FOREWORD BY MOHAMED EL-ERIAN
CEO of PIMCO

THE LITTLE BOOK of ECONOMICS



GREG IP
The Economist

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Additional Praise for *The Little Book of Economics*

"Greg Ip has the rare talent of making even the toughest topics easy to understand. In *The Little of Book of Economics,* he tells you what you need to know with superb clarity and memorable examples. I recommend this book to anyone who wants a clear explanation of how the forces of economics shape the world."

—Michael J. Mauboussin, Chief Investment Strategist,
Legg Mason Capital Management;
Author of *Think* Twice

"The book is an excellent introduction to basic economic concepts and ideas explained in clear and thoughtful ways. A must read in economic literacy."

—Nouriel Roubini, Professor of Economics,
New York University; Co-founder and
Chairman of Roubini Global Economics

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The Little Book of Economics by Greg Ip

THE LITTLE BOOK OF ECONOMICS

How the Economy Works in the Real World

GREG IP

FOREWORD BY
MOHAMED EL-ERIAN



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To Natalie and Daniel

Foreword



IT WAS AS A 15-year-old at school in England that I was formally introduced to the subject of economics. And I immediately fell in love with it. Here was a subject that provided me with valuable tools to think about a range of topics, to formulate answers from first principles, and to pose additional interesting questions whose answers I was also eager to know.

My love affair with economics has blossomed and continues today. And I feel privileged as economics seems to be even more relevant and topical as time passes. It facilitates our understanding of the well-being of societies; it explains many of the daily interactions between individuals, companies, and governments; and it offers a guide to understanding the political and social trends that are shaping our world.

Simply put, economics is the key to understanding and analyzing both what is likely to happen and what should happen. Yet, as a topic, it is also horribly misunderstood and often overlooked.

Many believe that economics is too complex, too mathematical, and too arcane for them. Others question the benefits of investing their time and effort to get to know a subject that is the source of endless jokes, including presidential ones. (For example, President Harry S. Truman is said to have famously asked for a one handed economist, noting that “all my economists say, on the one hand and on the other.”)

Why am I telling you all this? Because I have come across a book that makes economics brilliantly accessible and, also, lots of fun (yes, economics can be fun!).

Forget about those heavy textbooks. Instead, read Greg Ip’s book. It is well written and highly engaging. Moreover, this book could not have been written by a more qualified person; and it could not come at a better time.

Greg first came to my attention, and that of my professional colleagues,

through his reporting and analyses at the *Wall Street Journal.* We would all eagerly look forward to his columns for insights into economic developments and the outlook for policy.

Greg's work at the *Wall Street Journal*, and now *The Economist,* is based on careful, in-depth research. It uses a robust set of analytical frameworks and reflects access to top policymakers and thinkers. And it is always relevant and timely. His columns have been the catalyst for interesting discussions at PIMCO's Investment Committee as we all tried to better understand developments and detail our shared outlook for the economy and markets.

In his elegant book, Greg takes us on an informative and stimulating economic journey. We make multiple stops as we get exposed to basic topics (such as the drivers of economic growth and welfare) and delicate balances (such as the tug of war between inflation and deflation). We learn about how government actions impact the economy—be it through the familiar channel of public finances and interest rates, or the more complex web of regulations and prudential supervision.

The book offers us a wonderful mix of perspectives. We are treated to broad overview analyses that are reminiscent of looking at the landscape from a plane flying at 30,000 feet in a cloudless sky. We are also exposed to careful micro discussions, finding ourselves, as Greg puts it, "inside the sausage factory."

As you would expect, Greg's book also includes delightful discussions of one of his favorite topics—namely, the design and operation of monetary policy. We get a rare view into the mysterious world of the U.S. Federal Reserve where technocratic competence has to be combined with political savvy and judgment calls about the inherently uncertain balance of future risks and opportunities.

The book also provides us with numerous examples of how all this analysis applies to companies and people that are familiar to most of us. Indeed, the frequent real world snippets and text boxes are a great reminder of how economics plays out every day in the world around us.

Greg did more that produce an elegant book. He did so at a great time.

The global economy today is in a multiyear process of resetting after the 2008-2009 global financial crisis. This historical phenomenon is full of unfamiliar dynamics. It constantly questions “conventional wisdom” and it proceeds in a highly uneven and bumpy fashion.

No wonder economics features so prominently on the front pages of daily newspapers around the world. In industrial countries, there are frequent reports on the unusual level and composition of unemployment, the explosion in public debt and deficits, the volatility of exchange rates, the prospect for higher taxation, and the still fragile state of the banking system. In major emerging economies, you will find numerous articles on the sustainability of their development breakout phases, on controlling inflation and asset bubbles, and on resisting protectionist pressures from abroad.

Greg assembles and analyzes these pressing themes in a work that is as much a guidebook for our times as an explainer of economics. His brilliant book will help you identify and understand the economic forces that are dramatically reshaping the globe today, and having a major impact on our social and political outlook. It will expose you to the key issues in an engaging and enjoyable fashion. Even seemingly old hands like me will end up learning and re-learning critical aspects of this fascinating and relevant topic.

I hope that you enjoy this book as much as I did. It’s a must-read for all those wishing to understand what today’s world holds in store for them, for their children, and for their grandchildren.

—Mohamed El-Erian

Introduction



IN THE SUMMER of 2009 the cover of *The Economist* portrayed an economics textbook melting into a puddle. “Of all the economic bubbles that have been pricked, few have burst more spectacularly than the reputation of economics itself,” it said.

That same summer, Paul Krugman, the Nobel prize—winning economist, surveyed the wreckage of the global economy and declared that most macroeconomics—the study of the broad economy—of the last 30 years was “spectacularly useless at best, and positively harmful at worst.”

For those of us whose job is to watch the economy, the last few years have been a trial by fire. Just a few years ago, we supposedly had it all figured out. Steady growth and low inflation were here to stay and nasty recessions were a thing of the past. Like the bathroom plumbing, the broad economy was something people didn’t think about because it worked fine. Who could blame the folks who watch over our economy, like central bankers, for being a bit smug?

We’ve now seen the worst crisis and the deepest recession since the 1930s, and unprecedented government firepower unleashed in response. It’s been a Galapagos Islands of economic exotica: central banks out of interest-rate bullets reaching for their monetary bayonets, debt crises stalking rich and poor countries, fear of inflation side by side with fear of deflation. The smiles have been wiped off the experts’ faces. The public’s indifference to the economy has been replaced by rapt attention and, let’s face it, a lot of fear.

With such a turbulent and uneasy global economy, clear explanations of what’s going on are vital. Yet, most people find economics shrouded in jargon and dry numbers. *The Little Book of Economics* provides the solution.

Telling the story of our economy has been my stock in trade for 20 years now. At newspapers in Canada, then at the *Wall Street Journal*, and now *The Economist,* I’ve followed markets, talked to workers, visited businesses, and got

to know central bankers. Then I've explained to readers and listeners in plain, simple terms, what's going on in the economy, why, and how it affects them.

I was introduced to economics as a child. My mother, a practicing economist, now retired, delighted in trying to apply what she knew about the dismal science to her four children's upbringing. We must have been the only kids in town whose weekly allowance was indexed to inflation. I took economics in college, though not intending to write about it; I just wanted a fallback in case journalism didn't work out. Right out of college, I joined a metropolitan daily newspaper that put me on the night shift covering local politics, crime, and the like, a lot of which never made it into the paper. The business section, however, had lots of space in it and regular hours, so I got a transfer. Soon, I was writing about the economy and the markets, and loving it.

In the process, I discovered a chasm between the economics taught in college and the real world. Textbooks go on about the money supply but it turns out central banks ignore it. Simple questions like "how big is the national debt?" have complicated answers. I learned about fiscal policy but not about debt crises.

So I wrote this book with those lessons in mind. This is not a book for PhD economists, but for the citizen and investor on Main Street. I've explained the essential concepts with real life examples and analogies, and shown the forces behind the news and events of the last two years. I've left out the dense and unappealing jargon. If only the world would do the same! But of course, in the world of economics you will run into jargon, so I've prepared you by putting a section called "Into the Weeds" in most chapters. By the phrase "into the weeds," I mean the internal guts of the economy: the data, the people, the lingo. Don't be frightened by these sections; they are perfect primers for anyone who wants to follow the markets and the economy in detail. Finally, I've boiled down everything in each chapter into "The Bottom Line." If you read nothing else in the chapter, read this: it will tell you the essentials in a few short sentences.

There's much more to economics than what I could put into *The Little Book of Economics* so please visit my web site, www.gregip.com, where you'll find a more complete list of sources used in this book, suggestions for further reading, more of my own articles, and answers to questions about things this book discusses.

We’ve been through a lot of economic trauma in the last few years, but economics still offers essential tools for understanding it. This book will put those tools in your hands.

Chapter One

The Secrets of Success



How People, Capital, and Ideas Make Countries Rich

POP QUIZ: The year is 1990. Which of the following countries has the brighter future?

The first country leads all major economies in growth. Its companies have taken commanding market shares in electronics, cars, and steel, and are set to dominate banking. Its government and business leaders are paragons of long-term strategic thinking. Budget and trade surpluses have left the country rich with cash.

The second country is on the brink of recession, its companies are deeply in debt or being acquired. Its managers are obsessed with short-term profits while its politicians seem incapable of mustering a coherent industrial strategy.

You've probably figured out that the first country is Japan and the second is the United States. And if the evidence before you persuaded you to put your money on Japan, you would have been in great company. "Japan has created a kind of automatic wealth machine, perhaps the first since King Midas," Clyde Prestowitz, a prominent pundit, wrote in 1989, while the United States was a "colony-in-the-making." Kenneth Courtis, one of the foremost experts on Japan's economy, predicted that in a decade's time it would approach the U.S. economy's size in dollar terms. Investors were just as bullish; at the start of the decade Japan's stock market was worth 50 percent more than that of the United States.

Persuasive though it was, the bullish case for Japan, as fate would have it, turned out completely wrong. The next decade turned expectations upside down. Japan's economic growth screeched to a halt, averaging just 1 percent from 1991 to 2000. Meanwhile, the United States shook off its early 1990s lethargy and its economy was booming by the decade's end. In 2000, Japan's economy was only half as big as the U.S. economy. The Nikkei finished down 50 percent, while U.S. stocks rose more than 300 percent.

What explains Japan's reversal of fortune and its decade-long economic

malaise? Simply put, economic growth needs both healthy *demand* and *supply*. As is well known, Japan's *demand* for goods and services suffered when overinflated stocks and real estate collapsed, saddling companies and banks with bad debts that they had to work off. At the same time, though less well known, deep-seated forces chipped away at Japan's ability to *supply* goods and services.

The supply problem is critical because in the long run economic growth hinges on a country's productive potential, which in turn rests on three things:

1. Population
2. Capital (i.e., investment)
3. Ideas

Population is the source of future workers. Because of a low birth rate, an aging population and virtually nonexistent immigration, Japan's working-age population began shrinking in the 1990s. A smaller workforce limits how much an economy can produce.

Capital and ideas are essential for making those workers productive. In the decades after World War II, Japan invested heavily in its human and economic capital. It educated its people and equipped them with cutting-edge technology adapted from the most advanced Western economies in an effort to catch up. By the 1990s, though, it had largely caught up. Once it had reached the frontier of technology, pushing that frontier outwards would mean letting old industries die so that capital and workers could move to new ones. Japan's leaders resisted the bankruptcies and layoffs necessary for that to happen. As a result, the next wave of technological progress, based on the Internet, took root in the United States, whose economic lead over Japan grew sharply over the course of the 1990s.

A Recipe for Economic Growth

Numerous factors determine a country's success and whether its companies are good investments. Inflation and interest rates, consumer spending, and business confidence are important in the short run. In the long run, though, a country becomes rich or stagnates depending on whether it has the right mix of people, capital, and ideas. Get these fundamentals right, and the short-run gyrations seldom matter.

Until the eighteenth century, economic growth was so slight it was almost impossible to distin- guish the average Englishman's standard of living from his parents'.

Between 1945 and 2007 the United States economy went through 10 recessions yet still grew enough to end up six times larger with the average American three times richer.

We've taken growth for granted for so long that we've forgotten that stagnation could ever be the norm. Yet, it once was. Until the eighteenth century, economic growth was so slight it was almost impossible to distinguish the average Englishman's standard of living from his parents'. Starting in the eighteenth century, this changed. The Industrial Revolution brought about a massive reorganization of production in England in the mid-1700s and later in Western Europe and North America. Since then, steady growth—the kind that the average person notices—has been the norm. According to economic historian Angus Maddison, the average European was four times richer in 1952 than in 1820 and the average American was eight times richer.

In the pre-industrial era, China was the world's largest economy. Its modest standard of living was on a par with that of Europe and the United States. But China then stagnated under the pressure of rebellion, invasion, and a hidebound

bureaucracy that was hostile to private enterprise. The average Chinese was poorer in 1952 than in 1820.

So why do some countries grow and some stagnate? In a nutshell, growth rests on two building blocks: population and productivity.

1. *Population* determines how many workers a country will have.
2. *Productivity,* or output per worker, determines how much each worker earns.

The total output a country can produce given its labor force and its productivity is called *potential output,* and the rate at which that capacity grows over time is *potential growth.* So if the labor force grows 1 percent a year and its productivity by 1.5 percent, then potential growth is 2.5 percent. Thus, an economy grows.

Take a Growing Population

Let's recap. An economy needs workers in order to grow. And, usually, the higher the population, the higher the number of potential workers. Population growth depends on a number of factors including the number of women of child-bearing age, the number of babies each woman has (the fertility rate), how long people live, and migration.

In poor countries, many children die young so mothers have more babies. As countries get richer and fewer children die, fertility rates drop and, eventually, so does population growth. As women have fewer children, more of them go to work. This *demographic dividend* delivers a one-time kick to economic growth. For example, it was a major contributor to East Asia's growth from the 1960s onward and to China's growth after the introduction of its one-child policy. But a country only gets to cash in its demographic dividend once. Eventually, as population growth slows, it ages and each worker must support a growing number of retirees. If fertility drops much below 2.1 babies per woman, the population will shrink unless it is offset by higher immigration. For this reason, a demographic cloud hangs over China. It may be "the first country to grow old before it grows rich," say population experts Richard Jackson and Neil Howe. Its fertility rate is below two and its working-age population will start to decline around 2015.

Add Capital

A country is not rich, though, just because it has a lot of people—just look at Nigeria, which has 32 times as many people as Ireland but an economy of roughly equal size.

The reason for this population/economic size disparity is that the average Nigerian is much less productive than the average Irishman. For a country to be rich—that is, for its average citizen to enjoy a high standard of living—it must depend on productivity, which is the ability to make more, better stuff out of the capital, labor, and land it already has.

Productivity itself depends on two factors: capital and ideas.

You can raise productivity by equipping workers with more capital, which means investing in land, buildings, or equipment. Give a farmer more land and a bigger tractor or pave a highway to get his crops to market, and he'll grow more food at a lower cost. Capital is not free, though. A dollar invested for tomorrow is a dollar not available to spend on the pleasures of life today. Thus, investment requires saving. The more a society saves, whether it's corporations or households (governments could save but are more likely to do the opposite), the more capital it accumulates.

Capital, though, will only take a country so far. Just as your second cup of coffee will do less to wake you up than your first, each additional dollar invested provides a smaller boost to production. A farmer's second tractor will help his productivity far less than his first. This is the *law of diminishing returns.*

Season with Ideas

How do you overturn the law of diminishing returns? With ideas. In 1989, Greg LeMond put bars on the front of his bicycle that enabled him to ride in a more aerodynamic position. This simple idea sliced seconds off his time, allowing him to beat Laurent Fignon and win the Tour de France.

New ideas transform economic production the same way. By combining the capital and labor we already have in a different way, we can produce different or better products at a lower cost. “Economic growth springs from better recipes, not just from more cooking,” says Paul Romer, a Stanford University economist. For example, DuPont’s discovery of nylon in the 1930s transformed textile production. These man-made fibers could be spun at far higher speeds and required far fewer steps than cotton or wool. Combined with faster looms, textile productivity has soared, and clothes have gotten cheaper and better.

The productive power of ideas is nothing short of miraculous. Investing in more buildings and machines costs money. But a new idea, if it’s not protected by patent or copyright, can be reproduced endlessly for free.

The productive power of ideas is nothing short of miraculous. Investing in more buildings and machines costs money. But a new idea, if it’s not protected by patent or copyright, can be reproduced endlessly for free. Just as other cyclists quickly copied Greg LeMond’s aerobars, companies catch up to their competitors by copying their ideas. Although this can be frustrating for the person who came up with the idea, it’s great for the rest of us as we benefit from the improvements made with the existing idea. Here are a few examples:

- **New Business Processes.** Some of the most powerful ideas involve rearranging how a company runs itself. In 1776, in the first chapter of *The Wealth of Nations,* Adam

Smith marveled how an English factory divides pin making into 18 different tasks. Smith calculated that one worker, who could by himself make one pin a day, could now make 4,000. “The division of labor occasions, in every art, a proportionable increase in the productive powers of labor,” he wrote. Two centuries later Wal-Mart revolutionized retailing by using big box stores, bar codes, wireless scanning guns, and exchanging electronic information with its suppliers to track and move goods more efficiently while scheduling cashiers better to reduce slack time. As competitors like Target and Sears copied Wal-Mart, customers of all three benefited from lower prices and more selection, a McKinsey study found.

• **New Products.** Netscape’s Navigator was the first commercially successful browser but was soon supplanted by Microsoft’s Internet Explorer, which is now under siege by Mozilla Firefox, Apple Safari, and Google Chrome. Browsers keep getting better but consumers still pay the same price, zero. Drugs provide another example. According to Robin Arnold of IMS Health, Eli Lilly’s introduction of the antidepressant Prozac in 1986 inspired competitors to develop similar drugs like Zoloft and Celexa, providing alternatives for patients who didn’t respond well to Prozac.

It’s not just companies that thrive by imitating their competitors. Entire countries can turbo-charge their development by strategically copying the ideas and technologies that other countries already use. For example, Japanese steelmakers didn’t invent the basic oxygen furnace; they adapted it from a Swiss professor who had devised it in the 1940s. They thus leapfrogged U.S. steelmakers who were using less efficient open hearth furnaces. Their mainframe computer makers benefited from a government edict that IBM make its patents available as a condition of doing business there.

More recently, China’s adaptation of existing ideas from other countries has resulted in significant economic growth. Since 1978, it has moved workers from unproductive farms and state-owned companies to more productive privately owned factories that used machinery bought or copied from foreign companies,

expertise acquired from foreign universities or joint venture partners, and intellectual property adapted and occasionally stolen from foreign creators.

Still, once a country has copied all the ideas it can, future growth depends on waiting for new ideas or developing its own. Inevitably, a country at the technological frontier grows more slowly than one catching up to the frontier. As we learned earlier in this chapter, that’s just what happened to Japan.

Nurturing Growth

Getting the ingredients right is essential to economic growth, but so is the environment that the government creates in order to foster its development. Like the temperature on the oven, the wrong setting can ruin the recipe. So, what do governments do that matters most?

- **Human Capital.** It's no use equipping workers with the most advanced equipment in the world if they can't read the instructions. Education and training, both forms of human capital, are essential to productivity. Korea went from third world status to the ranks of the industrialized nations in a generation in part by rigorously educating all its children. Its high school graduation rates now exceed those of the United States.
- **Rule of Law.** Economic growth needs investors to know that if they invest today, they get to keep the rewards years later. That requires transparent laws, impartial courts, and the right to property. The United States' army of lawyers sue at the drop of a hat and wrap every transaction in legalese, but in a maddening way that signifies its respect for laws.

Small government is better than big government, but size is less important than quality. For example, Sweden's government spends more than half of gross domestic product (GDP) while Mexico's spends only a quarter of its GDP. But Swedish government is efficient and honest while Mexico's is inefficient and rife with corruption. That's one reason Sweden is rich and Mexico is poor.

Does government have to be democratic for growth? There's no firm rule. The authoritarian governments of China, Korea, and Chile ran smart policies that produced strong growth early in their development. Conversely, sometimes democratic governments are pressured by voters to expropriate private property, run up unsupportable debts, or shelter politically favored groups at everyone else's expense. But dictators have done all those things and worse, bringing on social unrest that ruins the investment climate. Democracy provides essential feedback to government just as free markets do to

companies, and elections are generally less disruptive than civil wars.

• **Letting Markets Work.** Entrepreneurs and workers get rich coming up with new, cheaper ways to make things. In the process, they drive someone else out of business. Joseph Schumpeter, the Austrian-born Harvard economist, called this "creative destruction." Governments squelch creative destruction by forbidding new companies from entering a market, granting monopolies, restricting imports or foreign investment, or making it hard for companies to lay off workers. A financial system that would rather lend to government-owned companies than small entrepreneurs also holds back growth.

Into the Weeds

Now that we've established what a country needs to grow, how do we measure that growth? The global gold standard is the GDP, which is the value of all the products and services a country produces in a year. GDP can be measured in two ways:

1. **Expenditure-Based GDP.** Total of all the money spent on stuff.
2. **Income-Based GDP.** Total of all the money earned producing stuff.

Expenditure-based GDP includes spending by consumers—on such items as houses, bread, and visits to the doctor—and by government—on such items as schools and soldiers. It also includes spending by businesses, but only on investment-related expenses—such as a bakery's new oven or building. GDP excludes business spending on inputs (e.g., ingredients and parts) that show up in what consumers buy. For example, a bakery's purchase of flour is included in what the consumer spends on bread. To add that to GDP would be counting it twice. Exports are also included in *expenditure-based* GDP because this represents what foreigners spend on things made in the United States. Imports are subtracted from GDP to exclude what Americans spend on things made in other countries.

Expenditure-based GDP is measured in nominal and real dollars. *Nominal dollars* represent the actual value of activity. *Real dollars* remove the effects of inflation. Suppose sales of bread rise 5 percent. If the price per loaf rose 2 percent, then real spending on bread (i.e., the number of loaves sold) rose 3 percent. That's real GDP and it's the usual way of measuring economic growth. However, you can't spend real GDP—wages and profits are earned in nominal dollars so nominal GDP is a better way to measure the size of the economy.

The second method, *income-based* GDP, includes the wages, benefits, and bonuses earned by workers and managers; the profits earned by companies and their shareholders; the interest earned by lenders; and the rent earned by landlords.

In theory, the expenditure-based GDP and income-based GDP sums should be equal, because one person's spending is another person's income. In practice, however, GDP is so large and difficult to measure with precision that it would be a miracle if calculating it two ways produced the same number.

When the U.S. Commerce Department's Bureau of Economic Analysis calculates GDP, 75 percent of its initial estimate is based on surveys of actual activity like retail sales and construction. For the rest it gets creative. For example, it checks out the weather to estimate utility output or dog registrations to estimate spending at veterinarians' offices. It sounds goofy, but it lines up pretty well with the hard data that eventually replaces it.

Will the United States Become the Next Japan?

As the United States struggles out of its eleventh, and worst, recession since World War II, a nagging worry hangs over it: Does it face a long period of stagnation as Japan did in the 1990s? The pessimist could marshall a lot of evidence to answer yes. He'd contrast the technology bubble of the 1990s, which left the United States with broadband Internet and business-to-business web sites, with the real estate bubble of the late-2000s that did nothing for productivity and left behind trillions of dollars of bad property loans that are making it harder for the businesses of tomorrow to get money.

The pessimist would go on to note that Americans' faith in free markets has been shaken and government has grown. New regulators are cropping up and old ones are getting more intrusive. Finally, he'd point out that the labor force is growing more slowly and employment is no higher than a decade ago. Anti-immigrant sentiment could turn off the tap of young foreign workers while our schools, despite recent improvement, are global underperformers.

The optimist would reply that the United States still has the building blocks of growth. Its population growth and fertility rate remain among the highest in the industrial world and far higher than China's. Americans are jaded about finance but still like free enterprise. In April 2009, at the depths of the worst recession and bear market in memory, the Pew Research Center found that 90 percent of the people in this country said they admired people who get rich by working hard.

The optimist would go on to note that for all the rhetoric to the contrary, U.S. leaders still believe in free enterprise, as well. Within two years of taking stakes in nine major banks, the Treasury had sold all but one. True, the federal government propped up General Motors; but to get the money GM had to go through bankruptcy and shear off 30 percent of its U.S. workforce. By contrast, France gave money to Peugeot and Renault only after they promised to preserve French jobs.

Optimists would also point out that the United States' legal and democratic

traditions have survived intact. Populist anger at bankers is at a fever pitch. Yet in the first major criminal trial stemming from the mortgage meltdown, jurors acquitted two traders for Bear Stearns, because, one said, “We just didn’t have enough to convict them.”

If the financial system can flush the bad debt left from the property bubble, then investment should resume and with it, productivity growth of perhaps 1.5 percent to 2 percent per year. Add that to labor force growth of 0.75 percent and you get long-term growth of 2.25 percent to 2.75 percent per year. The United States may no longer be a glamorous growth stock; but it’s still a blue chip.

The Bottom Line

• Long-term economic growth depends on population and productivity. A growing population is the source of future workers, and the more productive those workers are, the richer they become. It takes investment in both capital and ideas to raise productivity.

• Ideas enable us to recombine the workers and the capital we already have in new ways to produce brand-new products or old products at a lower price. Competition forces countries and companies to copy each other’s ideas and constantly come up with new ones.

• Both investment and ideas must be nurtured. Honest government and trustworthy laws encourage investors and innovators to take risks in hopes of reaping the rewards. Investment in education enables workers to take advantage of the latest ideas. And free markets ensure that dying, unproductive industries are culled so that growing industries can attract capital and workers.

Chapter Two

Economic Bungee Jumping



Business Cycles, Recessions, and Depressions . . . Oh My!

IN EARLY 1973 the *New York Times* asked four economists for their forecasts. Alan Greenspan predicted that the economy would grow 6 percent and declared, “It’s very rare that you can be as unqualifiedly bullish as you can now.” He was half right; the economy did grow 6 percent that year, but it was a lousy time to be bullish. A few days after the *Times* article appeared, stocks entered a deep, multiyear bear market and by the end of the year the economy had fallen into its worst recession in decades.

What happened? Economic growth and falling unemployment began to strain the economy’s productive capacity. Inflation was rising and soon, so were interest rates. That October came the *coup de grâce:* the Arab embargo sent oil prices skyrocketing. High interest rates and recession are a nasty combination for stocks and employment.

Over long stretches, the economy grows thanks to our rising population and productivity. But in the short run, it goes through cycles of expansion and recession. Catching the bottom of the cycle can turbocharge your portfolio or business plan, while missing the peak can lay waste to both.

Medicine has made countless breakthroughs that enable us to live longer, healthier lives, but it hasn’t yet eradicated epidemics. For the same reason, both our wealth and our understanding of the economy have advanced tremendously but we haven’t yet abolished the business cycle. Business cycles are an unavoidable and largely unpredictable feature of market economies.

Business cycles and market cycles have a lot in common. Both are driven in great part by a tug-of-war between expectations and reality. Just as stock prices are a bet on the future of companies that may prove wrong, businesses and households are constantly making plans based on how much they expect their sales or wages to grow tomorrow. The future is inherently uncertain, so these decisions often depend as much on gut feelings as cold calculation. Expectations

are heavily shaped by the recent past. If video games sold well last month, a store will order more this month. If Internet traffic doubled last year, telecommunications companies will lay more fiber optic cable this year.

Business cycles and market cycles interact, reinforcing each other. As General Electric or eBay report rising profits, investors bid their stocks to nosebleed levels. When cash flow and asset prices rise, fewer borrowers default so investors buy more corporate bonds and subprime mortgages. The markets then feed back into the economy. Higher stock prices make CEOs think they are geniuses, so they expand their businesses further. Easy credit tempts both businesses and consumers to borrow more than they can safely handle.

Every business expansion eventually dies. Only the cause of death changes.

These imbalances inevitably unwind, often abruptly and without notice. Just as people often get sick faster than they get better, bear markets are more violent than bull markets and unemployment rises more quickly than it falls. The credit taps are tightened more quickly than they're opened. The event that ends these imbalances and thus the business cycle is seldom the same. In nineteenth-century America, it was often a natural disaster, a crop failure, or a bank panic. In 1973 and 1990, it was a spike in oil prices. In 2001, technology investments crashed. In 2007, house values plummeted. We sometimes think we'll eliminate recessions if we could just inoculate ourselves against past imbalances. After all, we can develop immunity to the last virus we contracted. The problem is that it mutates and we're susceptible all over again. The same holds true for the business cycle. Every business expansion eventually dies. Only the cause of death changes.

Not Your Father's Business Cycle

There is one common element to almost all modern business cycles. As the economist Rudi Dornbusch wrote in 1998, "None of the post-war expansions died of natural causes, they were all murdered by the Fed."

The Federal Reserve raises interest rates if it thinks the economy is growing so fast that inflation will rise. Costlier credit eventually forces businesses and consumers to curb their spending—sometimes abruptly. Long ago, the effect was brutally direct. Regulation Q, a rule passed during the Depression, limited how much interest banks could pay on deposits. When the Fed tightened monetary policy, interest rates in the financial markets rose more than on bank deposits. As a result, people shifted money out of their saving accounts and into higher-yielding money market funds. As deposits shrank, banks had to curtail lending. Sales of homes and cars, which are often bought on credit, shriveled. Companies suddenly found inventories piling up and had to shut down production and lay off workers. Laid-off workers slashed their own spending, multiplying the initial impact. Recession ensued.

Happily, the Fed could also end recessions by cutting interest rates. And, like a bungee jump, the deeper the dive, the sharper the upswing. People who had put off buying houses, cars, and other large-ticket items troop back to the stores. Companies with too little inventory on hand restart production and hire back workers. Those workers spend anew, which leads to more hiring and the expansion becomes self-supporting.

Business cycles changed after 1982. Inflation became better behaved, so the Fed did not raise interest rates as much or as often. Innovation and deregulation weakened Regulation Q so when interest rates rose, banks could still make loans. *Just-in-time* management ensured inventories didn't get far out of line with sales, while a growing chunk of gross domestic product (GDP) went toward services like knee surgery and yoga lessons that don't require inventories. The Fed seemed omnipotent: it nimbly raised interest rates before inflation broke out, and cut them before growth crumbled. The two recessions that did occur, 1990-1991 and 2001, were uncommonly mild. Economists dubbed this era the Great

Moderation.

Alas, neither business cycles nor imbalances had been tamed; they simply changed shape. Hyman Minsky, an unorthodox, wild-haired economist largely ignored by his colleagues before his death in 1996, had argued that capitalism was inherently unstable and periods of stability would simply result in even bigger imbalances that ultimately come undone in a turbulent crisis or recession —something his followers dubbed a *Minsky Moment.* The 25-year Great Moderation encouraged everyone to take on more debt, hold less cash, and pay more for homes and other assets on the belief the business cycle had been tamed. The Great Recession of 2007-2009 was a classic Minsky Moment, when expectations were brutally brought back to earth.

Predicting recessions is all about spotting imbalances, such as a rising ratio of inventories to sales of big-ticket goods or a growing backlog of unbuilt office towers as vacancy rates rise. Yet an imbalance can last a long time, or may be corrected without bringing the entire economy down. In both 1984 and 1995 the Fed engineered soft landings: it slowed the economy down without tipping it into recession.

Economists often miss fatal imbalances because they’re looking in the wrong place. Having vaccinated everyone against whatever killed the last business cycle, they fail to spot the virus that infects the current one. In 2007, the backlog of newly built homes for sale seemed reasonable relative to monthly sales. It turns out sales were unsustainably frothy, and when they slumped, a reasonable inventory of unsold homes became a glut.

Ringing the Gong

How do you know a recession has occurred? Easy: a press release goes out. In 1920, a group of academics formed the National Bureau of Economic Research (NBER) to promote better economic analysis. That decade, it began sifting through the economic records and dating business cycles as far back as possible.

Since 1978, the NBER has entrusted business cycle dating to a committee of six to eight of its scholars. They periodically examine a bunch of indicators—manufacturing shipments, wholesale trade, income, industrial production, employment—and then declare when a recession has begun or ended. Because the declaration comes many months after the fact, it's about as useful to investors as an autopsy is to an emergency room physician. The NBER would rather be right than early. Still, this keeps a radioactive decision out of the hands of government. What president would let a recession be declared on his watch?

The NBER has identified 31 business cycles that have occurred since 1860. They average four to five years in length; the shortest cycles were less than two years (1920- 1921 and 1981-1982) and the longest, from 1990 to 2001, was more than 10 years.

The NBER defines a recession as "a significant decline in economic activity spread across the economy, lasting more than a few months." In dating expansions and recessions they look at monthly indicators such as employment, industrial production, and retail sales. It's not the only definition of recession out there, it's simply the most popular. Another definition of the term is a period containing two consecutive quarters of declining GDP. This is not very practical, though, because GDP is often revised. Therefore, under this definition, recessions would be like a Cheshire cat—they would disappear, reappear, and change shape.

When the Bungee Cord Breaks

In June 1930, some bankers and religious leaders visited Herbert Hoover to air their concerns about the economy. “Gentlemen, you have come 60 days too late,” he told them. “The depression is over.” Actually, it would run for almost three more years.

At the time, *depression* was the term used for what we now call a *recession.* Since then, the word is reserved for a slump of calamitous proportions.

Depressions occur when the economy’s normal recuperative mechanism fails to engage.

Depressions are like plagues: devastating, rare, and only dimly understood until after the fact. They occur when the economy’s normal recuperative mechanism fails to engage; the bungee cord breaks. The usual culprit is a broken financial system. Often, an investment boom turns to bust, leaving businesses and consumers with a glut of unneeded buildings and equipment that depresses future spending. The loans they took out to finance their investment go bad, crippling banks and leaving borrowers unable to get money even at rock-bottom interest rates. If lower interest rates can’t stimulate demand, the virtuous circle of spending, job creation, and rising incomes can’t begin.

Like recessions, depressions have no official definition. Harry Truman said “a recession [is] when your neighbor loses his job; it’s a depression when you lose yours.” One rule of thumb, according to *The Economist,* is that a depression is a contraction in economic activity of at least 10 percent or lasting at least three years. By that standard, the last one in the United States was from 1929 to 1933. Perhaps that lulled Americans into thinking we’d eradicated depressions, but a look to other countries would have proved otherwise. Finland’s GDP shrank 10 percent between 1989 and 1993 thanks to the collapse of the Soviet Union, a

major trading partner, and its banks. Indonesia's GDP shrank 13 percent in 1998 after its economy and financial system collapsed.

Financial crises don't always produce depressions, but they often lead to severe recessions with unusually weak recoveries. The stagnation that followed the collapse of Japanese stock and land prices in the early 1990s is an example. Richard Koo of Nomura Securities says many Japanese companies were left insolvent, meaning their debts far exceeded their assets, and were determined to pay down debt, a process called *deleveraging*. If people or companies can't or won't borrow, then even rock-bottom interest rates won't spur the usual burst of spending.

When the economy is growing so slowly, it takes less to tip it back into recession: a jump in oil prices, a modest increase in interest rates, or higher taxes could do it. The financial crisis of 2007-2009 has left the United States with some of the same problems Japan grappled with in the 1990s. Its companies emerged in good shape but its households and banks are bloated with bad mortgage debt that has to be whittled back. Governments have big budget deficits they may try to tackle with higher taxes or sharp spending cuts.

However, the United States seems to have responded to its problems more quickly than Japan did, by taking just two years to boost its banks' capital and slash interest rates to the bone. Moreover, as we saw in Chapter One, its long-term growth outlook is brighter. While the United States may not endure the lengthy stagnation that Japan did, it's not going to enjoy a bungee-like rebound either.

The Bottom Line

• Ultimately, long-run growth drives our standard of living. In the short run, the economy goes through regular cycles of expansion and recession. These cycles are driven by how much consumers and businesses spend, which in turn depends a lot on their view of the future.

• Bullish expectations boost investment, stock prices, and lending, all of which feed back to the economy.

Eventually, though, expectations get ahead of fundamentals, creating imbalances. These imbalances come undone, usually with a nudge from the Federal Reserve, producing recessions.

• Recessions create pent-up demand. Lower interest rates eventually release that demand, bringing the recession to a close. Sometimes, though, this natural restorative process fails, because a broken financial system dams the flow of credit. Then, a recession may become a depression.

Chapter Three

In-Flight Monitor



Tracking and Forecasting the Business Cycle from Takeoff to Landing

ON A COAST-TO-COAST flight you can relax with a drink and watch your progress on the video monitor in front of you, up to the minute you descend into your destination city. Wouldn’t it be nice if we could do the same with the economy: flip on a screen and know instantly where the economy is, how fast it’s growing, and whether a recession lies ahead.

Unfortunately, when you clamber into the economy’s cockpit you discover erratic and imprecise instruments, a filthy windshield, and old, faded maps. Still, imperfect though they are, we have a wealth of data and tools with which to track the economy’s journey.

The Four Engines of the Economy

The most obvious way to track the economy is by looking at its four principal areas of spending. If the economy is an airplane, then its four engines are consumers, businesses, government, and exports. Its speed depends on the power of all of these engines. However, these engines aren't all the same size and they operate at different speeds. If you're wondering why they total more than 100 percent of the gross domestic product (GDP), it's because imports are subtracted from GDP.

- Consumer spending and housing: 66% to 76% of GDP
- Business investment in buildings, equipment, and inventories: 8% to 13% of GDP
- Government spending: 18% to 20% of GDP
- Exports: 8% to 12% of GDP

Consumer spending represents the largest engine on the airplane accounting for about two-thirds of GDP. It is primarily driven by household income and wealth. When home prices or stocks go up a lot, consumers feel wealthier and spend more: typically, a dollar more of wealth boosts spending by four cents that year. Conversely, when home prices and stocks drop, consumers spend less and the economy weakens.

Consumer spending is also driven by the ephemeral role of confidence. The more fearful consumers are for the future, the less they spend. Sounds obvious, right? But, sometimes the obvious is wrong. The Conference Board and the University of Michigan conduct confidence surveys but they aren't great predictors of what consumers actually do. Consumers were traumatized by the terrorist attacks of September 11, 2001, but when car companies rolled out mouth-watering zero percent financing shortly thereafter, they jumped.

Consumer spending is the economy's ballast: though large, it doesn't fluctuate much from quarter to quarter, except for big-ticket purchases like houses and cars. Paychecks and Social Security checks are fairly steady and consumers try to spend the same each month on groceries, tuition, and medical premiums.

Although housing is also a form of consumer spending, it behaves differently from the rest of this category. At most it's just 5 percent of GDP but it's one of the most volatile things in the economy. It follows demographic forces like population, family size, immigration, and the demand for vacation homes over time. But because a house is such a big commitment and so sensitive to interest rates, it's the first thing consumers postpone when interest rates rise or they lose their jobs.

From the late 1990s until 2006, demand for homes outstripped demographic forces thanks to low mortgage rates and loosened underwriting standards. Young families bought homes earlier than their parents did while speculators bought homes they never planned to live in. The mania left a glut of vacant and foreclosed homes that could take years to absorb.

After consumers, business investment is the next most important component of GDP. It comes in three types: inventories, buildings, or equipment. Businesses accumulate inventories either on purpose to meet future sales, or by accident because sales drop off unexpectedly. Though inventories are a tiny part of overall GDP, they are often the biggest contributor to quarterly changes because they respond to shifts in demand almost immediately. Such influence fades, however, once businesses restore inventories to comfortable levels.

Numerous factors influence how businesses invest in buildings and equipment: stronger profits, higher stock prices, lower interest rates, and the potential profitability of the investment. In the early 2000s, many airlines were bankrupt yet went ahead and installed thousands of high-tech self-serve ticketing kiosks in airports around the world, because they issued tickets at 5 percent of the cost of using an agent.

But by far the most important driver of business investment is the sales outlook. If consumer demand is growing briskly, businesses will expand to meet that demand. And when consumers pull back, so, eventually, will businesses. In fact, because months or even years may elapse between the decision to add a factory, store, or product line and the completion of the project, investment is kind of an accelerator, pushing the economy further both on the way up and on the way down. In 2004, amidst an oil-fuelled boom, bullish developers in the Persian Gulf emirate of Dubai broke ground on the world's tallest skyscraper. By the time the rocket-shaped half-mile tall edifice was completed in early 2010,

Dubai was deeply mired in recession and on the verge of default.

Government spending, such as on tanks and teachers, equals about 20 percent of GDP. Governments also send checks out, such as Social Security benefits and bond interest, but these checks are not counted as government spending in GDP because the money ends up being spent by someone else.

Exports, the fourth engine to track, represent about 11 percent of GDP and imports account for 15 percent of GDP.

These main economic engines can all be monitored in the quarterly GDP figures. There are also numerous other economic indicators that offer more detailed views of the economy. The following are some of the most important. (I will discuss employment, inflation, and trade in later chapters.)

• **Manufacturing.** A legacy of the United States' industrialized past is that we have a lot of manufacturing data. Each month the Census Bureau reports shipments, orders, and inventories of durable goods (goods designed to last at least three years). An important subsector of durable goods is capital goods, such as machine tools and computers. Capital goods orders are a good guide to business investment, although before you draw any conclusions you should exclude aircraft and defense orders: they're so volatile they muddy the underlying trend. The Census Bureau separately reports total factory orders, which (besides durable goods) covers nondurables, such as packaged food and gasoline. Each month the Federal Reserve reports industrial production, and the private Institute for Supply Management (ISM) releases an index of manufacturing activity based on a survey of purchasing managers.

• **Real Estate.** The Census Bureau issues three key monthly real estate reports. The first covers housing starts—the number of new homes on which construction begins—and building permits which, like starts, track construction but are less affected by weather. A second report covers sales and prices of newly built homes. A third report covers construction spending, from hospitals and highways to apartment buildings and stores. The National Association of Realtors reports the number of existing homes sold and the median price every month. The Federal Housing Finance Agency and S&P/ Case-Shiller

issue separate monthly reports on home prices.

• **Consumer Spending**. The Census Bureau reports retail sales each month. Sales of automobiles are volatile and gasoline's price seesaws, so if you want the underlying trend you should exclude these categories. Retail sales cover only 40 percent of consumer spending because services and housing are excluded. Once a month, the Bureau of Economic Analysis reports total consumer spending and its major components, which includes services and durable goods, personal income, and saving.

The Mapmakers

When you set out on a journey you are at the mercy of the people who draw your maps. When you track the economy, you have to trust the people who gather the statistics. Collecting these numbers is a core duty of government, although it hasn't always been. In 1884 the *New York Times* greeted the creation of what is now the Bureau of Labor Statistics as "a fine bit of Congressional witlessness."

Three federal agencies produce the lion's share of our economic data: the Bureau of Economic Analysis (BEA) and the Census Bureau, both part of the Commerce Department, and the Bureau of Labor Statistics (BLS) in the Labor Department. The Federal Reserve also produces some data, such as industrial production and consumer credit. Lastly, private organizations like the National Association of Realtors and the Conference Board produce some key data.

U.S. politicians certainly abuse statistics but virtually never interfere with them.

In some countries, governments regularly interfere with economic statistics. For instance, in 2008, Argentina decided to exclude fast-rising prices from its consumer price index. The result was a ridiculously low reading on inflation. The Chinese government frequently reports suspect data—growth reported by the provinces often differs from what the central government reports for the whole country. Garbage in, garbage out: Bad data leads investors and businesses to make bad decisions. At the extreme, it undermines trust in government.

U.S. politicians certainly abuse statistics but virtually never interfere with them. The statistical agencies, though run by political appointees, are independent and apolitical. Even so, the data isn't perfect. The agencies track the economy by sampling people and businesses, then they extrapolate the data and apply it to the whole economy. That's an imprecise science given how big,

varied, and ever-changing the economy is. As with opinion polls, data surveys have their margins of error, and some are quite large, leading to large revisions later on when more data is available. For instance, the Census Bureau estimates new home sales from a small sample of local permit offices based on building patterns that may be decades old. The margin of error in these surveys is usually around 20 percent, and numbers are routinely revised up or down by 5 percent.

The agencies also make judgments when it's not obvious how to put a number on something. Suppose you buy a computer this year at last year's price but the new model has a faster microchip and a bigger hard drive. How do you measure the computer power you actually bought? The BEA concludes that, adjusted for quality, the price of computing power declined and the amount of computing power you bought went up. Some people think this exaggerates growth in computer spending.

Data is often seasonally adjusted to help see through patterns that recur each year. It is pretty useless to learn that retail sales rose from November to December: they always do, typically by about 17 percent. They then fall back in January. What we want to know is: did they rise by more than usual? That's what seasonal adjustment does: it removes predictable calendar effects. If retail sales only rose 15 percent in December, that would be a disappointing drop of 2 percent, seasonally adjusted.

All these procedures mean our data is never perfect; but nor is it dishonest or biased. You can generally assume that, if there are errors, they cancel each other out over time.

How to Make Astrologers Look Prescient

Economists pore over all this data and more and combine it into a forecast of where the economy is going. Their success rate is the stuff of comedy. John Kenneth Galbraith once remarked that "The only function of economic forecasting is to make astrology look respectable." Alan Murray of the *Wall Street Journal* once quipped, "If pilots' vision were as bad as economists', Amtrak would be profitable." In 2006, not one of the economists surveyed by the *Wall Street Journal* predicted a recession.

Lots of detailed economic forecasts are available for free (though remember: advice is worth what you pay for it!).

Truth be told, forecasts aren't useless: indeed, the average of a group of forecasts is more accurate than simply assuming next year will be like this year. For all the well-earned ridicule, economists are still in demand by businesses, governments, and investors who prefer a bad forecast to no forecast. Even a wrong forecast sheds light on the behavior of the economy and helps us recalibrate our decisions.

Lots of detailed economic forecasts are available for free (though remember: advice is worth what you pay for it!). The *Wall Street Journal* surveys about 50 forecasters each month and publishes their views online. *The Economist* surveys economists once a month and publishes either their projections or those of its sister forecasting organization, the Economist Intelligence Unit, each week for about 40 countries in its second-to-last page. The International Monetary Fund, the Congressional Budget Office, the Organization for Economic Cooperation and Development, and the Conference Board all publish regular, unbiased forecasts.

You could decide to ignore economists altogether and formulate your own

forecast based on indicators that have traditionally foreshadowed the economy's direction. The Conference Board combines 10 indicators—from the money supply to unemployment insurance claims—into a single index that is released once a month. The index tends to lead shifts in GDP by several months, although it often gives erroneous signals.

Of the many indicators you can look to, financial markets are among the best leading markers of growth. Investors are constantly sifting millions of bits of new information—from corporate earnings to the corn harvest—and what they learn is instantly reflected in the prices of shares, commodities, and bonds. The stock market will often signal a turn in the economy 1 to 12 months ahead of time. When bond yields are equal to or below the Fed's interest rate target, producing a flat or inverted *yield curve,* a recession is usually one to two years away. The reverse—bond yields well above the Fed's interest rate target, that is a steep yield curve—usually means the economy will pick up.

Investors are a moody bunch so stocks and interest rates often send false signals. Paul Samuelson, a Nobel Prize-winning economist, once joked that the stock market has forecast nine of the past five recessions. Remember the stock market crash of 1987? The next recession was still three years away.

The Bottom Line

- The four engines of economic growth are consumer spending, business investment, government spending, and exports. Consumers are, by far, the largest contributor to GDP.
- Movements in GDP are dominated by the most volatile categories of spending: housing, business inventories, and big-ticket consumer purchases, like cars.
- Forecasting the business cycle is risky business; you have to carefully monitor a continuous blizzard of data which, though faithfully gathered, may be out of date and inaccurate. Stock prices, the yield curve, and commodity prices are all useful leading indicators but send a lot of error signals.

Chapter Four

Labor Pains



Employment, Unemployment, and Wages

TRY TO IMAGINE a worse time to start a new career. The world is in the grip of its worst recession since the 1930s. The prime minister of Canada proclaims, “We are moving from crisis to catastrophe.” The U.S. unemployment rate is at its highest since the Great Depression.

That was what the world looked like in 1982 when Howard Schultz told his mother he was quitting his job as a well-paid salesman to join a five-store chain of coffee shops. No wonder she tried to change his mind. “You have a future,” she pleaded. “Don’t give it up for a small company nobody’s ever heard of.” Schultz ignored her, and millions of caffeine addicts are glad he did: he went on to turn Starbucks into a multinational franchise with more than 16,000 stores and well over 100,000 employees around the world while introducing a new job title into the American lexicon: *barista.*

Howard Schultz probably didn’t spend a lot of time in 1982 trying to figure out how he’d keep more than 100,000 people employed in 28 years’ time. That’s the beauty of the job machine. In the depths of recession it is almost impossible to conceive of where the jobs will come from. Yet the new jobs always come.

Say It Ain’t So

When people wonder “where will the jobs come from?” they reflect a popular anxiety.

Two centuries ago, Jean-Baptiste Say, a French economist, elegantly argued that there can never be too little work to go around. If a waiter earns $25 by working two hours longer, he’ll spend the $25 on something, or put it in the bank which then lends it to someone to spend. That $25 in extra demand is exactly enough to pay for the extra labor he supplied. Say’s Law dictates that “Supply creates its own demand.” Some economists go so far as to argue that anyone who is unemployed must therefore not really want to work, at least for the wages available.

Clearly, this isn’t true during and right after recessions, when the problem is that no work is available at any wage. Companies aren’t going to hire workers, even at a pittance, if there’s nothing for them to do. But over time a healthy economy should always create enough jobs to employ the people available to work. Since 1982, the number of working-age Americans who want to work has grown 39 percent, or about 43 million. Back in 1982, who could imagine what all those people would do? Yet they found jobs, injecting enough money back into the economy to maintain the demand for their labor. In the same period, the number of jobs has grown an almost identical 42 million, or 47 percent.

Diving into the Employment Petri Dish

Assessing the health of the labor market starts with figuring out just how big it is. Some of the working-age population, those aged 16 to 65, are in school, at home raising children, in prison, in the military, have retired, or have been unemployed so long they have given up looking for work. The share of the working-age population actually participating in the labor force, either by working or looking for work, averages about 65 percent.

But participation fluctuates a lot from month to month, often depending on business conditions. In recessions, some people lose jobs, and others decide not to look for work—they stay home or go back to college, so they're not counted as unemployed. This can cause the level of employment and the unemployment rate to drop in the same month. During booms, the opposite happens: The economy draws people into the labor force who might otherwise stay at home or stay in college.

Participation also changes with society. When *Leave It to Beaver* was on the air in the 1950s, less than 40 percent of working-age women were in the labor force. By the time *Murphy Brown* went off the airwaves in 1998, 60 percent were.

The monthly change in jobs garners huge headlines but it is just the tip of the iceberg. The job market is a wonderfully chaotic Petri dish in which new jobs are constantly being created or destroyed.

The monthly change in jobs garners huge headlines but it is just the tip of the iceberg. The job market is a wonderfully chaotic Petri dish in which new jobs are constantly being created or destroyed as new firms grow and old firms die. In 2007, when the economy was humming, about 2 million people were fired or

laid off each month and almost 3 million more quit their jobs. This loss of jobs was just offset by almost 5 million people hired each month, and so on net, employment rose.

So, who does the hiring and firing? *Small* companies destroy just as many jobs as they create; they aren't disproportionate job creators. By contrast, new companies do create a surprisingly large share of new jobs. A 2009 study by Dane Stangler and Robert Litan of the Kauffman Foundation found that if you took out firms that were five years old or younger, employment would contract most months. So job creation tends to be primarily the product of entrepreneurs who have a crazy idea for starting a new company. But it's a mug's game trying to figure out which of the hundreds of thousands of start-ups each year will grow to be the big employer. In 1968, would you have bet on Fairchild Semiconductor, the giant, innovative Silicon Valley pioneer, or the two executives who left to start Intel?

Payday

So the number of jobs, over time, depends first and foremost on the number of people who want to work. But what determines how much they make?

Real pay, that is, after inflation, ultimately depends on productivity. The more a worker produces for his employer, the more he'll earn. Over time, as companies have equipped their workers with more and better equipment, their pay has risen. Someone with a power paint sprayer can paint a lot more of a building in an hour than if he only had a brush, so he should earn more.

Technology and globalization have enabled celebrity athletes, singers, and corporate executives to multiply their earning power astronomically.

But this is not an iron law. When a worker becomes more productive, he may not be the one who benefits. If he doesn't have much bargaining power, his employer may leave his salary alone while racking up higher profits. More often, the customer benefits. Newspaper reporters are a lot more productive now because an article they once wrote just for the newspaper now also reaches thousands of more readers on the Web. The problem is that most newspapers can't persuade online readers to pay for the articles. So the benefit of the reporter's increased productivity goes entirely to readers who get news for free, while the reporter may have to take a pay cut!

Wages have become a lot more unequal in recent decades. This isn't because of racial or sexual discrimination. In fact, while white men do earn more than women and minority men, the gap has been closing. The disparity these days is based on education and skills. Imagine everyone standing on a 10-rung ladder, with the lowest paid on the bottom rung and the best paid on the top. The ladder has gotten a lot taller—those one rung from the top earn 35 percent more than

they did 30 years earlier. But the distance between the rungs has grown, with the result that the middle rung is only 11 percent higher and the bottom rung is just as close to the ground.

It turns out that the rung you stand on depends a lot on how much education you have received. In the 1950s, the average high school graduate could find a job in manufacturing, railroads, construction, and other industries that were highly productive, didn't face much foreign competition, and paid well. Over the decades, though, machines and software replaced many of those jobs. As international trade grew, U.S. workers faced competition from lower-paid workers in other countries. Services grew rapidly, and many of those jobs required either almost no skills (operating a cash register in a fast-food restaurant) or a great deal of skill (performing a heart transplant or teaching autistic children). In 1973, a person with a graduate degree earned an average 75 percent more than another person with just a high school diploma. By 2007, that premium had leapt to 125 percent.

Education, though, can't fully explain why those at the very top have gotten so fabulously rich. According to Emmanuel Saez, an economist at the University of California, Berkeley, the 1 percent richest households reaped 24 percent of all income in 2007, the highest share since 1928. Technology and globalization have enabled celebrity athletes, singers, and corporate executives to multiply their earning power astronomically. Susan Boyle got her start singing in church and at karaoke pubs. When she sang the same songs on *Britain's Got Talent* and on best-selling CDs, her income skyrocketed.

Unemployment, Naturally

No single number better captures the health of the economy than the unemployment rate. It represents the share of the labor force that is looking for work but cannot find it. To keep the unemployment rate from rising, employment must do more than just stay the same; it has to grow as fast as the labor force. For the unemployment rate to drop, employment must grow faster than the labor force.

According to the Congressional Budget Office (CBO), the labor force grew 1 percent per year in the United States during the 2000s. Since people are always joining and quitting the labor force, some months it would grow by half a million and other months it would fall by as much. But, on average, the labor force grew by 120,000 people per month. That meant employment had to grow by more than that for unemployment to fall. If, instead, it grew just 80,000, then unemployment would rise by 40,000 and the unemployment rate would rise.

In the coming decade, the labor force will grow more slowly because the population is aging and women's participation in the labor force has stopped rising. The number of new jobs we need each month to keep unemployment from rising will be around 80,000, instead of 120,000.

Yet, even in a healthy economy, it is normal for there to be some unemployment. Someone who has been fired, laid off, or who has just told her boss to take this job and shove it doesn't usually take the first thing that comes along. Instead, she spends time trying to find the dream job.

Some people also struggle to find work even in a healthy economy because of a disability, poor English, or too little education. Many people are simply victims of creative destruction. A mainframe computer programmer laid off after 20 years first looks for another job programming mainframes. If the entire world has moved to personal computers, he may be out of work a long time unless he retrains or changes careers.

For all these reasons, even in an economy running at full-tilt, unemployment

won’t drop below a natural rate. Since it seems cruel to label something like unemployment as *natural*, economists also call this the *nonaccelerating inflation rate of unemployment*, or NAIRU, because below this level, firms have to jack up pay to attract qualified workers. Those higher wages eventually lead to higher prices and inflation.

The natural rate of unemployment is to economics what black holes are to physics: we know it’s there but we can’t really see it. It’s hard to know if someone is unemployed because no one is hiring or because he simply doesn’t have the necessary skills. The natural rate also moves around as the economy changes. In the early 1970s, lots of young baby boomers entered the labor force. They had less skill and experience than their parents, so they took longer to find work, which raised the natural unemployment rate.

Government policies can also affect the natural unemployment rate. Generous welfare or unemployment insurance enable workers to take longer looking for jobs while minimum wages make some unskilled workers too expensive to hire.

In 1982, France cut the official work week from 40 hours to 39 hours in the hope that employers would hire more people to do the extra hour of work. But since affected workers’ wages stayed the same, their hourly pay went up and many lost their jobs, according to Francis Kramarz, a French economist. A decade ago, France prodded companies to cut the work week further, to 35 hours. This was a bit more successful at creating jobs but many firms still went out of business.

Many European countries make it expensive to fire workers, which makes companies think twice about hiring them in the first place. No surprise that temporary staffing agencies are a booming business in Europe: temps are easy to get rid of.

Into the Weeds

Job growth and unemployment are central to diagnosing an economy's health so a lot of attention is focused on how they're measured. On the first Friday of every month, investors and politicians hold their breath, waiting for the federal Bureau of Labor Statistics (BLS) to report how the job market performed the previous month. The numbers can send stocks and bonds soaring or plunging, and unleash a torrent of press releases in Washington as the president grabs credit if it's good news and his opponents heap blame on him if it's bad.

The employment report is actually two reports.

1. In the *payroll survey,* the BLS surveys private and government employers in order to estimate the total number of workers on nonfarm payrolls, their hourly wages, and hours they worked. Its initial sample covers 30 percent of all U.S. workers; it estimates the rest. The BLS revises those estimates over the following months as it gets data from more of its sample. Those revisions can be big. A new restaurant may open, then close six months later without the BLS knowing it existed. The BLS tries to estimate the jobs created and lost at new firms with a special *birth-death* model. Once a year, it finally has enough information to replace all those estimates with actual data for almost every job.

2. In the *household survey,* the BLS surveys 60,000 households across the country (barely 0.1 percent of the total) about their age, education, race, and whether they are working, and if not, why not. From that sample it estimates the unemployment rate, the participation rate, and the total number of people employed and unemployed for the whole country. Except for technical changes once a year these numbers are not revised.

You may think unemployment is a simple concept, but the official definition is quite precise: you have to be available and have looked for work in the four weeks before the government takes it survey. You do not, however, have to be collecting unemployment insurance. By that measure, there were 15.3 million unemployed people in November 2009, for an unemployment rate of 10 percent.

There are alternative measures of unemployment. That same month (November 2009), 2.3 million more people were available but hadn't looked for work in the last four weeks; almost a million more had simply given up looking because they concluded no work was available, and 9.2 million were working part time because they couldn't find full-time work. Including all these people produces an *under*employment rate, or as the pros call it, the *U-6 unemployment rate*, of 17.2 percent.

If the payroll and household reports show employment going in opposite directions, which should you trust? Usually, the payroll survey because its sample is much larger. If the two reports show a persistent divergence in employment levels, it's a clue one is missing something important.

The employment report can leave you scratching your head. For instance, you may hear that in one month employment fell, which is bad, but so did the unemployment rate, which is good. Why might this happen? There are two main reasons.

1. **Participation Bounces Around.** Some people counted as unemployed (and therefore part of the labor force) one month may not be in the next, because they gave up looking for work, went back to school, or retired. When unemployment falls because of a drop in participation, it is usually a bad sign. Conversely, if unemployment rises because of higher participation, it is a good sign.

2. **Sometimes the Two Surveys Diverge.** The payroll report may find fewer jobs while the household report finds more people employed. This can happen because employment surveys, like opinion polls, have margins of error, and different results are normal, statistical noise. Or it may also result from the fact that the two surveys define *employment* differently. Someone working two jobs is counted twice in the payroll survey but just once in the household survey. Nannies, farm workers, and the self-employed are counted in the household survey but not in the payroll survey.

If the two surveys go in different directions, which should you trust?

> Usually, the payroll survey because its sample is much larger, and its job count is constantly revised as more complete information is received. But the payroll survey doesn’t tell you anything about the unemployed or the characteristics of workers themselves. For that, you have to turn to the household survey. If the two reports show a persistent divergence in employment levels, it’s a clue one is missing something important.

Another important job market indicator is the number of new claims that states receive for unemployment insurance. Because the U.S. Labor Department reports total new claims each Thursday, this number is one of the earliest indicators of a shift in the health of the economy. The numbers are volatile, though. Holidays and bad weather can play havoc with the trend.

The Job Market of Tomorrow

In the 2000s, the natural rate of unemployment was probably around 5 percent. By the end of the decade, the actual unemployment rate was 10 percent. Will we ever get back, or close, to that 5 percent rate? The path is strewn with obstacles.

Many of the jobs lost in 2007-2009 are never coming back. In 1982, about 22 percent of the unemployed were on temporary layoff, and businesses called many back to work when sales recovered. In 2009, though, only 11 percent were on temporary layoff; for two-thirds of the unemployed, the job they lost was gone permanently. What explains those permanent losses? Well, many of the now-unemployed owed their jobs to the housing boom—construction workers, tradesmen, mortgage brokers, and so on. Even when the housing market recovers, a lot of those people won't be needed.

Another factor holding back employment is that some people can't move to a new job because their homes are worth less than their mortgage. Unless they can come up with a lot of extra cash to pay off the mortgage, or default, they're tied to their homes until values recover.

A final damper on job creation is that the longer someone is unemployed, the more their skills and habits waste away, making it harder to ever go back to work. Even when the economy has recovered, some of those people will struggle to go back to work.

The future structure of the workforce is changing as people tend to work later into their lives. For decades, a growing share of workers over the age of 55 retired before reaching 65; now, however, more are staying in the labor force. Incentives in Social Security and company pensions to retire early have now reversed, and people need to work longer to keep the lifestyle they want. It's also because work itself has changed. Someone who inhaled noxious vapors on a factory floor often couldn't work much past age 55, much less want to. But nowadays we teach or consult, we don't plough fields or mine coal, and we stay healthy longer. Not only can many of us work longer, many of us want to.

As a result of these factors, the natural rate of unemployment, previously around 5 percent, will probably rise in coming years, perhaps even as high as 6 percent.

The Bottom Line

• In the short run, the number of jobs rises and falls with the business cycle. In the long run, though, the growth in jobs usually tracks almost perfectly the growth in the number of people who want jobs.

• The unemployment rate is the single best signpost of the economy's health. When the economy reaches full strength, the unemployment reaches its so-called *natural* rate.

• Pay usually tracks productivity, which is why, over the years, workers have gotten richer. In recent decades, however, the best-paid workers have seen their salaries grow much more rapidly than the rest of the work force has, because of the premium on skills, weaker unions, and superstar salaries, whether for lawyers or for athletes.

Chapter Five

Fire and Ice



Warning: Inflation and Deflation Are Toxic to Your Economic Health

WHEN YUGOSLAVIA dissolved into a bloody civil war in the 1990s, there were more than just ethnic and religious rivalries at work. Inflation, the continuous rise in the prices of almost everything, was also a factor. Thanks to an economic crisis in the early 1980s, prices in Yugoslavia were rising at annual rates of more than 1,200 percent by the late 1980s. Inflation helped dissolve the cohesion of Yugoslavia's multi-ethnic middle class. Some people protected themselves by growing their own food or hoarding foreign currency. Others watched their incomes and savings get wiped out.

Throughout history, high inflation has often led to social upheaval. Hyperinflation, when prices rise by 50 percent per month, helped bring the Nazis to power in Germany and the communists in Russia and China, and topple both civilian and military governments in Argentina. These, of course, are extreme forms of the disease. But far more modest rates of inflation in the 1970s helped drive Labor from power in Britain and Jimmy Carter from the White House.

Why is inflation so destabilizing?

Prices are the market's air supply; they signal surpluses and shortages and tell businesses and consumers when to produce more or consume less. Inflation contaminates this air supply. Suppose you are thinking of opening a new hotel in a city where rates are rising 10 percent, thinking that must be a sign of strong demand. But what if the cost of land is going up 12 percent, linen by 11 percent, chambermaid and doormen wages by 13 percent? The new hotel may actually lose money. Inflation makes it hard to interpret price signals.

Inflation also unsettles people because it arbitrarily punishes some people while it rewards others. A retiree who buys a government bond that pays 4 percent interest, only to see inflation jump to 5 percent, sees his purchasing power get clobbered. A home buyer lucky enough to lock in a mortgage at 5 percent and then sees home prices soar 50 percent scores a windfall.

Inflation is also a hidden tax. As wages rise to compensate for it, so does tax revenue, making it easier for the government to repay what it borrowed before inflation took off. In the process, however, it robs the currency in people's wallets of purchasing power.

Another reason inflation is unsettling is that getting it back down is painful. Governments may resort to wage and price controls or other heavy-handed interventions to reduce inflation. Usually, though, it takes a recession to cure inflation—and that hurts everyone.

Goldman Sachs economists have shown that investors do best under low inflation (see Table 5.1). Under high inflation, only stocks gain, and not by much. Under hyperinflation, everything goes down.

Table 5.1 Investors Hate Inflation and Deflation

Source: Goldman Sachs Global Economics Paper #190, September, 2009.

	Annual after-inflation returns		
	Cash	Bonds	Equities
Deflation			
United States, 1930–1933	7.3	10.7	–6.2
Japan, 1998–2003	0.4	2.3	0.7
Problem inflation			
United States, 1967–1980	–6.4	–3.1	1.1
Turkey, 1971–2002	–33.4	0.8	2.7
Hyperinflation			
Germany, 1922–1923	–100.0	–100.0	–100.0
Brazil, 1988–1993	–93.3		–67.3

Inflation's dangers should not be overstated. It is hard to find evidence that steady inflation below 5 percent does much economic harm. The trouble is that as inflation rises it gets less predictable. This year 5 percent, next year who knows?

From Cigarettes to Aztecs

There are two competing schools of thought on the cause of inflation, and listening to their proponents is like listening to creationists and Darwinians argue over how life began. Monetarists blame the *money supply,* while neo-Keynesians blame a combination of *excess spending and inflationary psychology.* There's truth to both schools.

Blame It on the Money Supply

Milton Friedman, the Nobel economist, said "Inflation is always and everywhere a monetary phenomenon."

There are two competing schools of thought on the causes inflation. Listening to them is like listening to creationists and Darwinians argue over how life began.

Monetarism, as this brand of economics is called, blames inflation on too much money chasing too few goods. Intuitively, this makes sense. If you double the amount of money people spend on stuff, but leave unchanged the amount of stuff, prices will double.

In its most basic form, this notion is uncontroversial, and economists of all stripes accept it. Let's examine one example. In German prisoner-of-war camps, prisoners used cigarettes as currency, pricing bread, shirts, and chocolates in cigarettes. When Red Cross shipments arrived, suddenly everyone had more cigarettes to spend—and the prices of everything went up. As the cigarettes wore out or were smoked, prices started dropping again. Altering the supply of money has the same effect. A government normally finances its spending with taxes or

by selling bonds to the public. Suppose, instead, it sells the bonds to the central bank, which pays for them by creating money out of thin air. This can produce *hyperinflation*, when prices rise 50 percent or more *per month*. In 2008 in Zimbabwe, prices were doubling roughly every day. Steven Hanke, a Johns Hopkins University economist, figures annual inflation equaled 89.7 sextillion percent (that's 897 followed by 20 zeros). During such hyperinflations, people try to hold as little currency as possible. As soon as they're paid, they spend the money before its value is wiped out. In many cases, people switch to foreign currency instead.

At the opposite extreme, fixing the money supply eradicates persistent inflation. That's what happens when a country goes on the *gold standard*, which means that the currency is backed by gold. You could take your notes to a bank and receive their face value in gold. Prices could rise, but eventually, they'd fall again. When the United States was on the gold standard between 1790 and 1911, periods of inflation and deflation alternated; wholesale prices ended the period roughly where they began.

Under some conditions, though, the money supply can rise even with a gold standard in place. How? The supply of gold may increase. For example, when Spanish conquerors brought troves of Aztec and Inca treasures back to Europe, a century of mild inflation ensued. Or, another way this can happen is if the government allows the same amount of gold to back a larger amount of currency. Roman emperors and medieval kings routinely debased their coins—that is, they reduced their gold or silver content—to finance their wars. In 1933-1934, Franklin D. Roosevelt allowed gold to rise from $20.67 to $35 per troy ounce, a 41 percent devaluation, in a successful effort to end deflation.

Thus far, the link between the money supply and inflation is straightforward. It's when you get to the case of a modern economy that the monetarist theory, while good in theory, proves almost useless in practice. Let's examine why.

The central bank doesn't control the entire money supply, only a narrow portion of it: specifically, the notes, coins, and reserves it supplies to commercial banks. (*Reserves* are cash that banks keep on deposit at the Fed to settle payments with each other, with the Treasury, or to exchange for currency to refill their ATMs.)

To understand why the link between money supply and inflation is muddy, imagine that the Fed distributes $1 trillion in freshly printed twenty-dollar bills to people on street corners. If they promptly rush home and stuff the money under their mattresses, what will happen to consumer spending and inflation? Zilch. For money to cause inflation, it must be lent and spent. Banks lend when they have healthy balance sheets and a lot of eager, creditworthy customers. Consumers spend when they feel confident about their jobs and salaries; they go to the ATM more often, run up bigger credit cards bills, remodel their homes, and buy faster cars.

Monetarists claim that growth in the money supply leads to more spending and more inflation. Actually, it's the other way around. Every dollar consumers borrow or spend returns to the banking system and shows up in someone else's checking or savings deposit or money market mutual fund, which are all part of the broader money supply (which has labels like M1, M2, and M3).

For this reason, the Fed doesn't target the money supply. It uses its control of reserves only to ensure banks have enough cash to keep their ATMs full, and to control short-term interest rates. (I'll explain how it does this in Chapter Ten.) Therefore, its influence over the broad money supply is indirect. If it raises interest rates, it will dampen spending and, eventually, the money supply. If, however, the economy is truly moribund, because no one wants to lend or borrow, the Fed can drive interest rates to zero and print gobs of money without causing broader measures of money and credit to grow. That's what happened in 2009: The Fed had lowered rates to almost zero and increased reserves to banks by $1 trillion, yet total bank lending contracted.

The Other Side of the Story: Mind the Gap and Your Mind

So save some trouble and don't preoccupy yourself with the money supply. For a more realistic picture of inflation—the neo-Keynesian picture—think instead of hotels in Scottsdale, Arizona. The supply of rooms is roughly the same all year, but there's a lot more demand in January when the temperature averages 70 degrees than in July when it averages 100 degrees. The demand for rooms is higher in January, and so, not surprisingly, the hotel can charge a lot more than it

would in July.

The same is true for the economy as a whole: When demand for all goods and services runs ahead of the supply (i.e., potential output), inflation rises. When demand falls short of potential, inflation falls. When unemployment is below its natural rate, workers are better able to win raises. This relationship was captured by Alban William Phillips, a New Zealand economist. The Phillips Curve, which shows an inverse relationship between unemployment and inflation, is at the heart of the neo-Keynesian inflation model.

A hotel whose occupancy suddenly rises to 95 percent from 80 percent will eventually add rooms, but will first simply charge more. Similarly, if occupancy falls, the hotel may eventually close. But first, it will simply charge less. The difference between actual gross domestic product (GDP) and potential GDP is the *output gap*, which you could think of as a vacancy rate for the entire economy. Inflation always falls after recessions because the output gap is so large: hotels and office buildings are empty, factories are idle, and the unemployed are everywhere.

The surest sign the economy has exceeded its capacity is if firms are paying higher wages to attract qualified workers. Inflation needs a wage- price spiral; if wages don’t rise, there’s no spiral.

Like the natural rate of unemployment, potential output is a slippery thing to measure. It’s easy to tell if a hotel, factory, or power plant is at full capacity. But what about a law firm or an Internet dating service? Potential also changes. In the early 1970s, high oil prices rendered a lot of existing factories obsolete; this reduced potential. In the late 1990s, companies found they could use the computers and the Internet to boost production with fewer workers. For example, airlines replaced reservation agents with web sites. This boosted potential.

Globalization has also relaxed the constraints on capacity. A company that interprets X-rays can’t charge as much if a competitor offers to do it using Indian

radiologists at a fraction of what U.S. radiologists cost.

It is difficult to know when the economy has exceeded its capacity, but there are telltale signs. The surest sign is if firms are paying higher wages to attract qualified workers. Inflation needs a wage-price spiral; if wages don't rise, there's no spiral.

An economy with a large output gap can grow rapidly with little threat of inflation, just as a near-empty hotel that manages to boost occupancy to 50 percent is still in no position to raise room rates. But once the output gap has been closed, the economy can only grow in line with the labor force and productivity. For the United States, that means a growth rate between 2.25 percent and 2.75 percent.

Strange as it may seem, inflation also depends a lot on what people *think* it will be. Suppose an employer and its union sit down to hammer out a new contract. If both parties agree inflation will be 2 percent, they will quickly agree to a 2 percent cost-of-living increase and the firm will plan on setting prices to cover those costs. If every firm in the country and its employees do the same thing, inflation will settle at 2 percent. Thus, expectations of inflation can be self-fulfilling.

Rapidly shifting expectations lead to quicker changes in inflation. If a jump in oil prices suddenly boosts the cost of living, firms and workers quickly raise wages and prices to compensate, and a wage-price spiral ensues. This means that the tradeoff between inflation and unemployment in the Phillips Curve is only temporary. Pushing the economy past its potential can drive down unemployment for a little while, but as inflation picks up, so will workers' wage demands, and unemployment will return to where it was.

On the other hand, if people have gotten used to 2 percent inflation year in and year out, they might endure a jump in oil prices without expecting wages to automatically follow. Well-anchored expectations can keep inflation steady even when the economy is above or below potential.

Even Worse than Inflation

Inflation is a familiar scourge. Deflation, when prices are falling, is rarer and, potentially, nastier. This may seem odd. Shouldn't we be happy if the prices we pay go down year after year? Well, it's sort of like weight loss. What's the reason for it: you're eating better and exercising more (good), or starving to death (bad)?

Good deflation occurs when workers and companies become more productive and learn to make things at a lower cost. Intel, for example, is continuously cutting the price of computer chips because it keeps finding new, cheaper ways to make them. Intel's profits and its employees' salaries still go up. If you multiply that across the entire economy, it's possible for prices to fall across the board even as incomes rise.

Bad deflation occurs when spending collapses and companies have to cut their prices to prop up sales, just as hotels cut their rates when tourist traffic dries up. Once people expect falling prices, they hold off on purchases. Workers initially resist pay cuts, so employers must lay some off to cope with falling prices. Eventually, fear of unemployment persuades workers to accept lower pay. Prices and wages follow each other down, the mirror image of an inflationary wage-price spiral. We saw this happen between 1929 and 1933 in the United States when prices fell 7 percent per year. Japan has endured a milder form of this bad deflation since the late 1990s.

If prices and wages are falling at the same rate, is anyone the worse for it? After all, paychecks are smaller, but purchasing power is the same because prices have fallen. The problem is that debt is fixed so as incomes and prices fall, the burden of debts rises. Homeowners slash spending to keep up with their mortgage payments. Or worse, the homeowner goes into foreclosure because the home may not be worth enough to repay the loan. The bank fails, deepening the economic stress. "The more the economic boat tips, the more it tends to tip," wrote Irving Fisher, the American economist who labeled this phenomenon *debt-deflation* in 1933.

Deflation can be harder to cure than inflation. Faced with inflation, a central bank that wants to can generally raise interest rates as high as needed. Faced with recession, it can stimulate spending and restore growth by lowering its interest rate below the inflation rate, making the real cost of borrowing *negative.* Clearly, that's impossible when inflation itself is negative, since the central bank can't lower interest rates below zero: During deflation the real interest rate will always be positive. (In Chapter Ten, I'll describe other tools the central bank can use if it's already lowered short-term rates to zero.)

The People's Choice

In the wake of the Great Recession, a weird schizophrenia has overcome the economics fraternity. It was nicely encapsulated in a country-and-western You Tube ditty[1] by Merle Hazard, the pseudonym of Jon Shayne, a money manager:

> Inflation or deflation, tell me if you can:
> will we become Zimbabwe or will we be Japan?

In the long run, inflation is a political choice.

So, which will it be? Probably, neither. Yet there are risks on both sides. The Great Recession left so much unused economic capacity that inflation, already low, could cross the line into deflation.

In the long run, though, inflation is a political choice. When society won't pay the taxes necessary to meet its own demands to create jobs, provide social programs, or fight wars, government has to borrow and may pressure the central bank to keep interest rates low to help with that borrowing. That would eventually lead to inflation. In the extreme, the government may simply order the central bank to print the money, which can lead to hyperinflation.

It sounds tempting, but don't assume politicians will succumb. Voters hate inflation. In the 1970s, people consistently rated inflation a bigger concern than unemployment in Gallup polls. In a 1996 study, Robert Shiller, a Yale University economist, found that if forced to choose, Americans, Germans, and Brazilians all preferred higher unemployment to higher inflation. Thus, if inflation rises, politicians will eventually be forced to tame it or find a central banker who will. Jimmy Carter and Ronald Reagan, for instance, stood by as the Fed induced two

savage recessions to break the back of inflation.

Into the Weeds

When the Bureau of Labor Statistics (BLS) was created in the late nineteenth century, the cost of living was one of the first things it tried to measure. Today, the consumer price index (CPI) is the economic statistic that most affects Americans' daily lives since it is used to calculate cost-of-living adjustments. Once a month, BLS statisticians and contractors fan out across the country, and visit thousands of businesses to collect prices on over 80,000 items in 200 categories from new cars to funerals. It uses regular surveys of consumers' spending habits to assign a weight to each category in the index—32 percent for shelter, 0.3 percent for sugar and candy. The 12-month percentage change in the CPI is the most common measure of inflation.

Fresh food and energy account for many of the monthly swings in the CPI. Because an increase one month is often undone a few months later, economists regularly exclude food and energy. The remainder, or core inflation, provides a more stable picture of underlying inflation. This picture will be misleading, though, if energy and food costs march steadily higher (or lower) over time instead of reverting to their old levels.

The CPI isn't flawless. Consumers are constantly shifting to stores that have cheaper prices—to Wal-Mart, for example, from pricey department stores, and to cheaper products, such as Internet telephone calls instead of landline calls. The CPI tries to capture these changes by surveying consumers' spending habits every two years, but in between, it may slightly overstate inflation.

The CPI's measure of home ownership is also controversial. It's not a measure of home prices. Rather, it's a measure of what a homeowner would pay to rent the same house. The two prices usually move together, but not always. Between 1998 and 2007, home prices rose 84 percent but because rents were much less buoyant, the CPI recorded only a 38 percent increase in the cost of owning a home.

There are other inflation measures, including:

- **PCE Index.** An important but little-known alternative to the

CPI is the *price index of personal consumption expenditures*, or *PCE index*, which the Bureau of Economic Analysis uses to calculate GDP. The Federal Reserve's forecasts are based on the PCE index rather than the CPI. The PCE is based on what businesses actually sell rather than what consumers say they buy (which may be flawed). As a result, it assigns less importance to housing than the CPI, and more to medical care. The PCE index has quirks, too—it puts a price on things that have no price, like Sunday mass and no-fee checking accounts.

• **GDP Deflator**. The *GDP deflator* measures prices paid by all sectors of the economy: businesses, government, foreign buyers of exports, as well as consumers. It's used to calculate how much of an increase in nominal GDP is due to inflation and how much is real activity.

• **Producer Price Index.** The *producer price index* (PPI) measures the prices that sellers receive, rather than what consumers pay. While it tracks prices for some services, like transportation and health, its main attraction is its index of finished goods, which excludes services and intermediate goods like the rubber and steel that eventually go into cars. Because it excludes services, the PPI is a much narrower measure of inflation than the CPI, and it is much more volatile.

• **Import Price Index.** The *import price index* tracks what we spend on imported goods, and thus signals inflationary or deflationary pressure from abroad or from the dollar's exchange value.

Gold and commodity prices are much better measures of the *fear* of inflation than as *predictors* of inflation.

• **Inflation Expectations.** These expectations can be monitored through surveys. Each month, the Thomson Reuters/University of Michigan Surveys of Consumers asks consumers what they expect inflation to be over the next year, and the next 5 to 10 years. Treasury inflation-protected securities (TIPS) provide a minute-by-minute measure of investors' inflation expectations. If a TIPS bond yields 3 percent and a regular bond yields 5 percent, the difference, 2 percent, is the expected inflation rate. Be cautious with this because numerous

technical factors push these yields around.

• **Gold and Commodity Prices.** Many investors look to gold and commodity prices for early warning signs of inflation and deflation. These prices are much better measures of the *fear* of inflation than as *predictors* of inflation. That's partly because so many other things affect them. Gold responds to global unrest, the demand for jewelry, and the dollar. Commodity prices respond to the strength of the global economy, strikes, and bad weather.

• **Wages and Labor Costs.** Hourly and weekly wages can be tracked each month in the BLS's payroll survey that I discussed in Chapter Four. The quarterly *employment cost index* is more comprehensive because it also includes benefits and bonuses. Benefits for health care, pensions, and payroll taxes are now almost 20 percent of compensation, up from 5 percent in the 1940s. Still, to determine if rising wages are inflationary, you have to compare them to productivity. If a painter's salary doubles because he can now paint twice as much with a paint sprayer, his salary per square foot has not risen at all. Labor costs, adjusted for productivity, are measured through *unit labor costs*, which the BLS reports quarterly along with productivity.

The Bottom Line

• High inflation is destabilizing and corrosive; deflation can be destructive. The best inflation is not too high nor too low: from 1 percent to 3 percent seems about right.

• The money supply is a lousy guide to where inflation is going. Better, instead, to monitor how far the economy is operating from its capacity. For example, if unemployment is 5 percent, it doesn't have much spare capacity left. Wages are the best evidence of an economy running out of capacity. If wages aren't rising, a wage-price spiral can't happen.

• Inflation is more likely to rise if people expect it to, because they'll adjust their wage and price behavior accordingly. Stable inflation expectations are a bulwark against both inflation and deflation.

Chapter Six

Drop the Puck!



The Globalization Game Is Here Whether We're Ready or Not

IN THE SUMMER of 2006, Israel fought a fierce, one-month war with Hezbollah. Israeli jets pounded southern Lebanon while Hezbollah rained rockets on northern Israel, sending residents into bomb shelters and emptying the beaches, stores, and port of Haifa, one of Israel's largest cities. Yet Israel's stock market was higher when the war was over than when it began. That year Israel's economy grew 5 percent and its currency soared.

Why so little harm to the country's economy amidst so much destructive violence? In a word: *globalization.* Israel's economy is led by advanced technology companies whose markets are the rest of the world. Just before the war, Warren Buffett acquired Iscar Metal-working Company, a precision metal-cutting tool maker. It was hit by a rocket but never missed a shipment. During the war, Hewlett Packard made one of the largest ever acquisitions of a predominantly Israeli high-tech company.

Globalization is the increased flow of goods, services, people, ideas, and capital across borders. As economies merge with each other, interest rates in one country respond to the whims of investors an ocean away, local companies' sales depend on the tastes of foreign consumers, and local consumers can choose from a cornucopia of foreign and domestic offerings. As such, globalization means a lot is riding on the skills of a country's own citizens. If they produce something the world wants, their ability to serve a far larger market translates into higher productivity and salaries. It also leaves a country at the mercy of the rest of the world's health. Israel didn't have a banking crisis but because its major trading partners did, it followed them into recession in 2009.

A Gravitational Pull from Afar

When you study economic growth, jobs, and interest rates you have to keep in mind that globalization is exerting an often hidden influence, the way a distant planet's gravitational pull alters another planet's orbit. Local business and consumers could be doing fine, but if the global economy is sickly then U.S. exports will be weak, affecting jobs, incomes, and growth at home. Americans' wages will be tugged up or down by what workers making the same thing earn in other countries. The price of gasoline is subject to how much oil China and India consume. And policies Congress wants for favored industries may be dropped because they violate world trade rules.

The best yardstick of this growing interdependence is in the remarkable expansion of global trade. Since 1950, global trade has outstripped world gross domestic product (GDP) growth by 6 percent to 4 percent, according to the World Trade Organization (WTO).[2] Exports account for more than 40 percent of China's, Germany's, and Israel's GDP, and more than 80 percent of Ireland's. Even in the United States, which depends less on trade because of its gigantic internal market, exports have risen from 5 percent of GDP in the 1960s to 11 percent in the 2000s. That number should head higher as U.S. firms seek their fortunes among the emerging markets' nouveau riche consumers instead of hunkered down Americans.

We usually think the benefit of international trade is more exports. But that's a blinkered view. Imports are just as important, perhaps more important, because they enrich consumers. Think of all the things you'd forsake if borders were closed: fresh fruit and tropical flowers in the dead of winter, British novelist J.K. Rowling's Harry Potter novels, cheap oil from Saudi Arabia (okay, a mixed blessing), Hyundais.

Countries even benefit by importing something they could make themselves. Why do parents hire a nanny when they could stay home and raise the child themselves? Because it lets them earn the money to buy a nicer home and send the child to college. The same principle of *comparative advantage* is why rich countries buy toys and clothing from poor countries: so that their own workers

can earn more building aircraft, conducting heart bypass operations, or making movies.

Yet, comparative advantage doesn't explain why many countries export and import similar things. For example, why does France sells Renaults to Germany while Germany exports Volkswagens to France? Why don't the French stick to buying Renaults and Germans to Volkswagens? Because consumers like choice. Just as your town has numerous pizzerias catering to different tastes in pizza, French and German consumers want to choose from more than just a few brands of car.

Giving consumers this much choice would be impossible without globalization. Cars require huge economies of scale to make cheaply and a single country's market by itself can't support more than a few brands. When global barriers come down, numerous small national markets become a big global market that numerous companies can now profitably serve. Singapore and Luxembourg are tiny countries but are among the richest because their companies and consumers are part of a global market. The competition inevitably improves the quality of the domestic product, such as when a flood of Japanese imports forced U.S. manufacturers to improve their own quality.

The expansion of trade from things we drop on our foot to things we carry around in our brains terrifies many Americans.

It’s Complicated

To economists, the benefits of both exports and imports are so obvious that it’s one of the few things this notoriously fractious profession agrees on. Yet, in recent years, trade has changed radically, rattling even normally stalwart supporters. Traditionally, we bought toys, clothing, and other things from poor countries that required more manual and less intellectual labor. We bought more advanced products like aircraft, software, and microprocessor chips from other rich countries.

But in recent decades, China, India, and Russia have joined the global workforce and now sell the sorts of advanced products we long thought were invulnerable to such competition. The collapsing cost of blasting megabytes of data across undersea cables makes it possible for foreigners to read Americans’ X-rays, take their hotel reservations, or report on town council meetings. Alan Blinder, a former vice-chairman of the Federal Reserve, has estimated that perhaps a quarter of U.S. jobs can now be done offshore.

This expansion of trade from things we drop on our foot to things we carry around in our brains terrifies many Americans who fear that even the most advanced jobs will disappear at the hands of foreign competition. Just consider the storm of criticism that greeted Gregory Mankiw, a Harvard professor who, while serving as chairman of George Bush’s Council of Economic Advisers in 2004, said outsourcing was just as beneficial as traditional trade. The Republican Speaker of the House, Dennis Hastert, accused Mankiw of failing a “basic test of real economics.”[3]

But, Mankiw was right. While cheaply written software from India may put some U.S. programmers out of work, it makes U.S. consumers of software better off. Cheap software may help some U.S. companies develop products that they can then sell abroad. This then enables the company to hire the laid off programmers in a new capacity.

That so many Americans are fearful of outsourcing is understandable. Why, they might imagine, would anyone pay them (or a Japanese or British worker)

more than a Chinese or Indian worker with the same university degree? The reason is that a U.S. worker's productivity comes not just from her own education and skill but the social, economic, and political infrastructure around her: the advanced equipment she uses, the cables that transmit her telephone and Internet traffic free of static and brownouts across the country and back, highways that get her and her coworkers to the office and their products to market, trustworthy courts that enforce contracts and settle disputes with customers and suppliers.

While trade does not rob Americans of jobs, it alters the balance between winners and losers.

Expanded trade in services plays to the United States' strength—about one-third of our exports are already services from Hollywood films to engineering, architectural, and financial services. The Shanghai World Financial Center, which on completion in 2007 became China's tallest skyscraper, was designed by Kohn Pedersen Fox, a New York-based architecture firm that gets 50 to 85 percent of its business outside the United States. Apple's iPod is assembled in China, but much of the finished product's designs, components, marketing and value were added elsewhere. Indeed, according to a study by the Personal Computing Industry Centre at the University of California, Irvine, just 2 percent of all the wages earned in the sale of an iPod are earned in China, while 70 percent are earned in the United States. When Apple sells an iPod in Germany, it shows up as an export from China, but most of the benefit flows back to the United States.

There's a caveat to this story, though. Trade does not make Americans collectively poorer, but it does alter *the balance between winners and losers.* In the case of the iPod, the winners, besides Americans who buy iPods, are clearly Steve Jobs and Apple's employees. The people who sell the iPod in U.S. stores aren't really affected. Their jobs don't require high skills but they're also relatively insulated from overseas competition. The losers are the people who may have assembled iPods in the United States but can't compete with the low wages paid to factory workers in China. Trade can thus aggravate inequality,

eroding wages for formerly middle-class workers while rewarding those at the top.

A Question of Balances: Trade Deficits and Surpluses

Trade has expanded over time because:

- Consumers around the world are getting more affluent and want more choices.
- The cost of getting stuff across the ocean has plummeted thanks to jet engines, the shipping container, and the fact that valuable things weigh less these days: some don't weigh anything at all and can be zapped across fiber optic cables.
- Barriers to trade have fallen steadily.

Even as exports and imports grow over time, though, countries may swing from a trade surplus—that is, from exporting more than it imports—to a trade deficit and back, because of short-term influences, including:

- **How Healthy a Country and Its Trading Partners Are.** If European consumers are sickly and U.S. consumers are robust, the United States will import a lot from Europe but its exports to Europe will suffer, which will widen the U.S. trade deficit.
- **The Terms of Trade.** The relative prices of a country's exports and imports also influence trade deficits. If you own an apartment in a neighborhood that suddenly becomes fashionable, you can raise the rent without investing a dime on renovations. Similarly, a country blessed with resources the rest of the world wants reaps a windfall. Russia's trade surplus soared in the 2000s because soaring demand made its oil more valuable. The reverse is also true. Like a tenant whose rent doubles because his neighborhood has gentrified, the United States had to pay more for oil in the 2000s because it was so much in demand by other countries.

Some countries run deficits year after year while others run surpluses.

This reflects different saving and spending habits.

• **Exchange Rate.** A lower currency makes exports cheaper and imports more expensive, so shifts in the exchange rate have a big impact on trade deficits and surpluses. But the impact is fleeting if the lower currency sets off an inflationary spiral and exporters jack up prices, wiping out any competitive advantage.

Conversely, a stronger currency doesn't spell the end of exports: companies can adjust by cutting their own costs or accepting thinner profit margins.

These factors can push exports and imports up or down in the short run yet some countries run deficits year after year while others run surpluses. Such persistent gaps reflect underlying differences in spending and saving. The United States persistently consumes and invests more than it produces because it has a shortage of saving. That extra consumption thus sucks in imports, leading to a trade deficit. Conversely, a country that always consumes less than it produces will have a trade surplus. Germany has chronically weak consumer spending, a reflection of its aging populations and a national obsession with saving. German stores don't open on Sunday unless they're in railway or gas stations and can only have sales on certain days of the year.

Meet Mr. Smoot and Mr. Hawley

Global trade is one of the great economic success stories. One study by Scott Bradford, Paul Grieco, and Gary Hufbauer estimates the average American household is some $10,000 per year richer thanks to the post-war expansion of trade.[4]

Given that, you'd think tearing down tariffs, quotas, and other barriers to trade would be wildly popular. In fact, the public and politicians generally prefer protectionism—that is, the sheltering of domestic industries from foreign competition—to free trade.

Free trade is a tough sell because its benefits are less obvious than its costs. Imports make the majority of consumers better off, but they seldom know or care, whereas companies and workers that lose their livelihoods to imports are quick to let their representatives in Congress know. That's why free trade politically is usually a loser. When John Edwards ran for president in 2004, he would rue the loss of textile factory jobs in North Carolina and lament that some families couldn't afford winter coats for their children. Yet the imports that cost those textile workers their jobs are an important reason why children's clothing cost almost 60 percent less in real terms than in 1980.

Given this political hostility, it's remarkable that free trade has made so much progress. Before World War II, protectionism was the stated preference of Republican presidents, which is why Herbert Hoover signed into law the Smoot-Hawley Tariff Act in 1930. It raised tariffs on thousands of products and triggered outrage and, in some cases, retaliation from other countries. Global trade was already collapsing, but Smoot-Hawley accelerated the process.

Fear of a repeat has since helped free trade put down roots in the halls of power around the world. In 1934, Congress passed the Reciprocal Trade Agreements Act. It shifted responsibility for trade policy to the president who is less susceptible to narrow, protectionist interests and more likely to see trade agreements as a foreign policy bargaining chip. In 1947, the world signed onto global rules under the General Agreement on Tariffs and Trade (GATT). In 1995,

GATT changed its name to the World Trade Organization (WTO). Visitors often ask the WTO's chief, Pascal Lamy, if the two men whose pictures hang in his office are his relatives. He says they are Senator Reed Smoot and Representative Willis Hawley, the "true founders" of the WTO.

The GATT and WTO have been joined by proliferating bilateral and regional trade groups, like the European Union and the North American Free Trade Agreement. Still, like a virus, protectionism is always mutating, from the tariffs, quotas, and subsidies of old to preferential government procurement ("Buy American" or "Buy Chinese"), restrictive licensing requirements, local monopolies, and trumped-up health, safety, and environmental standards. For instance, for 90 years, Australia kept out New Zealand's apples supposedly for sanitary reasons. Similarly, the United States has kept Mexican truckers off its roads claiming Mexican drivers are not safe, when in reality U.S. truckers just don't want the competition. The next big wave of protectionism could be green, as countries whose companies buy permits to belch carbon slap tariffs on countries that don't.

Into the Weeds

The benefits of trade are a matter of high-minded economics, but trade relations is a bare knuckle business. The president conducts trade policy through the U.S. trade representative. The trade representative is not there to debate the nuances of economic theory but to cajole and threaten other countries. The House of Representatives' Committee on Ways and Means and the Senate Finance Committee oversee trade policy. The Senate must ratify treaties. Other countries are reluctant to sign a treaty that the Congress may amend before ratifying. To smooth the way, Congress sometimes give the president *trade promotion authority,* sometimes called Fast Track, which permits him to negotiate treaties that Congress can approve or reject, but not amend.

Individual legislators regularly take trade into their own hands, introducing bills that would punish other countries for protectionist behavior. The president usually stops them, but then uses them as leverage to extract concessions from the offending country. Dozens of bills, for example, in recent years aimed to hit China for keeping its currency artificially low. None have become law, but both George W. Bush and Barack Obama have used them as leverage to get China to let its currency rise.

Complaints about imports usually fall into one of three categories: subsidies, dumping, or surges. A *subsidy* is a government grant or some other favorable treatment that lowers the cost of the import. *Dumping* occurs when a foreign company sells its products abroad for less than it costs to make them, or for less than it charges at home. A *surge* is a sudden increase in imports.

Subsidy and dumping complaints are heard by the Import Administration, part of the Commerce Department. If the Import Administration agrees subsidies or dumping have occurred, as it does 95 percent of the time, it sends the complaint to the federal International Trade Commission (ITC), an independent, bipartisan panel, to determine if the subsidy or dumping actually hurt anyone in the United States. About 60 percent of the time it concludes that it did. In the case of subsidy it recommends a countervailing duty. In the case of dumping it recommends an antidumping duty. The president has little discretion here: if the

ITC says injury has occurred, the Commerce Department generally has to impose the duty.

Like a hockey referee, the WTO gives countries an impartial venue to settle their trade disputes rather than mixing it up in the parking lot.

A company accused of causing a surge of imports hasn't actually done anything wrong: it's just making it hard for local competitors to survive. U.S. companies or unions can ask for a safeguard against the surge under one of two laws: Section 201, which applies to any country, or Section 421, which only applies to China. Safeguard cases are decided by the ITC. If it concludes that a safeguard is warranted, the president has the discretion to say no.

World trade is like hockey: fights are inevitable, but they're more dangerous when the players leave the rink and settle matters in the parking lot. Like the referee who hands out the penalties and lets the game continue, the WTO gives countries an impartial venue to settle their trade disputes rather than mixing it up in the parking lot. In 2002, George W. Bush slapped tariffs on steel from numerous countries. Rather than strike back, the European Union complained to the WTO. The WTO ruled the tariffs illegal and gave the EU permission to retaliate. As the EU drew up a list of retaliatory moves, Bush backed down, and withdrew the tariffs. The EU declared victory and sheathed its sword.

Still, free trade is a tough sell at the best times, and won't make much progress in coming years, if any. Prolonged high unemployment only makes people and their leaders more suspicious of competition. The global balance of power is also changing. For decades the United States let China and other poor countries get away with protectionism in the interests of letting them catch up. China is still poor but Americans now see it as a full-fledged economic and political rival and expect it to play by rich-country rules.

The Bottom Line

• Falling trade barriers, rising affluence, and the plunging cost of selling things across borders have fueled globalization. Able to buy from and sell to the entire world, even small countries can achieve exceptional levels of wealth.

• Trade makes the United States a whole richer. But the benefits are not shared equally. Especially as services trade grows, the biggest gainers will be the highest skilled workers while those with the least skills will see their wages eroded.

• Free trade is not politically popular and every country routinely indulges its protectionist impulses. Yet free trade survives because countries have also agreed to subject their actions to the rules of the World Trade Organization which keeps trade spats from becoming trade wars.

Chapter Seven

All the World’ s an ATM



Knitting Global Markets Together

THE MESS CREATED by subprime mortgages issued to people of doubtful credit should have been the United States' private headache. After all, the loans were dreamed up to satisfy the American obsession with home ownership. Yet, to leverage themselves to the hilt, Americans had to borrow. If they could only borrow from other Americans, the competition for money would have driven up U.S. interest rates and snuffed out the frenzy.

But, as we learned in the previous chapter, economic borders are melting, in particular for borrowers. Factory workers in Shanghai, mutual fund investors in the United States, sovereign wealth funds in the Persian Gulf, and banks in Düsseldorf are all connected to a global ATM that continuously channels money from savers in one part of the world to borrowers in another. Thus, when U.S. homeowners and the U.S. Treasury needed money, the global ATM matched them to Germans, Chinese, and Saudis who needed a place to invest their savings.

When home prices turned down, the pain was felt not just in the U.S. financial system but by the banks and investors of every country that helped finance the housing boom. IKB, a once sleepy German bank that ran out of opportunities to lend to local businesses, loaded up on subprime mortgage-backed securities. In 2007, it had to be bailed out by the German government. It was joined in the injured ward by French, Swiss, and British banks, Australian hedge funds, and Norwegian municipalities.

The subprime mortgage crisis eloquently demonstrates how the global markets for assets, debts, and currencies have knit the world together. It provides many benefits, such as helping countries finance investment when they don't have enough saving and enabling investors and borrowers alike to spread their risks around. But just as modern jet travel allows viruses to cross oceans, modern capital markets rapidly transmits one country's problems to others. And unlike with exports and imports, the currency and capital markets aren't governed by a shared rules of the road. They're a free-for-all prone to crisis.

Financing Deficits and More

If you spend more than you earn, you cover the difference by running up your credit card, running down your savings, or cashing in some investments. For a country, the equivalent is running a *current account deficit*—paying foreigners more for imports, interest, and dividends than it receives from them. To finance such a deficit, a country has to either borrow or sell some assets, such as stocks, bonds, Rockefeller Center, or a beer company to foreigners, with the result that the country's foreign debt mounts.

There's nothing wrong with a current account deficit. Just as a start-up company needs outside investors to develop its technology, a country often lacks the savings to exploit its bountiful investment opportunities. Foreigners lend it the money or purchase shares in its companies so that they can build railroads, dig mines, or erect factories. The investments make the country wealthier, generating wages and profits it can use to repay the foreign investor.

Nowadays, though, far more capital crosses borders than what's needed simply to finance deficits. In 2009, for example, foreigners bought and sold about $40 trillion worth of U.S. stocks and bonds, more than 10 times the total trade that year. According to the Bank for International Settlements, foreign exchange trading now averages more than $3 trillion *per day.* These flows do more than transfer money from a saver in one country to a borrower in another; they make it possible for both investors and borrowers to diversify. U.S. investors, for instance, can diversify their portfolios by owning mature, stable U.S. companies and riskier but faster growing companies from Brazil and China, while U.S. companies can finance their expansion by raising money from Brazilian hedge funds and Chinese banks.

Still, the stunning scale of capital movements poses huge risks. Imagine carrying a cookie sheet filled with water across the kitchen floor. Just the slightest trip and water sloshes over the sides. The global capital market is like that cookie sheet. Enormous amounts of money flow effortlessly across borders around the clock but even a minor disturbance can divert huge sums from one market to another, sending stocks, interest rates, and currencies sharply up or

down.

Foreign borrowing binges almost always end badly, as it did for the United States. It could have been worse.

The easy availability of global capital means a country can finance bigger deficits for longer than when capital was less mobile and harder to get. Most of the time that's good, but sometimes it lets a country dig itself deeper into debt. In the late 1990s, the United States ran current account deficits reflecting its companies' hunger for capital to invest in new technology. In the 2000s, it kept on running current account deficits, but this time to finance our lifestyles, such as suburban McMansions with granite-topped kitchen counters. They did nothing to enhance future growth.

Foreign borrowing binges almost always end badly, as the United States' did. It could have been worse. In small countries, foreign investors suddenly flee a country, sending its interest rates up sharply and its economy into recession; it happened to Mexico in 1994 and throughout east Asia in 1997. Large countries like the United States are spared that trauma but the result is still miserable.

The Currency Market

Of all the thousands of prices in a modern economy, the most important may be the price of its currency. It's a real-time vote of confidence in a country's economic health and a transmission channel for prices, investment, and production.

Currencies move about as predictably as a toddler in a toy store, as investors at home and abroad shift their money based on the latest bit of data or on a whim. Yet there is method to their madness. The currency of a country that persistently runs higher inflation than its trading partners will fall. In the 1970s and 1980s Britain's inflation was persistently higher than Germany's, and so the pound declined against Germany's deutsche mark, the currency it used until 2002 when it adopted the euro.

Why? Suppose a Briton wants to buy a Volkswagen. If higher inflation raises its price at home, she'd exchange her pounds for deutsche-marks and buy it in Germany. Eventually, that selling will drive the pound down and the deutsche-mark up—until the Volkswagen was just as expensive in Germany. Over time, then, currencies move toward their *purchasing power parity*, which is the theoretical value of a currency that would make a basket of goods cost the same in two countries.

The *Economist* magazine's Big Mac index is a quick-and-dirty measure of currency's purchasing power parity. The magazine tracks the cost of a Big Mac in over 20 countries. In July 2009, a Big Mac cost 33 pesos in Mexico, and $3.57 in the United States. To equalize those prices, the dollar would have to trade for 9.24 pesos. In fact, it traded for 13.6 pesos, implying the peso was about 33 percent undervalued against the dollar.

Purchasing power parity is a lousy guide to a currency's movements in the next few years. In the short term, the outlook for economic growth, inflation, and interest rates is more important. If Sweden is entering recession, its central bank will probably cut interest rates. That makes Swedish krona bonds less attractive. Another factor is a country's terms of trade: If oil prices soar, that raises the

value of Canadian exports and sucks capital into its oil industry, feeding demand for Canadian dollars.

In Search of Stability

Erratic exchange rates can be a pain, as you know if you've ever had to decide whether to buy euros when you book your French vacation or wait until you travel. For a business trying to decide where to open its next branch the uncertainty is even more debilitating. And a country is always tempted to drive down its currency to boost its exports at the expense of its trading partners.

Since the collapse of the Bretton Woods system in 1971, the global monetary system has been a free-for-all.

Fixed exchange rates eliminate both uncertainty and the temptation of competitive devaluation. When countries all fixed their currencies to gold, they in effect fixed them to each other, as well. The gold standard collapsed in the 1930s but world leaders resurrected it in modified form under the Bretton Woods agreement, named for the New Hampshire resort where they met in 1944. Participating countries fixed their currencies to the dollar and the United States fixed its dollar to gold; it would convert another country's dollars to gold at $35 per ounce. The International Monetary Fund would police the system, lending money to a country that struggled to finance a current account deficit, and permitting it to devalue if necessary to eliminate the deficit altogether.

The system fell apart when the United States began to run current account deficits in the 1960s, which left foreigners holding a lot of dollars. Eventually, it dawned on everyone that the United States didn't have enough gold to redeem all those dollars. In 1971, Richard Nixon shut the gold window: the United States would no longer exchange its gold for dollars. The world entered a period of generally *floating exchange rates.*

Since then, the global monetary system has been a free-for-all. Several times a year, the heads of state, central bank governors and finance ministers of the

biggest economies—the G7, and, increasingly, the G20—meet to discuss the global economy. Afterward they issue long, anodyne statements promising cooperation and a resolute attack on their various economic flaws. Occasionally this makes a difference. In 1985, what was then the G5 kicked off a big decline in the dollar, and in 1987, the G7 brought that decline to a halt. In 2008, their pledge not to let any more big banks fail helped end the panic that began with the collapse of Lehman Brothers. Usually, though, it doesn't matter. There's no one to enforce the commitments. The IMF has no leverage over countries that are themselves lenders, like China, or even over borrowers that visit the global ATM instead. Unlike the IMF, the ATM doesn't attach conditions to its money such as freer markets or smaller budget deficits.

Fixed exchange rates didn't die with Bretton Woods. They are now regularly adopted by individual countries, usually without the consent of the country they peg to. This gives their businesses a predictable investment environment and, by eliminating devaluation as the solution to rising costs, controls inflation. Over 60 countries, from China to Belize, peg to the dollar in some way.

As with any form of price-fixing, a fixed exchange rate won't last if the fundamentals are all wrong, such as excessive inflation or persistent current account deficits. The central bank supports its currency by purchasing it in the open market in exchange for foreign currencies in its reserves. If reserves run low, it has to raise interest rates to draw investors back in. But it may not have the fortitude to keep rates high if recession threatens. As a last resort, a country can impose capital controls, in effect threatening to jail anyone who trades the currency outside its official value.

Hong Kong has successfully pegged its currency to the U.S. dollar since 1983 thanks to a gigantic hoard of foreign exchange reserves and a willingness to endure a deep recession to keep it there. Yet the only sure way for a country to lock in an exchange rate is to surrender its monetary passport and adopt another country's currency altogether. Ecuador, Panama, and El Salvador use the dollar, while 16 European countries exchanged their currencies for the euro. But, this adoption process comes at a price—when you give up your monetary citizenship you live by the interest rates of the economy you adopted. You can no longer cushion your economy from domestic misfortune by using a weaker exchange rate to boost exports. You may conclude you can't live with these fetters and switch back to your old currency. Indeed, the euro's future is clouded by the

possibility that some countries may renounce its use.

The Case of China's Yuan

Since 1997, China has kept its currency, the yuan, also called the renminbi, either steady or changing only gradually against the dollar. It succeeds for several reasons.

First, it has capital controls, which means you need the government's permission to buy and sell the yuan. Currency dealers who trade in the black market to avoid those controls have been busted on television. Second, it keeps the currency artificially low, not artificially high. To force the currency higher, speculators would have to buy up a lot of it. Yet the central bank can simply print as much as it wants to meet their demand, accepting in return their U.S. dollars, euros, or other currencies. Although this practice would normally lead to inflation, China has avoided that in part because productivity has kept pace with its rapidly rising wages. Third, and most important, Chinese households and companies save a lot. They plow those savings into foreign assets like Treasury bonds, which props the dollar up against the yuan.

China's exchange rate policy has been a huge boon to its development. It has fueled exports, enabling it to move millions of workers from subsistence farming to better paying, more productive factory work. But it also contributed to the crisis. China needed to put its excess savings somewhere, and the United States needed the money. So China put a huge chunk of its money into Treasurys, keeping the United States' long-term interest rates artificially low, fueling the housing bubble.

Eventually, China will want to abandon this system. By roping its currency to the dollar it has outsourced much of its monetary policy to the United States. China's economy may need higher interest rates than America's but raising interest rates may suck in speculative capital, blowing up property prices and threatening financial instability, inflation, or both.

The American Dollar: The World's Problem

One of the rewards for the United States for emerging as the economic superpower after the Second World War was its dollar became the place where global central banks liked to park their spare cash. At the end of 2009, the world's central banks held $8 trillion in reserves between them and 60 percent were in dollars, insofar as could be determined.

The U.S. Treasury bond market is to the world what money market mutual funds are to ordinary investors: a safe, dull place to store cash you need in a hurry.

The dollar owes its reserve-currency status first to the United States' leading share of the global economy. Most countries in the world do business with the United States. International trade is routinely priced in dollars even when an American isn't in on the transaction. The United States' legal and political stability means anyone with dollars is pretty sure the country that printed them will still exist when the time comes to spend them.

The dollar will lose this status one day as the United States' share of global GDP shrinks. But for now there are no realistic rivals. Because of China's capital controls, the yuan is mostly useful for buying stuff from China. For a central bank to keep its reserves in yuan would be like you keeping your savings in frequent flyer miles. As for the euro, are you sure that if you own a 10-year Greek euro bond, Greece won't have abandoned the euro 10 years from now—and repay you in drachmas?

Thus, the U.S. Treasury bond market is to the world what money market mutual funds are to ordinary investors: a safe, dull place to store cash you need in a hurry. This gives the United States what Valéry Giscard d'Estaing, then the French finance minister, in 1965 called the *exorbitant privilege* of borrowing

astronomical sums in its own currency. If the dollar depreciates, the lender has a problem, not the United States, a point Nixon's Treasury Secretary made in 1971 to the great irritation of the Europeans.

Of course, being inundated with preapproved credit cards also seems like an exorbitant privilege until the credit card bill arrives. At some point, the United States may wish the world hadn't let it borrow quite so easily. All that foreign debt has costs, and not just the interest bill that foreigners send us every year. There are political implications, as well.

After Britain and France seized the Suez Canal in 1956, the United States threatened to dump Britain's bonds, driving down the pound, if its forces didn't withdraw. Britain complied. Who knows? Maybe China will do to the United States what the United States did to Britain. In other words, if one day China takes a dislike to American foreign policy it may threaten to dump Treasurys, which would perhaps drive up American interest rates. Skeptics note that by hurting its biggest customer this would also hurt China. But then countries routinely put national security ahead of economic expedience: it's why the United States embargoes Cuba. This "balance of financial terror," as Larry Summers called it in a speech in 2004, should keep someone at the Pentagon awake at night.[5]

Into the Weeds

We measure a country's dealings with the rest of the world with the *balance of payments,* which has two sides: the *current account* and the *capital account.* The *current account* includes money we send to foreigners for services rendered: imports and exports of goods like oil and cars and services like tourism, investment income such as interest on bonds and profits that corporate subsidiaries send back to the head office, and transfers, such as money immigrants send home.

Betting on currencies is best left for those with more money than pride.

A country that runs a $10 current account deficit must finance it by attracting a net $10 worth of capital, that is, it must run a *capital account* surplus of exactly the same size. Conversely, a country with a current account surplus has to lend to another country or buy its assets.

Each quarter, the Bureau of Economic Analysis releases the balance of payments that provides a snapshot of global capital movements. (See Table 7.1.) It includes the current account and its components, and the capital account: how much flowed into and out of the country in the form of stocks, bonds, direct investment, and so on. The two are supposed to equal, but seldom do. (Just to confuse you further, these official government statistics refer to the capital account as the *financial account.*)

Table 7.1 The International Ledger: The Balance of Payments, 2009

Source: U.S. Bureau of Economic Analysis

Current Account			
Money in		**Money out**	
Exports of goods and services	$1,571 bn	Imports of goods and services	$1,946 bn
Investment receipts (interest, dividends, etc.)	588	Investment payments (interest, dividends, etc.)	467
		Other	125
Total:	2,159	Total:	2,538
Current account deficit: 378*			
Capital Account			
Money in		**Money out**	
Foreign acquisitions of U.S. companies, land, etc.	135	U.S. acquisitions of foreign companies, land, etc.	269
Foreign purchases of Treasuries	584	U.S. purchases of foreign stocks and bonds	208
Other foreign purchases (or sales) of U.S. assets, derivatives	–413	Other U.S. purchases/ sales of foreign assets	–336
Total:	356	Total:	140
Capital account surplus: +216*			

* Statistical discrepancy between current and capital accounts: 162

The Bottom Line

• Global capital markets let investors diversify their portfolios and borrowers choose from different sources of capital. There's a downside, though: Investors' savings may be battered by events in far off countries, while companies and countries can abruptly have their access to capital cut off.

• Currencies over time reflect their purchasing power and thus countries' inflation. But in the short run, economic growth, interest rates, and current and capital account balances drive currencies, sometimes violently.

• The United States borrows cheaply abroad in great part because foreign central banks like to hold dollars: they're safe, easy to convert to other currencies, and backed by a strong, stable country.

Chapter Eight

All the President’ s Men



They Don’t Control the Economy But They Sure Do Try

PRESIDENTS LIVE or die by the economy. If you tracked public disapproval of the president against the unemployment rate, you’d see they move closely together. Unfortunately, being held responsible for the economy isn’t the same as being able to do something about it. Economic growth is the product of countless unorchestrated actions by business, consumers, innovators, investors, and government at home and abroad. A president may get a change in taxes or spending through Congress, but the effect on growth is often fleeting and hard to detect. The government agency with the most immediate, tangible influence on the economy, the Federal Reserve, is also the one the president is least able to push around.

Republicans and Democrats argue incessantly about who’s better for economic growth, with Republicans preaching the mantra of small government and low taxes and Democrats the elixir of enlightened management of the economy. Who’s right? According to a 2006 study by Elliot Parker at the University of Nevada, Reno, the economy has grown faster under Democratic than under Republican presidents since 1929. It’s hard to say why, though, because a president’s policies may not show results for years, and then, not the intended ones.

For instance, the inflation that Gerald Ford and Jimmy Carter struggled with began with mistakes by their predecessors, Lyndon Johnson and Richard Nixon. The deregulation often attributed to Ronald Reagan actually began under Carter. The Internet revolution that buoyed the economy in Clinton’s last years in office could be traced to the Defense Department’s development of a communications network in the 1960s that could survive a nuclear attack. And who’s to blame for the financial crisis that made the last years of George W. Bush’s presidency and the first of Barack Obama’s so miserable? You’d have to finger a litany of disconnected regulatory and political decisions stretching back two and a half decades.

Still, presidential decisions do matter for individuals, companies, and industries, and if done right, they can help the economy grow faster and spread

the fruits of that growth to more people.

Presidents populate their administrations with economic experts whose influence depends on their personal rapport with the president and the president's willingness to listen.

The Company Presidents Keep

The president implements economic policy both through his own decisions, aided by a network of advisors and government departments, and through the people he appoints to run regulatory agencies.

Presidents populate their administrations with economic experts whose influence depends on their personal rapport with the president and the president's willingness to listen. Inevitably, the economic advisors compete to be heard with political advisors, Congress and the president's own predispositions, and they often don't win. The economic experts themselves may disagree. When the little-known economist, George Warren, persuaded Franklin D. Roosevelt to take the United States off the gold standard, another adviser called it "the end of western civilization." History, however, shows that Warren was right.

With a staff of 25, the National Economic Council is one of Washington's smallest economic agencies yet potentially its most powerful.

Of the numerous agencies that give the president economic advice, four are key.

1. **National Economic Council (NEC).** With a staff of 25, the National Economic Council is one of Washington's smallest, yet most powerful economic agencies. Bill Clinton created the NEC in 1993 and named Robert Rubin as its first director. From a warren of offices in the West Wing of the White House, the NEC filters the economic advice that pours in from the rest of the administration and presents its findings and recommendations to the president. Yet, other advisers still have channels to the president. The NEC is supposed to be an impartial broker between Treasury, the Office of Management and Budget (OMB) and other economic agencies. In practice, though, the

NEC director often has strong views of his own and may be at odds with other agencies, as Larry Lindsey was as George W. Bush's NEC director and Larry Summers occasionally is as Obama's.

2. **The Office of Management and Budget (OMB).** The Office of Management and Budget develops the president's fiscal and budget policy. The OMB director's job boils down to finding a way to fit a gigantic expanse of budget requests into the straitjacket of projected tax revenue. This means both weighing in on high profile initiatives and screening government agencies' many mundane budget requests.

One of the OMB director's main jobs is to say no to the constant demands for more spending or lower taxes from Congress and other agencies. The *Wall Street Journal* once reported that to warn off supplicants, Mitch Daniels, George W. Bush's first budget director, tried unsuccessfully to have his telephone's hold music changed to play the Rolling Stones' "You can't always get what you want." But, the fact remains: Budget directors are routinely overruled by political priorities. During Bush's first six years, including Daniels' tenure, spending galloped ahead without so much as a veto. Peter Orszag, Obama's first budget director, kept Obama's health reform from adding to projected deficits but made little progress halting the upward spiral of health costs.

The OMB also screens the regulations issued by other federal agencies, from the Environmental Protection Agency to the Food and Drug Administration. If it thinks a regulation is poorly formulated or justified, it can send it back. The OMB also oversees the nuts and bolts of how the government and the civil service are run.

3. **Council of Economic Advisers (CEA).** The Council of Economic Advisers is the president's in-house think tank. It is a creature of the Employment Act of 1946 and that era's utopian belief that good economics can produce better government. The CEA is peopled mostly by itinerant economists plucked from academia or think tanks for two- to four-year stints. The council's three members, one of whom is chairman, have included some of the country's best-known economists, including James Tobin, Burton Malkiel, Alan Greenspan, Joseph Stiglitz, and Ben Bernanke. It is a nonpartisan rite of passage for many of the country's most promising economists. Paul

Krugman and Larry Summers, though both Democrats, worked for Martin Feldstein, the Republican chairman of Reagan's CEA.

The CEA is supposed to give the president expert economic opinion, no matter how discomforting. When Christina Romer, Obama's first CEA chairman, briefed him on horrible job numbers before either had taken office, Obama replied, "It's not your fault—yet." It's also supposed to stop bad ideas from seeing the light of day. As with all government agencies, though, the CEA's influence primarily depends on how much the president values it. John F. Kennedy put great faith in the opinions of his CEA chairman, Walter Heller. On the other hand, Feldstein's harping about the deficit made him so unpopular in the White House that Reagan's Treasury Secretary Donald Regan once recommended that Feldstein's annual economic report be thrown in the garbage.

4. **The Treasury.** Created in Congress' first session in 1789, the Treasury is the oldest and arguably most prestigious federal department and the only one with its own tunnel to the White House. Secretaries of the Treasury have always been among the most prominent cabinet members, starting with the first, Alexander Hamilton. The Treasury's formal responsibilities are quite prosaic: It collects taxes and manages the national debt.

Informally, the Treasury Secretary's main job is chief economic spokesman of the administration and indeed the country. His actual influence varies. He may be a major architect of economic policy or he may mostly recite White House talking points.

Most federal regulators are independent but their actions still reflect the inclinations of the political appointees who run them.

However, in the competition for the president's ear, the Treasury Secretary has formidable advantages: a gigantic staff of experts and desk officers and a rolodex of finance ministers and central bankers from around the world. The world's budget directors have no equivalent to the regular confabs finance ministers hold

around the world. The Treasury Secretary is official spokesman on the dollar, and traders cling to his words like burrs to his clothes.

The Long Arms of the Law

The president's economic advisors are the public face of his economic policy. Yet many of the most momentous economic decisions emerge from regulatory agencies. There are some 50 such agencies from the National Labor Relations Board to the Office of Pipeline Safety. Most are independent in that they enforce rules defined in law rather than follow the dictates of the president or Congress, but how they interpret the law reflects the inclinations of the people who run the agencies and the politicians who appoint them.

For the economy, the most important regulators are those overseeing the financial system since they can determine how freely and safely credit flows. U.S. bank regulation is ridiculously complicated. Some banks are state chartered and some are federally chartered. Some are, technically, thrifts (or savings-and-loans) institutions. Finally, most banks are owned by holding companies that might have lots of other subsidiaries that aren't banks.

This has resulted in a sprawling collection of regulators, including:

- **The Federal Reserve.** As the big dog of economic regulators, it regulates bank holding companies like Citigroup Inc. and J.P. Morgan Chase & Co. and state-chartered banks that are members of the Federal Reserve System.
- **The Office of the Comptroller of the Currency (OCC).** Regulates nationally chartered banks, which includes most of the biggest banks, like Citibank.
- **The Office of Thrift Supervision.** Regulates thrifts (also known as savings-and-loans).
- **The Federal Deposit Insurance Corporation (FDIC).** Regulates state-chartered banks that aren't part of the Federal Reserve system and runs the deposit insurance fund.
- **State Banking Departments.** Share the regulation of state-chartered banks with the Fed and the FDIC.

Alongside these bank regulators, there are separate federal regulators for the markets.

• **The Securities and Exchange Commission (SEC).** Regulates securities brokers and dealers, mutual funds, and stock exchanges like the New York Stock Exchange and NASDAQ Stock Market. It also polices investment advisors, credit rating agencies, and any company whose shares trade on a stock market to ensure its financial statements comply with the law.

• **The Commodity Futures Trading Commission (CFTC).** Regulates derivatives, such as futures contracts on corn, Eurodollars, and oil, and the exchanges on which they trade, like the Chicago Mercantile Exchange and the Intercontinental-Exchange.

To a visitor, this plethora of regulators is perplexing. Since banks all do much the same thing, why are there so many regulators? Why separate agencies for stock futures and stocks? Clearly, the number of regulators is not correlated with their efficacy. Citigroup has over 100 regulators in the United States alone and over 400 around the world. Yet Citi still took on huge amounts of risk it barely understood and received infusions of federal cash to prevent collapse.

The explanation is history and politics. Long ago these firms did distinctly different things. Though the distinctions have long since blurred, many firms prefer the regulator they know to one they don't. Cynics would say they prefer the regulator they can co-opt to the one they can't. Congress plays along. Because they oversee the CFTC, Congress' agricultural committees can hit up big financial companies for donations; if they let it merge with the SEC, all that money would go to the banking committees. Americans also like competition among the regulated to extend to regulators on the theory it keeps any from getting too big and oppressive.

In 2010, Congress and Obama passed a massive financial overhaul. It will close the Office of Thrift Supervision and create the Consumer Financial Protection Bureau to take over bank regulators' jobs of writing and enforcing rules for credit cards, mortgages, and other consumer financial products. The Federal Reserve could regulate any big financial company even if it isn't a bank, if it thinks its failure could wreck the financial system. The FDIC could take over a big failing company even if wasn't a bank, pay off some of its creditors in hopes of preventing panic, and wind it down.

The federal government enforces the rules of the free market at home through

competition laws. Two agencies lead the effort: the Federal Trade Commission (FTC) and the Department of Justice through its Antitrust Division. They enforce the Sherman Antitrust Act of 1890, which prohibits anticompetitive behavior and monopolies; the Clayton Act of 1914, which prohibits anticompetitive mergers; and the Hart-Scott-Rodino Act of 1976, which requires mergers be scrutinized for competitive impact. While the two share many duties such as reviewing mergers and investigating anticompetitive conduct, there are some differences. Only the Justice Department can bring criminal charges, and the FTC has broader power to investigate questionable business practices and consumer complaints.

The activity the FTC and the Justice Department investigate is usually confined to a company or market and includes things like cartelization, price-fixing, bid-rigging, and illegal monopoly. In theory, the antitrust laws are nonpartisan but in practice, different administrations pursue these things differently. For example, Democrats are fonder of breaking up corporate monopolies or oligopolies in hopes of bringing down costs and fostering competition, while Republicans are more likely to trust market forces to loosen any would-be monopolist's grip. Thus, the Clinton Administration pursued Microsoft for years for its alleged anticompetitive behavior, but the Bush Administration settled the case with just a slap on the wrist.

Even though competition policy is usually aimed at individual companies, it can have reverberations for the entire economy. The Department of Justice's long-running antitrust suit against AT&T eventually resulted in the company's breakup into separate long distance and regional operating companies with major implications for the development of technologies and markets.

The globalization of business means antitrust rulings increasingly reach across borders. In the last decade, the European Union's competition commissioner has become a force to be reckoned with by U.S. companies; it killed General Electric's merger with Honeywell and kept up its investigation of Microsoft long after the United States dropped its own.

The Bottom Line

• Presidents don’t control the economy but they sure try. A president’s economic agenda is dictated by ideology, but how it is implemented depends on the circle of economic advisers in the National Economic Council, the Treasury Department, the Office of Management and Budget, and the Council of Economic Advisers.

• The president also exercises a lot of influence through his appointments to dozens of federal regulatory agencies. The bank regulators, for example, influence who gets credit and under what terms while the Justice Department and the Federal Trade Commission set the ground rules for business conduct and competition.

Chapter Nine

The Buck Starts Here



The Federal Reserve's Amazing Power to Print and Destroy Money

BACK IN 1986, *Newsweek* called the Federal Reserve chairman the second most powerful man in America. In 2008 and 2009, you could delete the word *second* as the Fed, under its chairman Ben Bernanke, cut interest rates, propped up banks, lent to cash-strapped companies, and bought hundreds of billions of dollars of mortgages to keep the economy from collapsing.

The Fed occupies a unique position in the United States. It is a partly public, partly private institution whose political independence rivals the Supreme Court's. It is populated by technocratic central bankers who, regardless of party affiliation, see themselves as united in their mission of low inflation and steady growth. They speak their own nerdy dialect, "Fedspeak," saying things like *monetary accommodation* instead of *low interest rates.* They revel in goofy inside jokes. A sign in the Fed's barber shop reads, "Your growth rate affects my money supply."

Spandex Money

The United States struggled for years over whether to have a central bank. Alexander Hamilton, the first secretary of the Treasury, convinced Congress to create the First Bank of the United States in 1791 to handle the infant republic's monetary affairs, over the objections of then-Secretary of State Thomas Jefferson who feared the concentration of so much economic power in one place. Hostility to the bank persisted and in 1811 Congress let its charter lapse. The Second Bank of the United States began life in 1816, but Andrew Jackson, a populist opposed to the power of money interests, vetoed the renewal of its charter, which expired in 1836.

The event that finally led to the Fed's creation was The Panic of 1907.

Without a central bank, private and state-owned banks could issue their own currencies, convertible in theory on demand to gold. In practice, one bank's dollar might be worth more than another's if investors had more faith in its stability. Banks seldom kept enough gold to redeem all the currency they issued; they would borrow from other, usually bigger, banks to handle contingencies. But if many banks faced the same demand at once, there wouldn't be enough gold to go around. As a result, many banks failed. Customers fearing others would follow, would then rush to convert their notes to gold, triggering more failures. Such panics were commonplace.

The event that finally led to the Fed's creation was the Panic of 1907, which began with a run on several banks that had lost money when customers speculated in the stock market. John Pierpont Morgan, the head of the bank that bore his name, convened New York's leading bankers in his personal library and persuaded them to meet all the demands for cash then besieging the city's troubled banks. To prevent a repeat, Congress, at the prodding of banks, passed the Federal Reserve Act in 1913.

The act said that the Fed's job was to furnish an "elastic currency." This does not mean it's supposed to print $20 bills on spandex; rather, it means expanding and shrinking the money supply as needed. This gives the Fed two powerful roles:

1. **Lender of Last Resort.** A bank that has run out of money to repay its creditors can borrow from the Fed. (In Chapter Eleven, I will show how the Fed does this.)

2. **Carrying out Monetary Policy.** By manipulating the supply of dollars to banks, the Fed can raise or lower interest rates with the goal of holding down inflation and preventing recessions, a set of responsibilities called *monetary policy.* (In Chapter Ten, I discuss this in detail.)

The Fed, over the long run, can't make the economy grow more quickly or produce more jobs; that depends on population and productivity. But in the short run, monetary policy gives it tremendous influence over the business cycle. Higher interest rates dampen spending by households and businesses and thus economic growth, eventually, restraining prices and wages. Conversely, lower interest rates stimulate spending and, with time, put upward pressure on prices and wages.

Yet, despite these powers and its leaders' earnest idealism, the Fed's efforts to steer the economy by fulfilling those two roles are often upended by bubbles, busts, inflation, deflation, oil embargoes, technology revolutions, and more, as an overview of its history reveals.

In its early years, the Fed sought to merely meet farmers' and industry's demand for credit without influencing the overall temper of economic activity. When farmers needed money to bring the harvest in, the Fed expanded the money supply so that banks could meet their needs. Then, when the farmers repaid their loans, the money supply contracted. By the 1920s, though, the Fed had gotten more ambitious, seeking to influence nationwide economic activity and inflation with interest rates.

In its history, the Fed has made two monumental mistakes. The first began in the late 1920s. Worried that speculation in the stock market was creating a dangerous bubble, it jacked up interest rates. This sharply slowed the economy

down. In October of 1929, the overheated stock market finally crashed. The Fed initially cut interest rates but then stood by as banks in the United States and around the world collapsed, unleashing a devastating contraction of credit. Precisely why remains a matter of debate. Its ability to hold down interest rates and expand credit was inhibited by a fear that foreigners would respond by dumping their dollars and demanding gold in return, draining the Fed's essential supply of the metal, though it had plenty. Regardless of the cause, the Great Depression bottomed out in 1933 when Franklin Delano Roosevelt used a bank holiday to close dying banks and recapitalize the remainder, and devalued the dollar against gold.

From the late 1940s to the late 1960s, the Fed kept growth strong, recessions short, and inflation generally low. By the late 1960s, though, its effort to keep the economy at full employment led to its second monumental mistake. It repeatedly failed to raise interest rates enough to stop inflation from ratcheting higher. Inflation and recession ensued in the 1970s. In reaction to those failures, in 1978, Congress imposed its current mandate on the Fed: full employment, stable prices, and moderate long-term interest rates. In 2010, it added financial stability.

Before the crisis, Congress paid the Fed the ultimate compliment by ignoring it.

The modern era of the Fed began in 1979 with the appointment of Paul Volcker as chairman. He promptly raised interest rates and induced two severe recessions, breaking the back of inflation. The years spanning from 1982 to 2007 became known as the "Great Moderation," a period marked by generally low inflation, declining unemployment rates, and mild, infrequent recessions. Central bankers thought they'd uncovered the holy grail of economic success—deliver low inflation and the economy will grow and everything else would take care of itself. By 2006, when Ben Bernanke succeeded Alan Greenspan as chairman, things were going so swimmingly that Congress paid the Fed the ultimate compliment: It ignored it. When someone asked a senator what he thought of Bernanke's nomination, he replied, "for what?" Seriously.

The Fed is a compromise between federally appointed officials in Washington and autonomous reserve banks controlled by private bankers.

Less than two years after Bernanke took office, the Great Moderation and the Fed's aura of technocratic competence ended with the financial crisis and recession of 2007-2009. The Fed shares the blame for the crisis, because of its prior lax regulation of banks and mortgages and, according to some, holding interest rates as low as it did, contributing to speculation and the housing boom.

Once the crisis was underway, Bernanke, as he later described it, "was not going to be the Federal Reserve chairman who presided over the second Great Depression." Using the same willingness to experiment that he admired in Roosevelt, he pushed the limits of the Fed's powers to lend to all and sundry, slash interest rates, and buy up bonds. Another Depression was avoided but at a price: Bernanke's aggressive actions have stirred up long-dormant suspicions of central bank power.

Who's in Charge?

The Fed's governance reflects a compromise at its birth in 1913 between populists who wanted power to rest with federally appointed officials in Washington, and conservatives who wanted it to rest with autonomous reserve banks controlled by private bankers. The system split power between a politically appointed board in Washington and 12 regional reserve banks.

In 1935, the structure was overhauled to shift power from the 12 reserve banks to the governors. That structure persists today. The seven-member board of governors sets all Fed policy except monetary policy. For example, it interprets and applies laws governing banks. The president nominates and the senate confirms governors, including the chairman and two vice-chairmen, one of whom oversees bank supervision.

The 12 regional reserve banks are stationed across the United States and are charged with supervising local banks, distributing cash, and processing checks. The boundaries of the districts they oversee defy geographic logic; two banks are based in Missouri partly because it was the home state of the speaker of the House in 1913. Reserve bank presidents (except New York's) are appointed by their banks' boards of directors, who represent the public. The most important reserve bank is New York, whose 380-strong markets group carries out the daily financial transactions that alter interest rates, lend to banks, and occasionally push the dollar up or down.

This hybrid public-private structure insulates the Fed from political pressure, but not completely. Lyndon Johnson and Richard Nixon both pressured Fed chairmen to keep interest rates low, with some success. Ronald Reagan appointed governors who sought to corral the power of Paul Volcker. George H.W. Bush sought to influence Alan Greenspan by briefly withholding reappointment (it didn't work). Congress plays the game too, by refusing to confirm the president's governor nominees or by threatening to clip the Fed's wings. In 2010, for example, led by Ron Paul, a Texas populist, Congress subjected the Fed's emergency actions to Congressional audit.

To keep monetary policy as independent as possible, it’s the exclusive domain of the 12-member Federal Open Market Committee (FOMC). All seven members of the board of governors and the New York Fed president sit on the FOMC. The four remaining seats rotate annually among the 11 other reserve bank presidents. Though only five presidents vote, all 12 participate in FOMC meetings so it is commonly thought of as having 19 members: 12 voting and 7 nonvoting.

The Bottom Line

- The Fed stands alone in its economic sway and its independence. It can print and destroy money at will to protect the financial system from panics and to manage the business cycle.
- The Fed is a compromise between political accountability and private independence. Its politically appointed governors and privately appointed reserve bank presidents make up the Federal Open Market Committee, which sets monetary policy at meetings eight times a year.

Chapter Ten

White Smoke over the Washington Mall



The Making of Monetary Policy and the Fine Art of Fed Watching

MORE THAN ALMOST any other event on the economic calendar, meetings of the Federal Open Market Committee (FOMC) have the potential to rattle the markets. No wonder, then, that they are so closely watched.

One such rattling occurred in February of 1994. For more than a year before, the Fed had kept its short-term interest rate target at a low 3 percent in an effort to nurse the economy back to health. Alan Greenspan, the chairman, had concluded the time had come to raise rates, but he was worried that the markets might not be ready for it. To the rest of the FOMC gathered at the Fed's headquarters overlooking the Washington Mall, Greenspan proposed starting with a quarter of a percentage point increase. It would cool the economy and the market down a bit, ensuring inflation didn't rear its ugly head. Others, though, believed that more forceful action was needed to head off inflation and called for a half-point increase. Greenspan, worried that the news would catch Wall Street flat-footed, pleaded with them to reconsider: "I've been around a long time watching markets behave and I will tell you that if we do [half a point] today, we have a very high probability of cracking these markets."

Greenspan carried the day. Yet even the quarter-point increase came as a shock. Stocks and bonds tanked on the news. It was a jarring reminder of the power this little-known group of people has over our financial fates.

Inside the FOMC Meeting

For all their market-moving potential, meetings of the FOMC are staid affairs generally bereft of drama. Eight times a year, the 19 members of the FOMC gather in Washington for a one- or two-day meeting. The Fed chairman sits at the center of the table, the other 18 members (assuming there are no vacancies) sit on either side, their nameplates riveted on the back of their seat. The meeting usually begins with a briefing on the financial market developments, which is delivered by the head of markets at the New York Fed. Then, the staff presents the Greenbook, which is its forecast of the economy, and then the reserve bank presidents take turns reviewing conditions in their districts. Next, the staff's director of monetary affairs, also called the FOMC secretary, presents the Bluebook, a list of policy options members could take that day. (A summary is circulated in advance of the meeting.) After these presentations, all FOMC members discuss their view of the national economy and what they think the Fed should do. Finally, the chairman makes a recommendation and calls a vote. After the meeting wraps up, members help themselves to a buffet lunch. At 2:15 PM, the committee issues its statement.

FOMC members can be classified as hawks or doves. Hawks generally prefer tighter policy than their peers, are more vocal, and are more likely to cast a dissenting vote. Why are hawks so much more outspoken than doves? It's a matter of professional pride. A central banker would rather be known for his toughness on inflation than his concern for unemployment. "Only hawks get to go to central banker heaven," Robert McTeer, a Dallas Fed president, once said. Doves are more likely to worry about unemployment, and to think that inflation worries are overdone. A central banker with dovish tendencies is like a wine critic who drinks Merlot out of a box. Nothing wrong with it, but best kept behind closed doors.

An FOMC member who is one of the 12 reserve bank presidents (other than New York's) is more likely to dissent than one of the governors. That's because governors share offices, staff, and a sense of solidarity with the chairman. Still, unlike in the Supreme Court, close FOMC votes are unheard of. Inflation and unemployment can animate economics geeks for hours but are much less divisive than the things the Supreme Court grapples with like abortion, freedom

of speech, and the rights of suspected terrorists. The Fed traditionally prefers consensus so the chairman, unlike the Chief Justice of the Supreme Court, carries the day by default. More than two dissents is rare; four in the same direction would be a revolt. Laurence Meyer, a former governor, once joked that there are two red chairs at the table. Only members in red chairs get to dissent.

Punch Bowls and Ham Sandwiches

William McChesney Martin, a former Fed chairman, famously described the Fed's role as taking away the punch bowl just when the party gets going. FOMC deliberations are consumed by figuring out just how much punch to supply. If everyone is having a good time spending money, the Fed cools things down by taking the punch bowl away, that is, by raising interest rates. The opposite is also true: If spending is moribund, it is the Fed's job to supply as much punch as necessary to get the people to come to party in the first place.

Calibrating the punch supply involves several delicate judgments:

- How far is the economy operating from its productive capacity, which is its potential output? In other words, how big is the *output gap?* A related question is how far is unemployment from its natural rate?
- How far is inflation from the Fed's preferred level?
- What's the outlook for these two things given the forecast for growth, unemployment, and the public's expectations of inflation?

The Fed doesn't have an inflation target, but FOMC members' long-term forecast of inflation, now 1.7 to 2 percent, serves the same purpose.

As I described in Chapter Five, both potential growth and the natural rate of unemployment are rather hard to nail down. And any Fed chairman who wanted to keep his job would think twice before asserting publicly that any specific level of unemployment was acceptable or natural. Fortunately, the Fed makes it possible for a careful reader to discern its estimates of both potential growth and the natural rate of unemployment. Four times a year, the Fed publishes the collective forecasts of FOMC members for major economic indicators. Their long-run forecast of growth roughly corresponds to their estimate of potential growth (around 2.5 percent) while their long-run forecast of unemployment

corresponds to their estimate of the natural rate of unemployment (around 5 percent).

What's the Fed's preferred inflation level? Some central banks make it easy to figure this out by publishing a numerical inflation target, usually 2 percent (or a range around 2 percent). The Fed doesn't have a target, but FOMC members' longer-run forecast of inflation serves the same purpose. That range has lately been 1.7 to 2 percent. So if inflation is more than 2 percent or headed over 2 percent, they may want the economy to operate below potential for awhile to nudge it down. If inflation is much below 1.7 percent, they'd welcome a few years of above-potential growth to get it back up.

One thing the Fed doesn't dwell on is the money supply; in the view of its leadership and its staff, it is not much use for predicting inflation or economic growth. The Fed did explicitly target the money supply from 1979 to 1982. Currently, though, entire meetings regularly transpire with no mention of the money supply—despite that sign in the barber shop.

The growth, unemployment, and inflation picture helps the FOMC decide where to set interest rates. Generally, the further below its capacity the economy is operating, the lower it will keep interest rates in an effort to get it back up. The higher inflation is relative to its preferred level, the higher it will keep interest rates. The Fed's job sounds simple, right? Estimate the output gap, check on inflation, set interest rates, go golfing. May as well replace the Fed with a ham sandwich.

It's harder than it sounds. Monetary policy works with long and variable lags because loan, wage, and price contracts take a while to change. Nothing the Fed does today will affect unemployment or inflation in the next few months. The quarterback throws to where the receiver will be when the ball arrives, not where he is when the ball is thrown. Similarly, the Fed aims its actions at where the economy and inflation are headed over the next one to three years. If inflation is 2 percent today but the economy is straining its capacity, the Fed needs to raise rates now to keep inflation from rising next year. If inflation is 3 percent but a recession has sent unemployment up sharply, it can cut interest rates, expecting the output gap to get inflation down. If inflation is close to zero then it will keep rates low until the economy is booming so strongly that inflation rises.

All these decisions are prone to error. Potential is unknowable, the future is a guess, and the past isn't much easier given frequent data revisions. People are unpredictable: If rates rise, they may buy fewer homes, or they may buy more if they think even higher rates are on the way.

Since the Fed can never get things exactly right, it must constantly weigh whether it wants to err on the side of being too tight or too easy. For example, as Chapter Five shows, it's easier (though by no means fun) to correct an error that leads to inflation than one that leads to deflation. On a winding mountain road, it is better to scrape your fender on the side of the mountain than to drive through the guardrail and into the canyon.

The Technocrat in Charge

The Fed's consensus-based governance is also a result of being run by chairmen who, while political appointees, are technocrats rather than partisans and lead through the persuasiveness of their argument rather than the force of their personality. That is true of Ben Bernanke who was an accomplished monetary policy scholar at Princeton University when George W. Bush appointed him a Fed governor in 2002. He briefly served as chairman of Bush's Council of Economic Advisers in 2005. In February of 2006, he succeeded Alan Greenspan as Fed chairman.

Bernanke didn't much care for the New Deal but he admired Roosevelt's willingness to try anything to get the economy going. Bernanke has shown a similar willingness to experiment.

Bernanke is a leading scholar of the Great Depression. In *Essays on the Great Depression*, he wrote, "I am a Great Depression buff, the way some people are Civil War buffs." He blames the Depression on the Fed's misguided attachment to orthodoxy, which caused it to stand by as the economy collapsed. Bernanke didn't much care for the New Deal but he admired Roosevelt's willingness to try anything to get the economy going. Bernanke showed a similar willingness to experiment in tackling the crisis and recession of 2007-2009.

Bernanke is introverted. His voice sometimes quavers when he speaks in public and he doesn't much care for the conventions of public life. Examples of his disregard for fashion, such as wearing beige socks with a dark suit in Bush's Oval Office, are legendary. Though nominally a Republican, Bernanke's ideology defies classification. By 2009, his approval ratings were higher among Democrats than Republicans. Obama reappointed him to a second term that expires in 2014, while his parallel term as governor expires in 2020.

Nowadays it is hard to shut the Fed up: It spews forth a virtually continuous gusher of information and commentary.

Fedspeak

What the Fed says is almost as important as what it does. It wasn't always that way. Before the 1990s, the Fed followed the credo of Montagu Norman, a Bank of England governor: "Never explain, never apologize." It rarely disclosed changes in interest rates; therefore, investors deciphered such changes from the Fed's market operations. It believed that talking caused unnecessary volatility, and if it discussed what it might do, it would bind its hands if a different course of action proved necessary.

Starting in the early 1990s, this fondness for opacity changed. The Fed now believes that talking actually harnesses the markets to its own ends. Fret aloud about inflation and bond yields will rise, doing some of the work the Fed would otherwise have to do. In fact, it's hard to shut the Fed up: It spews forth a virtually continuous gusher of information and commentary. The most important is the statement that the FOMC releases at the end of each meeting. It usually provides the interest rate decision, a description of the economy and its outlook, a hint of where interest rates will go next, and how the FOMC members voted.

Three weeks after each meeting, the Fed releases detailed minutes disclosing more of the reasoning and debate behind the decision, without naming who said what. A full transcript follows five years later. Four times a year, the minutes include the FOMC members' forecasts. Between meetings, members give speeches. Several times a year, the chairman testifies to Congress; in February and July this testimony is accompanied by a lengthy Monetary Policy Report. Officials also give interviews, often off the record, to reporters who then try to infer the Fed's next move.

With all this Fedspeak, the Fed's actions are less likely to shock people. Indeed, when after a long hiatus the Fed prepared to raise rates in 2004, it went to absurd lengths to avoid the sort of surprise that occurred in February 1994. A few weeks before the increase, one Fed official foreshadowed the event in a Bob Dylan spoof called "*The Rates They Are A-Changin'.*"

All the FOMC's deliberations, study, and chatter usually boil down to a

relatively simple decision: What will be its target for the Federal Funds rate, the rate that banks charge on one-day loans to each other? The Fed Funds rate is a benchmark for all other short-term rates: the bank prime rate, commercial paper, Treasury bills, and floating-rate mortgages. It also ripples through to long-term bond yields and mortgage rates, although the effect is more muted, because bond investors lend for years, not just a few days or weeks. It can also affect stock prices and the dollar. With this one modest interest rate lever, the Fed sways an array of financial conditions, and thus the entire economy.

Into the Weeds

Once the FOMC selects a target for the Fed Funds rate, it can't just order banks to borrow or lend at the target rate. It has to manage market conditions to make the rate at which banks exchange money actually meet that target. It does this through *open market operations.* To understand how these work, start with the fact that banks are required to keep a portion of customers' deposits readily available as currency and coins in their vaults or ATMs, or as reserves. Banks use reserves to settle payments with each other and with the Treasury, for example as customers cash Social Security checks or pay their taxes. As a result, the daily flow of such payments may leave one bank with more reserves than it needs, and another with less. The first can lend its excess to the second in the Fed Funds market.

To lower the Fed Funds rate, the Fed's open market desk in New York buys Treasury securities, or securities backed by Fannie Mae or Freddie Mac, from a bank or the bank's customer. To pay for them, it creates money out of thin air which it deposits in the bank's reserve account with the Fed. This is, de facto, printing money, since the bank is free to swap those reserves for notes and coins. These operations expand the Fed's balance sheet. With more reserves than it needs, the bank lends some out, pushing down the Fed Funds rate.

To raise the Fed Funds rate, the Fed does the opposite: It sells securities from its own portfolio. The bank that buys them pays the Fed out of its reserve account. That money disappears and the Fed's balance sheet shrinks. That bank, to replenish its reserves, borrows from other banks, pushing up the Federal Funds rate.

Traders bet on the Fed's next move using *Fed Funds futures,* financial contracts traded on the Chicago Board of Trade. As Fedspeak or economic news comes out, one can calculate the probability of a rate change from how this contract changes.

Zero: The Final Frontier

In December 2008, the Fed hit an ominous milestone. As the U.S. economy spiraled down in the wake of Lehman Brothers' collapse, it concluded the damage to the economy would be so great that it had to cut the Federal Funds rate all the way to zero, or more precisely, to between zero and 0.25 percent. Was there anything left it could do?

Another tactic would be to buy foreign currencies in exchange for newly printed dollars, depressing the dollar's value and helping exports. But by hurting imports, this would come at other countries' expense. So a central bank that has cut short-term rates to zero is, practically speaking, out of bullets.

A soldier out of bullets still has a bayonet. The Fed did the equivalent of reaching for its bayonet. Between 2008 and 2010, it bought $1.75 trillion worth of Treasury bonds and mortgage-backed securities by printing money. Its balance sheet ballooned from under $1 trillion to over $2 trillion and banks' reserves skyrocketed from almost nothing to more than $1 trillion.

As Fedspeak or economic news comes out, one can calculate the probability of a rate change from how the Federal Funds futures contract changes.

When a central bank shifts its focus to expanding its balance sheet through bond purchases rather than targeting short-term interest rates, it is called *quantitative easing*. This stimulates the economy in two ways.

1. When bond prices rise, their yields decline. So the Fed's buying nudged down long-term interest rates, boosting interest-sensitive spending on items like houses.
2. Since banks don't earn much on reserves, they may lend them

out to make higher-returning loans to businesses and households. That's the rationale used by the Bank of Japan starting in 2001 and the Bank of England in 2009 when they tried the same thing.

In theory, quantitative easing endows the Fed with awesome power. It could buy up every U.S. bond in existence. Yet, in practice, this is the Star Trek of central banking, taking the Fed into strange new worlds with unknown consequences.

• **Political.** One of the major risks of this strategy is that it could cast doubt on the Fed's political independence. When the Fed buys government bonds, it has lent money to the government. This is called *monetizing the debt.* Even though the Fed wasn't forced by politicians to buy the bonds, some experts do worry that this is how the government eventually copes with the national debt: by making the Fed buy it. That won't happen as long as politicians respect the Fed's independence, which George W. Bush, Barack Obama, and even Congress, despite rumblings to the contrary, have so far done.

• **Inflation.** The second unknown is whether printing all that money will create inflation. Monetarists who see a tight link between all those extra reserves and inflation certainly think so. But they're probably wrong. That's because, as I noted in Chapter Five, reserves can't cause inflation if they aren't lent and spent.

But reserves do pose a more technical problem. To raise the Federal Funds rate, the Fed ordinarily uses open market operations to reduce the supply of reserves. That's easy in normal times when banks don't have much reserves, but harder when they have $1 trillion, which they will lend them for next to nothing even if the Federal Funds rate target is 2 percent.

Luckily, in 2008 the Fed got a new tool to work with: the right to pay interest on excess reserves (IOER). If IOER is 2 percent, banks will keep those reserves at the Fed rather than lend them at less than 2 percent in the Fed Funds market.

• **Tempting Speculators.** Do zero interest rates entice hedge funds, banks, and others to plough borrowed money into risky investments? A lot of people think that's what happened when the Fed kept low rates from 2002 to 2004, bringing on the subprime crisis. And

does it do the same in China and other countries who link their currency to the dollar and thus U.S. interest rates? There may be truth to this, but raising interest rates to combat speculation is a bit like using dynamite to eradicate termites: the remedy may do more damage than the problem. A more surgical response is to use regulations to limit risk-taking.

• **Exit Strategy.** When the economy has recovered, the Fed may want to sell those extra bonds. The reserves it created when it first bought the bonds would then disappear. Such selling should push up long-term rates, but by how much is hard to predict.

Raising interest rates to combat speculation is like using dynamite to eradicate termites.

The Bottom Line

• When setting interest rates, the FOMC weighs how far the economy is from its potential, and how far inflation is likely to be from 2 percent. This is harder than it sounds because the economy responds unpredictably and with lags.

• At FOMC meetings, Fed officials listen and debate the best path for monetary policy. A few dissent but the chairman always carries the day. The Fed gives out so much information that the result is seldom a surprise but it still moves markets.

• The Fed carries out monetary policy by using open market operations to move the Federal Funds rate, charged on loans between banks, up or down.

• When the Funds rate fell to zero in 2008 the Fed turned to quantitative easing: buying up bonds to push down long-term interest rates. Quantitative easing has unpredictable political and economic consequences.

Chapter Eleven

When the World Needs a Fireman



America's Lender of Last Resort and the World's Crisis Manager

THE COLLAPSE of the Twin Towers on September 11, 2001, tore through the infrastructure of Wall Street. Traders' telephones didn't work. The wires over which banks sent payments to each other were severed. A bank that processed half of Wall Street's Treasury bond trades couldn't confirm what trades had gone through. And the aircraft that shuttled bags of checks between processing centers were grounded. With payments stuck in transit, some banks started to run short on cash while others began to hoard what they had.

Roger Ferguson, the only governor at the Fed that day, issued a statement reminding banks that the Fed was open for business. The following day, banks borrowed $46 billion from the Fed. Where did the Fed get the money? Simple: It printed it. More precisely, it used a few keystrokes and voila, the money appeared in the banks' accounts at the Fed. When the damage was repaired and the markets returned to normal, the banks repaid the loans and the money disappeared.

Neat trick, huh? This, however, is not some parlor game. In fact, it is the sort of thing for which the Fed was created—to be the financial system's lender of last resort. Most of the time, this role is ignored. The crisis of 2008 brought that role back to the limelight with a vengeance, as the Fed worked its magic by lending to commercial banks, investment banks, an insurance company, money market mutual funds, and others, all to keep financial institutions afloat, maintain the flow of credit to the economy, and thus enable businesses and consumers to keep spending.

Whenever the financial system catches fire, the phones soon ring at the Fed station house.

The Fed's unique power to lend at will makes it the financial system's crisis manager. When fire breaks out in some corner of the financial system, the phones soon ring at the Fed station house in Washington or at the New York Fed in lower Manhattan, whose president talks regularly with the biggest players on Wall Street and the heads of foreign central banks and finance ministries.

Being crisis manager may not involve lending money; it may mean strong-arming private banks and investors to lend their own money to keep companies or countries from defaulting. The Fed got this role by virtue of its place at the center of world markets and its reputation for nonpartisan professionalism.

The Fed has been called on to play this role with increasing frequency. Although Paul Volcker's defeat of inflation in 1982 ushered in 25 years of tranquil growth, it also led to serial crises.

- In the early 1980s, many big U.S. banks were near-insolvent because of souring loans to Latin America. Volcker arranged for those loans to be rolled over until the banks were healthy enough to write them off.
- In 1987, the stock market crashed. The Fed cut interest rates and urged banks not to cut off strapped Wall Street brokers.
- In 1994, Mexico devalued the peso and narrowly avoided default with the help of loans from the Fed and Treasury.
- In 1997, when Korea teetered on the edge of default, New York Fed president William McDonough persuaded U.S. banks to renew their loans.
- In 1998, McDonough brokered a rescue of the giant hedge fund Long Term Capital Management.

A Rude Awakening

Like the Fed's apparent success at taming the business cycle, its crisis-management skills may have lulled us into thinking the economy has become a safer, less violent place. As a result, everyone from the biggest banks to the smallest hedge funds came to assume that money would always be easy to borrow. "Money always seems free in manias," noted Charles Kindleberger, a market historian in *Manias, Panics, and Crashes.* That assumption was shattered on August 9, 2007, when a French bank, BNP Paribas, announced that one of its investment funds, which had sustained big losses on subprime mortgages, would suspend repaying investors their money. The event triggered a global scramble for cash as investors, unsure who'd been left holding the mortgage industry's toxic waste, hoarded their money. Short-term interest rates skyrocketed.

The Fed needed to find a way to inject money into the financial system. It used open market operations. It lowered the discount rate. It auctioned off loans from the discount window (which I'll explain later). It swapped lines of credit with foreign central banks, enabling them to lend desperately needed dollars to their own banks. In the *New York Times*, Paul Krugman compared Bernanke to television's MacGyver, who "would always get out of difficult situations by assembling clever devices out of household objects and duct tape."

On the evening of March 13, 2008, Bear Stearns informed the Securities and Exchange Commission (SEC), which then told Tim Geithner, then president of the New York Fed, that it too was about to run out of cash, and it would have to file for bankruptcy protection the next morning. Unwilling to risk the chaos that would ensue, the Fed the next morning agreed to lend Bear Stearns enough money to stay alive long enough to find a buyer. By law, the Fed ordinarily only lends to commercial banks, so it had to use a loophole in the law to lend to Bear Stearns, an investment bank. It used the same loophole to lend money to American International Group, an insurance company, to keep it from failing, and it used it to buy asset-backed commercial paper, to lend to money market mutual funds, and to buy the commercial paper issued by companies like General Electric.

The Fed can lend as much as it likes. Need $1 billion? Print $1 billion. By early 2009, it had lent $1.5 trillion. Yet this formidable firepower has a big handicap. A loan from the Fed can help a bank that's temporarily illiquid (i.e., short of cash) as long as it is solvent (its assets are worth more than its debts). But Fed lending cannot save a bank that is insolvent. Insolvent banks must be closed or given new capital. New loans simply delay the inevitable. In 2008, rapidly souring mortgage loans meant many U.S. financial institutions were nearly insolvent, or suspected of it, which is why $1.5 trillion didn't stem the panic. The Fed claims it couldn't lend to Lehman Brothers because it was insolvent, though that claim is suspect.

Only when Congress agreed to invest up to $700 billion to recapitalize banks and buy up bad debt did the panic ease.

The Fed has a loophole to lend temporarily to companies other than banks, but it sat unused until 2008.

Could the Fed Go Broke?

Imagine the Fed as a regular bank. It has assets—loans to commercial banks and Treasury bonds; and liabilities—commercial bank reserve deposits and the currency in your wallet. The Fed earns interest on its assets and pays some interest on reserves but those $20 bills in your wallet are an interest-free loan to the Fed. This produces a big profit for the Fed, called *seignorage*, which it hands over to the Treasury. This isn't chump change. In 2009, it gave the Treasury $47 billion. This means every taxpayer has an interest in how the Fed manages its balance sheet.

During the financial crisis, the Fed shifted from safe Treasurys to riskier things like mortgage-backed securities, loans to banks and AIG, old Bear Stearns assets, commercial paper, and so on. Could this strategy cause the Fed to go broke? Almost certainly not. The Fed does not carry its bonds at market value, so fluctuations in their prices don't affect its profit. If some of its loans default and the collateral is inadequate, it would record a loss. But the losses would have to be ridiculously large to wipe out its profit, never mind its substantial capital. Anyway, the Fed could have no capital at all and still do its job, although having to ask Congress for more capital wouldn't be good for its independence and our confidence in it.

Into the Weeds

Banks are acutely vulnerable to panic. Most of their money is tied up in loans. They keep cash on hand to repay some depositors, but not enough to repay all of their depositors.

In 1873 Walter Bagehot, an early editor of *The Economist*, wrote in *Lombard Street*, "A panic grows by what it feeds on . . . [It is] a species of neuralgia." In such a panic, investors abandon any kind of risky asset and demand the safest, most liquid thing: cash, or its closest substitute, Treasury bills. Only a central bank can create more cash. Bagehot recommended it lend against any good collateral, at a penalty interest rate to discourage frivolous borrowing.

This is the principle behind the loans the Fed makes from its *discount window* (although there's no actual window). It lends to commercial banks, accepting as collateral loans, securities, and other assets discounted from face value. Loans from the Fed to banks are charged the discount rate. To encourage banks to first borrow from each other before borrowing from the Fed, the discount rate, since 2003, has been set above the Federal Funds rate target. Occasionally, the actual Fed funds rate spikes above its target if, for example, banks suddenly have to meet a cluster of payments and all try to borrow at once. On those occasions, the discount window is a useful safety valve for them.

Over the years, the discount window has dwindled in importance as banks found other sources of funds at home and abroad. Banks used it when the payment system didn't operate properly, as on 9/11, or if they were short of required reserves. Most notoriously, troubled banks used it when no one else would lend to them, as Continental Illinois did in 1984. It eventually failed. This gives the discount window a stigma, and healthy banks avoided it at all costs. Getting around that stigma is why during the recent crisis the Fed made loans from the discount window via auctions: They were cheaper, and more anonymous.

The Federal Reserve Act says the Fed can only lend to banks, thrifts, and credit unions. That made sense when banks dominated the economy. But as

Chapter Fourteen will show, they don't anymore. Between 1980 and 2007, their share of credit (excluding federal borrowing) shrank to 23 percent from 50 percent. Mutual funds, investment banks, finance companies, hedge funds, and the like supply the rest. Instead of deposits, they fund themselves by issuing bonds and short-term money market paper and by borrowing from banks. When the crisis hit, lenders wouldn't refinance their paper or their loans. They faced the equivalent of a nineteenth-century bank run, but with no lender of last resort.

In the 1930s, Congress inserted a loophole in the Federal Reserve Act. It said that with a supermajority vote of governors, the Fed could lend to companies other than banks—temporarily. The Fed was reluctant to use Section 13(3) as this loophole is called. It often has had to fight pressure, usually successfully, to lend to politically favored constituencies from farmers to homeowners. Such loans help some people at the expense of others, and expose the taxpayer to loss if the loans go bad. That sort of lending should be left to elected politicians. And so 13(3) sat largely unused—that is, until 2008.

The Fed has never before inserted itself so deeply into life-and-death decisions about who would get money and under what conditions. Many in and outside of Congress recoiled, especially when the companies who were saved reported massive profits and handed out fat bonuses. The Fed became party to the bankruptcy proceedings of companies whose loans it bought. It even became owner of a hotel chain.

As the crisis passed, the Fed closed most of its special lending facilities. Yet, having once become lender of last resort to the entire financial system, the Fed will be expected to do so again. "Regardless of whether that window is officially opened or closed, the market now assumes that it will be opened if necessary," said Vikram Pandit, head of Citigroup.

The Bottom Line

• The Federal Reserve has made its name managing the economy through monetary policy, but its parents had a different career in mind: to act as lender of last resort when banks ran out of cash. The Fed is uniquely suited to the job

because it can simply create whatever money it needs to lend, primarily through loans from its discount window, and withdraw the money from existence when the loans are repaid.

• During the financial crisis the Fed dusted off a loophole to lend not just to banks but to a wide assortment of companies. In so doing it may have saved the country from another Depression, but it also awakened politicians to its formidable power.

Chapter Twelve

The Elephant in the Economy



What the Government Giveth and Taketh Away

IN 2009, during the rancorous fight over health care, an agitated voter told his Congressman to “keep your government hands off my Medicare.” The next year, a man angry about a tax audit crashed his plane into an Internal Revenue Service building in Austin, Texas, killing an employee.

Fiscal policy arouses strong feelings among people because it affects the shape of society. It provides services the private sector can’t—like national defense—or won’t—like national parks—at a publicly acceptable price. It sends checks to the unlucky, the elderly, the sick, and the poor, and pays for them by taxing the more affluent, the young, and the employed, affecting their incentives to earn and to invest. People’s demands on government are unlimited but what they are willing to pay in taxes sure isn’t. Reconciling what they want with what they’ll pay for is a never-ending balancing act. The government’s solutions may not be efficient for the economy or fair for people, but simply what’s politically palatable.

The federal government leaves a pretty big footprint on the economy. From 1970 to 2007, it collected the equivalent of 18 percent of gross domestic product (GDP) in taxes, and spent about 21 percent of GDP. The difference between those figures results in a budget deficit (more on that in the next chapter). And yet they barely hint at the breadth of things on which the government spends, the impact of how it taxes, and the mind-numbingly complex way Congress and the President deal with both.

What the Government Giveth

You can divide federal government spending into three main categories.

1. **Interest Paid on the Debts Taken on Since the American Revolution.** For most of the last decade this type of expenditure was an afterthought, averaging 8 percent of spending and 1.6 percent of GDP. As the national debt climbs in coming years, it will become a much bigger presence in the budget, consuming some 4 percent of GDP by 2020. There's not much politicians can do about this category.

2. **Discretionary Spending.** Name a federal activity and odds are it is discretionary, from the Peace Corps and the federal courts, to national defense, the largest, topping $700 billion a year. Congress must appropriate funds every year for discretionary activities. No appropriation, no activity. For the last decade, discretionary spending has averaged about 38 percent of total spending. This is the category of spending over which politicians have the most control.

3. **Mandatory Spending.** Also called *entitlements*, mandatory spending comprises 60 percent of federal spending. Mandatory spending doesn't require an annual appropriation: it is already set in law. For example, Social Security benefits are dictated by the terms of the Social Security Act. Congress often amends these laws, but if does nothing, the spending continues on autopilot.

Initially, growing entitlement spending reflected our natural urge to expand the safety net as we become richer. In the future, though, it will be fueled by demographics and medical inflation.

Entitlements deserve a closer look because they dominate federal spending and, left alone, will overshadow everything else. There were no entitlements until the creation of Social Security in 1935. It was joined by Medicare and Medicaid in 1965. These three account for most of the growth in mandatory spending. Other entitlements, like veterans' pensions and food stamps, have

grown much more slowly.

Initially, growing entitlements spending reflected our natural urge to expand the safety net as the United States became richer. Since 1990, the proportion of the U.S. population enrolled in Medicaid has risen from 10 percent to 15 percent and Barack Obama's health reforms are expected to raise it further. In the future, though, entitlements will be fueled by demographics and medical inflation. As the U.S. population ages, the bill for Medicare and Social Security benefits grows. Meanwhile, science continually comes up with new, more expensive ways to treat our ailments. And because most Americans have health insurance, they tend to consume more health care than if they paid the full price. If left unchecked, these three entitlements will go from 10 percent of GDP to a crushing 18 percent by 2050.

Social Security was originally designed to be financed by payroll taxes. This worked when the taxes paid by workers far outstripped benefits collected by retirees. The extra money went into a trust fund. As the population ages, however, the number of workers per retiree is falling and payroll taxes now barely cover benefits. True, the trust fund still has $2.5 trillion in it. But that's economically meaningless: The money consists entirely of federal government IOUs. To repay those IOUs, the federal government has to come up with the money elsewhere either by borrowing from the public or raising taxes, just as if the trust funds didn't exist. Medicare is partly funded by a payroll tax and by premiums paid by beneficiaries, but these don't cover the program's costs now, and the gap will only grow.

Every year the trustees of Social Security and Medicare report on the gap between future revenue and benefits. Expressed in 2009 dollars, they put that "unfunded obligation" at $104 trillion over all coming years, or 8 percent of all future GDP. That estimate depends a lot on assumptions of how long people live, how fast their wages grow, the rate of health care inflation, and future interest rates. Moreover, Social Security's contribution to that gap is relatively stable. Health care is the real time bomb.

What the Government Taketh Away

Spending money is the fun part. Raising the taxes to pay for it is what makes people squeal, and Americans have a long history of squealing. In the 1790s, a tax on whiskey provoked a rebellion against the administration of George Washington. Back then, the government got most of its revenue from taxing items that were easy to find, such as imports and liquor. As government has grown, it found other things to tax: wages, investment income, profits, capital gains, gasoline. Its biggest revenue raisers are the personal income tax, payroll tax, and the corporate income tax.

Taxes provoke no end of argument between Republicans and Democrats, conservatives and liberals, economists and politicians. One flashpoint is how to share the tax burden. Most Republicans and Democrats agree the tax system should be progressive, which means the rich should pay higher tax rates than the middle class, and the poor should pay little or no tax. They differ, however, on how far to go: Should the rich pay double the tax rate as the middle class? Triple? Should the poor get refundable tax credits even if they pay no tax? Should payroll and sales taxes, which consume more of the income of the poor than the rich, be progressive?

Another flashpoint is over exemptions, deductions, exclusions, and credits. Though pitched as tax cuts, these are all types of tax *expenditures*, a targeted boost delivered through taxes instead of spending. They range from credits for disabled coal miners to deferred capital gains tax on electrical transmission lines. Some are sensible, such as the child credit and the charitable deduction, while others encourage bad behavior. For instance, the deduction for employer-provided health care encourages wasteful health spending, while the deduction for mortgage interest encourages people, in particular the wealthy, to take out bigger mortgages.

Besides raising money, taxes change behavior. The behavioral response to taxes, though, is often exaggerated.

A final flashpoint is over how taxes affect behavior. In 1990, George H. W. Bush slapped a luxury tax on yachts, private planes, expensive cars, and the like. Sales of yachts promptly collapsed with the help of a recession and the tax was repealed in 1993.

In the 1970s and 1980s, *supply-side* conservatives, like economist Arthur Laffer and Congressman Jack Kemp, claimed that if taxes on wages and investment income were cut, workers would supply so much more labor and investors so much more capital that tax revenue would actually go up. Even mainstream Republican economists didn't buy it. It was politically irresistible, though, enabling politicians to promise both lower taxes and reduced deficits with a straight face.

As it happens, tax revenue fell after Ronald Reagan's and George W. Bush's tax cuts and it rose after Bill Clinton's tax increases. A lot of this, though, had nothing to do with changes to tax rates, but the health of the economy. In a boom, people and corporations earn more so they pay more tax. In a recession, they pay less.

Supply-siders have a point, even though they exaggerate it. High tax rates do discourage work and encourage tax avoidance. For example, a high income tax wouldn't discourage a traveling salesman from working enough to buy a home, but it might discourage him from working enough to install a swimming pool. In a 2009 study, economists Emmanuel Saez, Joel Slemrod, and Seth Giertz concluded raising rates on the rich by 1 percent may cause them to report 0.1 percent to 0.4 percent less taxable income. Thus, it is not just the total tax take that matters, but how it is levied. All else equal, it is better to tax things we want less of—higher gasoline taxes would discourage driving, carbon emissions, and imported oil. Raising taxes on dividends and capital gains, on the other hand, would discourage investment that makes workers more productive. But if taxes on dividends are abolished, accountants will find a way for wealthy clients to convert their wages to dividends.

Into the Weeds

Reconciling this multitude of competing priorities for spending and taxes is the job of the federal budget. In parliamentary systems, like Britain's and Canada's, the Prime Minister draws up a budget and Parliament passes it. It's like a steak: a solid cut of meat that changes little between the cow and the dinner plate. The United States' budget is more like sausage, a mixture of ground meat from different parts of the animal stuffed into a misshapen skin.

Let's take a look inside the sausage factory. Under the Constitution, the president can only propose spending and taxes; Congress has final say, subject to the president's veto. In its first century of existence, the United States had no federal budget. Individual agencies would request money and Congress would appropriate funds for them one at a time. In 1921, the president began formulating a single budget with the creation of what is now called the Office of Management and Budget (OMB). Congress clawed back some of its influence in 1974 after a standoff with Richard Nixon, establishing its own budget process and the Congressional Budget Office as its nonpartisan scorekeeper.

Even during the best of times, Congress routinely ignores requests by the president to kill pet programs or tax breaks.

Though the fiscal year begins October 1, the budget process begins a year and a half earlier when federal agencies submit their budget requests to the OMB. No later than the first Monday in February, the OMB submits the president's budget to Congress. Besides laying out thousands of individual proposals and cost estimates, the budget is also a political document that lays out the president's domestic agenda. How much he actually gets depends a lot on his approval rating—Congress grants a popular president more of what he wants—and his party's control of Congress. But even during the best of times, Congress routinely ignores requests by the president to kill pet programs or tax breaks.

After receiving the president's budget, Congress starts its own process. The Senate and House budget committees pass a budget resolution that sets out spending and revenue totals to which all other tax, program, and appropriations bills should conform. The resolution isn't a law, and can't be vetoed by the president. Both chambers are supposed to pass the resolution by April 15, though they routinely miss this target. And at least four times since 1998 Congress couldn't agree on a resolution at all.

After the resolution passes, and even if it doesn't, individual committees get to work. Tax proposals are handled by the Finance Committee in the Senate and the Committee on Ways and Means in the House. Mandatory spending proposals are assigned to the relevant authorizing committee—Medicare to the Finance and Ways and Means committees, food stamps to the agriculture committees, and student loans to the education and labor committees.

Discretionary spending is the purview of the House and Senate appropriations committees. Each has 12 subcommittees whose chairmen are dubbed "cardinals," dealing with a particular part of the budget. This is the favored time for individual lawmakers to earmark money in an agency's budgets for a special projects or constituents, such as a bridge to nowhere in Alaska or swine manure research. Earmarks have grown from a relatively harmless way for a legislator to promote his state or district to a vehicle for vote-buying and even corruption. But they are economically insignificant. They seldom exceed 1 percent of federal spending, and they only result in the reallocation of money that would be appropriated anyway.

Getting discretionary spending bills into law is essential because the federal government can't spend money that Congress hasn't appropriated. Since Congress routinely misses the October 1 deadline to pass all 12 of its appropriations bills, it usually has to pass a *continuing resolution* to fund the government in the interim. Some years, Congress and the president deadlock and, with no authority to spend money, the government shuts down, most famously in 1995-1996. Emergency functions, such as national defense and air traffic control, can continue, but employees get IOUs instead of paychecks until the deadlock ends.

Multiple appropriations bills are routinely merged into a single *omnibus bill* either to speed things up or to force through provisions that might not pass on

their own. If more money is needed after the fiscal year begins, Congress passes a *supplemental bill.*

If individual spending and tax bills don't total up to what the budget resolution envisioned, they are, in theory, forced to conform through a process called *reconciliation.* Reconciliation has since evolved into a vehicle for major legislative changes. Unlike most bills, reconciliation bills cannot be filibustered in the Senate so they can pass with 51 instead of 60 votes, and debate is limited to 20 hours. This makes it attractive for contentious legislation, such as Bush's tax cuts and parts of Obama's health care overhaul. Reconciliation, however, has its limits—its Byrd rule forbids amendments that are *nongermane,* meaning they have nothing to do with the budget. Generally, it can't be used to widen the deficit, although Bush broke that tradition with his tax cuts. There's typically one reconciliation bill every one to two years.

In budget battles, hyperbole and partisan exaggeration are the weapons of choice. Thank goodness for the Congressional Budget Office.

In budget battles, Congressional leaders and presidents regularly indulge in hyperbole and partisan exaggeration. Thank goodness for the Congressional Budget Office (CBO). Though appointed by Congressional leaders, the CBO director is nonpartisan and doesn't endorse bills. By evaluating their impact and cost, though, he can make or break them.

The CBO gets things wrong, sometimes spectacularly. In the late 1990s, it repeatedly underestimated future surpluses. Starting in 2001, it made the opposite mistake as deficits replaced surpluses, only partly because of Bush's tax cuts. But its errors are unbiased. They result from misjudgments or mistaken assumptions, not a presumption that a policy is good or bad.

The CBO shares its watchdog role with Congress' Joint Committee on Taxation (JCT). Although its chief of staff is a partisan appointment, the committee's role and its staff are nonpartisan. The JCT analyzes and helps write

tax legislation. The CBO uses its revenue estimates to score estimate the cost of legislative proposals.

The budget process in the United States makes deficit reduction hard because touching any spending program or tax break arouses opposition from concentrated constituents and allied legislators. To overcome this, Congress sometimes tries to impose rules on itself that make it hard to run deficits, much as Odysseus had himself tied to his mast to resist the call of the sirens. One such rule is Pay-As-You-Go (Paygo), which requires that new tax cuts or mandatory programs not increase the deficit and must be paid for with higher taxes or lower spending elsewhere in the budget. Paygo, however, has loopholes. Major deficit reductions such as in 1990 have usually required bipartisan deals, often made at summits with just a handful of decision makers.

Hitting Closer to Home

State and local governments together spend about as much as the federal government. State and federal budgets are similar, but there are some important differences.

- States spend less on benefit checks and more on delivering services, like college education, prisons, and road maintenance. Thus, they employ more people.
- States get a third of their general revenue from the federal government, mostly for shared programs like Medicaid. For the rest, they depend heavily on both sales and income taxes.

In all but four states, the fiscal year begins on July 1. More than half of states have a one-year budget cycle while the remaining states mostly have a two-year cycle. They rarely budget beyond two years, which makes for myopic decision making. Like Congress, state legislatures have final say over the budget and four (notably California) need a supermajority to pass a budget. But governors have more say than presidents. In 44 states, governors can veto individual items rather than an entire spending bill, whereas the Supreme Court struck down a similar presidential line-item veto. Governors also have more power to change spending or taxes without the legislature's permission if the budget goes off course.

Every state except Vermont is required to balance its budget. If, part way through the fiscal year, a deficit materializes, many states require the governor or legislature to eliminate it before the year ends. States can borrow for capital projects such as prisons and highways.

Balancing a state budget is a harrowing experience because while spending grows steadily, revenue gets whip-sawed by economic ups and downs. When a recession drives down revenue, states have to raise taxes or cut spending, making the recession worse. To escape the straitjacket, states often resort to gimmicky moves, such as skipping pension contributions or counting the proceeds of a bond issue as revenue. That is sort of like getting a home equity loan and counting the new cash as salary.

Still, the balanced budget requirement helps keep state debts low. Total state and local debt in 2009 was just $2.4 trillion, with state debt accounting for $1 trillion. A lot of that state debt was backed by earmarked fees like highway tolls. Debt backed by the full faith and credit of the states was only about $400 billion in 2008 or just 3 percent of GDP. States do, however, have large unfunded gaps in their employee retiree plans: $1 trillion as of 2008, the Pew Center on the States estimated in a 2010 report. Since state economies are less diverse than the country's as a whole and they can't print money, states are at greater risk of default than the federal government, although none has done so since Arkansas in 1933.

The Bottom Line

- The federal government is a gigantic player in the economy and it will get bigger in coming years as government services expand, the population ages, and interest on the national debt mounts.
- Federal spending comes in three varieties:
    1. Interest on the debt.
    2. Discretionary spending.
    3. Mandatory spending.
- Tax revenue comes mainly from personal and corporate income and payroll taxes. Compared to other countries, the United States relies relatively little on consumption taxes such as on gasoline or a value-added tax.
- Every year the president proposes a budget; Congress accepts some of it but ignores a lot as it passes the appropriations, tax, and mandatory program laws.
- Unlike the federal government, states must balance their budgets each year, which makes for profligacy in good times and wrenching austerity in bad times.

Chapter Thirteen

Good Debt, Bad Debt



How Government Borrowing Can Save or Destroy an Economy

GEORGE PAPANDREOU ran for election in 2009 promising to reinvigorate Greece's recession-gripped economy by raising public salaries, investing in infrastructure, and helping small business. Shortly after becoming prime minister he discovered the budget deficit had exploded to 13 percent of Greek gross domestic product (GDP). Investors fled the country's bonds, driving their interest rates up to punishing levels. Papandreou was soon slashing salaries and raising taxes in a desperate effort to stave off default.

Government borrowing is like Ritalin. At the right dosage it can jolt a lethargic economy out of recession. Overdosing, as Greece discovered, can bring on seizure.

Borrowing money isn't necessarily bad. In fact, the U.S. national debt arguably helped bind the country together at its birth. In a famous compromise with Thomas Jefferson, Alexander Hamilton persuaded Congress to assume the colonies' debts in return for moving the capital from Philadelphia to present-day Washington. For most of the next century and a half, the federal government was small and conservatively run. The budget was in surplus more often than deficit; the national debt in 1860 was lower than in 1791. (A *deficit* occurs when the government's revenue falls short of spending in a particular year. The *debt* is the sum of all deficits ever run.)

All that changed in the 1930s. In five of every six years since, the government has run a deficit. Although a family that keeps borrowing money every year to pay its bills would eventually have its credit cards canceled and file for bankruptcy, countries are different. Since their economies grow over time, they can keep borrowing as long as total debt doesn't get out of line with GDP. In theory the government can tax the entire GDP if necessary to repay the money—something no individual or company can do.

Three's a Crowd

There's nothing wrong with the government borrowing to finance an investment, such as a highway, that pays off long into the future. That way, future taxpayers help pay for something that also benefits them. But, deficits now mostly finance things like social programs that only benefit today's citizens. Yet, future taxpayers will have to repay those deficits *with interest.*

Furthermore, deficits may chip away at long-term economic growth. To understand how they do this damage, imagine a watering hole on the African savannah with just enough water to support a pride of lions and a herd of zebras. Then one day, a bunch of elephants move in. Soon, lions and zebras are dying of thirst. Like the watering hole, the pool of savings from which businesses and households borrow is finite. When government deficits start drawing on that pool, the three-way competition for money pushes up long-term interest rates and crowds out private investment—perhaps a family decides not to buy a house or a business decides not to expand. That hurts future growth.

Elephants don't crowd out lions and zebras when they're drinking from a lake instead of a watering hole. Similarly, deficits are less likely to crowd out private investment when the pool of savings is global instead of local. In the last decade, the world has had more savings than it knew what to do with, and the United States kept borrowing without pushing up long-term rates. Still, even this doesn't let deficits off the hook; when the United States borrows by selling bonds to foreigners, the influx of foreign money might lift the dollar, penalizing U.S. exporters.

These nefarious effects are hard to pin down but they're real. In 2004, before becoming Barack Obama's budget director, Peter Orszag wrote a study with William Gale that found a deficit of 3.5 percent of GDP (roughly its average since 1982), year in and year out, raises interest rates by 0.4 to 0.7 percentage points and shrinks the economy by 1 percent to 2 percent.

When Deficits Help

The wisdom of deficits changes during recessions. When people lose their jobs, bonuses, or hours and corporate profits fall, they pay less tax. That deepens deficits but softens the blow to private spending. Meanwhile, benefits for the poor, such as those who are on Medicaid, and the unemployed, automatically rise.

Businesses and consumers usually trim their own borrowing during recessions out of caution for the future. With less competition for saving, deficits are less likely to push up long-term interest rates as we saw in 2009 when the deficit hit 10 percent of GDP but bond yields fell.

The biggest drawback of fiscal stimulus is that it is usually redundant. Central bankers are much better at managing the business cycle.

That sort of increase in the deficit is pretty much automatic, and it usually reverses during recovery. Sometimes, though, governments give the economy an added jolt with fiscal stimulus: an extra tax cut or a dollop of spending. This is usually a bad idea. It can take months, even years, for money targeted at roads, sewers, and power lines to clear the necessary approvals. Tax cuts may be saved rather than spent. Just one-third of the $96 billion in tax rebates distributed as part of a fiscal stimulus in 2008 were spent in the first year, according to a 2009 study by Claudia Sahm, Matthew Shapiro, and Joel Slemrod. If the economy really needs more stimulus, it’s better to leave it to the Fed. It can lower interest rates on an hour’s notice, and raise them just as quickly when the need has passed, without reelection clouding its judgment.

However, fiscal stimulus is a good idea under one special case: when the Fed has already lowered short-term interest rates to, or close to, zero. Then, fiscal

policy may be the only means left to pull the economy out of recession. This happens rarely; one of those few times was in 2009, which is why most economists backed a major federal stimulus. Raising taxes and cutting spending to reduce deficits is also riskier in such a situation, because the Fed can’t compensate by lowering rates.

Different types of stimulus have different multiplier effects. The Congressional Budget Office thinks a dollar spent by the federal government on a jet fighter or a park ranger will ultimately generate an estimated $1 to $2.50 of total activity, whereas a dollar of tax cuts will generate between $0.50 and $1.70. But quantity does not equal quality. Building a bridge to somewhere and a bridge to nowhere will both create jobs. That doesn’t mean they’re equally useful.

Debt Traps and Debt Crises

Most of the time, debt does its damage gradually, like termites in the attic. As lenders demand higher interest rates, the deficits slowly suffocate private investment and a growing share of national income goes to paying interest on the debt. Year after year this nibbles away at the economy's foundations. Sometimes, though, it is like a fire that races through the house. Investors suddenly decide not to lend at all. Interest rates skyrocket, the currency collapses, and economic activity implodes. It's like the conversation between two characters in Ernest Hemingway's *The Sun Also Rises.* "How did you go bankrupt?" one asks. "Two ways," the other replies. "Gradually and then suddenly."

Investor confidence is crucial. An otherwise bearable debt becomes intolerable if interest rates rise sharply.

Unfortunately, it is hard to know in advance whether a crisis will be gradual or sudden. A key danger sign is a high and rising debt-to-GDP ratio. Investor confidence is crucial. An otherwise bearable debt becomes intolerable if investors suddenly demand sharply higher interest rates. A tipping point occurs when interest rates climb above a country's nominal growth rate. At that point, the debt-to-GDP ratio will automatically rise unless the country runs a budget surplus, excluding interest. For example, if a country's nominal GDP grows 4 percent and it pays 6 percent interest on its debt, it needs an annual surplus, excluding interest, of 2 percent of GDP to keep the debt steady as a share of GDP.

Walter Wriston, the legendary chief executive of Citicorp, was ridiculed for saying countries don't go bankrupt, after Latin American loans almost wrecked his bank. But he was right: A creditor can't drag a deadbeat country through bankruptcy court and grab its assets. Countries may choose to default because they can't pay or because they don't want to. So lenders must worry about a country's ability and willingness to pay.

These differences explain why some countries can go longer without a debt crisis than others. At the end of World War II, the United States' debt reached 120 percent of GDP, and Britain's 200 percent; neither experienced a crisis. Nor has Japan, even though its debt at the time of this writing exceeds 200 percent of GDP. By contrast, Mexico's debt was only 35 percent of GDP when a crisis struck in 1994.

In general, investors give a longer leash to countries with a long history of paying their debts like the United States, Canada, and Britain. Such countries are often allowed the luxury of borrowing in their own currency, which insulates them from one of the major causes of debt crises: the inability to repay foreign currency debt. By contrast, investors give shorter rope to countries that regularly stiff them. Argentina, for example, has defaulted three times since 1980 alone, most recently in 2001.

Countries escape debt through one of five ways. The most painless is to grow its way out: economic growth generates revenue to shrink the deficit and brings down the debt-to-GDP ratio.

Another way of controlling debt is austerity: painful cuts in spending or increases in taxes. This brings down interest rates, which also cuts the deficit. This is how rich countries like Ireland and Denmark in the 1980s and Canada in the 1990s escaped their debt traps and it is how the United States turned things around in the early 1990s. Another way is a bailout, when another country or the International Monetary Fund (IMF) comes to the rescue as the United States did for Mexico in 1994—although austerity is often a condition of such rescues.

Then, for countries like the United States that borrow in their own currencies, there's inflation, which reduces the real value of existing debts. As we saw in Chapter Five, though, creating inflation is easier said than done. And it may not help: If investors smell inflation, they'll charge higher interest rates or refuse to lend. The government may then have to twist the central bank's arm into keeping interest rates low, or force private citizens and banks to buy its bonds at artificially low rates.

The fifth route out of a debt trap is to default.

Could It Happen Here?

The United States' deficits are chewing away at the rafters, but are they about to burn the house down? It doesn't seem likely. Investors' faith in U.S. debt is buttressed by history, culture, and law. When the Continental Congress couldn't pay revolutionary soldiers their wages, they gave them IOUs instead. Many veterans sold their IOUs to speculators. Alexander Hamilton persuaded the new republic to pay off all the IOUs, including those held by speculators, to establish the country's creditworthiness.

The only time the United States did anything like defaulting was its decision in 1934 not to honor previous promises to repay in gold. At the time of this writing, the debt is a manageable 60 percent of GDP and interest rates are no higher than GDP growth. The United States still has the "exorbitant privilege" of borrowing in the world's most popular currency. As we saw in Chapter One, its long-term economic outlook is brighter that most countries' thanks to higher population growth.

Crises used to be restricted to emerging countries. Not anymore.

But there are reasons to worry. It used to be that debt would loom large only once promises to retiring baby boomers came due. No more. The Great Recession left gaping structural deficits that are already driving up debt as a share of GDP, unless there's an economic boom or big changes to policies. Crises used to be restricted to emerging countries. Not anymore. Wealthy Iceland needed the IMF's help in 2008 to avoid default, and Greece had to be bailed out by the IMF and the rest of Europe in 2010. When U.S. debt was last this high, in the early 1950s, it owed it mostly to its own citizens. Today, the United States owes half to other countries, who may be quicker to flee if they smell trouble. (To be sure, most of those foreign lenders are central banks with few alternatives for their money.)

Keeping investors comfortable doesn't require the budget to be balanced overnight or that we pay all the debt back. It means ensuring that when the economy is healthy again, the debt will stop rising. That, however, means painful and divisive choices between raising taxes and shrinking government.

We can't count on a windfall from falling interest rates because they're already low. Discretionary spending is too small to trim the deficit much unless our military commitments shrink dramatically. Entitlements will have to bear the brunt, through less generous benefits, cost control, reduced eligibility for government programs, and higher payroll taxes.

Taxes will also likely have to rise to reduce the deficit. One popular proposal is to impose new taxes on consumption rather than income, with the idea of encouraging Americans to save. A higher gasoline tax, for example, would also reduce carbon emissions. Another possibility is a value-added tax, or VAT. A VAT is charged throughout the production process of a product. For example, a baker might pay $0.05 VAT on flour and collect $0.25 in VAT on bread that he sells to the consumer. After deducting the tax he paid, he submits the tax he's collected to the government: $0.20 in this case. Another way to raise revenue is to trim tax breaks, which add up to $1 trillion more per year and make the tax code complicated and inefficient.

It's hard to believe but politicians have made these sorts of tough decisions before. When Social Security teetered on insolvency in 1983, they raised payroll taxes and the retirement age. In the 1990s, they cut Medicare provider rates and changed welfare from matching state funding to block grants. George H. W. Bush in 1990 and Bill Clinton in 1993 raised taxes.

Unfortunately, these episodes may have taught politicians the wrong lesson. Bush lost re-election in 1992. In 1993, Marjorie Margolies-Mezvinsky, a first-term Democratic Congresswoman from a conservative suburban Philadelphia district, cast the deciding vote for Clinton's tax increase. It helped turn the budget around but she wasn't around to take credit: In 1994, voters threw her out.

Today, Congress is its most polarized since the 1920s. It is increasingly difficult for Democrats to countenance cuts to entitlements and even harder for Republicans to raise taxes. If events in Greece and in the United States are a

guide, it will take a wake-up call from the markets, in the form of rising long-term interest rates, to get politicians to act.

Into the Weeds

The Treasury Department's oldest function is to raise the money needed to fund the government by collecting taxes and issuing debt. It has numerous ways of borrowing, but the most important is through public auctions of Treasury bills, which mature in one year or less; notes, which mature in 1 to 10 years; and bonds, which mature in 20 to 30 years. It also raises money by selling bonds directly to the public, and to state and local governments. Investors usually buy securities through designated primary dealers who bid on their behalf at auctions. Big money managers and foreign central banks can submit their own bids, either via a dealer or directly through the Fed.

Total Treasury borrowing is limited by a law called the debt ceiling. Because the national debt keeps growing, Congress must regularly raise this ceiling, though it usually grandstands a bit first.

Treasurys are the world's most heavily traded and trusted security and the volume of bids at auctions routinely exceeds the amount for sale by a factor of two to three. For the Treasury to sell less than it needs would be like the Jonas Brothers failing to sell out a high school gym: it would be a shocking blow to U.S. prestige and investor confidence. The Treasury carefully manages the process to avoid that, with plenty of advance notice of how much it intends to borrow, and rules designed to ensure that if customers are scarce, dealers are there to buy.

So how big is the national debt? Well, it depends on one's definition of national debt of which there are quite a few as Table 13.1 shows. In September 2009, the gross federal debt was almost $12 trillion or 83 percent of GDP. However, almost $5 trillion of this is owed to other parts of the federal government, principally the Social Security and Medicare Trust funds. That debt doesn't trade in the markets. After excluding that debt and the debt held by the Federal Reserve, the net federal debt drops to under $7 trillion, or 48 percent of GDP. This is the figure most often compared across countries.

Table 13.1 How Big is the National Debt?

Source: U.S. Treasury, Office of Management and Budget, Federal Reserve.

(As of September 2009)	**$ trillion**	**Share of GDP**
Gross federal debt	11.9	83%
Minus debt owed to other parts of the government (e.g., Social Security Trust Fund)	*4.6*	
Equals publicly held debt	7.5	53%
Minus debt held by the Federal Reserve	*0.8*	
Equals net federal debt	6.8	48%
Add state and local debt (excluding receivables)	*2.4*	
Equals general government debt	9.1	64%
Federal government financial assets	*0.9*	

The federal government also has assets: the investments in banks, auto companies, and mortgage-backed securities made during the financial crisis, worth some $800 billion in September 2009. Its other assets, like aircraft carriers and the Washington Monument, aren’t that useful for paying bills.

The Hidden National Debt

Taxpayers are on the hook for far bigger obligations than just the bonds the Treasury has issued. The present value of health and pension benefits promised to future civil service retirees, veterans, and military personnel amount to some $5 trillion. Then there's the $104 trillion unfunded liability in Social Security and Medicare.

Unfunded obligations are based on current forecasts and current law. But forecasts can change and Congress can change the law.

These debts, however, are different from Treasury debt: They're estimated obligations based on current forecasts and current law. But forecasts can change and Congress can change the law, and indeed, it probably will. It may pay a political price but it is not as traumatic as defaulting on a bond.

Finally, Uncle Sam has in effect cosigned trillions of dollars of others' loans with various backups and guarantees. For example, the Federal Deposit Insurance Corporation (FDIC), has guaranteed the safety of over $5 trillion in deposits. The Pension Benefit Guaranty Corporation backs private pension plans. Ginnie Mae has guaranteed $1 trillion of mortgages insured by the Federal Housing Administration and Veterans Administration. And, most contentious of all, since 2008 the federal government has stood behind more than $5 trillion of debt and guarantees issued by Fannie Mae and Freddie Mac, two formerly privately controlled mortgage companies that became insolvent during the financial crisis.

The actual risk is much smaller than those hair-raising figures imply. Few of those guarantees will have to be honored because most banks won't fail and those that do will be paid for by the banks that survive. Ginnie Mae, Fannie Mae, and Freddie Mac can repay most of their own debts with the fees, interest, and

principal from the mortgages they own or guarantee. But crises and recessions have a way of turning these contingent liabilities into real ones.

The Bottom Line

• Chronic deficits compete with private borrowers for limited savings driving up interest rates, retarding investment, and impairing future economic growth. Interest on the national debt starves other government programs.

• Budget deficits can be good. During recessions, tax revenues fall and spending on the poor and unemployed rises, softening the sting. There's less competition with private borrowing.

• Governments sometimes use fiscal stimulus—that is, a deliberate increase in the deficit—to boost a weak economy. This is usually unnecessary, unless the Fed is unable to do the job because it has already cut interest rates to zero.

• A breaking point can come when debt is so high that investors suspect governments will try to renege either by defaulting, or through inflation.

• The United States' long history of fiscal probity, favorable long-term growth outlook and control of the world's reserve currency, suggest it has a long way to go before it faces a crisis, but the risk can't be rule out.

Chapter Fourteen

Love-Hate Relationship



The Bipolar Financial System—Essential for Economic Growth But Sometimes It Goes Nuts

IN TOM WOLFE'S 1987 novel *Bonfire of the Vanities,* a bond trader's daughter asks him what he does for a living. His wife explains, "Just imagine that a bond is a slice of cake, and you didn't bake the cake, but every time you hand somebody a slice of the cake a tiny little bit comes off, like a little crumb, and you can keep that."

That image pretty much sums up the popular view of financiers: They don't make anything, they just get rich rearranging the fruits of others' labor. At times of crisis, that cynicism turns venomous, such as when Charles Grassley, a Republican senator, in 2009 urged the richly paid employees of one bailed-out firm to resign or commit suicide.[6]

Yet, finance is as essential to economic growth as it is unpopular among Congressmen. The financial system channels capital from those who have it to those who need it, much as the circulatory system moves blood from the heart to the lungs and muscles. A simple example shows how. Imagine that you have money to invest while a colleague at work needs to borrow money to buy a house. Why not bypass the bank, and lend him the money? It seems like a win-win: you'd charge him more than you'd earn on a certificate of deposit and he'd pay less on his mortgage. Upon reflection, it is obvious why this seldom happens. He may need more than you have. He may want to borrow it for 10 years but you only want to lend it for one year. Most important, you don't know if he'll pay it back.

The financial system solves all these problems. It matches savers with borrowers with neither having to know each other. It conducts the necessary due diligence; if the borrower defaults on the loan, the saver still gets his money back. It also spares the borrower of the burden of repaying the saver before he's done with the money.

One way of appreciating the importance of the financial system is to imagine

what happens when it stops working. As Ben Bernanke reportedly warned in the wake of Lehman's bankruptcy: the "economy's arteries, our financial system, is clogged, and if we don't act, the patient will surely suffer a heart attack."[7] An example of a country suffering such a heart attack is Iceland, whose gross domestic product (GDP) sank some 15 percent after all its banks failed in 2008. Inflation and unemployment skyrocketed, restaurants emptied, and the once globe-trotting population found itself grounded . . . literally.

The U.S. financial system is one of the most diverse and complex in the world—sometimes it is too complex for its own good. Thomas Philippon, an economist at New York University, estimates that in 1947, finance accounted for 2.3 percent of GDP. By 2005, it was almost 8 percent. That's an awful lot of cake, and a lot of it was just sugary icing with no nutritional value: leveraged buy-outs, speculative stock trading, and financial engineering whose main purpose was to layer on more bets.

But just because finance has its periodic excesses shouldn't blind us to the fact that most of the time it is useful. Much of that cake represented 401(k)s, life insurance, and taking Microsoft and Google public. The historical record has the same message: Financial innovation usually helps growth; it doesn't hurt it. Something akin to joint stock companies in ancient Rome helped spread large-scale mining technology. Preferred shares were one of the financial innovations that made the railroad-building boom of the nineteenth and twentieth centuries possible. Countless studies also have found that countries with more developed financial systems grow faster.

So does the diversity of the U.S. financial system encourage competition and growth, or does it feed speculation and breed crises? In fact, it does both.

Where Have You Gone, George Bailey?

Think of our financial system in two parts:

1. **Institutions.** This part includes regular banks, investment banks, and *shadow banks* (i.e., companies that act like banks but aren't regulated the same way).
2. **Capital Markets.** This part is comprised of securities and derivatives that investors trade back and forth.

Banks remain the foundation of our financial system, but over the years their importance has shrunk.

Let's look at institutions first. A bank is the most basic part of the financial system, and the most basic sort of bank looks like the Bailey Building and Loan Association run by George Bailey in the film *It's a Wonderful Life*. It starts with shareholder capital, raises deposits, and makes loans.

Banks have gotten a lot more complex since Jimmy Stewart played George Bailey in 1946. Deposits now contribute just 60 percent of their funding; they get the rest from bonds, short-term IOUs like commercial paper, wholesale loans from other banks and big investors, derivatives, and other things. They lend to countries, companies, and individuals through loans, securities, credit cards, lines of credit, and countless other avenues.

Although banks remain the foundation of our financial system, their importance has diminished over the years. In 1980, banks supplied 50 percent of the economy's credit; by 2007, that had shrunk to 23 percent. Capital markets, which I'll describe more below, and institutions that look, act, and smell like banks but aren't regulated like banks have taken on a larger lending role. These shadow banks, as PIMCO, the bond fund manager, calls them, match *savers* and *borrowers*, but they don't take deposits. Instead of deposits, shadow banks fund

their lending by issuing bonds and short-term IOUs or by getting rid of their loans through securitization.

You've probably done business with a shadow bank. Some are neighborhood fixtures, like mortgage brokers, payday lenders, and leasing companies. Others are nationally known. Fannie Mae and Freddie Mac, for example, guarantee or hold mortgages; Ally Financial, the former General Motors Acceptance Corporation (GMAC), makes car loans, and General Electric Capital Corporation makes leases and loans to businesses. Subprime mortgage lending was dominated by shadow banks like New Century Financial, now bankrupt, and Countrywide Financial, now part of Bank of America. Finally, there are some that you've never heard of, such as Sigma Finance, a so-called structured investment vehicle that at its peak had $57 billion in such assets as mortgage-backed securities, more than most U.S. banks.

Investment banks, also called *broker-dealers*, are another type of shadow bank. Rather than lend money directly, they match savers and borrowers in the markets by underwriting and trading stocks, bonds, and other securities; delivering the proceeds to the borrower or company; and taking a fee in the process.

For all their myriad names and legal charters, banks and shadow banks live or die by two things: capital and liquidity.

Over the years, the lines between banks and shadow banks have blurred. Commercial banks now trade stocks and bonds and investment banks make loans. Loans themselves are often chopped up and turned into securities. Commercial banks provide back-up credit to shadow banks, in effect acting as their lenders of last resort. Commercial banks and shadow banks may be part of the same holding company. Some shadow banks like Ally Financial and General Electric Capital own banks of their own.

For all their myriad names and legal charters, banks and shadow banks live or die by two things: capital and liquidity.

Capital is like armor on a warship. More armor makes a warship more resistant to enemy fire, but slower. With more capital a bank can endure more loan losses, but it is less profitable because its profit must be spread among more shareholders.

The ratio of assets to capital is called *leverage* and it is an indicator of how reliant a company is on debt. Consider Bank A: It has $1 of shareholders' capital, raises $9 in deposits, and makes $10 in loans. Its leverage is 10. If it gets another dollar of capital it can make $10 more in loans. Bank B, however, has leverage of 20: With each additional dollar of capital it can make $20 in loans. You can see why banks and their shareholders like leverage. But leverage works in reverse as well. Just as a thinly armored warship is more easily sunk, a thinly capitalized bank is more likely to fail. For Bank A to become insolvent and have its capital wiped out, 10 percent of its loans would have to go bad. For Bank B, just 5 percent would.

Federal regulations require banks to hold capital of at least 8 percent of assets, while shadow banks get by with far less. This is one reason why more of them failed during the financial crisis. For example, Fannie Mae and Freddie Mac operated with capital of less than 4 percent to juice their profits. But when mortgages turned sour, their capital disappeared and taxpayers bailed them out.

Liquidity refers to cash and things that are almost like cash that can be used to meet pressing needs. Your house may be worth $300,000, but that's not much help if you need $5,000 today to replace a broken furnace. So you keep cash on hand or a home-equity line of credit for the unexpected. It's the same for a bank. If it can't pay back depositors and lenders, it will fail. So banks keep cash in the vaults, hold securities (like Treasury bills) it can quickly sell, or maintain lines of credit with other lenders. They can also borrow from the Federal Reserve.

If capital is a warship's armor, liquidity is its ammunition. Too little liquidity is as lethal as too little capital. Without it, a bank would succumb to creditors pulling out their money just a warship that's out of ammo will succumb to enemy fire.

The importance of liquidity was forgotten in the years leading up to the crisis when a tidal wave of easy money fooled many firms into thinking they could

always borrow when they needed. But when panic hit, that assumption proved very wrong.

A popular source of liquidity is the repo market, which is kind of a pawn shop for financial institutions, but instead of pledging grandma's jewelry, a bank might pledge $1.1 million worth of mortgages, loans, and corporate bonds in order to borrow $1 million from a money market mutual fund for one day. In early 2008, investment banks had borrowed $4.5 trillion via repo loans, more than banks had in federally insured deposits at the time. But repo loans have no federal guarantee. When lenders grew skittish about Bear Stearns and its collateral they stopped rolling over repo loans, precipitating its collapse.

As a result of the financial crisis of 2007, financial institutions now need more capital and liquidity, because both regulators and the investors who lend to them demand it. This will make them safer, less profitable and, for a while, less able to lend.

Capital Markets

Banks and shadow banks have a vital role to play in supplying credit, especially to small businesses and households. But larger firms can raise capital by issuing stocks, bonds, and other types of securities directly to investors. If you belong to a pension plan, have a life insurance policy, or own a mutual fund, you are helping finance business investment as surely as your savings account makes your bank's lending possible.

Debt (also called credit) and equity (also called stocks) serve different purposes. Debt is temporary with limited upside . . . at best. Debt holders get back their principal plus interest, nothing more. They do, however, get repaid first if the venture goes bad. Equity is a permanent: The company has no obligation to ever repay your investment. Equity brings ownership. Stock holders share in the rewards of success and the losses of failure.

Stocks are simple and glamorous. Credit is complicated and dull. Yet it matters more to the economy.

Most companies have one common equity or stock. It trades on a public exchange like the New York Stock Exchange and NASDAQ Stock Market where everyone can see it. A company may, however, have numerous types of debt: short-term, long-term, secured, unsecured, convertible to shares, and so on. A lot of this debt is seldom traded so it is poorly suited to a public exchange. Instead, you buy it from, or sell it to, a dealer.

Stocks are simple and glamorous. Cable television tracks minute-by-minute moves in the Dow. Friends share stock tips and magazines celebrate entrepreneurs made rich by their initial public offering. By contrast, debt is complicated and dull, usually relegated to the inner pages of the financial papers. Yet it matters more to the economy. Most companies don't issue stock; they are

privately held. Households and governments don't issue stocks at all. At the end of 2009, all the stocks in the United States were worth about $20 trillion. All debt was equal to about $52 trillion of which households owed $14 trillion; businesses, $11 trillion; financial institutions, $16 trillion; and governments, $10 trillion. This means that an interruption in the supply of credit hurts a lot more parts of the economy than a fall in the stock market.

An important difference between banks and capital markets is that while a bank usually holds its loan until it matures, securities in the capital markets change hands often, and are valued at whatever price they could fetch in the market today. But there have to be a lot of buyers and sellers willing to trade at that price. Straightforward, popular securities like Treasury bonds and shares of IBM are thus highly liquid. Wall Street's propeller heads have made some securities so complex that in times of panic it became impossible for buyers and sellers to agree on a price. What were once liquid markets became dry as the Gobi Desert.

Two popular types of debt security that played a starring role in the financial crisis is the asset-backed security, or ABS, and the mortgage-backed security, or MBS. An ABS or MBS is almost like a share in a mutual fund: It gives you partial ownership of a pool of mortgages, credit card receivables, auto loans, or other securities. They are structured to pay you interest even if some of the loans in the pool go bad.

Mortgage-backed securities are a great idea that Wall Street, as is its habit, took to excess.

ABS and MBS sound exotic, but they're not. They have been around for decades. Here's how they work. Suppose a small bank has made $100 million in mortgages. It can package them as an MBS and sell it to a pension fund or a foreign central bank. It then takes the proceeds of the sale, and makes $100 million more in mortgages.

Wall Street has a bad habit of taking a good idea to excess, and MBS were no

exception. To appeal to more investors, financiers divided MBS into *tranches* with differing characteristics: some that were safer because they were paid interest first, and some less safe because they took the hit if any mortgages in the pool defaulted. Then they took these MBS and recombined them into new securities called *collateralized debt obligations*, or CDOs.

Years ago you would put your money in a bank and the bank would grant a mortgage to your neighbor. Now, you:

- Put your money in a pension fund
- Which is a partner in a hedge fund
- Which buys a collateralized debt obligation
- Which holds a mortgage-backed security
- That a bank put together
- Out of mortgages it acquired from a mortgage broker
- Who made the original loan to your neighbor

Did you get all that? Don’t feel bad, neither did some of the world’s most sophisticated investors. With so many steps, many investors didn’t know much about who they ultimately lent to, and simply outsourced their due diligence to credit rating agencies. Those agencies in turn thought the securities were worth AAA ratings because they badly miscalculated how much home prices would fall and how many of these loans would default.

The Teenage Boys of Finance

Derivatives are one of the most maligned and least understood part of the financial system. They are the teenage boys of finance—energetic and full of potential but the first to be fingered when someone totals the car.

A derivative is a contract whose value is derived from some other price or security: an interest rate, a currency, a stock index, a commodity. The first derivatives were on agricultural commodities. A farmer would enter into a binding contract with a food processor to sell his corn to that same processor six months later, locking in the value of future sales. Now, a U.S. company that plans to deliver parts to a European customer may use a derivative to lock in today the value of the euros he'll receive in six months' time. Suppose you want a 10-year loan but your bank would rather make a one-year loan. It can make you the 10-year loan, then use an interest-rate swap to make it resemble a one-year loan.

Currency and interest rate swaps are the clean-cut honor roll students of derivatives who almost never cause problems. Credit default swaps (CDS) are the tattooed skateboarders forever giving the school principal heart palpitations.

The idea of a CDS seems innocent enough. Suppose you made a $100 loan to your brother, but you worry he won't repay you. You pay a bank $5 a year on the condition that if your brother defaults, the bank pays you $100. The CDS thus make it possible for you to hedge your loan. The problem is they also give you less reason to be careful about lending to your brother. CDS thus may be one reason so many bad loans were made.

Asset-backed securities and derivatives are too useful to disappear. Crises are extremely effective at killing stupid financial innovations.

The growth in derivatives has been nothing short of phenomenal. Between 1998 and 2009, their global notional value grew eight times to $615 trillion. Now, what's notional value? Suppose you enter a contract to pay 5 percent interest on someone else's $100 loan. The contract's notional value is $100 but your actual exposure is only $5 per year. In this instance, notional value overstates the actual risk.

Nonetheless, this growth has brought dangers. Derivatives encourage leverage because they require less of a down payment than the same bet made with cash. They are also opaque: A company knows how much it owes to a bank or bondholders, but it may not know how many CDS are riding on its solvency. Orange County, Barings Bank, and American International Group lead a list of organizations that blew their brains out on derivatives. Consequently, derivatives have been prime suspects in many market blow-ups. Portfolio insurance, a popular hedging technique using stock index derivatives, helped cause the 1987 stock market crash.

Regardless of these dangers, ABSs, MBSs, and derivatives are too useful to disappear. Crises kill off stupid financial innovations—the 1987 stock market crash deepsixed portfolio insurance and the latest crisis has done the same for exotic mortgage securities. But, derivatives are here to stay. Like teenage boys, though, their potential is best realized with plenty of adult supervision. That means that they require plenty of capital and liquidity and, wherever possible, transparency in the open market, such as on a public exchange instead of in a private dealing room.

The Bottom Line

• You don't have to hug your banker, but what he does is essential to economic growth. Banks and capital markets match savers with those who need capital.

• Over the years, banks have been joined by shadow banks that, like banks, made loans but don't take deposits and aren't as tightly regulated. All these institutions need capital to protect against losses and liquidity to repay

lenders. Too much of either, and profits suffer. Too little, and the institution could fail.

• Equities get all the attention in the capital markets but the economy relies more on a healthy market for debt securities, such as money market paper, bonds, and asset-backed securities.

Chapter Fifteen

A Species of Neuralgia



The Multiple, Recurring Causes of Financial Crises

IN NOVEMBER 2008, as Britain sank into its worst recession since the 1940s, Queen Elizabeth asked the elite scholars at the London School of Economics, why didn't anyone see it coming? The eminent economists convened a conference to study the question, then sheepishly drafted a letter to the queen. "Your Majesty, the failure to foresee the timing, extent and severity of the crisis," they wrote, "was principally a failure of the collective imagination."

They shouldn't have felt so bad. The only thing more inevitable than crises is our failure to anticipate them. As Carmen Reinhart and Kenneth Rogoff note in *This Time is Different: Eight Centuries of Financial Folly,* crises have been a fixture of finance since 1340 when Edward III of England defaulted, bankrupting the Florentine bankers who financed his war with France. Almost continuously since 1800, some part of the world has been in a banking or debt crisis. And for centuries, societies have been trying to find ways to stop them. They created central banks to prevent crises by giving banks a lender of last resort, and the International Monetary Fund to do the same for countries.

There's no single definition of a crisis—as a judge said of pornography, you know one when you see one. The trigger is unpredictable and the event is violent, often emotional, as investors and lenders move as a herd to protect themselves. Markets are normally self-correcting, as lower prices bring out buyers. Crises are self-reinforcing as lower prices bring out more sellers.

Almost by definition, crises are unexpected because they involve collective errors of judgment.

Almost by definition, crises are unexpected because they involve collective errors of judgment. "Financial crises that are foreseeable . . . rarely happen," Alan Greenspan wrote in his memoir, *The Age of Turbulence.* If a crash seems

imminent, “speculators and investors will try to sell out earlier. That defuses the nascent bubble and a crash is avoided.” For example, in the late 1990s Ed Yardeni, a prominent economist, predicted that computers’ inability to cope with Y2K, the millennial date change on January 1, 2000, could trigger a global recession.[8] Forewarned, the world spent billions of dollars to fix the problem and nothing happened.

Crises will always be with us because they are rooted in humans’ inbred tendency to extrapolate the past, their inability to predict the future, and their regular swings between greed and fear. Of course, these things are always present in the economy. For them to produce a financial crisis, though, some combination of other conditions must also be present.

Condition 1: Afloat on a Bubble

Every asset has some intrinsic value. For a stock, it is future profits, dividends, and cash flows. For a home, it is the cost of renting instead of owning it. For oil, it is the cost of getting more of it out of the ground. Yet calculating intrinsic value is never easy. What are future profits? Are there any other houses like this? How soon can that oil be pumped? Most of us end up assuming an asset's value is what other people think it is worth, much as we choose a restaurant not based on a careful examination of the menu and critics' reviews, but on how crowded it is. These assumptions make it relatively easy for an asset to become unmoored from fundamentals. In 2000, the S&P 500 topped 30 times earnings, double its historical average. In 2006, the ratio of home prices to rents reached 47 percent above its multiyear average.

Jeremy Grantham, a fund manager who's made the study of bubbles a personal passion, says that in all of them, the asset in question has reverted to its long-term average value: "There are no exceptions." Why then, do bubbles recur? At the start of every bubble is a kernel of economic truth: the Internet really was transforming U.S. business, just as railroads had a century and a half earlier. The public thus concludes old rules don't apply. In the 1980s, Japanese stocks traded at two to four times the valuation of U.S. stocks, but this was attributed to the effect of cross-shareholdings between companies. Sky-high land prices were justified by Japan's shortage of land. Both, of course, collapsed.

Not all bubbles lead to crises. To produce a crisis requires leverage.

Many people correctly identify a bubble before it bursts, but profiting from that prescience is difficult when the tide of opinion and money is running against them. *The Economist* raised alarms about U.S. property prices in 2002; prices rose for four more years. As I write this book, home prices in Australia and Britain, which rose far more than prices in the United States, had yet to deflate.

History says they will; when, is anybody’s guess.

Condition 2: Leverage, the Prime Suspect

Not all bubbles lead to crises. To produce a crisis requires something else: leverage, which means lots of debt relative to assets or income. Leverage does not cause a market to crash any more than driving fast on a highway causes your car to crash. But leverage, like speed, makes the crashes that happen way more deadly. Leverage amplifies profits and losses when markets move. Suppose you spend $1 on a stock and it falls 50 percent. You lose half of your investment. Suppose you take your dollar, borrow another dollar, and buy $2 worth of the stock, which then falls 50 percent. After repaying the dollar you borrowed, you've lost your entire investment.

The fall in house prices that began in 2006 did far more damage than the decline in stocks after the dot-com bubble burst in 2000, even though the loss of value was about the same. Why? During the dot-com bubble very few stocks were bought with borrowed money, whereas during the housing boom, almost all homes were. As home prices plunged, owners defaulted, and loan losses ate away at lenders' capital. Indeed, the worst financial crises usually involve banks because banks are, by their nature, leveraged.

Leverage often gets a helping hand from *moral hazard*, a term originally borrowed from insurance. It means that a person will take more risks if he is insulated from the consequences. If you pay for your son's car insurance and speeding tickets, odds are he'll drive faster. If investors believe the government won't let a company fail, they'll give it more money and charge it less interest. In the 1980s, federal deposit insurance enabled thrifts to lend recklessly to real estate developers. Investors lent to Russia on the view it was "too nuclear to fail." It defaulted in 1998. Though Fannie Mae and Freddie Mac were owned by shareholders, investors assumed the government wouldn't let them fail and lent to them for almost as little as they charged the U.S. government. Can you blame them? After the two collapsed from all that subsidized borrowing, taxpayers bailed them out.

Leverage is an early warning sign of a crisis. It could be rising corporate debt-to-income ratios, or it could be an entire country's foreign debt as a share of

GDP—a feature of Thailand that tipped some off to the 1990s crisis in East Asia.

But leverage can also be hard to spot because borrowers may use subterfuge, creative accounting, derivatives, and outright fraud to hide their debt. When investors realize the truth, all hell breaks loose—as with Greece's understated deficit in 2009, Enron's use of off-balance-sheet entities in 2000, or Korea's puffed-up foreign exchange reserves in 1997.

When your deadbeat brother-in-law can't repay your loan, he first buys time by claiming the check is in the mail. Likewise, a company or country lurching toward insolvency first claims to be merely illiquid.

Condition 3: Mismatches, the First Coconspirator

When an avid mountain climber marries someone who's scared of heights, divorce may be in the cards. Similar mismatches in finance are usually a sign of trouble. A company whose sales are in Indonesian rupiah borrows in dollars. A homeowner whose wages are in Hungarian forint borrows in Swiss francs. A country borrows from foreign banks in some other country's currency. In all these cases, a plunge in the local currency will make it dramatically harder to repay the foreign loan.

Rising dependence on short-term borrowing is often a telltale sign of trouble.

A similarly dangerous sort of mismatch is borrowing short-term to make long-term investments. Relying on short-term loans is like having to reapply for your job every three months. Good luck if it happens on a day your boss takes a dislike to you! Short-term borrowing spells trouble if interest rates rise sharply or investors balk at refinancing the loans as they come due. In fact, rising dependence on short-term borrowing is often a red flag: it may mean nervous investors won't make long-term loans except at punitive rates. As such, countries, companies, and individuals are often tempted to rely excessively on short-term funding because it is cheaper. Mexico's 1994 peso crisis was precipitated by heavy dependence on short-term borrowing, much of it linked to foreign currencies.

Condition 4: Contagion

The failure of one bank, one company, or one hedge fund seldom constitutes a crisis; the threshold is crossed when the panic spreads to others, a phenomenon dubbed *contagion.*

Contagion has several causes. One is guilt by association. When Lehman Brothers failed in the fall of 2008, investors began to bet that Morgan Stanley and Goldman Sachs would be next. When Thailand devalued its currency in July 1997, investors naturally worried that Malaysia, Indonesia, the Philippines, and Korea would do the same, since their economic circumstances were similar. They rushed to sell the local currency, precipitating more devaluation.

Another source of contagion is the fact that countries, companies, and banks have countless relationships with lenders, borrowers, trading partners, and investors often around the world. As a result, the failure of one company can bring down all its counterparties. For instance, if Bank A defaults on a loan to Bank B, Bank B may not be able to pay its loan to Bank C, and so on. The more interconnected a company, the bigger a threat it is to the financial system. Lehman Brothers employed only a tenth as many people as General Motors but its bankruptcy did far more damage because it was much more interconnected.

Earlier in this chapter, I described how someone who is insolvent first claims to be merely illiquid. Yet there are times when, because of contagion, an otherwise healthy hedge fund, bank, or country will become illiquid (that is, unable to borrow), and collapse. In the Depression, insolvency and illiquidity contributed about equally to bank failures.

Condition 5: Elections

Crises often come in election years. They are often a result of economic stresses that can only be fixed with painful remedies that politicians running for election don't want to administer. Politicians may ignore or paper over the problem in hopes of addressing it after the election, as Mexico did in 1982 with the Federal Reserve's help and Greece did in 2009. After Bear Stearns nearly failed in March 2008, Henry Paulson, the Treasury Secretary, didn't seek authority to handle failures at similar firms, like Lehman Brothers, because Democrats in Congress would not act until after that fall's election. Opposition candidates have little incentive to commit themselves to unpleasant courses of action, which leaves a fog of uncertainty. That unsettles investors and causes them to flee, as occurred in Korea in 1997 and Brazil in 1998. The years 2012 and 2016 may be delicate ones for the United States.

Into the Weeds

In the wake of the 1987 stock market crash the President's Working Group on Financial Markets, comprising the heads of the Federal Reserve, Treasury, Securities and Exchange Commission, and Commodity Futures Trading Commission, was formed to periodically meet and consult on the stability of the markets. Conspiracy theorists ascribe every inexplicable market rally to the machinations of this "Plunge Protection Team." This endowed them with far too much power and wisdom. In practice, when crises hit, the Treasury and the Fed would resort to ad hoc bailouts, jawboning, and prayer.

The sweeping financial overhaul of 2010 aims to tackle crisis prevention more thoroughly. It creates a 16-member Financial Stability Oversight Council, composed of the heads of the federal regulatory agencies and the Treasury Secretary, to look for threats with the power to rein in or even break up anyone dangerous.

Regulators could order the seizure of any big market player (much as the Federal Deposit Insurance Corporation can seize a bank), and close it down while paying off just enough of its debts to contain panic. In theory, the system is saved, fools take their lumps, and taxpayers are protected. In practice, who knows if future politicians will risk the fallout of liquidating a big company? What if it is the government itself that's the cause of the next crisis?

Shortly after the Federal Reserve was created in 1913, John S. Williams, the Comptroller of the Currency, wrote, "Financial and commercial crises or 'panics' . . . with their attendant misfortunes and prostrations, seem to be mathematically impossible." It wasn't true then. It's not true now.

The Bottom Line

• Every crisis is different but they share certain traits. An asset price that deviates from historical fundamentals

may signal a bubble, but not when or how the bubble will burst.

• Debt is a prime suspect in every crisis. Currency and interest rate mismatches, reliance on short-term debt, and moral hazard are all coconspirators.

• Crises are spread through contagion: Investors burned on one company or country flee others that look like it. A failing bank pulls down others with whom it trades or has other relationships. Because of contagion, companies or countries that were merely illiquid become insolvent and collapse.

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About the Author



GREG IP IS THE U.S. Economics Editor for *The Economist* magazine, based in Washington, DC. His career spans two decades of financial and economic journalism, including 11 years at the *Wall Street Journal* in both New York and Washington and before that stints at *The Financial Post* and *The Globe and Mail* in Canada. He appears frequently on television and radio, including National Public Radio, PBS, CNN, CNBC, and MSNBC. He has won or shared in several prizes for reporting. Greg graduated from Carleton University in Ottawa, Canada, with a degree in economics and journalism. He lives in Bethesda, Maryland.

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