A stable macroeconomy reduces uncertainty and enables economic agents to focus on productive decisions rather than on trying to mitigate high risks. A pensioner copes with the 1998 financial crisis in Russia.
Managing macroeconomic risk

Building stronger institutions for better policy outcomes

Increasing resilience and promoting opportunity through sound macroeconomic policy

Peru has weathered a series of crises in the past 25 years. The first, driven by a money-financed fiscal expansion in the second half of the 1980s, led to high inflation and large macroeconomic imbalances. Declared ineligible for new loans from the International Monetary Fund (IMF) in 1986, Peru had no room for maneuver, and the new administration had to resort to severe monetary and fiscal tightening to bring inflation down, leading to a steep recession. The gross domestic product (GDP) plummeted more than 20 percent in 1990 from peak to trough. It took Peru 14 quarters to return to the real GDP level it had before the crisis.

By 1997, Peru’s inflation reached single-digit levels. The government continued reconstituting reserves and reducing external debt. The country nonetheless remained vulnerable to reversals in capital flows, which became all too apparent when financial contagion, triggered by the East Asian crisis, led to a “sudden stop” in capital inflows. A recession again followed, but this one was milder (GDP fell around 4 percent from peak to trough), and the recovery was shorter (six quarters), if weak.

At the onset of the 2008–09 global crisis, Peru’s economy was better equipped to withstand the unprecedented external shock. A credible inflation targeting regime kept inflation low and stable. Real GDP had grown strongly before the crisis (6.8 percent a year from 2002 to 2008). Sounder macroeconomic management and benign conditions internationally allowed Peru to build ample liquidity buffers and monetary and fiscal space, helping accommodate the global shock: unlike much of the rest of the world, the recession in Peru in 2008–09 was mild (minus 2.1 percent from peak to trough), and the recovery was swift (two quarters) and strong. Peru’s GDP grew 10 percent the year after the economy hit its trough.

As Peru’s experience illustrates, the national government can play a pivotal role helping individuals manage aggregate risks—domestic and international—that they are not equipped to manage on their own (cartoon 7.1). High inflation can worsen income distribution, increase poverty, and lower real wages. Unemployment rises in recessions—and even more in recessions associated with financial crises. Aggregate risks like these can have a profound impact on people, households, communities, enterprises, and the financial system—and each of these agents’ capacity to manage risk.

The government’s conduct of macroeconomic policy plays a unique and pivotal role in managing risk at the national level. Macroeconomic policies that are adequately designed and implemented help overcome many obstacles in managing risk, including asymmetric information, coordination failures, externalities, and the provision of public goods (see chapter 2). Thus sound macroeconomic policy promotes development. A stable macroeconomic environment and ample revenues and resources—fiscal
in the run-up to elections or fall prey to lobby groups competing for higher spending during upswings. Coordination failures among policy makers may also lead to less than optimal allocation of policy instruments to meet different macroeconomic targets. Problems like these can lead to uncertainty over the course of policy, which can in turn lead to greater instability and lower growth. Box 7.1 illustrates that uncertainty in global economic policy is growing. Reducing mismanagement of macroeconomic risk requires an adequate institutional framework that attains better information, improves the quality of analysis, and develops tools to help policy makers with the host of uncertainties they face. Greater public accountability for the likely costs of their policies will increase the quality of policy making. This chapter argues that credible, transparent, more flexible, and sustainable macroeconomic policy frameworks increase a country’s resilience. It highlights examples of good monetary and fiscal management and offers policy recommendations suited to countries at different levels of institutional capacity facing different constraints and opportunities.

**Gearing macroeconomic policies toward aggregate stability**

**Using macroeconomic policies to manage economic crises and cycles**

*Reducing instability and uncertainty.* Macroeconomic volatility is a source of short-term concern and an impediment to achieving long-term development goals. Beyond regular business cycle fluctuations, volatility disrupts households’ and firms’ saving, investment, and production decisions. It reduces the ability of the financial system to transform liquid financial instruments into long-term capital investments, as agents in the economy become reluctant to enter long-term contracts. Greater output volatility—especially when accompanied by crisis episodes—lowers long-term growth. Increasing output volatility by one standard deviation leads to a 1.3 percentage point reduction in growth per capita; this decline is even more sizable (2.2 percentage points) during crises.3 Macroeconomic volatility also worsens income inequality and poverty, as lower-income segments of the population are less protected from economic downturns. Doubling aggregate volatility reduces the income share of the poorest quintile of the population by 2.4 percent. Moreover, the average increase in income inequality during recessions (5 percent) tends to be larger than the
**The new normal in the world economy: Heightened macroeconomic policy uncertainty in developed countries**

Recent policy conflict and fiscal crisis in the world’s biggest collective economies—the United States and the European Union—have generated considerable uncertainty, leading to concerns that firms and consumers may be postponing hiring and spending decisions, stalling the recovery. Uncertainty is a subjective concept, and measuring it is not easy. It can be approximated with an index of economic policy uncertainty that uses three groups of observable measures. The first component quantifies newspaper coverage of policy-related economic uncertainty. The second measures variability of forecasts of fiscal and monetary policies (as captured by the interquartile range of 1-year-ahead forecasts of inflation, government purchases, and state and local government purchases). The third reflects the number and size of tax code provisions set to expire in future years. The weight of each of these components varies according to the country or region.

Historically, policy uncertainty in the United States has surged around major wars, elections, and terrorist attacks. Recently, uncertainty spiked in 2008 and has remained high (panel a). A similar surge has occurred in Europe since 2008; together, the two have contributed to increased global policy uncertainty (panel b).

How big is the negative impact of policy uncertainty? In the United States, policy uncertainty of the size observed on average between 2006 and 2011 reduces industrial production by 2.5 percent and employment by 2.4 million workers. Moreover, policy uncertainty in the United States and the European Union spills over to the rest of the world through two channels. First, these two economic areas collectively account for more than half the world’s trade and outbound foreign direct investment. Second, they are major financial centers, and the higher volatility of their stock markets due to increased uncertainty can have a global contagion effect.

The probability of disasters also affects people’s perceptions of uncertainty; their decision making is disrupted by the greater likelihood of disasters. Economic disasters—as defined by a peak-to-trough cumulative drop in GDP or consumption larger than 10 percent—have a mean size of 21–22 percent, an average duration of 3.5 years, and an estimated probability of occurrence of 3.5 percent a year. Disasters have the potential to destroy part of the capital stock and impair productivity; thus they are characterized by declines in investment, corporate leverage, output, and employment, and account for part of increased risk premium in financial markets. Calibrated models for the United States estimate that doubling the probability of disaster reduces investment by 3.5 percent and unemployment by 0.8 percent.

Will policy uncertainty remain high? The prospects for a decline in U.S. policy uncertainty in the near term are not bright, largely because of the current U.S. political agenda and the polarization of its political system. In the European Union, policy uncertainty will remain high if concerted actions to address banking and fiscal problems at the national and supranational levels are delayed and pro-market reforms are not undertaken in southern European countries. In short, economic policy uncertainty is the new normal. With this in mind, firms and consumers should also actively manage risks—for instance, by attempting to reduce exposure to the most sensitive sectors. Such steps can help minimize the impact of international policy risk.

**Economic policy uncertainty has increased in recent years in the United States and Europe**

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Sources: Bloom 2013 for the WDR 2014; Barro and Ursúa 2012; Gourio 2012.

**Note:** The index of policy uncertainty is normalized to 100 for January 2008. The data and description of these uncertainty indexes is available at http://www.policyuncertainty.com. This index may also capture macroeconomic and political uncertainty. The implied volatility index (VIX) is a measure of the implied volatility of S&P (Standard and Poor’s) 500 index options. LTCM = Long-Term Capital Management L.P.
reduction during booms (0.9 percent). A rising tide may lift all boats, as President Kennedy famously said, but a falling tide pushes them down deeper and longer. Macroeconomic policy will help manage aggregate risks—and avoid itself becoming a source of risk—and facilitate the development of risk-sharing mechanisms in the economy.

Managing the cycle in good times and coping in bad times. Macroeconomic policies help manage aggregate shocks—coming from abroad, from domestic policies themselves, or from systemically important domestic agents. In reality, developing countries’ policies have been unable to contain boom-bust economic and financial cycles. These countries are exposed to larger and more frequent external shocks, have lower shock-absorbing capacity (including less diversified economic structures, underdeveloped financial markets, dollarized balance sheets, and poor institutional quality), and are more likely to experience macrofinancial crises. As a result, economic activity in developing countries is more volatile and prone to deep recessions (figure 7.1). Structural changes in advanced countries since the mid-1980s have led to a decrease in world output volatility. Better monetary frameworks that insulate the economy from shocks, financial innovations that reduce market frictions, labor market flexibility, and technological improvements in inventory management explain this reduction. A stable external environment and improved macroeconomic frameworks not only explain the lower output volatility but also reduce the probability of recessions among developing countries (figure 7.1). Conversely, the unraveling of the Great Moderation period was also transmitted to emerging markets during the recent crisis. Most of these countries experienced a sharp slowdown. Aggressive monetary policy actions from advanced countries’ central banks succeeded in restoring global financial conditions. As the world economy recovered (reflected in rising commodity prices and lower global risk aversion), the better-prepared emerging markets were able to resume rapid economic growth.

**FIGURE 7.1** *Real economic activity is more volatile and more likely to decline sharply in developing countries*

![Graph showing real GDP volatility and proportion of years in deep recessions for different income groups and periods (1960–89 and 1990–2010).]

Source: WDR 2014 team based on data from World Bank World Development Indicators (database).

Note: Real GDP volatility is the standard deviation of GDP growth per capita. Proportion of years in deep recessions captures the share of years when per capita GDP declined more than 5 percent on a cumulative basis. Both measures have been computed for 1960–89 and 1990–2010.
Aiding longer-term planning and development. Macroeconomic stability broadens the set of tools for long-term planning available to households, firms, and governments. Increased price stability in countries that have wrestled with bouts of high and volatile inflation rates has led to the development of financial intermediaries, including local currency debt markets, the revival of mortgage markets, and the emergence of pension and mutual funds (see chapter 6). These developments have allowed economic agents to increase the average planning horizon of spending and investment decisions and raise the maturity of domestic government debt. For instance, if Brazil had the long-term inflation performance of Denmark, the depth of its local currency bond market would be almost triple its size.6

Delivering low inflation through sound monetary policy

High inflation distorts the saving and investment decisions of households and firms, thus leading to slower economic growth. Having a clearly defined (quantitative) nominal target helps central banks anchor expectations about the evolution of prices. To stop high inflation, countries have adopted either monetary aggregates or the exchange rate as their nominal anchors. Choosing an exchange rate anchor (hard peg) is sensible for countries with weak institutions, dollarized economies, underdeveloped financial markets, and low-credibility central banks. The exchange rate anchor is easy to implement and monitor and is verifiable by market participants. It has been successful in reducing inflation from historically high levels.7 Small countries with greater international trade integration tend to have hard pegs, because greater exchange rate stability boosts their foreign trade and investment. Targeting monetary aggregates provides greater exchange rate flexibility and permits central banks to pursue independent monetary policy. However, these regimes proved to be inconsistent with long-term development. Exchange rate targeters were plagued by problems of fiscal indiscipline and monetary financing of deficits that led to a costly regime collapse.8 Money growth targeters gradually lost the ability to anchor expectations as the relationship between monetary aggregates and inflation became unstable.9

Once high inflation was defeated, monetary frameworks targeted the inflation rate to coordinate expectations. Central banks set an inflation target to be achieved over a specific policy horizon. Monetary policy announcements shaped the expectations of the private sector concerning future interest rates and future inflation. Inflation targeting required having flexible exchange rates, so central banks could conduct independent monetary policy. Inflation targeting has been able to deliver low and stable inflation rates.10 Its success rested on the better understanding of the monetary transmission mechanisms and on three strong institutional underpinnings.11 First, central banks have a clear mandate (to maintain price stability) and are fully committed to achieving that goal. Second, central banks are independent from political interference in their decision making. They are instrument-independent: that is, they can choose and manage the instruments to achieve their primary goal. Third, greater central bank accountability creates incentives to fulfill the mandate. The effectiveness of monetary policy requires the absence of fiscal dominance, reduced currency mismatches, and sound domestic financial markets.12

The institutional push toward greater transparency has strengthened the reputation of central banks and enhanced efficiency in the implementation of monetary policy. Greater institutional capacity and flexibility to achieve the inflation target over time have permitted policy makers to use monetary policy instruments countercyclically. Historically, advanced countries have been able to implement expansionary monetary policies during recessions. They have lowered policy interest rates to withstand real shocks and stabilize output without jeopardizing their inflation target. In contrast, monetary authorities in many developing countries have acted procyclically, raising policy rates during contractions to avoid massive capital outflows and currency depreciation (fear of free falling) and cutting rates in good times to prevent surges in capital inflows and currency overvaluation (fear of capital inflows).13

The adoption of sound macroeconomic policies (inflation targeting and flexible exchange rates), public debt management strategies, and market-friendly reforms (trade and financial liberalization) have helped many emerging markets sharply reduce the fear of free falling (figure 7.2). It thus comes as no surprise that in the midst of the recent global financial crisis, many emerging countries in Latin America and East Asia were able to reduce policy rates. For instance, the average monetary policy rate declined from 6.50 percent to 1.25 percent in Peru, and from 5.21 percent to 1.98 percent in the Republic of Korea, from September 2008 to September 2009.

The choice of exchange rate regime matters for its likely effects, both direct and indirect, on inflation and growth. Countries with higher per capita
For instance, it takes 12 months to correct half the imbalance in the current account under floating exchange rates, compared with 21 months under fixed rates. Overall, flexible exchange rate regimes are needed to guarantee the long-term viability of an independent and sound monetary policy framework. Box 7.2 illustrates the costs of not having an independent monetary policy (including a floating regime at the national level) within a currency union.

Before the global financial crisis, the prevailing monetary framework in advanced countries and some developing countries was characterized by a fragmented approach. Inflation targeting and flexible exchange rates were used to achieve low and stable inflation, stabilize fluctuations in output, and facilitate external adjustment. Meanwhile, microprudential regulation and bank supervision sought to prevent excessive risk taking in the financial sector. This arrangement did not account for the fact that macroeconomic and financial cycles are tightly linked—

**Figure 7.2** Monetary policy has become countercyclical in some developing countries

Source: WDR 2014 team based on data from Végh and Vuletin 2012.
Note: The figure compares the correlation between monetary policy rate and real GDP in 1960–99 with that in 2000–09. Both series are detrended using the Hodrick-Prescott filter. A positive (negative) correlation coefficient signals countercyclical (procyclical) monetary policy. The countries are classified as: (a) always countercyclical when the correlations are positive in both periods; (b) becoming countercyclical when the correlation is negative in 1960–99 and positive in 2000–10; (c) always procyclical when the correlations are negative in both periods; (d) becoming procyclical when the correlation is positive in 1960–99 and negative in 2000–10.
especially in advanced economies. For instance, real output and credit cycles of advanced countries are in the same cyclical phase (expansion or recession) 80 percent of the time, while the likelihood of a recession in economic activity in these countries conditional on a credit crunch is 40 percent. The lack of a holistic approach led central bankers to tailor policy actions that addressed the trade-offs between inflation and output but did not address the buildup of financial imbalances. Yet mopping up the effects of burst bubbles by providing unlimited liquidity and sharply reducing interest rates—the preferred policy pursued in many advanced countries—can create moral hazard problems. In environments with low interest rates and excess liquidity, such as those currently experienced in advanced economies, financial institutions have incentives to take excessive risks and expand their balance sheets. Excessive leverage of financial institutions in advanced countries can be transmitted to emerging markets through surges in capital inflows and ensuing accumulation of financial imbalances.

These developments have reignited the debate about including financial stability among central bank mandates and expanding the policy toolkit to include macroprudential instruments. Central banks need to assess whether monetary and financial conditions may lead to sharp credit and asset price reversals that disrupt economic activity. If so, they should deploy macroprudential tools to reduce the procyclicality of the financial system, avoid excessive bank risk taking, and increase the resilience of systemic institutions by imposing additional capital requirements. Movements in monetary policy rates may prove ineffective in addressing financial bubbles, as higher interest rates may have adverse unintended consequences on output, unemployment, and volatility. Overall, macroprudential instruments—because they have more direct effect on leverage than the policy rate—can give central banks more instruments to achieve the goals of price and financial stability. For emerging markets, controls on capital inflows to limit the expansion of domestic credit and prevent the increase of currency and maturity mismatches may enhance financial stability.

Promoting countercyclical fiscal policy

Countercyclical spending by the government is needed for two reasons: to transfer resources to less
Unlike industrial countries that tend to implement countercyclical monetary policies, many developing countries follow a procyclical stance. About half of developing countries use the legal reserve requirement both as a substitute for countercyclical monetary policy and as an instrument to stabilize output. In good times, policy makers in developing countries cut policy interest rates to reduce currency appreciation pressures and instead choose to increase reserve requirements to cool down the economy. In bad times, they increase policy interest rates to reduce depreciation pressures and decrease reserve requirements to help the economy get out of the recession.

In other words, reserve requirement policy substitutes for monetary policy in its countercyclical role.

Increasing the legal reserve requirement by one standard deviation reduces output somewhat more than increasing the monetary policy rate (0.39 percent versus 0.21 percent) (see figure). In principle, both policy instruments could be used for stabilization purposes. In developing countries, however, monetary policy typically has been used to defend a nation’s currency and contain inflationary pressures, but it has responded procyclically to fluctuations in output.

Reserve requirement policies can help stabilizing real GDP fluctuations

In other words, reserve requirement policy substitutes for monetary policy in its countercyclical role.

Countercyclical fiscal policies in advanced countries are triggered by automatic increases in social security and welfare spending as the economy moves into recession—especially during crises. Historically, social security spending in advanced countries increases to 13.1 percent of GDP in the year of the financial crisis, from an average of 11.4 percent before the crisis. A reduction of 1.0 percentage point in the growth rate of the economy is compensated by a 0.36 percentage point increase in social expenditures in these countries, on average. Social expenditures account for more than 80 percent of the overall contribution of fiscal policy to stabilizing output. Automatic movements in pensions and health spending,

East Asian crisis. Unemployment insurance in the Republic of Korea was extended from 12.3 percent to about 50 percent of the unemployed from 1999 to 2004.23

Countercyclical fiscal policies in advanced countries are triggered by automatic increases in social security and welfare spending as the economy moves into recession—especially during crises. Historically, social security spending in advanced countries increases to 13.1 percent of GDP in the year of the financial crisis, from an average of 11.4 percent before the crisis. A reduction of 1.0 percentage point in the growth rate of the economy is compensated by a 0.36 percentage point increase in social expenditures in these countries, on average. Social expenditures account for more than 80 percent of the overall contribution of fiscal policy to stabilizing output. Automatic movements in pensions and health spending,
along with unemployment compensation, have been among the largest contributors. Increasing transfers that are well-targeted and do not distort incentives to work (say, transfers to the unemployed and the poor) have been quite effective in the United States at stabilizing fluctuations in output. Cutting transfers (by 0.6 percent of GDP) in the United States increases output volatility by 4 percent, the variance of hours worked by 8 percent, and household consumption volatility by 35 percent.\(^{26}\)

In contrast, most developing countries have been unwilling or unable to implement fiscal expansions during recessions.\(^{27}\) Their behavior arises from the weakness of automatic stabilizers, their procyclical access to world capital markets, and political economy problems. Automatic stabilizers in developing countries are too small to have a significant smoothing effect on real economic activity: taxation is regressive, coverage and benefits of transfer programs are low, and unemployment insurance is almost nonexistent.\(^{28}\) Spending on health, education, and infrastructure behaves procyclically in good times, and it expands faster than other types of spending. Social spending remains fairly constant during downturns, rather than declining. Deploying social spending in bad times may thus require only building up safety margins in good times—thereby breaking the cyclical pattern of boosting public spending in good times.\(^{29}\) Procyclical discretionary fiscal interventions increase output volatility and hence undermine long-term growth. Heavy reliance on discretion may also create greater uncertainty and lead to greater instability. Governments may have less need for discretionary policy action if they have stronger built-in resilience or large automatic fiscal stabilizers.

The procyclical bias of fiscal policy in developing countries stems partly from their generally procyclical access to capital markets. Governments’ inability to borrow resources abroad or at home (or to borrow only at very high interest rates) during downturns leads them to cut spending or raise taxes. During upswings, they have access to markets and tend to borrow to increase public spending. Procyclical fiscal policies are also the outcome of political distortions and distributional conflicts. Governments tend to spend windfall revenues (stemming from rising commodity prices or higher-than-expected growth) during good times, when they are under pressure from powerful interest groups competing for public spending. In such situations, accumulating primary surpluses during upswings (saving for a rainy day) can be politically costly. Fiscal resources generated during upswings end up being captured by government agencies, state-owned enterprises, provinces or states, and rent-seekers.\(^{30}\) Finally, voters may also seek to starve governments and reduce political rents—especially in corrupt democracies.\(^{31}\)

Institutional development has helped some developing countries escape from the trap of fiscal procyclicality. An improvement in the quality of institutions, reflected in better fiscal institutions and sound fiscal rules, has helped some countries graduate from fiscal policy procyclicality. More than one-third of developing countries now follow a countercyclical fiscal policy stance (map 7.1).\(^{32}\) Improved fiscal outcomes and frameworks in emerging markets have been rewarded in the markets by lower sovereign spreads. For instance, the sovereign spread of Brazil declined from 772 basis points to 145 basis points (over U.S. treasuries) from end-2000 to end-2012.

Other factors that have contributed to developing countries’ graduation from procyclicality are increases in the depth of domestic financial markets and greater credibility of fiscal policies.\(^{33}\) The effectiveness of discretionary fiscal stimulus is under intense debate in academic and policy circles. Discretionary actions to stimulate consumption and hence aggregate demand in the short run (the so-called Keynesian multiplier) through government spending should be distinguished from steps to increase productive capacity in the short and long run (such as public investment in infrastructure). Estimating these aggregate spending multipliers (that is, the increase in GDP for every dollar in additional government spending) is not a trivial issue. The estimation should consider changes in government spending that are independent from economic conditions; specifically, it needs to isolate the effects of government spending on output from reverse causality and from the influence of other forces in the economy such as natural hazards. The evidence consistent with this identification strategy suggests that the use of discretionary fiscal policy to stimulate demand in developing countries has not been overly successful—as witnessed over the past 30 years. The (short-term) aggregate government spending multiplier in developing countries is quite small: the one-year government spending multiplier
The effectiveness of government expenditure in building productive capacity goes beyond the horizon of output impact multipliers. Public infrastructure projects, especially infrastructure projects, can have lasting positive effects on GDP, investment, and productivity—especially when the economy’s stock of infrastructure capital is relatively low. The evidence shows that while the short-run impact of output to government investment is 0.6 in developing countries, its cumulative impact rises to a long-run value of 1.6. Public infrastructure projects require coordination among different levels of government, and they undergo an extensive planning, bidding, contracting, construction, and evaluation process.
Public infrastructure stimulus may not automatically translate into commensurate increases in the supply of infrastructure services because of limited or low-quality projects in the pipeline and inefficiencies in the selection and implementation of these projects. The disconnect between spending and asset accumulation is particularly acute when governance and fiscal institutions are weak, as is the case of many developing countries.

**Elements of sound fiscal policy expansions**

Fiscal expansions need to be credibly and sustainably financed. Only those developing countries with strong fiscal positions and large reserve stocks (such as Chile, China, Malaysia, and Turkey) can afford to finance fiscal expansions. This point underscores the importance of building up fiscal buffers in good times so that they are available in bad times.

Fiscal expansions should be timely but not rushed. Timely action is a challenge in developing countries, where data quality and fiscal institutions are often weak. Serious risk can arise from rushing to expand public spending without adequate oversight institutions and capacity to appraise new projects in place. Policy makers should first consider expanding well-functioning and already-tested projects and financing preappraised and “shovel-ready” new projects, before embarking on untried public spending projects that risk becoming “white elephants.”

Fiscal expansions should focus on growth-enhancing spending programs or on areas where expenditures are reversible. Such expansions will not jeopardize long-run fiscal and debt sustainability. Policy makers should concentrate on projects that act as automatic stabilizers. Examples include means-tested social benefit programs that expand during downturns, as more people fall below eligibility thresholds, and then contract as the economy recovers. Similarly, workfare programs that clearly pay below-market wages will attract participants in downturns but will not be appealing once the economy recovers. The risks of unsustainable accumulation of public debt are also reduced to the extent that increases in spending occur in areas such as infrastructure, where costs may be recovered through future user fees. Overall, strengthening automatic stabilizers—or designing programs that resemble them for use during recessions—are sustainable ways to conduct countercyclical policies.

Historical experience in developing countries challenges the notion that expansionary fiscal policy...
is effective. That does not mean that expansionary policy cannot play a role in mitigating the effects of crises, however. It does mean that recommendations for countercyclical fiscal measures should incorporate the sobering lessons from past experience. Two priorities should be considered in the use of expansionary fiscal policy. First, social safety nets should be strengthened to help the most vulnerable and those most affected by the crisis to cope, especially in areas where short-term coping mechanisms can have severe long-term impact, such as cutbacks in children’s food consumption or education (see chapter 3). Second, government spending should focus on areas that are likely to contribute to long-term growth, such as infrastructure.

**Generating sustainable fiscal resources to finance stabilization policies and long-term social programs**

**Making fiscal room to maneuver to cope with shocks and unexpected obligations**

Funding for stabilization policies and long-term social programs is limited by the ability of the government to save and borrow resources. In this context, creating space for policy actions requires assessing the sustainability of public debt, the nature and timing of desired expenditures, the responsiveness of public revenues to economic activity, the exposure to fiscal risks, and the government’s capacity to repay its debt. In the latter case, debt defaults and the ensuing credit downgrades reduce the country’s creditworthiness and deepen the downturn in economic activity.

**Preparing to cope with macroeconomic disasters.** Severe macroeconomic contractions are typically accompanied by declines in public revenue collection and the call for social expenditure increases. In the past 50 years, middle-income countries have been in recession 14 to 16 percent of the time, and low-income countries, a staggering 27 percent of the time. Meanwhile, industrial countries have spent 7 percent of the time in sharp recession, as defined by cumulative declines in real GDP per capita of more than 5 percent. The timely and appropriate response to a collapse in aggregate demand will be limited by the health of the government fiscal position.

**Preparing to cope with budgetary surprises.** Governments need to safeguard fiscal space to manage implicit obligations (such as social security programs) or obligations arising from explicit or implicit contingent liabilities. Explicit contingent liabilities stem from the government’s need to meet the terms of contracts and regulations; examples include credit guarantees and public-private partnerships in infrastructure. Implicit contingent liabilities are taken by the government on the basis of political commitments (financial bailouts) or humanitarian grounds (disaster relief), or provision of public goods (environmental clean-up), for instance. Table 7.1 summarizes public policy actions to prevent or deal with recession and budgetary surprises (see also the discussion on contingent liabilities later in this chapter).

**Creating space to cope with downturns and build resilience**

**Using fiscal rules appropriately.** Fiscal rules have emerged in response to fiscal profligacy and to correct distorted incentives and contain pressures to overspend in good times. They typically impose year-by-year numerical limits on debt, expenditure, revenue, or budget balances. However, during the recent financial crisis, these annual numerical targets did not facilitate adjustment to adverse shocks, shifted expenditure composition away from social and investment spending, and created incentives in countries with large imbalances to erode transparency through the use of creative accounting. Rules should recognize that fiscal sustainability is an intertemporal concept and allow for temporary deficits accompanied by subsequent offsetting surpluses. Fiscal rules targeting budget balances along the cycle provide flexibility to respond to shocks and meet the sustainability criteria. These rules are far from being a panacea, however. Their credibility and effectiveness rest on their design, adequate institutional capacity, clear operational procedures, and effective communication strategies (see the “Focus on policy reform” at the end of this Report).

Medium-term expenditure frameworks (MTEFs) constitute another option to implement forward-looking multiyear budget planning. Under these frameworks, spending may not exceed expected revenues and is allocated through medium-term sector strategies. MTEFs combine top-down approaches to allocate aggregate resources to spending agencies, bottom-up determination of the resource needs of spending agencies, and assessment of the links between funding and results. Currently, more than two-thirds of all countries have adopted MTEFs.

**Managing assets prudently.** To weather adverse shocks, some countries have accumulated reserves
Managing macroeconomic risk

43 International reserves as a share of GDP nearly tripled in upper-middle-income countries over the past decade (to 30.8 percent of GDP in 2010 from 10.9 percent in 2000). Safer assets (reserves and debt) have driven the accumulation of foreign assets in emerging market economies, as opposed to advanced countries, which accumulated riskier assets (equity and foreign direct investment). Compared relative to the rest of the world, emerging markets are now in a net creditor position in safe assets, while they are in a net debtor position in riskier assets.44

while others have set up sovereign wealth funds in response to commodity price booms (such as oil-exporting countries) or large export-led booms in economic activity (as in China). Reserve accumulation can be used to limit exchange rate volatility and cushion aggregate domestic spending during current account reversals.42 Holding reserves can be costly, however, because their return is lower than the interest rate offered on government debt. The cost of carrying reserves for the median emerging market was around 0.5 percent of GDP from 2001–09, on average.43

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Source: WDR 2014 team.
The net accumulation of foreign assets and persistent current account surpluses led to the emergence and growth of sovereign wealth funds (SWFs). According to their source of revenue, they can be classified as commodity SWFs, funded by revenues from commodity exports (such as the Government Pension Fund of Norway, and Saudi Arabian Monetary Authority Foreign Holdings); and noncommodity SWFs, funded by transferring assets from international reserves, government budget surpluses, and privatization revenues (such as China’s SAFE Investment Company and Singapore’s Temasek Holdings).

SWFs have multiple goals, including stabilizing government revenue, managing intergenerational savings and pension liabilities, and making long-term investments. SWFs need legitimacy and credibility to protect their capital from depletion by the government or the current generation. Together, they manage more than $5 trillion in assets (with oil- and gas-related SWFs accounting for nearly 60 percent of the total), compared to world international reserves of $11 trillion and worldwide GDP of $71 trillion in 2012. Countries have enacted laws and created institutions to set up management principles and investment policies for their funds. Procedures governing the funding, withdrawal, and spending of the capital should be tailored to the specific fund’s goals. Stabilization and saving funds are typically made up of excess (commodity or government) revenues. Fund withdrawal is sometimes flexible; however, it requires an investment mandate to minimize unexpected resource demands from the government. An SWF’s spending plans should be part of a coherent policy framework, need to be flexible, and—if necessary—be able to be used to meet unexpected and large adverse shocks. For instance, Timor-Leste’s Petroleum Fund has invested in the country’s electricity grid and transportation networks. Chile has drawn upon its SWF to help rebuild areas damaged by the 2011 earthquake (box 7.5).

Greater accountability increases the credibility and effectiveness of these funds. All of them submit reports to the government on a regular basis. For instance, the Kuwait Investment Authority has an independent board that reports to the Council of Ministers.

**Adopting sounder public debt management strategies.**

Along with sharp debt reduction, public debt managers in emerging markets have engineered a major shift in the risk and maturity profile of government debt portfolios. First, the development of local currency bond markets has allowed governments to issue debt in their own currency, thus reducing their dependence on external funding and exposure to exchange rate risk. Second, public bond issuances have gradually shifted from short-term and floating debt to fixed rate debt—thus reducing the exposure to interest rate fluctuations. Third, governments have raised the average life of their portfolio by issuing long-term, fixed-rate instruments. Established issuers such as Brazil, Colombia, Jamaica, Mexico, Peru, Turkey, and Uruguay have been issuing 30-year bonds since 2006. These longer maturities have allowed debt managers to reduce the risk of refinancing. Finally, the stable domestic macroeconomic environment and financial market reforms have allowed governments to diversify their funding sources. Domestic institutional investors are playing a larger role, with pension funds and insurance companies increasing their demand for government bonds. Foreign investors have increased their role as well, especially in countries that have (or have recently obtained) investment grade status.

**Enhancing the scope for public debt management with market insurance.**

Market instruments help governments secure the funds needed to deal with the aftermath of large negative shocks, such as fluctuations in interest rates, exchange rates, and commodity prices, and reversals of capital inflows. Some governments have issued explicit state-contingent debt to hedge against some of these risks—for instance, government debt indexed to GDP, exports, or export commodity prices (such as copper prices). The hedging potential of these instruments has not yet been fully realized, however. State-contingent securities, already traded in international markets, can provide additional insurance, helping governments build portfolios with countercyclical returns. For instance, the risk of reversals in capital flows (sudden stops)—driven by episodes of international flight to quality—is strongly correlated with jumps in the Chicago Board Options Exchange Market Volatility Index (VIX), which measures anticipated volatility in the Standard & Poor’s 500 index. A strategy that “shorts” VIX-linked contracts may provide a good hedge against sudden-stop events. Similarly, market instruments are available to hedge against commodity price fluctuations, and the welfare gains from doing so are potentially large. While these measures offer some potential insurance against shocks to external funding, their effectiveness relies on the presence of deep-pocketed and informed creditors who are willing to take on emerging market risks. That
may be a problem, particularly when shocks to external funding often originate as shocks to the creditor’s ability to lend.\textsuperscript{51}

Implementing a management framework for sovereign assets and liabilities. Sound risk management by the government requires the effective implementation of a sovereign asset-liability management framework. This framework requires enhanced coordination by the various governmental institutions that control and manage specific sovereign financial assets and liabilities: for example, coordination between the treasury and the central bank, when the latter issues debt or holds windfall revenues (in the case of commodity-exporting countries). In practice, the management of assets and liabilities is rarely coordinated. Partial coordination efforts integrate the management of some (but not all) balance sheet items. For instance, Finland, Greece, and Turkey have integrated management of the net position on central government debt and cash reserves. In Hungary, the central bank prepares a consolidated balance sheet when an increase in the international reserves requires debt to be issued in foreign currency. In Canada, the country with the greatest degree of integration, the management of both assets and liabilities is assigned to one agency or ministry, which delegates responsibilities for day-to-day management (for example, to the central bank) and coordinates the borrowing and investing programs.\textsuperscript{52}

Managing macroeconomic contingent liabilities

Managing public liabilities entails not only addressing current obligations but also focusing on contingent liabilities, thus reflecting the increased awareness of the ability of these liabilities to impair fiscal sustainability. For instance, calls on government guarantees will trigger budgetary obligations.

Controlling social security expenditures. In many countries, social security benefits (either publicly or privately provided) are implicit public guarantees.
To the extent that they are politically binding (and at times unavoidable), these benefits are ultimately a government obligation. Disclosure of long-term budgetary pressures associated with social security and demographic trends permits countries to manage the associated risks better. For instance, Australia, New Zealand, the United Kingdom, and the United States have published stand-alone, long-term fiscal sustainability reports. European Union countries, along with Brazil and Japan, report long-term fiscal outlooks on pension and social security spending. The fiscal costs of social security can be mitigated by transforming these implicit open-ended guarantees into explicit but limited ones. For example, the 1981 pension reform in Chile introduced privately managed individual retirement accounts. A similar reform was adopted by several countries in Latin America and Eastern Europe from 1981 to 2004. Nevertheless, the 2008 crisis brought up shortcomings in the effectiveness of the model, including high fees in private accounts, distributional effects, and political interference. In March 2008, Chile enacted a comprehensive pension reform law that addressed critical policy areas (related worker coverage, gender equity, pension adequacy, and administrative fees) and set up a basic universal pension as a supplement to the individual accounts system. Under the new law, the Sistema de Pensiones Solidarias has been added to the existing mandatory individual accounts to increase coverage. It also introduced a noncontributory basic solidarity pension (Pensión Básica Solidaria).

**Developing sound frameworks for explicit contingent liabilities.** Optimal design of contingent contracts may reduce moral hazard by either the beneficiary or the guaranteed party. It is necessary to develop public-private risk-sharing mechanisms so that the guaranteed party or the beneficiary bears some risk. For instance, coverage ratios of credit guarantees should provide incentives for lenders to properly assess and monitor borrowers. Most practitioners argue that lenders should retain a significant part of the risk, from 30 to 40 percent. In practice, the median guarantee covers 80 percent of the loan, while some schemes offer guarantee to lenders up to 100 percent. Governments should also consider other risk-sharing mechanisms, such as termination clauses that allow them to close arrangements when the instrument is no longer needed, requirements to post collateral or to have an ownership stake, and measures to share the upside potential along with the downside risks. Rather than implementing ad hoc mechanisms, governments need to develop fiscal frameworks to better assess and mitigate risks associated with contractual obligations. They should develop methods to project the costs, evaluate the merits of taking on these liabilities, and declare the conditions under which the government will meet these obligations. For instance, Australia and Canada have developed principles to regulate the participation of the government as a guarantor in loan operations—including the identification, pricing, coverage, and evaluation of the risk. In the case of public-private partnerships in infrastructure, the governments of Colombia and South Africa have established frameworks to ensure proper risk taking and the allocation of risks. The risk allocation under these schemes is reflected in national or international legislation.

**Enhancing fiscal policy decision making through transparency and disclosure.** By enhancing the quality of information on fiscal risks, transparency builds support for prudent fiscal policies, promotes better policy actions, and leads to better risk mitigation. Disclosure strengthens confidence and credibility in public sector accounts and in the sustainability of fiscal policy. Credibility, in turn, reduces sovereign borrowing costs and improves the government’s access to international capital markets. Greater fiscal transparency is positively associated with improvements in a country’s credit rating: on average, credit spreads decline 11 percent when governments choose to become more transparent. In best practice, some governments (Australia, Brazil, Chile, Colombia, Indonesia, New Zealand, and Pakistan) have published statements of fiscal risks to their balance sheets and hence to their policy stance. Sometimes, however, full disclosure of government obligations may lead to moral hazard. For instance, reporting some implicit contingent liabilities may lead some agents to take on excessive risk under the impression that the government may step in to cover any losses. Moreover, information that may endanger the government in the event of litigation should not be revealed. Box 7.6 highlights the experience of Colombia in disclosing fiscal risks.

**Maintaining adequate regulatory and crisis resolution frameworks to protect against financial bailouts.** Government bailout of the financial sector can both be costly and impair the sustainability of its financial accounts. The median fiscal cost of financial system bailouts in 87 crisis episodes from 1970 to 2011 was approximately 7 percent of GDP (4 percent of GDP
for industrial countries, and 10 percent for developing countries). Recent banking crises have been among the costliest in terms of government obligations: the fiscal costs of the bailout in Iceland and Ireland have exceeded 40 percent of GDP so far. Protection against the risk associated with financial bailouts requires both an adequate institutional framework that regulates the behavior of financial intermediaries (through limits on risk taking) and sound entities to monitor their financial position. In addition, the government needs to formulate adequate frameworks for crisis resolution that provide clear expectations of ex post risk sharing.

**Designing a comprehensive strategy to manage liabilities associated with natural hazards.** Moving from postdisaster coping to proactive budget planning would help increase the financial and fiscal resiliency of countries. The fiscal impact of natural disasters has increased over time, with floods having high fiscal impact in Colombia. The government has strengthened its institutional and financial capacity to deal more efficiently with natural hazards by creating a national coordinating body in 1985, called the Prevention of and Attention to Disasters System; conducting impact evaluation studies of the potential costs and the financial capacity of the state; and creating a financial fund to recover and adapt infrastructure affected recently by floods. Currently, the MoF is designing a disaster risk financing strategy, which includes enhancing its management of the possible budgetary impacts of disasters through instruments such as contingent credit and parametric reinsurance, and improving insurance of public assets through risk pooling and standard insurance requirements for concession contracts.
Provide the right incentives

To improve the predictability and credibility of policy responses, increase the autonomy and accountability of monetary policy makers. One of the major institutional achievements in monetary policy has been to shield the central bank’s policy-making decisions from political interference and providing the monetary authority with independence to create policy instruments to achieve its goals. However, with greater autonomy comes greater responsibility. Advanced countries and some emerging market economies have made great strides in achieving greater transparency in monetary policy making. Currently, central banks must explain their policy frameworks, describe the ways they intend to reach their goals, and provide information about the models built to formulate economic policy analysis. The disclosure of this information improves the capacity of economic agents to anticipate monetary policy decisions and understand the central bank’s decision-making process. Monetary policy decisions are more predictable when communication from the central bank is timely, clear, collegial, and tailored to its audience.

Promote flexibility

Create the right incentives for better fiscal policy making by shifting toward flexible rules within an adequate institutional framework. Political authorities in many countries have granted the monetary authority independence, a very precise mandate to guide monetary policy, and incentives to be more transparent and accountable. These changes would also benefit fiscal policy arrangements—although to different degrees. The goal of fiscal policy is to achieve long-term budgetary discipline while allowing for flexibility to pursue short-term countercyclical actions. Success requires rules that do not constrain short-term flexibility. These flexible rules, in turn, require the development of supporting institutions. In this context, independent fiscal agencies can help inform, evaluate, and implement rules-based fiscal policies.

Build the foundation for long-term risk management

Enhance fiscal policy credibility by creating independent fiscal agencies. Independent monetary policy committees have greatly improved monetary policy making. Similarly, independent fiscal councils could be created to monitor fiscal discipline and restrain
policy makers from spending sprees in good times, thus helping overcome agency and common pool problems and fostering coordination (see chapter 2). Unlike monetary policy, there is less consensus on the goals of fiscal policy (such as the appropriate level of sustainable debt), and fiscal authorities have a wider set of instruments in their toolkit. Full delegation of policy-making decisions is implausible, given the redistributive nature of fiscal policy. However, government officials can empower councils to conduct and monitor some budget procedures. For instance, fiscal councils can correct overly optimistic official forecasts of budget and GDP growth by providing independent (legally binding) ones (as in Chile and the United Kingdom) or by auditing them (as in Sweden). They can increase rule flexibility by defining ex ante contingencies that trigger escape clauses to the rule (Switzerland), provide positive analysis and normative assessments of policies (Belgium and the Netherlands), and identify rule deviations associated with bad policies. Greater accountability strengthens the reputation of these councils. However, fiscal councils are not a panacea. They are subject to problems of time inconsistency, capture, and lack of legitimacy (see the “Focus on policy reform” at the end of this Report for more detail on their optimal design). In countries with weak institutions and capacity, a good foundation starts with more comprehensive fiscal frameworks—including top-down approaches to budget planning and cooperative bargaining that impose binding budget constraints and put a premium on fiscal policy transparency.

Ensure adequate institutional capacity to carry out macroeconomic policies and address implementation problems. The increasing complexity of macroeconomic management necessitates continuous strengthening of institutional capacity, which should be supported by qualified staff. For instance, the greater sophistication of monetary policy regimes and fiscal rules and the management of contingent liabilities demand rethinkimg and enhancing institutional arrangements. Effective policy implementation requires a high level of institutional coordination. Monitoring and managing fiscal risks associated with contingent liabilities may call for coordination among various risk management units, line ministries, and a supreme auditing institution. In addition, the design and application of a sovereign asset-liability management framework entail coordination among institutions controlling resources and generating obligations.

Protect the vulnerable

Protect the vulnerable from the distributional consequences of shocks or of the policies themselves. Macroeconomic policies have distributional consequences. Lower-income groups tend to be more affected by external shocks and macroeconomic imbalances. Higher-income groups tend to be more strongly affected by financial crises. Macroeconomic mismanagement tends to disproportionately increase the unemployment rate among low-income households and the young. Wealth shocks associated with equity price busts tend to disproportionately affect those aged 26–35 years (the most leveraged age group). Deeper financial markets tend to amplify shocks, thus strengthening the case for tighter macroprudential regulation. More stringent regulations in product markets tend to have an adverse impact on young people and poorer segments of society. The negative consequences of macroeconomic shocks and policies on the less favored segments of society can be alleviated by institutions and policies that facilitate risk sharing. Positive measures include social protection (such as unemployment benefits) and policies that facilitate resource reallocation (such as more flexible entry and exit of firms, more flexible business regulation, trade openness, and prudent fiscal policies).

Keep a long-run focus

Policy makers should be proactive and keep their sights on long-term development. Macroeconomic risk management should concentrate on managing the cycle prudently and on developing systematic, credible, and sustainable policy responses. Forward-looking policy makers should avoid making hasty decisions during crises and instead focus on building the resilience of individuals, households, communities, the enterprise sector, the financial system, and the economy as a whole. They need to build the proper economic institutions that can create incen-
Public programs (notably, investments in human capital and infrastructure), and devising policies to take advantage of trade and financial integration in the global economy will create the right incentives to deliver sustained growth without undermining the management of aggregate volatility.

Table 7.2 summarizes government policies for risk management, arrayed as priorities for countries at different levels of institutional development and capacity. Overall, safeguarding macroeconomic stability, building reserve funds to finance desirable

tives to invest and thus foster long-term development. Table 7.2 summarizes government policies for risk management, arrayed as priorities for countries at different levels of institutional development and capacity. Overall, safeguarding macroeconomic stability, building reserve funds to finance desirable

TABLE 7.2 Policy priorities to improve risk management at the macroeconomic level

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Foundational</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve quality of data</td>
<td>Data collection and dissemination</td>
<td>Monetary policy transparency</td>
</tr>
<tr>
<td>Disclosure of fiscal risks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Build stronger fiscal frameworks/institutions</td>
<td></td>
<td>Debt/deficit reduction</td>
</tr>
<tr>
<td>Protection</td>
<td>Central bank independence</td>
<td>Inflation targeting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flexible exchange rate regime</td>
</tr>
<tr>
<td>Insurance</td>
<td>Countercyclical monetary policy; reserve accumulation</td>
<td>Hedging mechanisms; contingent bonds</td>
</tr>
<tr>
<td>Design better automatic stabilizers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Countercyclical social spending</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping</td>
<td>Support from international financial institutions</td>
<td>Contingent credit lines</td>
</tr>
</tbody>
</table>

Source: WDR 2014 team.

Note: The table presents a sequencing of policies based on the guidance of chapter 2 for establishing policy priorities: be realistic in designing policies tailored to the institutional capacity of the country, and build a strong foundation that addresses the most critical obstacles sustainably and that can be improved over time.
Notes

1. The increase in the unemployment rate relative to precrisis levels tends to be between 2 and 4.5 percentage points higher than in a regular recession. See Calvo, Coricelli, and Ottonello 2012.

2. Other macroeconomic policies, including trade and financial openness, also permit the national government to stabilize the economy by sharing risks internationally. Although important in the policy toolkit, their discussion goes beyond the scope of this chapter.

5. Gali and Gambetti 2009.
12. Fiscal dominance refers to the situation where monetary policy is used to alleviate problems of fiscal sustainability through the monetization of public debt—and with little regard for the inflationary consequences.
26. McKay and Reis 2013.
27. Frankel, Végh, and Vuletin 2013.
30. Tornell and Lane 1999.
32. Frankel, Végh, and Vuletin 2013.
34. Kraay 2012; Barro and Redlick 2011.
35. Ramey 2011.
36. Auerbach and Gorodnichenko 2012.
40. Fatás and Mihov 2010; Schaechter and others 2012.
41. World Bank 2013
42. Aizenman, Edwards, and Riera-Crichton 2011.
43. IMF 2011.
44. Didier, Hevia, and Schmukler 2012.
45. Aizenman and Glick 2009 document that countries with SWFs have superior governance to that of other developing countries, including better government effectiveness, regulatory quality, and control of corruption. The transparency and credibility of SWFs tend to reflect their national governance benchmark.
47. Das and others 2009.
52. Das and others 2012.
53. Cebotari and others 2009.
59. Laeven and Valencia 2012 estimated the fiscal cost of bailouts as gross fiscal outlays related to the restructuring of the financial sector. The estimate includes fiscal costs related to bank recapitalizations and excludes asset purchases and direct liquidity assistance from the treasury.
60. This paragraph draws heavily from GFDRR 2012.
61. Fatás and Mihov 2013.
63. Wyplosz 2013.
64. Dabla-Norris and others 2010.
65. Das and others 2012.
References


Diseases without borders: Managing the risk of pandemics

Pandemics such as influenza (flu), AIDS, plague, and smallpox have caused episodes of overwhelming misery and economic and social disruptions throughout history. Today, a pathogen that originates in a chicken flock or a goat herd in a remote village in Asia or Africa and is then transmitted to humans can reach major cities on all continents within 36 hours. Because everyone is vulnerable, management of pandemic risk is the quintessential global public good that can yield benefits for all but can be supplied only through collective action. Any country’s efforts to reduce the risk are of limited benefit unless all other countries take supportive measures.

Sources of pandemics and development implications
Pandemics do not start in a vacuum; their onset is shaped by human action. A staggering 2.3 billion infections by zoonotic (animal-borne) pathogens afflict people in developing countries every year. Some 75 percent of pathogens capable of causing human disease are now animal-borne. This is a major concern because health, nutrition, and food and income security all decline when livestock and people are diseased. The poorest, often living close to livestock or wild animals, are most vulnerable. This disease burden persists because of weak veterinary and human public health systems that fail to detect diseases and allow them to spread. Adding to the risks, livestock numbers are projected to grow very quickly in developing countries. Some pathogens spread not just across species but also through trade and travel across borders and continents. Even worse, some become capable of easy human-to-human spread and thus have great impact, like AIDS, flu, or severe acute respiratory syndrome (SARS). Any country’s failure to stop contagion early at its animal source can cause a pandemic. A severe flu pandemic could more than double the total burden of disease. Moreover, economic activity would suffer from worker absenteeism, cascading service disruptions, and human reactions to fear and rumors, which can spread faster than the disease itself. Much of the economic costs would result from avoidance behaviors; these costs could account for as much as 60 percent of total economic costs. Poor countries, especially fragile and conflict-affected states, may be least able to cope.

Preventing a pandemic
To stop contagion, it is essential to act early, at the source, and quickly. Early warning requires cooperation from farmers and communities. If farmers who report disease are punished by having their livestock destroyed without compensation, they will hide disease from the authorities. The main cause of pandemic risk is low capacity of public veterinary and human health systems. Bringing them up to meet minimum international standards requires only modest resources: $3.4 billion a year for all developing countries, compared with the current level of barely $450 million. The expected annual benefits of robust systems are at least $37 billion, more than 10 times the costs. Because public health authorities failed to detect the disease early—on—a failure of public health service delivery—AIDS spread unchecked for decades. The costs of this manmade delay are still rising. In contrast, prompt public health action to isolate infected people helped stop the SARS outbreak. Contagion is far less likely to take off in countries that detect disease early and implement effective control measures promptly. To date, no mechanism ensures the strengthening of veterinary and human public health systems in countries that are unable to detect and control diseases, although such “weak links” put all countries at risk.

Mitigating impacts of a pandemic
Contingency planning, and periodic simulation exercises by governments, firms, and communities, as part of disaster risk preparedness, can mitigate impacts. Health sector plans can help cope with surges of patients. Networked industries like power, transport, finance, and food distribution can avoid major disruptions when the main firms have business continuity plans. Likewise, security and other government services need operational continuity plans in the event of high worker absenteeism. Communications in-country and across borders are vital, as the differing degrees of SARS contagion within Canada clearly demonstrated. Advance planning for truthful, complete, coordinated, and timely communications about the disease and government responses can reduce uncertainty and rumors. Too few governments, communities, and firms make and test contingency plans for complex disasters (including pandemics), despite evidence that these activities are highly beneficial.

In short, pandemics are an undermanaged risk. Pandemic prevention and preparedness tend to be sidelined, especially in the health sector, where the responsibility often rests. Health authorities focus on immediate problems and do not readily work with veterinary authorities to prevent diseases of tomorrow or coordinate societywide preparedness. Why such neglect? The economic and social impacts of contagion are often ignored, so the total risk is underestimated. Recent experience shows how wide this gap can be. The 2003 SARS outbreak, which killed about 10 percent of the 8,000 people it infected, caused $54 billion in economic damage (mostly canceled travel, lost retail trade, and associated cross-border economic shocks). A severe flu pandemic could cost 4.8 percent of global gross domestic product (GDP), or more than $3 trillion, trigger-
BOX 5.7.1 An emergency response to a top global catastrophic risk

How H5N1 avian flu galvanized the international community

Why an emergency response? Two goals:
• Control H5N1 avian flu at its source in poultry to reduce pandemic risk to humans and the world economy.
• Prepare all countries to cope with a pandemic.

Results? Notable achievements, but risks remain:
• Largest global public health program to date reduced risk through prevention and preparedness; assistance was delivered quickly to over 100 developing countries.
• H5N1 avian flu was controlled in most of the 63 countries in Africa, Asia, and Europe where it appeared but still circulates in a dozen countries. Preventing renewed spread of this virus is technically possible and cost-effective, yet most of the required investments in veterinary and human public health systems are unfunded.
• Preparedness for pandemics was boosted, as evidenced by responses to the 2009 H1N1 flu pandemic.
• The onset of the financial crisis in 2008 and decline in media attention sidelined pandemic prevention, leaving weaknesses in veterinary and public health systems unaddressed and undermining the sustainability of investments made.

How did it work?
• Initiated by the United States and the European Commission, the International Partnership on Avian and Pandemic Influenzas engaged all countries.
• After launch at the United Nations (UN) General Assembly in 2005, political support was galvanized at five ministerial conferences in 2006–10.
• A UN System coordinator worked with the World Bank to support the World Health Organization (WHO), the World Organisation for Animal Health (OIE), the Food and Agriculture Organization of the United Nations (FAO), and others to develop a common strategy rapidly.
• Financing of $3.9 billion in 2005–10 helped over 100 developing countries. No new fund was created; instead, the World Bank monitored financing gaps in recipient countries and organizations.
• Partners agreed on a strategy to reduce health risks at the animal-human-environment interface (One Health), steered by the WHO-OIE-FAO tripartite.
• The United Nations and partners founded a network for preparedness, the Towards a Safer World Initiative, but sustainable funding and other support remain uncertain.

Source: WDR 2014 team.

Promising precedents

The international community has already eradicated two devastating scourges: smallpox in 1979, and rinderpest (cattle plague) in 2011. Smallpox killed as many as 500 million people in the 20th century alone. Rinderpest, with its high fatality rate, decimated herds and economies for centuries and catalyzed the founding of the World Organisation for Animal Health (OIE) in 1924. Intergovernmental cooperation, science-based disease control strategies, mass vaccination, and surveillance were among the elements behind these successful campaigns. The disease risk was reduced to zero. The benefits are lasting and already outweigh the control costs many times over. International coordination and strong public health agencies broke the chain of transmission of SARS. Faced with the H5N1 avian flu threat, the international community rapidly mobilized and deployed resources for zoonotic disease control and pandemic preparedness, but the effort dissipated soon after the threat left the headlines.

Current and future generations would benefit if the international community set a goal to reduce pandemic risk. The goal would empower international organizations to raise risk awareness and motivate prevention and preparedness; provide relevant knowledge, capacity building, and technical assistance to developing countries; assess the performance of national veterinary and human public health systems and their collaboration; and mobilize resources for strengthening these systems.

Sources