Yamano, Alderman, and Christiaensen (2005).
[56] Perry, Servén, and Suescún (2007); Perry and Servén (2004).
[57] Easterly and Servén (2003).

fall and the net worth of highly indebted firms quickly erodes. Moreover, these adverse effects can persist even after the interest rate has returned to more normal levels.[58]

Nor is it clear how well countercyclical monetary policies will work when there is stress on the financial system, with investors ready to move their money elsewhere. Moreover, pumping liquidity into the system is unlikely to work well when there is high credit risk; banks will simply hoard the money.

Trade policies pose further challenges: Global trade can be an important part of the adjustment process in response to a crisis. Recent financial crises in the developing world (including the East Asia crisis) have not involved major declines in international trade, either as a cause or a consequence. In the wake of the East Asian crisis, there was a sharp increase in demand from the external sector, with exports rising rapidly and imports falling.[59] In some cases, this increase in demand exceeded 20 percent of GDP, partially offsetting the dramatic falls in domestic demand resulting from the financial crisis.

This is in contrast to the Great Depression of the 1930s, when world trade fell dramatically as beggar-thy-neighbor trade restrictions were introduced.[60] By contrast with the 1930s, the trading system in modern times has been able to cope with large and sustained (post-crisis) increases in net exports from the affected countries, allowing those countries to recover more quickly from these major shocks.

However, as we write, there are clear signs of a decline in world trade in response to the 2008 financial crisis, which will probably lead to balance of payments problems in some developing countries. Protectionist pressures will undoubtedly surface, as they have done in past crises.[61] There is also a risk that trade policy responses at the country level may worsen matters in the longer term—for both the country in question and its trading partners. Research on the macroeconomic adjustment problems of the 1980s and early 1990s showed that imposing restrictions on imports is generally not an effective way of dealing with balance of payments problems—even for the country in question, let alone when one takes account of the adverse

[58] Kraay (2003); Furman and Stiglitz (1998).
[59] McKibbin and Martin (1999).
[60] Kindleberger (1975).
[61] For example, tariffs were raised (temporarily) in Chile after the collapse of 1981-82; the Brazil crisis of 1999 and Argentine crisis of 2002 led to shifting waves of protection between Mercosur partners; Argentina's financial collapse in 2002 led to export taxes.

impacts on its trading partners.[62] While import restrictions reduced imports, they frequently also reduced exports—particularly of manufactures—by raising costs and by starving the export sector of needed inputs. And if other countries raise barriers in response to their own economic problems, solving the balance of payments problem becomes even more difficult.

A similar collective-action problem emerged during the recent sharp rise in food prices, whereby a number of countries decided to insulate their domestic markets from food price increases by imposing export barriers or reducing trade and consumption taxes. While these policy responses made sense from the point of view of each individual country, the collective effect was to exacerbate the increases in world prices.[63]

Early response is crucial, but political economy plays a role: Because financial crises tend to be systemic, government intervention is unavoidable.[64] Though the fiscal cost of interventions can be quite large, and with corresponding political costs, the cost of an eventual collapse of the financial system is even larger. Similarly, delayed adjustment to macroeconomic imbalances stemming from a financial crisis can be very costly to the poor, as illustrated by Peru's efforts to delay adjustment in the 1980s.[65] Well-designed policies implemented at the early stages of crises tend to be less costly.

The speed and scope of government intervention are affected by political economy factors.[66] While countries with competitive elections are no less likely to experience financial crises, in the event of a crisis they are likely to intervene more rapidly in insolvent institutions. The fiscal transfers they make to resolve a crisis typically are 10-20% of GDP less than those made by countries lacking competitive elections. They also suffer far smaller growth collapses. The reason that there is no difference in the likelihood of a crisis is that asymmetric information is so great in banking regulation that voters cannot hold politicians responsible for bad decisions prior to the crisis. However, once the consequences of failed regulation become large and visible, politicians exposed to elections are more likely to address them in a way that serves the public interest in their crisis response; for example, they are less likely to prop up existing owners and they are less likely to subsidize large creditors who should have known better.

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[62] Rajapatirana (1995).
[63] Ivanic and Martin (2008).
[64] de la Torre, Levy Yeyati, and Schmukler (2003); Ganapolsky, and Schmukler (2001); Levy Yeyati, Schmukler, and van Hoen (2004, 2006, 2008).
[65] Lustig (2000).
[66] Keefer (2007).

Financial sector responses need to consider incentives and longer-term impacts: Crisis resolution is a very important component of the safety net, and how the current crisis is resolved may sow the seeds of future crises. In one study we brought together research and first-hand crisis experience to catalog lessons on a variety of issues that regularly arise in crises: containment, resolution, and broader structural reform.[67]

Walter Bagehot's classic policy advice for managing liquidity during a systemic crisis is for the central bank to lend freely to solvent banks—but to minimize subsidizing risk-taking (moral hazard), the loans should be made at penalty interest rates and only on good collateral. Put differently, the advice is for governments to avoid lending to insolvent banks at all, even on good collateral and certainly not at below-market interest rates.[68]

Advocates of widespread bail outs (including insolvent institutions) to halt a systemic crisis argue that only sweeping guarantees and extensive support can stop the panicky flight of depositors and other creditors.[69] This is of course true if the crisis entails a series of self-fulfilling runs. However, most modern financial crises, including the current one, are driven instead by fundamental weaknesses in economic balance sheets. It must also be recognized that the short-term benefits of guarantees will vary with the fiscal strength of the guaranteeing government. To hasten the end of an insolvency-driven banking crisis and to constrain the spread of insolvency in the short term, the government must manifest a substantial capacity for absorbing losses. Depending on the depth of the systemic insolvency such support may not even halt the spread of crisis and delay healthy adjustments.

It must also be recognized that the information for deciding which financial institutions are sound may be quite weak, especially in developing countries, and the public at large may be suspicious of the true motives in the selection process. When this is the case, it may be preferable to implement more widespread support initially to restore confidence.

Even in the midst of a financial crisis, long-term goals should not be ignored. The manner in which a crisis is resolved affects the frequency and depth of future crises, through the significant impact it has on market discipline. If institutions can count on crisis resolution to be mismanaged, they will be more willing to risk insolvency, and safety-net subsidies will mainly flow to institutions that take excessive risks at the expense of taxpayers. Providing extensive

[67] Honohan and Laeven (2005).
[68] Kane and Klingebiel (2004); Calomiris, Klingebiel and Laeven (2005); Honohan and Laeven (2005).
[69] Demirgüç-Kunt, Kane, and Laeven (2008).

liquidity support and guarantees to insolvent institutions subsidizes gambles for resurrection and distorts risk-taking incentives, undermining market discipline and spawning future crises.[70]

Moreover, the short-term benefits of such bailouts have been oversold. Such policies seldom actually speed the recovery of a nation's real economy from a financial crisis or lessen the decline in aggregate output. Instead, providing liquidity support for insolvent institutions often prolongs a crisis. It does this by distorting risk-taking incentives so extensively that sound investments and healthy exits are delayed and additional output loss is generated. Our research has measured the impact of different crisis management strategies on the ultimate cost of resolving financial distress in a broad set of countries. We find that, while providing generous support increases the ultimate fiscal cost of resolving crises, it also does not speed the recovery, instead prolonging the duration of the crisis.[71]

While governments should be prepared to act in a systemic crisis, the approach and the actions they take still need to be designed to reduce conditions for moral hazard and the likelihood of a subsequent crisis. This should be done by imposing real costs on all responsible parties and getting the resources back in productive use as soon as possible.[72] It is difficult to prevent crises completely, but the right regulation and supervision policies can help make them less frequent and less costly.

Crises have led to some of the best social protection, and some of the worst: Some governments have introduced generalized food and fuel subsidies that have come at a huge fiscal and economic cost, and are not easily reversed, yet have had at best modest impact on poverty. Yet some developing countries have been able to turn a crisis into an opportunity for dismantling inefficient subsidies in favor of more effective safety net programs.

Social policy needs to respond flexibly to differing needs. If it is to provide effective insurance, it is crucial that the safety net responds to the needs of the poor, and does not rely heavily on administrative discretion. When we look at the "safety nets" found in practice, few appear to serve this insurance function well since they do not have the flexibility needed to adapt to changing circumstances. Relief transfers, workfare and credit are too often rationed among those in need, and hence provide unreliable insurance. Nor is the rationing necessarily targeted to those in need. Unless the public safety net is genuinely state-contingent, it cannot help much in

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[70] Kane and Klingebiel (2004); Calomiris, Klingebiel and Laeven (2005).
[71] Honohan (2005); Claessens, Klingebiel, and Laeven (2005).
[72] Demirgüç-Kunt (2008); Honohan (2005).

reducing the costs of insurance facing the poor. However, flexibility may come into tension with other goals in the fight against poverty, such as when strict but relatively rigid eligibility criteria for cash transfer programs help reduce leakage to the non-poor or when absorbing large amounts of labor in a relief work program means that the assets created are of less lasting value.

Efforts to assure that social policy responses are well targeted to the poor can also allow more effective social protection in a crisis. However, our empirical research has confirmed theoretical arguments that fine targeting is not necessarily consistent with a greater impact on poverty, and may even have perverse effects, such as when fine targeting undermines political support for the program.[73] Sustainability depends on having broad political support, which can be at odds with fine targeting. Also coverage of the poor is often weak in finely targeted programs.[74] Avoiding leakage to the non-poor often requires that help is severely rationed even amongst those in obvious need. Furthermore, better targeted programs are not necessarily more cost-effective. A recent study of a large transfer program in China found that standard measures of targeting performance (including those widely used by the Bank) are uninformative, or even deceptive, about the impacts on poverty, and cost-effectiveness in reducing poverty.[75] In program design and evaluation, it is better to focus directly on the program's outcomes for poor people than to rely on prevailing measures of targeting.

Two broad types of social protection (SP) policy responses matter. One is supporting public expenditures in key areas and the other is transferring resources to households through specific programs. We examine these in turn.

A crisis calls for a pro-poor fiscal response: If the country concerned has the option of an aggregate fiscal stimulus (possibly helped by foreign aid) then there is a long-standing macroeconomic argument in favor of assuring that the composition of the extra public spending, or tax cuts, favors programs that immediately benefit poor people. That is not only ethically defensible, it will probably also assure that the stimulus has maximum impact on aggregate current demand (either consumption or investment). This argument rests on the (plausible) assumption that the poor tend to be more credit constrained and so will have more unexploited for spending some extra cash during a crisis. (This does not assume that the poorest necessarily bear the brunt of the crisis.)

[73] Gelbach and Pritchett (2000).
[74] Cornia and Stewart (1995).
[75] Ravallion (2009).

For countries that find they have to contain, or even contract, aggregate public spending it is no less important to protect the programs that matter most to the poor. Social expenditures tend to be pro-cyclical, thus providing scope for public policies to protect households during macroeconomic crises.[76] In addition to direct assistance to households, budgetary processes could be used to establish contingency funds for selected social expenditures during economic downturns. The protection of expenditures is particularly important for nutrition and health outcomes, especially to the most vulnerable to reductions in calorie intake—children under 24 months of age, as well as pregnant and lactating women.

However, past experience suggests that it is often the types of public spending that tend to benefit non-poor people that are most protected at such times—with the brunt of adjustment borne by the poor.[77] Our research for Argentina found that social spending was not protected historically, although more "pro-poor" social spending was no more vulnerable.[78] The same study found that a relatively well-protected share of the benefits from the country's main anti-poverty program went to the non-poor. This appears to be a political economy constraint.

The shift in public spending needed to compensate those among the poor who were made worse off need not be large. For example, in our study of the welfare impacts of Russia's financial crisis of 1998, and the government's response of the public safety net, we found that aggregate safety net spending had contracted (along with other components of spending), but that a seemingly modest expansion in total outlays would have avoided the increase in poverty due to the crisis. However, countries experiencing larger shocks than Russia's will naturally require larger adjustments to the composition of spending.

A crisis can be an opportunity for introducing better social programs: The second strand of the SP response concerns specific programs. Our research has studied the effectiveness of the main SP programs found in practice—often programs set up in a financial crisis or famine.

One recently popular program makes cash (or kind) transfers to families conditional on the children of the recipient family demonstrating adequate school attendance (and health care in some versions). These are called Conditional Cash Transfer (CCT) programs; the conditions are sometimes called "co-responsibilities." Early influential examples were the *Food-for-Education Program* in Bangladesh and Mexico's *PROGRESA* program (now called *Oportunidades*).

[76] Paxson and Schady (2005).
[77] Ravallion (2004b).
[78] Ravallion (2002).

During the Tequila financial crisis of 1994, the Government of Mexico realized that it lacked an effective safety net for the country's poor, which led to the *PROGRESA* program.

There is evidence from impact evaluations that these schemes bring non-negligible benefits to poor households, in terms of both current incomes and future incomes, through higher investments in child schooling and health case.[79] Expanding the coverage and increasing the benefit levels on CCTs has been one response to crises, particularly in Latin America.[80] For example, Mexico was able to help redress the adverse welfare impacts of the recent rise in food prices by implementing a one-time top up payment to *Oportunidades* participants.

A common drawback of all such targeted transfer schemes in practice is that they tend to be relatively unresponsive to changes in the need for assistance. A previously ineligible household that is hit by (say) unemployment of the main breadwinner may not find it easy to get help from such schemes. Efforts should be made to re-assess eligibility in the wake of a crisis.

One way to assure that the safety net provides effective insurance—a genuine "safety net"—is to build in design features that only encourage those in need of help to seek out the program and encourage them to drop out of it when help is no longer needed given better options in the rest of the economy. The beauty of this approach is that it elegantly solves the severe information problem of targeting in a crisis (or even in normal times).

Subsidies on the consumption of inferior goods (for which demand falls as incomes rise) are self-targeted to the poor. The problem is that not many goods are inferior, although there have been cases in which this was feasible. Tunisia was able to make its food subsidies more cost-effective in reducing poverty by switching to inferior food items, combined with quality differentiation through packaging.[81] Subsidizing inputs to production by traditional farmers in developing countries can also embody a degree of self-targeting, since farmers tend to be poorer than average, though the benefits may well be higher among the relatively better-off farmers.

The classic example of self-targeting is a "workfare" program—variously called "relief work" or "public works" programs; "food for work" programs also fall under this heading. Such schemes have been widely used in crises and by countries at all stages of development. During the East Asian financial crisis of the late 1990s, both Indonesia and Korea introduced large

[79] Fiszbein, Schady, et al. (2009); Das, Do, and Ozler (2004).
[80] Fiszbein, Schady, et al. (2009).
[81] Alderman and Lindert (1998).

workfare programs, as did Mexico in the 1995 "Peso crisis," Peru during its recession of 1998-2001 and Argentina in the 2002 financial crisis.

A severe and prolonged economic crisis can force poor households to alter not only their food consumption but also their health-seeking behavior, such as to postpone the treatment of illness if such treatment involves out-of-pocket spending. By reducing out-of-pocket health care costs and promoting health service utilization, the availability of health insurance can reduce the impact of health shocks on households. During an economic crisis, access to health insurance for poor households can be even more critical. Evidence from Vietnam suggests that its social health insurance program probably has reduced the incidence of catastrophic health spending.[82] However, the evidence from China suggests that the various health insurance programs there—especially the urban scheme—may not have done so, suggesting that the design of health insurance programs determine the extent to which such programs can protect households from financial ruin.[83]

Public works can combine a safety net with infrastructure development in poor areas: Public spending on labor-intensive public works projects, such as building rural roads, can combine the benefits of an aggregate fiscal stimulus with those of income support for poor groups. The ideal workfare program should guarantee unskilled employment to anyone who wants it at the market wage rate and the work should be of value to poor communities (or with cost recovery from non-poor ones).[84] When designed well, these schemes can be responsive to differences in need—both between people at one date and over time for a given person.

A famous example is the *Employment Guarantee Scheme* (EGS) in Maharashtra, India, which started in the early 1970s. This aims to assure income support in rural areas by providing unskilled manual labor at low wages to anyone who wants it. The scheme is financed domestically, largely from taxes on the relatively well-off segments of Maharashtra's urban populations. The employment guarantee is a novel feature of the EGS, which helps support the insurance function, and also helps empower poor people. In 2004, India introduced an ambitious national version of this scheme under the *National Rural Employment Guarantee Act* (NREGA).[85] This promises to provide up to 100 days of unskilled manual labor per family per

[82] Wagstaff and Pradhan 2005
[83] Wagstaff and Lindelow 2005.
[84] Ravallion (1999, 2008).
[85] *Ministry of Rural Development, Government of India,* National Rural Employment Guarantee Act*, 2004.*

year, at the statutory minimum wage rate for agricultural labor, to anyone who wants it in rural India. The scheme was rolled out in phases and now has national coverage.

Our research on these programs has indicated sizeable income gains to participants, net of their foregone incomes from any work they have to give up to join the program. One study of Maharashtra's EGS found that the foregone income was about one quarter of the wage rate; by re-allocating work within the household, poor rural families were able to come close to maximizing the net income gain.[86] Research on Argentina's *Trabajar* program suggested larger foregone income for participants, around half of their earnings.[87] Another study of the same program found that the income losses to those who left the program were sizable, representing about three-quarters of the gross wage on the program within the first six months, though falling to slightly less than one-half over 12 months.[88]

In one study we assessed the impact of Argentina's main social policy response, *Plan Jefes y Jefas,* to the severe economic crisis facing the country in 2002-03.[89] The workfare program aimed to provide direct income support for families with dependents for whom the head had become unemployed due to the crisis. The study found that the program reduced aggregate unemployment, though it attracted as many people into the workforce from inactivity as it did people who would have been otherwise unemployed. While there was substantial leakage to formally ineligible families, and incomplete coverage of those eligible, the program did partially compensate many losers from the crisis and reduced extreme poverty.

There is less evidence on the benefits to the poor from the assets created in workfare programs. The imperatives of a rapid crisis response will naturally push these programs toward more labor-intensive techniques than found in normal times.[90] While this makes sense, it is important that the program generates assets of value, and not doing so can mean that even a well-targeted workfare program does not dominate cash transfer schemes in terms of their impact on poverty for a given budget outlay.[91] For example, our *ex ante* assessment of the scheme proposed under India's NREGA suggested that unless the assets created are of sufficient value to the poor

[86] Datt and Ravallion (1994).
[87] Jalan and Ravallion (2003).
[88] Ravallion, Galasso, Lazo, and Philipp, 2005.
[89] Galasso and Ravallion (2004).
[90] Ravallion (1999).
[91] Ravallion (1999).

the scheme would be unlikely to dominate even a poll transfer in terms of its poverty impact.[92] It appears that the schemes found in practice have given too little weight to asset creation. An exception is Argentina's *Trabajar* program (supported by the World Bank). The program's design gave explicit incentives (through the *ex ante* project selection process) for targeting the work to poor areas, again compensating for the market failures that help create poor areas in the first place. There is typically much useful work to do in poor neighborhoods—work that would probably not get financed otherwise.

Good data are crucial: Sound information and monitoring and evaluation systems are important for an effective social policy response. The information problems are compounded in a crisis, in which it is hard to know where the short-term impacts are greatest and how well policy responses are working. Various types of data are needed, including household and enterprise surveys and data on public spending. Geographic breakdowns will often be important. Naturally, rapid reporting and assessment will be at a premium; here there are some important lessons from the experience with disaster response.[93] An important part of crisis preparedness is having made the investments in data and evaluative research (both quantitative and qualitative) that are needed to have a reasonable idea of which public programs will need to be protected at a time of crisis; naturally that investment brings benefits for policy making at normal times.

Conclusions

A number of generic lessons for the current crisis emerge from this survey of our past research on financial crises. These include the importance of understanding incentives in the design of policy responses, the importance of spending composition in designing a fiscal stimulus or adjustment program, and the importance of sound information on what is happening on the ground as the crisis unfolds. However, if there is one lesson that stands out it is that the short-term responses to a crisis cannot ignore longer-term implications for development in all its dimensions. The macroeconomic stabilization response must be consistent with restoring the growth process and (hence) the pace of poverty reduction. Financial sector policies need to balance (understandable) concerns about the fragility of the banking system with the needs for sound longer-term financial institutions. And the social policy response must provide rapid income support to those in most need, giving highest on the poorest amongst those affected,

[92] Murgai and Ravallion (2005).
[93] Amin and Goldstein (2008).

while preserving the key physical and human assets of poor people and their communities. Difficult choices will be faced in addressing the (inevitable) trade-offs between rapid crisis response and these longer-term development goals.

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