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Introduction

THE FINANCIAL COLLAPSE of 2007 and the recession that followed left many economists on the defensive. News programs, magazines, pundits, and even the Queen of England all asked some variant of the question, why didn't you see it coming? Some in the economics community wrote articles or convened conferences to examine how they could have gotten it so wrong; others engaged in a full-throated defense of their profession.[1] For many who were hostile to the fundamental assumptions of mainstream economics, the crisis was proof that they had been right all along: the emperor was finally shown to have no clothes. Public confidence in authority was badly shaken.

Of course, it is incorrect to say that no one saw this crisis coming. Some hedge fund managers and traders in investment banks put their money instead of their mouths to work. A few government and Federal Reserve officials expressed deep concern. A number of economists, such as Kenneth Rogoff, Nouriel Roubini, Robert Shiller, and William White, repeatedly sounded warnings about the levels of U.S. house prices and household indebtedness. Niall Ferguson, a historian, drew parallels to past booms that ended poorly. The problem was not that no one warned about the dangers; it was that those who benefited from an overheated economy—which included a lot of people—had little incentive to listen. Critics were often written off as Cassandras or "permabears": predict a downturn long enough, the thinking went, and you would eventually be proved right, much as a broken clock is correct twice a day. I know, because I was one of those Cassandras.

Every year, the world's top central bankers get together for three days at Jackson Hole, Wyoming, along with private-sector analysts, economists, and financial journalists, to debate a set of topical papers commissioned for the event by the host, the Federal Reserve Bank of Kansas City. Following each day's presentations, participants go on long hikes in the beautiful Grand Teton National Park, where, amid the stunning mountain scenery, they talk central-banker

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shop: intense arguments about the Wicksellian rate of interest mingle with the sounds of rushing streams.

The 2005 Jackson Hole Conference was to be the last for the Federal Reserve Board chairman, Alan Greenspan, and the theme, therefore, was the legacy of the Greenspan era. I was the chief economist of the International Monetary Fund (IMF) at that time, on leave from the University of Chicago, where I have taught banking and finance for the best part of two decades. I was asked to present a paper on how the financial sector had evolved during Greenspan's term.

The typical paper on the financial sector at that time described in breathless prose the dramatic expansion of financial markets around the world. It emphasized the wonders of securitization, which allowed a bank to package its risky housing or credit card loans together and sell claims on the package in the financial market. Securitization allowed a bank to get the risky loans off its books. At the same time, it allowed long-term investors in the market, such as pension funds and insurance companies, to take on a small portion of the risky claims that they, by virtue of having longer horizons and holding a diverse portfolio of other assets, could hold more easily than the bank. In theory, with the risk better spread across sturdier shoulders, investors would demand a lower return for holding the risk, allowing the bank to charge lower loan rates and expand borrowers' access to finance.

In preparation for writing the paper, I had asked my staff to prepare graphs and tables. As we looked through them, I noted a few that seemed curious. They were plots of different measures of the riskiness of large U.S. banks, and they suggested that banks had become, if anything, more exposed to risk over the past decade. This was surprising, for if banks were getting risky loans off their balance sheets by selling them, they should have become safer. I eventually realized that I was committing the economist's cardinal sin of assuming *ceteris paribus,* that is, assuming that everything else but the phenomenon being studied, in this case securitization, remained the same. Typically, everything does not remain the same. Most important, deregulation and developments like securitization had increased competition, which increased the incentives for bankers (and financial managers more generally) to take on more complex forms of risk.

Once I saw this trend, the paper quickly wrote itself and was titled "Has Financial Development Made the World Riskier?" As the *Wall Street Journal* reported in 2009 in an article on my Jackson Hole presentation:

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> Incentives were horribly skewed in the financial sector, with workers reaping rich rewards for making money but being only lightly penalized for losses, Mr. Rajan argued. That encouraged financial firms to invest in complex products, with potentially big payoffs, which could on occasion fail spectacularly.
>
> He pointed to "credit default swaps" which act as insurance against bond defaults. He said insurers and others were generating big returns selling these swaps with the appearance of taking on little risk, even though the pain could be immense if defaults actually occurred.
>
> Mr. Rajan also argued that because banks were holding a portion of the credit securities they created on their books, if those securities ran into trouble, the banking system itself would be at risk. Banks would lose confidence in one another, he said. "The interbank market could freeze up, and one could well have a full-blown financial crisis."
>
> Two years later, that's essentially what happened.[2]

Forecasting at that time did not require tremendous prescience: all I did was connect the dots using theoretical frameworks that my colleagues and I had developed. I did not, however, foresee the reaction from the normally polite conference audience. I exaggerate only a bit when I say I felt like an early Christian who had wandered into a convention of half-starved lions. As I walked away from the podium after being roundly criticized by a number of luminaries (with a few notable exceptions), I felt some unease. It was not caused by the criticism itself, for one develops a thick skin after years of lively debate in faculty seminars: if you took everything the audience said to heart, you would never publish anything. Rather it was because the critics seemed to be ignoring what was going on before their eyes.

In part, I was criticized because I was off message. Some of the papers in the conference, in keeping with the Greenspan-era theme, focused on whether Alan Greenspan was the best central banker in history, or just among the best. Someone raining on that parade, suggesting all was not well and calling for better regulation, was unlikely to attract encomiums, especially given Greenspan's known skepticism about the effectiveness of regulation. In part, the reaction was defensive, for if the financial sector had gone so far off track, were the regulators not at fault for being asleep at the switch? In part, it was hubris. The Federal Reserve had dealt successfully with the downturn caused by the dot-com bust in

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2000–2001 and felt it knew how to rescue the system relatively painlessly if it got into trouble again.

Although I worried about banker incentives in my talk and regulatory motives in its aftermath, and although many more commentators and regulators have since come around to my point of view, I have come to believe that these issues are just the tip of the iceberg. The true sources of the crisis we have experienced are not only more widespread but also more hidden. We should resist the temptation to round up the most proximate suspects and pin the blame only on them. Greedy bankers can be regulated; lax government officials can be replaced. This is a convenient focus, because the villains are easily identified and measures can be taken against malfeasance and neglect. What's more, it absolves the rest of us of our responsibility for precipitating this crisis. But this is too facile a response.

We should also resist the view that this is just another crisis, similar to every financial crisis before it, with real estate and foreign capital flows at its center. Although there are broad similarities in the things that go wrong in every financial crisis, this one centered on what many would agree is the most sophisticated financial system in the world.[3] What happened to the usual regulatory checks and balances? What happened to the discipline imposed by markets? What happened to the private instinct for self-preservation? Is the free-enterprise system fundamentally broken? These questions would not arise if this were "just another" crisis in a developing country. And given the cost of this crisis, we cannot afford facile or wrong answers.

Although I believe that the basic ideas of the free-enterprise system are sound, the fault lines that precipitated this crisis are indeed systemic. They stem from more than just specific personalities or institutions. A much wider cast of characters shares responsibility for the crisis: it includes domestic politicians, foreign governments, economists like me, and people like you. Furthermore, what enveloped all of us was not some sort of collective hysteria or mania. Somewhat frighteningly, each one of us did what was sensible given the incentives we faced. Despite mounting evidence that things were going wrong, all of us clung to the hope that things would work out fine, for our interests lay in that outcome. Collectively, however, our actions took the world's economy to the brink of disaster, and they could do so again unless we recognize what went wrong and take the steps needed to correct it.

There are deep fault lines in the global economy, fault lines that have developed because in an integrated economy and in an integrated world, what is best for the individual actor or institution is not always best for the system. Respon-

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sibility for some of the more serious fault lines lies not in economics but in politics. Unfortunately, we did not know where all these fault lines ran until the crisis exposed them. We now know better, but the danger is that we will continue to ignore them. Politicians today vow, "Never again!" But they will naturally focus only on dealing with a few scapegoats, not just because the system is harder to change, but also because if politicians traced the fault lines, they would find a few running through themselves. Action will become particularly difficult if a more rapid recovery reinforces the incentives to settle for the status quo. This book is, therefore, an attempt to heed the warnings from this crisis, to develop a better understanding of what went wrong, and then to outline the hard policy choices that will tackle the true causes of this crisis and avert future ones.

Let us start with what are widely believed to be the roots of this crisis, which is, in part, a child of past crises.[4] In the late 1990s, a number of developing countries (in the interests of brevity, I use the term *developing* for countries that have relatively low per capita incomes and *industrial* for those that have high per capita incomes), which used to go on periodic spending binges fueled by foreign borrowing, decided to go cold turkey and save instead of spend. Japan, the second largest economy in the world, was also in a deepening slump. Someone else in the world had to consume or invest more to prevent the world economy from slowing down substantially. The good news for any country willing to spend more was that the now-plentiful surplus savings of the developing countries and Japan, soon to be augmented by the surpluses of Germany and the oil-rich countries, would be available to fund that spending.

In the late 1990s, that someone else was corporations in industrial countries that were on an investment spree, especially in the areas of information technology and communications. Unfortunately, this boom in investment, now called the dot-com bubble, was followed by a bust in early 2000, during which these corporations scaled back dramatically on investment.

As the U.S. economy slowed, the Federal Reserve went into overdrive, cutting interest rates sharply. By doing so, it sought to energize activity in sectors of the economy that are interest sensitive. Typically, such a move boosts corporate investment, but corporations had invested too much already during the dot-com boom and had little incentive to do more. Instead, the low interest rates prompted U.S. consumers to buy houses, which in turn raised house prices and led to a surge in housing investment. A significant portion of the additional demand came from segments of the population with low credit ratings or impaired credit histories—the so-called subprime and Alt-A segments—who now obtained access to credit that had hitherto been denied to them. Moreover, rising

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house prices gave subprime borrowers the ability to keep refinancing into low interest rate mortgages (thus avoiding default) even as they withdrew the home equity they had built up to buy more cars and TV sets. For many, the need to repay loans seemed remote and distant.

The flood of money lapping at the doors of borrowers originated, in part, from investors far away who had earned it by exporting to the United States and feeding the national consumption habit. But how did a dentist in Stuttgart, Germany, make mortgage loans to subprime borrowers in Las Vegas, Nevada? The German dentist would not be able to lend directly, because she would incur extremely high costs in investigating the Vegas borrower's creditworthiness, making the loan conform to all local legal requirements, collecting payments, and intervening in case of default. Moreover, any individual subprime homebuyer would have a high propensity to default, certainly higher than the level of risk with which a conservative private investor would be comfortable.

This is where the sophisticated U.S. financial sector stepped in. Securitization dealt with many of these concerns. If the mortgage was packaged together with mortgages from other areas, diversification would reduce the risk. Furthermore, the riskiest claims against the package could be sold to those who had the capacity to evaluate them and had an appetite for the risk, while the safest, AAA-rated portions could be sold directly to the foreign dentist or her bank.

The U.S. financial sector thus bridged the gap between an overconsuming and overstimulated United States and an underconsuming, understimulated rest of the world. But this entire edifice rested on the housing market. New housing construction and existing housing sales provided jobs in construction, real estate brokerage, and finance, while rising house prices provided the home equity to refinance old loans and finance new consumption. Foreign countries could emerge from their slump by exporting to the seemingly insatiable U.S. consumer, while also lending the United States the money to pay for these imports. The world was in a sweet but unsustainable spot.

The gravy train eventually came to a halt after the Federal Reserve raised interest rates and halted the house price rise that had underpinned the frenzied lending. Subprime mortgage-backed securities turned out to be backed by much riskier mortgages than previously advertised, and their value plummeted. The seemingly smart bankers turned out to have substantial portions of these highly rated but low-quality securities on their balance sheets, even though they must have known what they contained. And they had financed these holdings with enormous amounts of short-term debt. The result was that short-term creditors

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panicked and refused to refinance the banks when their debts came due. Some of the banks failed; others were bailed out even as the whole system tottered on the brink of collapse. Economies across the world went into a deep slump from which they are recovering slowly.

This narrative leaves many questions unanswered. Why was the flood of money that came in from outside the United States used for financing subprime credit? Why was the United States, unlike other economies like Germany and Japan, unable to export its way out of the 2001 recession? Why are poorer developing countries like China financing the unsustainable consumption of rich countries like the United States? Why did the Federal Reserve keep rates so low for so long? Why did financial firms make loans to people who had no income, no jobs, and no assets—a practice so ubiquitous that it attracted its own acronym, NINJA loans? Why did the banks—the sausage makers, so to speak—hold so many of the sausages for their own consumption when they knew what went into them?

I attempt to address all these questions in this book. Let me start by saying that I do not have a single explanation for this crisis, and so no single silver bullet to prevent a future one. Any single explanation would be too simplistic. I use the metaphor of *fault lines.* In geology, fault lines are breaks in the Earth's surface where tectonic plates come in contact or collide. Enormous stresses build up around these fault lines. I describe the fault lines that have emerged in the global economy and explain how these fault lines affect the financial sector.

One set of fault lines stems from domestic political stresses, especially in the United States. Almost every financial crisis has political roots, which no doubt differ in each case but are political nevertheless, for strong political forces are needed to overcome the checks and balances that most industrial countries have established to contain financial exuberance. The second set of fault lines emanates from trade imbalances between countries stemming from prior patterns of growth. The final set of fault lines develops when different types of financial systems come into contact to finance the trade imbalances: specifically, when the transparent, contractually based, arm's-length financial systems in countries like the United States and the United Kingdom finance, or are financed by, less transparent financial systems in much of the rest of the world. Because different financial systems work on different principles and involve different forms of government intervention, they tend to distort each other's functioning whenever they come into close contact. All these fault lines affect financial-sector behavior and are central to our understanding of the recent crisis.

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Rising Inequality and the Push for Housing Credit

The most important example of the first kind of fault line, which is the theme of Chapter 1, is rising income inequality in the United States and the political pressure it has created for easy credit. Clearly, the highly visible incomes at the very top have gone up. The top 1 percent of households accounted for only 8.9 percent of income in 1976, but this share grew to 23.5 percent of the total income generated in the United States in 2007. Put differently, of every dollar of real income growth that was generated between 1976 and 2007, 58 cents went to the top 1 percent of households.[5] In 2007 the hedge fund manager John Paulson earned $3.7 billion, about 74,000 times the median household income in the United States.[6]

But although the gargantuan incomes at the very top excite public interest and enrage middle-class columnists, most Americans rarely meet a billionaire hedge fund manager. More relevant to their experience is the fact that since the 1980s, the wages of workers at the 90th percentile of the wage distribution in the United States—such as office managers—have grown much faster than the wage of the 50th percentile worker (the median worker)—typically factory workers and office assistants. A number of factors are responsible for the growth in the 90/50 differential. Perhaps the most important is that although in the United States technological progress requires the labor force to have ever-greater skills—a high school diploma was sufficient for our parents, whereas an undergraduate degree is barely sufficient for the office worker today—the education system has been unable to provide enough of the labor force with the necessary education. The problems are rooted in indifferent nutrition, socialization, and learning in early childhood, and in dysfunctional primary and secondary schools that leave too many Americans unprepared for college.

The everyday consequence for the middle class is a stagnant paycheck as well as growing job insecurity. Politicians feel their constituents' pain, but it is very hard to improve the quality of education, for improvement requires real and effective policy change in an area where too many vested interests favor the status quo. Moreover, any change will require years to take effect and therefore will not address the current anxiety of the electorate. Thus politicians have looked, or been steered into looking, for other, quicker ways to mollify their constituents. We have long understood that it is not income that matters but consumption. Stripped to its essentials, the argument is that if somehow the consumption of middle-class householders keeps up, if they can afford a new car every few years

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and the occasional exotic holiday, perhaps they will pay less attention to their stagnant monthly paychecks.

Therefore, the political response to rising inequality—whether carefully planned or an unpremeditated reaction to constituent demands—was to expand lending to households, especially low-income ones. The benefits—growing consumption and more jobs—were immediate, whereas paying the inevitable bill could be postponed into the future. Cynical as it may seem, easy credit has been used as a palliative throughout history by governments that are unable to address the deeper anxieties of the middle class directly. Politicians, however, want to couch the objective in more uplifting and persuasive terms than that of crassly increasing consumption. In the United States, the expansion of home ownership—a key element of the American dream—to low- and middle-income households was the defensible linchpin for the broader aims of expanding credit and consumption. But when easy money pushed by a deep-pocketed government comes into contact with the profit motive of a sophisticated, competitive, and amoral financial sector, a deep fault line develops.

This is not, of course, the first time in history when credit expansion has been used to assuage the concerns of a group that is being left behind, nor will it be the last. In fact, one does not even need to look outside the United States for examples. The deregulation and rapid expansion of banking in the United States in the early years of the twentieth century was in many ways a response to the Populist movement, backed by small and medium-sized farmers who found themselves falling behind the growing numbers of industrial workers and demanded easier credit. Excessive rural credit was one of the important causes of bank failure during the Great Depression.

Export-Led Growth and Dependency

There are usually limits to debt-fueled consumption, especially in a large country like the United States. The strong demand for consumer goods and services tends to push up prices and inflation. A worried central bank then raises interest rates, curbing both households' ability to borrow and their desire to consume. Through the late 1990s and the 2000s, though, a significant portion of the increase in U.S. household demand was met from abroad, from countries such as Germany, Japan, and, increasingly, China, which have traditionally relied on exports for growth and had plenty of spare capacity to make more. But, as I argue in Chapter 2, the ability of these countries to supply the goods

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reflects a serious weakness in the growth path they have followed—excessive dependence on the foreign consumer. This dependence is the source of the second fault line.

The global economy is fragile because low domestic demand from traditional exporters puts pressure on other countries to step up spending. Because the exporters have excess goods to supply, countries like Spain, the United Kingdom, and the United States—which ignore growing household indebtedness and even actively encourage it—and countries like Greece—which lack the political will to control government populism and union demands—tend to get a long rope. Eventually, high household or government indebtedness in these countries limits further demand expansion and leads to a wrenching adjustment all around. But so long as large countries like Germany and Japan are structurally inclined—indeed required—to export, global supply washes around the world looking for countries that have the weakest policies or the least discipline, tempting them to spend until they simply cannot afford it and succumb to crisis.

Why are so many economies dependent on consumption elsewhere? Their dependence stems from the path they chose toward rapid growth, out of the destruction created by World War II or out of poverty. Governments (and banks) intervened extensively in these economies to create strong firms and competitive exporters, typically at the expense of household consumption in their own country.

Over time, these countries created a very efficient export-oriented manufacturing sector—firms like Canon, Toyota, Samsung, and Formosa Plastics are world leaders. The need to be competitive in foreign markets kept the exporters on their toes. But although global competition limited the deleterious effects of government intervention in the export sector, there were no such restraints in the domestic-oriented production sector. Banks, retailers, restaurants, and construction companies, through their influence over government policies, have managed to limit domestic competition in their respective sectors. As a result, these sectors are very inefficient. There are no large Japanese banks, for example, that rival HSBC in its global reach, no Japanese retailers that approach Walmart in size or cost competitiveness, and no Japanese restaurant chains that rival McDonald's in its number of franchises.

Therefore, even though these economies grew extraordinarily fast to reach the ranks of the rich, as their initial advantage of low wages disappeared and exports became more difficult, their politically strong but very inefficient domestic-oriented sector began to impose serious constraints on internally generated growth. Not only is it hard for these economies to grow on their own in

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normal times, but it is even harder for them to stimulate domestic growth in downturns without tremendously wasteful spending. The natural impulse of the government, when urged to spend, is to favor influential but inefficient domestic producers, which does little for long-run growth. Therefore, these countries have become dependent on foreign demand to pull them out of economic troughs.

The future does not look much brighter. As populations in these countries age, not only will change become more difficult, but their dependencies will also worsen. And China, which is likely to be the world's largest economy in the not too distant future, is following a dangerously similar path. It has to make substantial policy changes if it is not to join this group as an encumbrance on, rather than an engine of, world economic growth.

The Clash of Systems

In the past, fast-growing developing countries were typically not net exporters, even though their factories focused on producing to meet demand elsewhere. The fast pace of growth of countries like Korea and Malaysia in the 1980s and early 1990s entailed substantial investment in machinery and equipment, which were often imported from Germany and Japan. This meant they ran trade deficits and had to borrow money on net from world capital markets to finance their investment.

Even export-led developing countries thus initially helped absorb the excess supply from the rich exporters. But developing countries experienced a series of financial crises in the 1990s that made them realize that borrowing large amounts from industrial countries to fund investment was a recipe for trouble. In Chapter 3, I explain why these economies moved from helping to absorb global excess supply to becoming net exporters themselves and contributing to the problem: essentially, their own financial systems were based on fundamentally different principles from those of their financiers, and the incompatibility between the two, the source of the fault line, made it extremely risky for them to borrow from abroad to support investment and growth.

In the competitive financial systems in countries like the United States and the United Kingdom, the accent is on transparency and easy enforceability of contracts through the legal system: because business transactions do not depend on propinquity, these are referred to as "arm's-length" systems. Financiers gain confidence because of their ability to obtain publicly available information and understand the borrower's operations and because they know that their claims will be protected and enforced by the courts. As a result, they are willing

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to hold long-term claims, such as equity and long-term debt, and to finance the final user directly rather than going through intermediaries like banks. Every transaction has to be justified on its own and is conducted through competitive bidding. This description is clearly a caricature—transparency was missing during the recent crisis—but it reflects the essentials of the system.

The financial systems in countries where government and bank intervention was important during the process of growth are quite different. Public financial information is very limited, perhaps because the government and banks directed the flow of financing during the growth phase and did not need, or want, public oversight then. Even though in most of these countries the government has withdrawn from directing financial flows, banks still play an important role, and information is still closely guarded within a group of insiders. Because of the paucity of public information, enforcement of contractual claims largely depends on long-term business relationships. The borrower repays the lender or renegotiates in good faith to avoid the loss of the relationship, and the adverse consequences it would have, in a system where relationships are the currency of exchange. This means that outside financiers, especially foreigners, have little access to the system. Indeed, this barrier is what makes the system work, because if borrowers could play one lender off against another, as in the arm's-length competitive system, enforcement would break down.

So what happens when arm's-length, industrial-country private investors are asked to finance corporate investment in a developing country with a relationship system, as was the case in the early 1990s? Foreign investors who do not understand the murky insider relationships do three things. They minimize risks by offering only short-term loans so that they can pull their money out at short notice. They denominate payments in foreign currency so that their claims cannot be reduced by domestic inflation or a currency devaluation. And they lend through the local banks so that if they pull their money and the banks cannot repay it, the government will be drawn into supporting its banks to avoid widespread economic damage. Thus foreign investors get an implicit government guarantee. The threat of inflicting collateral damage is what makes arm's-length foreign investors willing to entrust their money to the opaque relationship system.

The problem in the mid-1990s in East Asia was that foreign investors, protected by such measures, had little incentive to screen the quality of ventures financed. And the domestic banking system, whose lending was until recently directed and guaranteed by the government, had little ability to exercise careful judgment, especially when borrowers were climbing the ladder of technological sophistication and investing in complex, capital-intensive projects. Borrow-

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ers were obviously happy with the free flow of credit and had no desire to ask questions. But when the projects financed by this poorly directed lending started underperforming, foreign investors were quick to pull their money out. Therefore, developing countries that relied substantially on foreign money to finance their investments suffered periodic booms and busts, culminating in the crises of the late 1990s.

Those crises were both devastating and humiliating. For example, the fall in Indonesian GDP from peak to trough was close to 25 percent, similar to the fall experienced by the United States during the Great Depression. But Indonesia's fall occurred in the span of only a year or so. As the economy tipped into free fall, with millions of workers becoming unemployed without any form of support, Indonesia experienced race riots and political turmoil. To cap it all, a proud country that felt it had liberated itself from its colonial masters and had achieved some measure of economic independence had to go hat in hand to the IMF for a loan and, in order to get it, was forced to submit to a plethora of conditions. Some of these were dictated directly by industrial countries to favor their own interests, leaving Indonesians seething about their perceived loss of sovereignty.

It should come as no surprise, then, that a number of developing countries decided to never leave themselves at the mercy of international financial markets (or the IMF) again. Rather than borrow from abroad to finance their investment, their governments and corporations decided to abandon grand investment projects and debt-fueled expansion. Moreover, a number decided to boost exports by maintaining an undervalued currency. In buying foreign currency to keep their exchange rate down, they also built large foreign-exchange reserves, which could serve as a rainy-day fund if foreign lenders ever panicked again. Thus in the late 1990s, developing countries cut back on investment and turned from being net importers to becoming net exporters of both goods and capital, adding to the global supply glut.

Investment by industrial-country corporations also collapsed soon after, in the dot-com bust, and the world fell into recession in the early years of the new millennium. With countries like Germany and Japan unable to pull their weight because of their export orientation, the burden of stimulating growth fell on the United States.

Jobless Recoveries and the Pressure to Stimulate

As I argue above, the United States was politically predisposed toward stimulating consumption. But even as it delivered the necessary stimulus for the world

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to emerge from the 2001 recession, it discovered, much as in the 1991 recovery, that jobs were not being created. Given the short duration of unemployment benefits in the United States, this created enormous additional political pressure to continue injecting stimulus into the economy. As I argue in Chapter 4, jobless recoveries are not necessarily a thing of the past in the United States—indeed, the current recovery is proving slow thus far in generating jobs. Jobless recoveries are particularly detrimental because the prolonged stimulus aimed at forcing an unwilling private sector to create jobs tends to warp incentives, especially in the financial sector. This constitutes yet another fault line stemming from the interaction between politics and the financial sector, this time one that varies over the business cycle.

From 1960 until the 1991 recession, recoveries from recessions in the United States were typically rapid. From the trough of the recession, the average time taken by the economy to recover to pre-recession output levels was less than two quarters, and the lost jobs were recovered within eight months.[7]

The recoveries from the recessions of 1991 and 2000–2001 were very different. Although production recovered within three quarters in 1991 and just one quarter in 2001, it took 23 months from the trough of the recession to recover the lost jobs in 1991 recession and 38 months in the 2001 recession.[8] Indeed, job losses continued well into the recovery, so that these recoveries were deservedly called jobless recoveries.

Unfortunately, the United States is singularly unprepared for jobless recoveries. Typically, unemployment benefits last only six months. Moreover, because health care benefits have historically been tied to jobs, an unemployed worker also risks losing access to affordable health care.

Short-duration benefits may have been appropriate when recoveries were fast and jobs plentiful. The fear of losing benefits before finding a job may have given workers an incentive to look harder and make better matches with employers. But with few jobs being created, a positive incentive has turned into a source of great uncertainty and anxiety—and not just for the unemployed. Even those who have jobs fear they could lose them and be cast adrift.

Politicians ignore popular anxiety at their peril. The first President Bush is widely believed to have lost his reelection campaign, despite winning a popular war in Iraq, because he seemed out of touch with public concerns about the jobless recovery following the 1991 recession. That lesson has been fully internalized by politicians. In politics, economic recovery is all about jobs, not output, and politicians are willing to add stimulus, both fiscal (government spending

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and lower taxes) and monetary (lower short-term interest rates), to the economy until the jobs start reappearing.

In theory, such action reflects democracy at its best. In practice, though, the public pressure to do something quickly enables politicians to run roughshod over the usual checks and balances on government policy making in the United States. Long-term policies are enacted under the shadow of an emergency, with the party that happens to be in power at the time of the downturn getting to push its pet agenda. This leads to greater fluctuations in policy making than might be desired by the electorate. It also tends to promote excess spending and impairs the government's long-term financial health.

In Chapter 5, I explore the precise ways in which U.S. monetary policy is influenced by these political considerations. Monetary policy is, of course, the domain of the ostensibly independent Federal Reserve, but it would be a brave Federal Reserve chairman who defied politicians by raising interest rates before jobs started reappearing. Indeed, part of the Federal Reserve's mandate is to maintain high employment. Moreover, when unemployment stays high, wage inflation, the primary concern of central bankers today, is unlikely, so the Fed feels justified in its policy of maintaining low interest rates. But there are consequences: one problem is that a variety of other markets, including those abroad, react to easy policy. For instance, prices of commodities such as oil and metals are likely to rise. And the prices of assets, such as houses and stocks and bonds, are also likely to inflate as investors escape low short-term interest rates to invest in anything that offers a decent return.

More problematic still, the financial sector is also prone to take greater risks at such times. In the period 2003–2006, low interest rates added to the incentives already provided by government support for low-income housing and fueled an extraordinary housing boom as well as increasing indebtedness. In an attempt to advance corporate investment and hiring, the Fed added fuel to the fire by trying to reassure the economy that interest rates would stay low for a sustained period. Such assurances only pushed asset prices even higher and increased financial-sector risk taking. Finally, in a regulatory coup de grâce, the Fed chairman, Alan Greenspan, effectively told the markets in 2002 that the Fed would not intervene to burst asset-price bubbles but would intervene to ease the way to a new expansion if the markets imploded. If ever financial markets needed a license to go overboard, this was it.

By focusing only on jobs and inflation—and, in effect, only on the former—the Fed behaved myopically, indeed politically. It is in danger of doing so again,

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even while being entirely true to the letter of its mandate. Although the Fed has a limited set of tools and therefore pleads that it should not be given many potentially competing objectives, it cannot ignore the wider consequences to the economy of its narrow focus: in particular, low interest rates and the liquidity infused by the Fed have widespread effects on financial-sector behavior. As with the push for low-income housing, the fault line that emerges when politically motivated stimulus comes into contact with a financial sector looking for any edge is an immense source of danger.

The Consequences to the U.S. Financial Sector

How did tremors on all the fault lines come together in the U.S. financial sector to nearly destroy it? I focus on two important ways this happened. First, an enormous quantity of money flowed into low-income housing in the United States, both from abroad and from government-sponsored mortgage agencies such as Fannie Mae and Freddie Mac. This led to both unsustainable house price increases and a steady deterioration in the quality of mortgage loans made. Second, both commercial and investment banks took on an enormous quantity of risk, including buying large quantities of the low-quality securities issued to finance subprime housing mortgages, even while borrowing extremely short term to finance these purchases.

Let me be more specific. In the early 2000s, the savings generated by the export-dependent developing countries were drawn into financing the United States, where fiscal and monetary stimulus created enormous additional demand for goods and services, especially in home construction. Foreign investors looked for safety. Their money flowed into securities issued by government-sponsored mortgage agencies like Fannie Mae and Freddie Mac, thus furthering the U.S. government's low-income housing goals. The investors, many from developing countries, implicitly assumed that the U.S. government would back these agencies, much as industrial-country investors had assumed that developing-country governments would back them before the crises in those countries. Even though Fannie and Freddie were taking enormous risks, they were no longer subject to the discipline of the market.

Other funds, from the foreign private sector, flowed into highly rated subprime mortgage-backed securities. Here, the unsuspecting foreign investors relied a little too naively on the institutions of the arm's-length system. They believed in the ratings and the market prices produced by the system, not realiz-

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ing that the huge quantity of money flowing into subprime lending, both from the agencies and from other foreign investors, had corrupted the institutions. For one of the weaknesses of the arm's-length system, as I explain in Chapter 6, is that it relies on prices being accurate: but when a flood of money from unquestioning investors has to be absorbed, prices can be significantly distorted. Here again, the contact between the two different financial systems created fragilities.

However, the central cause for the financial panic was not so much that the banks packaged and distributed low-quality subprime mortgage-backed securities but that they held on to substantial quantities themselves, either on or off their balance sheets, financing these holdings with short-term debt. This brings us full circle to the theme of my Jackson Hole speech. What went wrong? Why did so many banks in the United States hold on to so much of the risk?

The problem, as I describe in Chapter 7, has to do with the special character of these risks. The substantial amount of money pouring in from unquestioning investors to finance subprime lending, as well as the significant government involvement in housing, suggested that matters could go on for some time without homeowners defaulting. Similarly, the Fed's willingness to maintain easy conditions for a sustained period, given the persistent high level of unemployment, made the risk of a funding squeeze seem remote. Under such circumstances, the modern financial system tends to overdose on these risks.

A bank that exposes itself to such risks tends to produce above-par profits most of the time. There is some probability that it will produce truly horrible losses. From society's perspective, these risks should not be taken because of the enormous costs if the losses materialize. Unfortunately, the nature of the reward structure in the financial system, whether implicit or explicit, emphasizes short-term advantages and may predispose bankers to take these risks.

Particularly detrimental, the actual or prospective intervention of the government or the central bank in certain markets to further political objectives, or to avoid political pain, creates an enormous force coordinating the numerous entities in the financial sector into taking the same risks. As they do so, they make the realization of losses much more likely. The financial sector is clearly centrally responsible for the risks it takes. Among its failings in the recent crisis include distorted incentives, hubris, envy, misplaced faith, and herd behavior. But the government helped make those risks look more attractive than they should have been and kept the market from exercising discipline, perhaps even making it applaud such behavior. Government interventions in the aftermath of

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the crisis have, unfortunately, fulfilled the beliefs of the financial sector. Political moral hazard came together with financial-sector moral hazard in this crisis. The worrisome reality is that it could all happen again.

Put differently, the central problem of free-enterprise capitalism in a modern democracy has always been how to balance the role of the government and that of the market. While much intellectual energy has been focused on defining the appropriate activities of each, it is the interaction between the two that is a central source of fragility. In a democracy, the government (or central bank) simply cannot allow ordinary people to suffer collateral damage as the harsh logic of the market is allowed to play out. A modern, sophisticated financial sector understands this and therefore seeks ways to exploit government decency, whether it is the government's concern about inequality, unemployment, or the stability of the country's banks. The problem stems from the fundamental incompatibility between the goals of capitalism and those of democracy. And yet the two go together, because each of these systems softens the deficiencies of the other.

I do not seek to be an apologist for bankers, whose hankering for bonuses in the aftermath of a public rescue is not just morally outrageous but also politically myopic. But outrage does not drive good policy. Though it was by no means an innocent victim, the financial sector was at the center of a number of fault lines that affected its behavior. Each of the actors—bankers, politicians, the poor, foreign investors, economists, and central bankers—did what they thought was right. Indeed, a very real possibility is that key actors like politicians and bankers were guided unintentionally, by voting patterns and market approval respectively, into behavior that led inexorably toward the crisis. Yet the absence of villains, and the fact that each of these actors failed to bridge the fault lines makes finding solutions more, rather than less, difficult. Regulating bankers' bonus pay is only a very partial solution, especially if many bankers did not realize the risks they were taking.

The Challenges That Face Us

If such a devastating crisis results from actors' undertaking reasonable actions, at least from their own perspective, we have considerable work to do. Much of the work lies outside the financial sector; how do we give the people falling behind in the United States a real chance to succeed? Should we create a stronger safety net to protect households during recessions in the United States, or can we find other ways to make workers more resilient? How can large countries

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around the world wean themselves off their dependence on exports? How can they develop their financial sectors so that they can allocate resources and risks efficiently? And, of course, how can the United States reform its financial system so that it does not devastate the world economy once again?

In structuring reforms, we have to recognize that the only truly safe financial system is a system that does not take risks, that does not finance innovation or growth, that does not help draw people out of poverty, and that gives consumers little choice. It is a system that reinforces the incremental and thus the status quo. In the long run, though, especially given the enormous challenges the world faces—climate change, an aging population, and poverty, to name just a few—settling for the status quo may be the greatest risk of all, for it will make us unable to adapt to meet the coming challenges. We do not want to return to the bad old days and just make banking boring again: it is easy to forget that under a rigidly regulated system, consumers and firms had little choice. We want innovative, dynamic finance, but without the excess risk and the outrageous behavior. That will be hard to achieve, but it will be really worthwhile.

We also have to recognize that good economics cannot be divorced from good politics: this is perhaps a reason why the field of economics was known as political economy. The mistake economists made was to believe that once countries had developed a steel frame of institutions, political influences would be tempered: countries would graduate permanently from developing-country status. We should now recognize that institutions such as regulators have influence only so long as politics is reasonably well balanced. Deep imbalances such as inequality can create the political groundswell that can overcome any constraining institutions. Countries can return to developing-country status if their politics become imbalanced, no matter how well developed their institutions.

There are no silver bullets. Reforms will require careful analysis and sometimes tedious attention to detail. I discuss possible reforms in Chapters 8 to 10, focusing on broad approaches. I hope my proposals are less simplistic and more constructive than the calls to tar and feather bankers or their regulators. If implemented, they will transform the world we live in quite fundamentally and move it away from the path of deepening crises to one of greater economic and political stability as well as cooperation. We will be able to make progress toward overcoming the important challenges the world faces. Such reforms will require societies to change the way they live, the way they grow, and the way they make choices. They will involve significant short-term pain in return for more diffuse but enormous long-term gain. Such reforms are always difficult to sell to the public and hence have little appeal to politicians. But the cost of do-

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ing nothing is perhaps worse turmoil than what we have experienced recently, for, unchecked, the fault lines will only deepen.

The picture is not all gloom. There are two powerful reasons for hope today: technological progress is solving problems that have eluded resolution for centuries, and economic reforms are bringing enormous numbers of the poor directly from medieval living conditions into the modern economy. Much can be gained if we can draw the right lessons from this crisis and stabilize the world economy. Equally, much could be lost if we draw the wrong lessons. Let me now lay out both the fault lines and the hard choices that confront us, with the hope that collectively we will make the right difference. For our own sakes, we must.