

I N T R O D U C T I O N

On the afternoon of September 11, 2001, I was flying back to Washington on Swissair Flight 128, returning home from a routine international bankers' meeting in Switzerland. I'd been moving about the cabin when the chief of the security detail that escorted me on trips abroad, Bob Agnew, stopped me in the aisle. Bob is an ex-Secret Service man, friendly but not especially talkative. At that moment, he was looking grim. "Mr. Chairman," he said quietly, "the captain needs to see you up front. Two planes have flown into the World Trade Center." I must have had a quizzical look on my face because he added, "I'm not joking."

In the cockpit, the captain appeared quite nervous. He told us there had been a terrible attack against our country—several airliners had been hijacked and two flown into the World Trade Center and one into the Pentagon. Another plane was missing. That was all the information he had, he said in his slightly accented English. We were returning to Zurich, and he was not going to announce the reason to the other passengers.

"Do we have to go back?" I asked. "Can we land in Canada?" He said no, his orders were to head to Zurich.

I went back to my seat as the captain announced that air traffic control

had directed us to Zurich. The phones on the seats immediately became jammed, and I couldn't get through to the ground. The Federal Reserve colleagues who had been with me in Switzerland that weekend were already on other flights. So with no way to know how events were developing, I had nothing to do but think for the next three and a half hours. I looked out the window, the work I'd brought along, the piles of memos and economic reports, forgotten in my bag. Were these attacks the beginning of some wider conspiracy?

My immediate concern was for my wife—Andrea is NBC's chief foreign affairs correspondent in Washington. She wasn't in New York, which was one big relief, and visiting the Pentagon hadn't been on her agenda that day. I assumed she would be at the NBC bureau in the middle of town, heavily involved in covering the news. So I wasn't deeply worried, I told myself . . . but what if she'd gone on a last-minute visit to some general in the Pentagon?

I worried about my colleagues at the Federal Reserve. Were they safe? And their families? The staff would be scrambling to respond to the crisis. This attack—the first on U.S. soil since Pearl Harbor—would throw the country into turmoil. The question I needed to focus on was whether the economy would be damaged.

The possible economic crises were all too evident. The worst, which I thought highly unlikely, would be a collapse of the financial system. The Federal Reserve is in charge of the electronic payment systems that transfer more than \$4 trillion a day in money and securities between banks all over the country and much of the rest of the world.

We'd always thought that if you wanted to cripple the U.S. economy, you'd take out the payment systems. Banks would be forced to fall back on inefficient physical transfers of money. Businesses would resort to barter and IOUs; the level of economic activity across the country could drop like a rock.

During the cold war, as a precaution against nuclear attack, the Federal Reserve had built a large number of redundancies into the communication and computer facilities on which the money system relies. We have all sorts of safeguards so that, for example, the data of one Federal Reserve bank are backed up at another Federal Reserve bank hundreds of miles away or in

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some remote location. In the event of a nuclear attack, we'd be back up and running in all nonirradiated areas very quickly. This system was the one Roger Ferguson, the vice chairman of the Fed, would be calling on this day. I was confident that he and our colleagues would be taking the necessary steps to keep the world dollar system flowing.

Yet even as I thought about it, I doubted that physically disrupting the financial system was what the hijackers had in mind. Much more likely, this was meant to be a symbolic act of violence against capitalist America—like the bomb in the parking garage of the World Trade Center eight years earlier. What worried me was the fear such an attack would create—especially if there were additional attacks to come. In an economy as sophisticated as ours, people have to interact and exchange goods and services constantly, and the division of labor is so finely articulated that every household depends on commerce simply to survive. If people withdraw from everyday economic life—if investors dump their stocks, or businesspeople back away from trades, or citizens stay home for fear of going to malls and being exposed to suicide bombers—there's a snowball effect. It's the psychology that leads to panics and recessions. A shock like the one we'd just sustained could cause a massive withdrawal from, and major contraction in, economic activity. The misery could multiply.

Long before my flight touched down, I'd concluded that the world was about to change in ways that I could not yet define. The complacency we Americans had embraced for the decade following the end of the cold war had just been shattered.

We finally reached Zurich just after 8:30 p.m. local time—still early afternoon in the United States. Swiss banking officials met me as I got off the plane and rushed me to a private room in the departure lounge. They offered to show videos of the Twin Towers coming down and the fires at the Pentagon, but I declined. I'd worked in the neighborhood of the World Trade Center for much of my life and had friends and acquaintances there. I assumed the death tolls would be horrendous and would include people I knew. I didn't want to see the destruction. I just wanted a phone that worked.

I finally reached Andrea on her cell phone a few minutes before nine, and it was a great relief to hear her voice. Once we'd assured each other we

were okay, she told me she had to rush: she was on the set, about to go on the air with an update of the day's events. I said, "Just tell me quickly what's happening there."

She was holding the cell phone to one ear while the special-events producer in New York was on her earpiece in the other ear, almost shouting, "Andrea, Tom Brokaw is coming to you! Are you ready?" All she had time to say was, "Listen up." With that, she put the open cell phone on her lap and addressed the cameras. I heard exactly what America was hearing at that point—that the missing United Flight 93 had crashed in Pennsylvania.

I was then able to get a call through to Roger Ferguson at the Fed. We ran through our crisis-management checklist, and just as I'd figured, he had things well in hand. Then, with all civilian air travel to the United States shut down, I contacted Andy Card, the White House chief of staff, to request transportation back to Washington. Finally I went back to the hotel, escorted by my security detail, to get some sleep and await instructions.

By daybreak I was airborne again, on the flight deck of a United States Air Force KC-10 tanker—it may have been the only aircraft available. The crew was used to flying refueling sorties over the North Atlantic. The mood in the cockpit was somber: "You'll never believe this," the captain said. "Listen." I put my ear to the headset but couldn't hear anything other than static. "Normally the North Atlantic is full of radio chatter," he explained. "This silence is eerie." Apparently nobody else was out there.

As we came down the eastern seaboard and entered prohibited U.S. airspace, we were met and escorted by a couple of F16 fighters. The captain got permission to fly over what had been the site of the Twin Towers at the southern tip of Manhattan, now a smoking ruin. For decades, my offices had never been more than a few blocks from there; during the late 1960s and early 1970s I had watched day by day as the Twin Towers went up. Now, from thirty-five thousand feet, their smoky wreckage was New York's most visible landmark.

I went straight to the Fed that afternoon, driven with a police escort through barricaded streets. Then we went to work.

For the most part, the electronic flows of funds were doing fine. But with civilian air traffic shut down, the transportation and clearing of good old-fashioned checks were being delayed. That was a technical problem—a

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substantial one, but one that the staff and the individual Federal Reserve banks were entirely capable of handling by temporarily extending additional credit to commercial banks.

I spent most of my time in the days that followed watching and listening for signs of a catastrophic economic slowdown. For seven months before 9/11, the economy had been in a very minor recession, still shaking off the effects of the dot-com crash of 2000. But things had started to turn around. We had rapidly been lowering interest rates, and the markets were beginning to stabilize. By late August public interest had shifted from the economy to Gary Condit, the California congressman whose less-than-forthcoming statements about a missing young woman dominated the nightly news. Andrea couldn't get on the air with anything of global significance, and I remember thinking how incredible that seemed—the world must be in pretty good shape if the TV news focused mainly on domestic scandal. Within the Fed, the biggest issue we faced was how far to lower interest rates.

After 9/11, the reports and statistics streaming in from the Federal Reserve banks told a very different story. The Federal Reserve System consists of twelve banks strategically situated around the country. Each one lends money to and regulates the banks in its region. The Federal Reserve banks also serve as a window on the American economy—officers and staff stay constantly in touch with bankers and businesspeople in their districts, and the information they glean about orders and sales beats official published data by as much as a month.

What they were telling us now was that all across the country people had stopped spending on everything except items bought in preparation for possible additional attacks: sales of groceries, security devices, bottled water, and insurance were up; the whole travel, entertainment, hotel, tourism, and convention business was down. We knew the shipping of fresh vegetables from the West Coast to the East Coast would be disrupted by the suspension of air freight, but we were somewhat surprised by how quickly many other businesses were hit. For example, the flow of auto parts from Windsor, Ontario, to Detroit's plants slowed to a crawl at the river crossings that join the two cities—a factor in the decision by Ford Motor to shut down temporarily five of its factories. Years earlier, many manufactur-

ers had shifted to “just-in-time” production—instead of stockpiling parts and supplies at the plant, they relied on air freight to deliver critical components as they were needed. The shutdown of the airspace and the tightening of borders led to shortages, bottlenecks, and canceled shifts.

In the meantime, the U.S. government had gone into high gear. On Friday, September 14, Congress passed an initial emergency appropriation of \$40 billion and authorized the president to use force against the “nations, organizations, or persons” who had attacked us. President Bush rallied the nation with what will likely go down as the most effective speech of his presidency. “America was targeted for attack because we’re the brightest beacon for freedom and opportunity in the world,” he said. “And no one will keep that light from shining.” His approval ratings soared to 86 percent, and politics, if only for a short period, became bipartisan. Lots of ideas were being floated on Capitol Hill for helping the nation bounce back. There were plans that involved pumping funds into airlines, tourism, and recreation. There was a raft of proposals to extend tax breaks to businesses in order to encourage capital investment. Terrorism insurance was much discussed—how do you insure against such catastrophic events, and what role, if any, does the government have in that?

I thought it urgent to get commercial aircraft flying again, in order to abort all the negative ripple effects. (Congress quickly passed a \$15 billion air transport rescue bill.) But beyond that, I paid less attention to most of these debates, because I was intent on getting the larger picture—which still wasn’t clear to me. I was convinced that the answer would not lie in big, hasty, expensive gestures. It’s typical that in times of great national urgency, every congressman feels he has to put out a bill; presidents feel the pressure to act too. Under those conditions you can get shortsighted, ineffective, often counterproductive policies, like the gasoline rationing that President Nixon imposed during the first OPEC oil shock in 1973. (That policy caused gas lines in some parts of the country that fall.) But with fourteen years under my belt as Fed chairman, I’d seen the economy pull through a lot of crises—including the largest one-day crash in the history of the stock market, which happened five weeks after I took the job. We’d survived the real-estate boom and bust of the 1980s, the savings and loan crisis, and the Asian financial upheavals, not to mention the recession of

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1990. We'd enjoyed the longest stock-market boom in history and then weathered the ensuing dot-com crash. I was gradually coming to believe that the U.S. economy's greatest strength was its resiliency—its ability to absorb disruptions and recover, often in ways and at a pace you'd never be able to predict, much less dictate. Yet in this terrible circumstance, there was no way to know what would happen.

I thought the best strategy was to observe and wait until we understood better what the precise fallout from 9/11 would be. That is what I told the congressional leadership in a meeting in the House Speaker's office on the afternoon of September 19. Speaker Dennis Hastert, House minority leader Dick Gephardt, Senate majority leader Trent Lott, and Senate minority leader Tom Daschle, along with Bob Rubin, the former secretary of the treasury under President Clinton, and White House economic adviser Larry Lindsey, all met in a plain conference room attached to Hastert's office on the House side of the Capitol. The legislators wanted to hear assessments of the economic impact of the attacks from Lindsey, Rubin, and me. There was great seriousness to the ensuing discussion—no grandstanding. (I remember thinking, This is the way government should work.)

Lindsey put forward the idea that as the terrorists had dealt a blow to American confidence, the best way to counter it would be a tax cut. He and others argued for pumping about \$100 billion into the economy as soon as possible. The number didn't alarm me—it was about 1 percent of the country's total annual output. But I told them we had no way of knowing yet whether \$100 billion was too much or too little. Yes, the airlines and the tourism industries had been severely impacted, and the newspapers were full of stories about all sorts of layoffs. Yet on Monday, September 17, amazingly, the New York Stock Exchange had succeeded in reopening just three blocks from Ground Zero. It was an important step because it brought a sense of normalcy back to the system—a bright spot in the picture we were still piecing together at the Fed. At the same time, the check payment system was recovering, and the stock market hadn't crashed: prices had merely gone down and then stabilized, an indication that most companies were not in serious trouble. I told them the prudent course was to continue to work on options and meet back in two weeks, when we'd know more.

I delivered the same message the next morning to a public hearing of the Senate Banking Committee, counseling patience: “Nobody has the capacity to fathom fully how the tragedy of September 11 will play out. But in the weeks ahead, as the shock wears off, we should be able to better gauge how the ongoing dynamics of these events are shaping the immediate economic outlook.” I also emphasized, “Over the past couple of decades, the American economy has become increasingly resilient to shocks. Deregulated financial markets, far more flexible labor markets, and, more recently, the major advances in information technology have enhanced our ability to absorb disruptions and recover.”

In fact, I was putting a better face on the situation than I feared might be the case. Like most people in government, I fully expected more attacks. That feeling went mainly unspoken in public, but you could see it in the unanimity of the Senate votes: 98–0 for authorizing the use of force against terrorists, 100–0 for the aviation security bill. I was particularly concerned about a weapon of mass destruction, possibly a nuclear device stolen from the Soviet arsenal during the chaos of the collapse of the USSR. I also contemplated the contamination of our reservoirs. Yet on the record I took a less pessimistic stance because if I had fully expressed what I thought the probabilities were, I’d have scared the markets half to death. I realized I probably wasn’t fooling anybody, though: people in the markets would hear me and say, “I sure hope he’s right.”

In late September, the first hard data came in. Typically, the earliest clear indicator of what’s happening to the economy is the number of new claims for unemployment benefits, a statistic compiled each week by the Department of Labor. For the third week of the month, claims topped 450,000, about 13 percent above their level in late August. The figure confirmed the extent and seriousness of the hardships we’d been seeing in news reports about people who’d lost their jobs. I could imagine those thousands of hotel and resort workers and others now in limbo, not knowing how they would support themselves and their families. I was coming to the view that the economy was not going to bounce back quickly. The shock was severe enough that even a highly flexible economy would have difficulty dealing with it.

Like many other analysts, economists at the Fed were looking at all

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the proposed packages of spending and tax cuts, and the numbers associated with them. In each case, we tried to cut through the details to gauge the order of magnitude; interestingly, they all fell in the ballpark of \$100 billion—Larry Lindsey’s initial suggestion.

We reconvened in Hastert’s conference room on Wednesday, October 3, to talk again about the economy. Another week had passed, and the number of initial jobless claims had gotten worse—an additional 517,000 people had applied for unemployment benefits. By now, my mind was made up. While I still expected more attacks, there was no way to know how devastating they might be or how to protect the economy in advance. I told the group that we should take steps to offset the damage we could measure, and that it was indeed time for a constrained stimulus. What seemed about right was a package of actions on the order of \$100 billion—enough, but not so much that it would overstimulate the economy and cause interest rates to rise. The lawmakers seemed to agree.

I went home that night thinking that all I’d done was articulate and reinforce a consensus; the \$100 billion figure had first come from Larry. So I was surprised to read the media’s spin on the meeting, which made it sound almost as though I were running the entire show.* While it was gratifying to hear that Congress and the administration were listening to me, I found these press reports unsettling. I’ve never been entirely comfortable being cast as the person who calls the shots. From my earliest days, I had viewed myself as an expert behind the scenes, an implementer of orders rather than the leader. It took the stock-market crisis of 1987 to make me feel comfortable making critical policy decisions. But to this day, I feel ill at ease in the spotlight. Extrovert, I am not.

Of course, the irony was that in spite of my supposed persuasive power, in the weeks after 9/11 nothing worked out as I expected. Anticipating a second terrorist attack was probably one of the worst predictions I ever

**Time* magazine, for example, opined on October 15, 2001, “Greenspan’s shift provided the green light lawmakers had been waiting for. . . . The White House and leaders of both parties have agreed with Greenspan’s assessment that new spending and tax cuts should total about 1% of the country’s annual income, that it should make its effects felt quickly and that it should not threaten to balloon the deficit so much down the road that it immediately raises long-term interest rates.”

made. And the “constrained stimulus” I had supposedly green-lighted didn’t happen either. It bogged down in politics and stalled. The package that finally emerged in March 2002 not only was months too late but also had little to do with the general welfare—it was an embarrassing mess of pork-barrel projects.

Yet the economy righted itself. Industrial production, after just one more month of mild decline, bottomed out in November. By December the economy was growing again, and jobless claims dropped back and stabilized at their pre-9/11 level. The Fed did have a hand in that, but it was only by stepping up what we’d been doing before 9/11, cutting interest rates to make it easier for people to borrow and spend.

I didn’t mind seeing my expectations upset, because the economy’s remarkable response to the aftermath of 9/11 was proof of an enormously important fact: our economy had become highly resilient. What I’d said so optimistically to the Senate Banking Committee turned out to be true. After those first awful weeks, America’s households and businesses recovered. What had generated such an unprecedented degree of economic flexibility? I asked myself.

Economists have been trying to answer questions like that since the days of Adam Smith. We think we have our hands full today trying to comprehend our globalized economy. But Smith had to invent economics almost from scratch as a way to reckon with the development of complex market economies in the eighteenth century. I’m hardly Adam Smith, but I’ve got the same inquisitiveness about understanding the broad forces that define our age.

This book is in part a detective story. After 9/11 I knew, if I needed further reinforcement, that we are living in a new world—the world of a global capitalist economy that is vastly more flexible, resilient, open, self-correcting, and fast-changing than it was even a quarter century earlier. It’s a world that presents us with enormous new possibilities but also enormous new challenges. *The Age of Turbulence* is my attempt to understand the nature of this new world: how we got here, what we’re living through, and what lies over the horizon, for good and for ill. Where possible, I convey my understanding in the context of my own experiences. I do this out of a sense of responsibility to the historical record, and so that readers will know

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where I'm coming from. The book is therefore divided into halves: the first half is my effort to retrace the arc of my learning curve, and the second half is a more objective effort to use this as the foundation on which to erect a conceptual framework for understanding the new global economy. Along the way I explore critical elements of this emerging global environment: the principles of governing it that arose out of the Enlightenment of the eighteenth century; the vast energy infrastructure that powers it; the global financial imbalances and dramatic shifts in world demographics that threaten it; and, despite its unquestioned success, the chronic concern over the justice of the distribution of its rewards. Finally, I bring together what we can reasonably conjecture about the makeup of the world economy in 2030.

I don't pretend to know all the answers. But from my vantage point at the Federal Reserve, I had privileged access to the best that had been thought and said on a wide range of subjects. I had access to the broad scope of academic literature that addressed many of the problems my Fed colleagues and I had to grapple with every day. Without the Fed staff, I could never have coped with the sheer volume of academic output, some exceptionally trenchant and some tedious. I had the privilege of calling one or more of the Federal Reserve Board's economic staff and asking about academic work of current or historical interest. I would shortly receive detailed evaluations of the pros and cons on virtually any subject, from the latest mathematical models developed to assess risk neutrality, to the emergence and impact of land-grant colleges in the American Midwest. So I have not been inhibited in reaching for some fairly sweeping hypotheses.

A number of global forces have gradually, sometimes almost clandestinely, altered the world as we know it. The most visible to most of us has been the increasing transformation of everyday life by cell phones, personal computers, e-mail, BlackBerries, and the Internet. The exploration after World War II of the electronic characteristics of silicon led to the development of the microprocessor, and when fiber optics combined with lasers and satellites revolutionized communications capacities, people from Pe-kin, Illinois, to Peking, China, saw their lives change. A large percentage of the world's population gained access to technologies that I, in setting out on my long career in 1948, could not have imagined, except in the context of science fiction. These new technologies not only opened up a whole

new vista of low-cost communications but also facilitated major advances in finance that greatly enhanced our ability to direct scarce savings into productive capital investments, a critical enabler of rapidly expanding globalization and prosperity.

Tariff barriers declined in the years following World War II, a result of a general recognition that protectionism before the war had led to a spiraling down of trade—a reversal of the international division of labor which contributed to the virtual collapse of world economic activity. The postwar liberalization of trade helped open up new low-cost sources of supply; coupled with the development of new financial institutions and products (made possible in part by silicon-based technologies), it facilitated the forward thrust toward global market capitalism even during the years of the cold war. In the following quarter century, the embrace of free-market capitalism helped bring inflation to quiescence and interest rates to single digits globally.

The defining moment for the world's economies was the fall of the Berlin Wall in 1989, revealing a state of economic ruin behind the iron curtain far beyond the expectations of the most knowledgeable Western economists. Central planning was exposed as an unredeemable failure; coupled with and supported by the growing disillusionment over the interventionist economic policies of the Western democracies, market capitalism began quietly to displace those policies in much of the world. Central planning was no longer a subject for debate. There were no eulogies. Except in North Korea and Cuba, it was dropped from the world's economic agenda.

Not only did the economies of the former Soviet bloc, after some chaos, embrace the ways of market capitalism, but so did most of what we previously called the third world—countries that had been neutral in the cold war but had practiced central planning or had been so heavily regulated that it amounted to the same thing. Communist China, which had edged toward market capitalism as early as 1978, accelerated the movement of its vast, tightly regulated, then more-than-500-million-person workforce toward the Free Trade Zones of the Pearl River delta.

China's shift in protecting the property rights of foreigners, while subtle, was substantial enough to induce a veritable explosion in foreign direct investment (FDI) into China following 1991. From a level of \$57 million

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in 1980, FDI drifted upward, reaching \$4 billion in 1991, and then accelerated at a 21 percent annual rate, reaching \$70 billion in 2006. The investment, joined with the abundance of low-cost labor, resulted in a potent combination that exerted downward pressure on wages and prices throughout the developed world. Earlier, the much smaller so-called Asian Tigers, especially South Korea, Hong Kong, Singapore, and Taiwan, had showed the way by engaging developed-country technologies to bring their standard of living sharply higher through exports to the West.

The rate of economic growth of these and many other developing nations far outstripped the rate of growth elsewhere. The result has been the shift of a significant share of the world's gross domestic product (GDP) to the developing world, a trend with dramatic ripple effects. Developing countries typically have much higher savings rates than do industrialized nations—in part because developing nations' social safety nets are weaker, so households naturally set aside more money for times of need and retirement. (Other factors also play a part. In the absence of well-established consumer cultures, for example, households have less inclination to spend.) The shift of shares of world GDP since 2001 from low-saving developed countries to higher-saving developing countries has increased world saving so much that the aggregate growth of savings worldwide has greatly exceeded planned investments. The market process that equalizes actual global saving and investment, we have to assume, has driven real interest rates (nominal interest rates adjusted for inflation expectations) markedly lower. Or to put it another way, the supply of funds looking for a return on investment has grown faster than investor demand.

The apparent excess in savings, combined with globalization, technology-driven increases in productivity, and the shift of workforces from centrally planned economies to competitive markets, has helped suppress interest rates both real and nominal and rates of inflation for all developed and virtually all developing nations. It is why annual inflation rates almost everywhere (Venezuela, Zimbabwe, and Iran being notable exceptions) are currently in single digits—one of the few times, perhaps the only time, this has happened since the abandonment of the gold standard and the embrace of fiat, or paper, currencies in the 1930s. What is particularly striking about this set of forces is that, largely serendipitously, they all came

together at the beginning of the twenty-first century. Central banks' monetary policy was not the primary cause of the persistent decline in inflation and long-term interest rates, but we central bankers chose to alter our policies to maximize the long-term benefits of these tectonic shifts in global finance. Yet for reasons I will outline later, none of these forces is likely to be permanent. Inflation in a fiat money world is difficult to suppress.

The decline of real (inflation-adjusted) long-term interest rates that has occurred in the past two decades has been associated with rising price-to-earnings ratios for stocks, real estate, and in fact all income-earning assets. The market value of assets worldwide between 1985 and 2006 as a consequence rose at a pace faster than that of nominal world GDP (the 2001–2002 period was the notable exception). This created a major increase in world liquidity. Stock and bond prices, homes, commercial real estate, paintings, and most everything else joined in the boom. Homeowners in many developed nations were able to dip into their growing home equity to finance purchases beyond what their incomes could finance. Increased household spending, especially in the United States, absorbed much of the surge of exports from the rapidly expanding developing world. As the *Economist* put it at year-end 2006, "having grown at an annual rate of 3.2% per head since 2000, the world economy is over halfway towards notching up its best decade ever. If it keeps going at this clip, it will beat both the supposedly idyllic 1950s and the 1960s. Market capitalism, the engine that runs most of the world economy, seems to be doing its job well." Such developments have been on the whole both sweeping and positive. The reinstatement of open markets and free trade during the past quarter century has elevated many hundreds of millions of the world population from poverty. Admittedly many others around the globe are still in need, but large segments of the developing world's population have come to experience a measure of affluence, long the monopoly of so-called developed countries.

If the story of the past quarter of a century has a one-line plot summary, it is the rediscovery of the power of market capitalism. After being forced into retreat by its failures of the 1930s and the subsequent expansion of state intervention through the 1960s, market capitalism slowly reemerged as a potent force, beginning in earnest in the 1970s, until it now pervades

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almost all of the world to a greater or lesser extent. The spreading of a commercial rule of law and especially the protection of the rights to property has fostered a worldwide entrepreneurial stirring. This in turn has led to the creation of institutions that now anonymously guide an ever-increasing share of human activity—an international version of Adam Smith’s “invisible hand.”

As a consequence, the control of governments over the daily lives of their citizens has lessened; the forces of the marketplace have gradually displaced some significant powers of the state. Much regulation promulgating limits to commercial life has been dismantled. Throughout the early post–World War II years, international capital flows were controlled and exchange rates were in the grip of finance ministers’ discretion. Central planning was widespread in both the developing and the developed world, including remnants of the earlier dirigiste planning still prominent in Europe. It was taken as gospel that markets needed government guidance to function effectively.

At the meetings in the mid-1970s of the Economic Policy Committee of the Organization for Economic Cooperation and Development (OECD), made up of policymakers from twenty-four countries, only Hans Tietmeyer of West Germany and I were pressing for market-based policymaking. We were a very small minority on a very large committee. The views of John Maynard Keynes, the great British economist, had replaced those of Adam Smith and his classical economics when the Great Depression of the 1930s failed to follow Smith’s model of the way economies were supposed to behave. Keynes offered a mathematically elegant solution to why the world economy had stagnated and how government deficit spending could bring prompt recovery. Keynesian interventionism was still the overwhelmingly dominant paradigm in the mid-1970s, though it was already on the cusp of decline. The consensus within the Economic Policy Committee was that letting the market set wages and prices was inadequate and unreliable and needed to be supplemented by “incomes policies.” These differed from country to country, but generally set guidelines for wage negotiations between unions, which were very much more widespread and powerful than today, and management. Incomes policies fell short of all-out wage and price controls in that they were ostensibly voluntary. The guidelines, how-

ever, were generally backed up by the regulatory levers of government which were employed to “persuade” transgressors. When such policies failed, formal wage and price controls were often the response. President Nixon’s ill-fated, though initially immensely popular, wage and price controls of 1971 were among the last vestiges of postwar general wage and price interventionism in the developed world.

In my early schooling, I had learned to appreciate the theoretical elegance of competitive markets. In the six decades since, I have learned to appreciate how theories work (and sometimes don’t) in the real world. I have been particularly privileged to have interacted with all the key economic policymakers of the past generation, and to have had unparalleled access to information measuring world trends, both numerical and anecdotal. It was inevitable that I would generalize on my experiences. Doing so has led me to an even deeper appreciation of competitive free markets as a force for good. Indeed, short of a few ambiguous incidents, I can think of no circumstances where the expanded rule of law and enhanced property rights failed to increase material prosperity.

Nonetheless, there is persistent widespread questioning of the justice of how unfettered competition distributes its rewards. Throughout this book I point to the continued ambivalence of people to market forces. Competition is stressful because competitive markets create winners and losers. This book will try to examine the ramifications of the collision between a rapidly changing globalized economy and unwavering human nature. The economic success of the past quarter millennium is the outcome of this struggle; so is the anxiety that such rapid change has wrought.

We rarely look closely at that principal operating unit of economic activity: the human being. What are we? What is fixed in our nature and not subject to change—and how much discretion and free will do we have to act and learn? I have been struggling with this question since I first knew to ask it.

As I’ve traveled across the globe for nearly six decades, I have found that people exhibit remarkable similarities that by no stretch of the imagination can be construed as resulting from culture, history, language, or chance. All people appear motivated by an inbred striving for self-esteem that is in large part fostered by the approval of others. That striving deter-

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mines much of what households spend their money on. It will also continue to induce people to work in plants and offices side by side, even though they will soon have the technical capability of contributing in isolation through cyberspace. People have an inbred need to interact with other people. It is essential if we are to receive their approval, which we all seek. The true hermit is a rare aberration. What contributes to self-esteem depends on the broad range of learned or consciously chosen values that people believe, correctly or mistakenly, enhance their lives. We cannot function without some set of values to guide the multitude of choices we make every day. The need for values is inbred. Their content is not. That need is driven by an innate moral sense in all of us, the basis upon which a majority have sought the guidance of the numerous religions that humans have embraced over the millennia. Part of that innate moral code is a sense of what is just and proper. We all have different views of what is just, but none can avoid the built-in necessity of making such judgments. This built-in necessity is the basis of the laws that govern every society. It is the basis on which we hold people responsible for their actions.

Economists cannot avoid being students of human nature, particularly of exuberance and fear. Exuberance is a celebration of life. We have to perceive life as enjoyable to seek to sustain it. Regrettably, a surge of exuberance sometimes also causes people to reach beyond the possible; when reality strikes home, exuberance turns to fear. Fear is an automatic response in all of us to threats to our deepest of all inbred propensities, our will to live. It is also the basis of many of our economic responses, the risk aversion that limits our willingness to invest and to trade, especially far from home, and that, in the extreme, induces us to disengage from markets, precipitating a severe falloff of economic activity.

A major aspect of human nature—the level of human intelligence—has a great deal to do with how successful we are in gaining the sustenance needed for survival. As I point out at the end of this book, in economies with cutting-edge technologies, people, on average, seem unable to increase their output per hour at better than 3 percent a year over a protracted period. That is apparently the maximum rate at which human innovation can move standards of living forward. We are apparently not smart enough to do better.

THE AGE OF TURBULENCE

The new world in which we now live is giving many citizens much to fear, including the uprooting of many previously stable sources of identity and security. Where change is most rapid, widening disparities in the distribution of income are a key concern. It is indeed an age of turbulence, and it would be imprudent and immoral to minimize the human cost of its disruptions. In the face of the increasing integration of the global economy, the world's citizens face a profound choice: to embrace the worldwide benefits of open markets and open societies that pull people out of poverty and up the ladder of skills to better, more meaningful lives, while bearing in mind fundamental issues of justice; or to reject that opportunity and embrace nativism, tribalism, populism, indeed all of the "isms" into which communities retreat when their identities are under siege and they cannot perceive better options. There are enormous obstacles facing us in the decades ahead, and whether we surmount them is up to us. For Americans, opening our borders to the world's skilled workforce and education reform must be high on the policy agenda. So too must be finding a solution to our looming Medicare crisis. These are subjects to which I will return at the book's end. I conclude in the last chapter that despite the many shortcomings of human beings, it is no accident that we persevere and advance in the face of adversity. It is in our nature—a fact that has, over the decades, buoyed my optimism about our future.