Chapter 1

Revolution

A revolution has occurred in the United States in the past 50 years, a revolution that has reshaped investing and in the process changed the U.S. economy, the role of the federal government, the financial security of individuals, corporations, and financial institutions—including insurance companies—and the capital markets not only in the United States but also worldwide.

And yet this revolution has gone largely unnoticed by most of those affected by it. It occurred quietly, without bloodshed and with minimal disruption of lives. Like most revolutions, this was a revolution of ideas that swept away old thinking and old ways of doing things. Unlike most revolutions, the payoff was almost immediate and each step produced a positive return.

Also unlike most revolutions, this one was directed and driven by those generally considered among the most conservative in the nation, the nation's bankers, insurance executives, money managers, corporate executives, and state and local government officials. It was powered not by aroused passions, but by a flood of money released, inadvertently, by a decision, made by a federal government regulatory agency—the National Labor Relations Board (NLRB)—which oversees negotiations between companies and unions. The NLRB ruled in April 1948 that pensions had to be included in contract negotiations between an employer and employees, if a union wished. Until then, pension provisions had been set unilaterally by the employer. Afterward, union demands for pension benefits sparked rapid growth of pension plans and resulted in employers pouring money into pension funds to finance the promised benefits. The employers could no longer simply pay the benefits out of earnings; they now began to contribute additional amounts each year to meet future obligations.

As they stepped up their contributions to pension plans, the employers also began to search for better, more efficient ways to invest the accumulating assets. Better investments could produce higher returns, and higher returns could reduce the burdens of the pension obligations. The result of the search was a revolution in the way the nation's retirement promises are secured and the retirement savings are invested for the future, a revolution that continues today. This revolution affected every investor, institutional and individual, and through them, most aspects of the economy.

In 1949 the nation's pension assets totaled only $14.3 billion[1] and were, in effect, preserved in insurance company general accounts or locked into government bonds. They were not truly invested for growth. At the end of 1998 the nation's pension assets totaled more than $8.7 trillion,[2] more than 600 times what they were in 1949. They were larger than the national debt and growing faster. They were also larger than the nation's gross domestic product. That is, they could buy all the goods and services produced by the nation in one year and still have money left over. The pension assets were invested in a myriad of ways that financed true growth in the economy—that is, financed the growth of that gross domestic product.

This flood of money effected radical changes in financial institutions in this country and even internationally. The institutions overseeing pension assets in 1948 managed the assets according to a conservative interpretation of the old common law doctrine which stated that a trustee should invest the assets under his care with the care, skill, prudence and diligence that a prudent man, acting in like manner, would exercise. This doctrine was interpreted by the courts to mean that each individual investment must be prudent. If one investment turned out to be imprudent, the trustee could be found at fault, even if a dozen other investments were judicious and productive. Over the next 50 years the concept of prudence, indeed, the concept of risk, changed, and with it the investment practices of the nation's financial institutions.

Dramatic Changes

By April 1998, 50 years after the NLRB decision that unleashed the money flood into pension funds, the world of pension investing had changed completely, and it had changed the financial world. Fifty years ago almost all of the pension assets backed defined benefit plans that promised a specific monthly pension benefit when employees retired. By 1998 almost 25% of pension assets backed defined contribution plans for which the sponsor promises only to make a specific contribution into an account on behalf of each employee. No specific pension benefit is promised. Rather, the employee receives at retirement the value of the assets in his or her account. In addition, in 1948 both the asset allocation decision (that is, how much would be invested in stocks and bonds) and the portfolio management decision (which particular stocks and bonds would be bought) were made by perhaps 1,000 executives at a dozen major insurance companies and fewer than 100 major trust banks in the United States. A few pension executives at public employee pension funds and a handful of corporate funds were also involved.

By 1998 the asset allocation decision was made by more than 40,000 pension executives for defined benefit plans and by 35 million employees for defined contribution plans. The executives overseeing defined benefit plans, both corporate and public employee, influence the ebb and flow of almost $4 trillion of assets invested in the world's stock, bond, real estate, venture capital, and private equity markets. They decide how much of their funds' assets should be invested in each of these asset classes.

Through their selection of investment managers and the amount they give each manager to invest, they also influence the kinds of stocks or bonds or real estate in which the assets are invested. They decide, for example, how much money to give to a large-cap growth stock manager to invest in established growth companies—companies perceived to be growing faster than average; or how much to give to a manager specializing in a different kind of stocks; or how much to give to a venture capital manager or a junk bond manager to invest in small, less creditworthy but promising companies. Moreover, they are, for the most part, long-term-oriented investors. Their decisions affect the allocation of capital among companies and the cost of capital for different kinds of companies. The availability of capital and its price can affect the success or failure of a company, and ultimately the well-being of the whole economy.

Individual Control

The 35 million individuals directing the allocation of their own defined contribution plan investments are similarly influencing the flows of almost $2.2 trillion in assets.[3] These individuals, though not as familiar with the theory of investing as the professionals, have generally received some investment education from their employers. Many have learned about the relationship between risk and return. They have discovered that over the long run stocks have far outperformed bonds and other conservative investments. Many are now able to match their investments with their own financial status, future financial needs, and risk tolerance. They themselves decide how much they will invest in growth stocks or value stocks, large-cap or small-cap stocks, bonds, or guaranteed investment contracts through their decisions about how much to put into which mutual fund options offered by their employers. These employees have become investors, and some are becoming long-term-oriented investors as their investment pools increase.

Portfolio management decisions—decisions about which stocks, bonds, real estate property, venture capital deals, and so on to invest in—are now made by almost 10,000 highly educated investment executives at money management firms and at mutual fund companies. They are backed by an equal number of security analysts whose job it is to identify the stocks and bonds offering the best investment return prospects over the next few years. Thus, many more people, with many different decision-making processes, concerns, and needs, are involved in the investment decision process today than in 1950, when a relatively small group with similar concerns and backgrounds were involved. As a result of these changes, the capital markets, especially the stock market, have become more efficiently priced. Because so many people are looking, it is difficult for any single investor to consistently discover stocks that are wrongly priced in the market and buy them before others also discover them and act. Mispricing may occur briefly, but it is quickly eliminated by the actions of investors who recognize it and attempt to take advantage of it. Studies have shown that it is incredibly difficult for anyone, even these professionals, to outperform the market on a risk-adjusted basis over any significant period of time. As Charles D. Ellis of Greenwich Associates said in his seminal book, *Winning the Losers Game:* "The problem is not that professional managers lack skill or diligence. Quite the opposite. The problem with trying to beat the market is that professional investors are so talented, so numerous, and so dedicated to their work that as a group they make it very difficult for anyone of their number to do significantly better than the others, particularly in the long run."[4] Pension executives spend millions of dollars each year employing money management firms in search of returns in excess of the market. For most of them this is a futile exercise. Yet, if they did not all engage in that pursuit, if money managers weren't constantly evaluating the future prospect of companies in search of those most likely to prosper, if there was no contest of investment ideas and insights in the market, the capital allocation by the market would be far less efficient. Pension funds and their sponsoring organizations are paying the bulk of the cost for that efficiency. Even the bond market, though there are far more bonds outstanding than stocks, has become more efficient through a similar process.

This market efficiency has a very important consequence for the economy. It means that capital is being allocated efficiently across enterprises. If that were not so, if capital were not flowing in appropriate amounts and at the appropriate cost to the companies that could make the best use of it a very high percentage of the time, some investors would be able consistently to discover the fact and profit from it to earn returns in excess of the market as a whole. The economy as a whole benefits from that efficient allocation of capital. It can grow faster and at lower cost.

In 1950, in one of the most fortuitous developments in the U.S. economy since World War II, companies began seriously to fund their pension obligations, and they most often handed the assets over to investment professionals for investment in diversified portfolios of stocks and bonds. Many large companies limited the proportion of their pension fund assets that could be invested in their own stock, usually to 10%, even though there was no legal limit at that time. The companies wanted the pension funds protected from any difficulties that might strike the companies or their industries.

This was a fortuitous development because it channeled the pension fund money out of the companies, many of which were mature and in mature industries, into the capital markets. There, all companies competed for that capital on an equal basis. The institutional investors (eventually mostly the managers of pension assets) set stock prices; that is, they established the price for equity capital. Those companies perceived to have the best long-term return prospects were able to raise equity financing at the lowest cost. If the companies sponsoring the pension plans deserved the capital, they got it at reasonable cost; otherwise not. This was a strong positive for the U.S. economy, as we will see.

Investments Changed

The people making the decisions about investing pension assets have changed since 1948 and so, too, have the investments they use. Fifty years ago more than one-third of the assets of the nation's $14 billion in pension assets was invested in insurance company annuity products. Behind these annuities were portfolios of long-term bonds, mostly governments, which were simply held to maturity. More than 80% of the remainder was also invested in bonds, almost 50% of that in Treasury bonds. Less than 5% was invested in corporate equities—common and preferred stocks.[5] Most of the money in corporate equities was in the stocks of a few hundred large companies. There was no investment by pension funds in startup companies through venture capital or junk bonds; no investment in companies outside the United States; no investment in real estate, except tiny positions in mortgages. Nor was there any use of derivative securities such as options or futures to hedge risky positions. In 1950, there was no clear understanding of the nature of investment risk—how the risks of securities could compound or offset one another, or how risk and return were connected. Pension funds were the first investors to adopt new theories, approaches, and tools developed by academics and others.

The pension investment picture had changed radically by late 1998, 50 years after the NLRB decision. By then, large U.S. pension funds, both defined benefit (financing a plan where the company promises a specific retirement benefit) and defined contribution (where the employer promises only to make a specific annual contribution to a fund on behalf of each employee), had more than 60% of their assets invested in equities and only about 30% in fixed income securities. The remainder was in real estate and other private (i.e., nonmarket-traded) investments.[6] This surge of money into the equity market, in particular, helped lift the prices of stocks. The 1950s bull market that began when the threat of a postwar recession faded and continued until the late 1960s was reinforced by the growth of company contributions to pension funds and the movement of more and more of those pension assets out of bonds into stocks. In 1949 corporate pension funds had only $586 million invested in stocks.[7] A year later that figure had doubled. The amount had climbed to $3.1 billion by 1954,[8] to $16 billion by 1960,[9] and to $76 billion by 1970.[10] Pension funds had replaced individual investors as the drivers of the stock market. During the economic booms of the 1950s and 1960s, this flood of pension money into stocks helped lift stock prices, and the increase in stock prices reduced the cost of equity financing, helping hundreds of thousands of small companies go public and financing new plant and equipment for thousands of others.

A second surge of corporate money into pension funds, and hence into stocks, developed after the Employee Retirement Income Security Act (ERISA), the pension reform law, was passed in 1974. In 1975 corporations contributed $37 billion to their pension plans. By 1980 that total had climbed to $66 billion. By 1985 it was $95 billion. At least half of the contributions went into common stocks. During 1974–1980 private pension fund holdings of equities increased to $235 billion from $63.6 billion, a 19.7% compound rate of increase, while the stock market was climbing at a still healthy 9.9% compound annual rate.

Just as the corporate pension fund move into equities peaked and leveled off in the mid-1980s, public employee pension funds sponsored by state and local governments began to surge into equities. Their ownership of common stocks increased from 26% of their assets in 1980 to 60% in 1999. The equity holdings increased from $44 billion in 1980 to $1.5 trillion in 1998. The surge into equities during this period helped to lift stock prices even further. This surge in prices, by reducing the cost of capital, helped the U.S. economy restructure during the late 1980s after the energy crises of 1974 and 1979 had exposed much of U.S. industry as uncompetitive. Companies didn't respond immediately to the recovery of the stock market. High inflation and fear of recession slowed their reinvestment in plant and equipment until almost the mid-1980s, until inflation subsided and the cost of capital fell far enough for investment to become irresistible. But by the mid-eighties the restructuring was underway, and the results became apparent as the nineties began. The rising stock prices also helped restore individual investor confidence in the stock market, confidence that had been seriously eroded by the 1973–1974 bear market which cut the level of the Dow Jones Industrial Average, the most widely recognized stock market index, in half. In the wake of the bear market, individual investors had fled the stock market.

Reinventing America

Massive reinvestment in the U.S. economy was needed if the country was again to be competitive with the likes of Germany and Japan, which had now taken the economic world lead. In 1985 the U.S. economy was considered a basket case. U.S. chief executives were being urged to copy the German and Japanese corporate models. Harvard University economists argued that U.S. companies should seek their financing from institutions with which they had long-term relationships, not from the stock and bond markets. By the early 1990s, however, with the aid of pension fund capital, the U.S. economy had reinvented itself and was the most efficient, most resilient, and strongest in the world. As a result of the more competitive, more efficient, highly innovative economy, 15 million jobs have been created in the United States since 1990, and two-thirds of those have been jobs paying above the median wage. That is, they were not hamburger-flipping jobs, as some have alleged.

The huge flows into corporate equities and bonds from pension funds—private and public—helped finance that reinvestment. The largest funds were also major contributors to economic growth and the drive for efficiency through investments in venture capital or leveraged buyout pools. These funds reported more than $17 billion in venture capital investments and more than $49 billion in buyout pools at the end of 1999.[11] The total amount invested in both by all pension funds was far larger, perhaps as much as $100 billion, since many companies refused to disclose these "private" investments. The venture capital pools provided the resources necessary to get startup firms to a size where they could go public. The rise of Silicon Valley and the U.S. high-tech industry that leads the world parallels the growth of venture capital investing by U.S. pension funds. Without the pension fund assets, the U.S. high-tech industry might not now lead the world, for many firms would have been starved for vital capital or might have paid too a high price for it to permit success. Venture capital may be considered akin to rocket fuel for the economy, and pension funds provided much of that fuel.

Similarly, pension funds invested in leveraged buyout (LBO) pools that provided the financing for managements to take their companies private when they believed they could manage them more efficiently out of the public eye. LBO pools also provided the financing for outsiders to buy up the outstanding stock of companies and get rid of poor incumbent management which was not earning a competitive return on the assets. The leveraged buyout deals received bad press during the mid- to late 1980s, but in fact the threat of a takeover often shook up a sleepy management and stirred it to improve a company's efficiency and return on assets. Many completed LBO takeovers improved the performance of the company because the new management had to cut costs and improve efficiency and profitability in order to meet the debt repayments. As Christopher Farrell wrote in *Business Week* magazine: "For every leveraged buyout or hostile takeover, a dozen corporate chieftains got the message: Take risks, or lose your job. In other words, restructure your workforce and start breaking down barriers; refocus on core competencies and shed peripheral businesses; tie executive compensation to the stock market, work your capital smarter, and add to shareholder value. If you don't do it, we'll do it for you."[12] For too long, top managements at many companies had run them as their own private playgrounds, often at a cost to the investors. The improved management of America's premier companies prompted by the LBO movement was good for investors and good for the economy.

These changes were not without negative aspects, especially in the large numbers of employees laid off by companies heavily burdened by debt. The cost to these employees should not be overlooked. But the layoffs and downsizing were necessary as companies adopted new technologies, and the result was a fitter, more efficient, more competitive economy.

The LBO movement of the 1980s and 1990s could not have occurred without the financial support of the nation's pension funds. Individuals did not have sufficient amounts of money, and banks and insurance companies were, by and large, too conservative and risk averse. Pension funds were willing and able to provide billions. Through both leverage buyouts and venture capital vehicles, pension funds contributed to the growth and improved efficiency of the U.S. economy. In addition, the pension surpluses that built up, largely as a result of good investment returns in the early 1980s, often allowed companies to downsize humanely as they strove to become more efficient in the late part of the decade. They were able to use the surpluses to offer early-retirement incentives to long-term employees, preserving the jobs for hundreds of thousands of younger employees who otherwise might have been let go.

The flows into the bond markets as inflation subsided also helped lower interest rates and make fixed income financing affordable so that companies could finance the plant and equipment they needed by issuing bonds. So great was the flow of money and the desire for investment return to offset burgeoning pension costs in the 1970s and early to mid-1980s—driven largely by ERISA's provisions—that pension fund executives were willing to take additional risk, even in normally conservative fixed income investments, in search of higher returns. The result was the emergence of the junk bond market for bonds issued by companies rated below investment grade, or not even rated, by the rating agencies. Like the LBO phenomenon, the rise of junk bonds was criticized in the late 1980s; this was largely because of the perceived excess influence of Michael Milken, the investment banker who virtually invented it, and because junk bonds financed some poor deals. But the junk bond also had a positive effect on the economy: It made recovery possible for some sick companies and growth possible for companies too small or immature to raise capital in the stock market and not glamorous enough to attract venture capitalists. The emergence of this market was supported by pension fund bond managers and, to a lesser extent, by insurance companies and others.

The largest pension funds also contributed greatly to the building boom in the United States in the 1980s and 1990s that was an essential ingredient of the country's spectacular economic growth. At the end of 1998, the 200 largest pension plans had $79.8 billion in equity investments in real estate[13]—in office buildings, factories, shopping malls, warehouses, apartments, and hotels—compared with almost nothing in 1974. Sometimes the pension flows contributed to an oversupply of buildings and returns tumbled. Usually, however, the surplus was absorbed within a few years, and investment returns rebounded as continued economic growth increased demand for real estate of all kinds.

Looking Overseas

Pension executives also looked overseas for investment opportunities. Of the assets invested in equities, just under 10% was invested in non-U.S. equities in 1998. This flow of money not only helped develop the capital markets in many countries, but also helped finance economic development in those countries. Without the flood of U.S. pension money seeking investment opportunities, for example, the stock markets in Hong Kong, Singapore, Indonesia, and China would have been far slower to develop. Some pension funds invested in private investments in China before a stock market developed there, but most required the liquidity and transparency a stock market provided before they would agree to invest.

Large, defined benefit pension funds led the way into international investments, first into the developed markets of Europe and Japan and later into the emerging markets of Asia, the Pacific Basin, and Latin America. For example, at the end of 1998 the 200 largest pension funds had $253 billion invested in non-U.S. equities and $46 billion in non-U.S. bonds.[14] Of the assets invested in non-U.S. equities, $27 billion was in the stocks of companies in emerging markets, those underdeveloped countries, particularly in Asia and Central and South America that were most in need of additional capital. The largest amounts of funds flowed to those countries that had stable political systems, welcomed foreign investment, and seemed to be able to sustain economic growth, such as the major European countries. Mutual funds then followed, giving individual investors the opportunity to diversify their investments outside the United States as well.

Yet some money, seeking higher returns, flowed into less developed and more risky economies and markets. Some of the countries proved unable to sustain the economic growth, and some of the political systems proved less stable than the investors had thought. As a result, some pension funds saw their emerging market investments suffer losses when the emerging markets collapsed in late 1997. Others got out quickly. The pension fund flows were a two-edged sword. When they flowed in, they lifted stock prices; when they flowed out, prices crashed, as many nations have discovered since 1997. And they flowed out when the fund managers lost confidence in an economy, a market, or a political system. The $27.4 billion in emerging-market equities at the end of 1998 was down from $35.2 billion just a year earlier.[15] Nevertheless, assets flowing from U.S. pension funds through investment management organizations into these foreign markets helped finance accelerated change and growth in dozens of countries around the world. The pension funds also paved the way for the development of stock markets through which individual investors may also invest in developing economies in search of higher returns.

A Costly Lack

The absence of a well-funded pension system in other developed nations around the world has no doubt retarded their economic agendas. In Japan, for example, that country's inability to pour capital into the equity markets and direct that capital to the companies that could use it most efficiently, greatly hampered its efforts to restructure and regain competitiveness with the United States after it fell into recession in 1989. Although major companies in Japan made some effort to fund their pension promises, the pension fund contributions generally flowed into insurance companies and trust banks associated with the sponsoring companies. Then the assets were often invested back into the stock or bonds of those companies or their subsidiaries. They did not flow through independent money management firms and the stock market into the stock of the most promising companies. The capital remained trapped, often in inefficient old-line companies, leaving little for the financing of startup companies. In addition, pension assets in Japan financed virtually no venture capital industry, and the country experienced no LBO or corporate governance movement to shake up sleepy managements.

The German and French economies have also been far slower to restructure and become more efficient than the U.S. economy, in large part because they both lack funded pension systems and the strong, efficient, flexible, and diversified capital markets such funds demand and support. Without the pension funds providing the capital flows for the capital markets to direct toward uses promising the highest risk-adjusted returns, there was no lubricant to facilitate change. In Germany, most corporate pension promises are secured only by an IOU carried on each company's books. That is, the German equivalent of the money that U.S. corporations put into their pension funds to be invested in diversified portfolios of stocks, bonds, and so on, remains trapped within the sponsoring company. That company may be the least efficient possible user of that capital. German companies that need additional capital go to the major banks for loans, and German bankers are noted for their conservatism.

In France, there is almost no private pension system, not even the German book-reserve system, so again the capital markets there are small compared with those of the United States. In neither France nor Germany are the venture capital or LBO markets as highly developed as in the United States. It is therefore more difficult for entrepreneurs to raise capital to start firms to exploit a new idea. As a result, far fewer small businesses are started in those countries than in the United States. And far fewer of those that are started grow into huge, successful companies like Intel or Hewlett-Packard or Microsoft.

The pension fund money flood was not the sole cause of the U.S. economy's outperformance in the 1990s. Although there were many other causes, without it the wheels of change would have ground more slowly, and perhaps come to a halt, as they have in Japan.

Academic Support

The changes in the investment practices of U.S. pension funds were driven by the need to invest the flood of money from the funding of existing pension obligations or from new or growing pension plans. They were greatly accelerated by the work of academics in the nation's great universities who had begun to wrestle with the economic and financial implications of the capital markets. The research gave rise to a whole new avenue of economic research and a whole new branch of economics called *financial economics*. These academics, Harry Markowitz, William Sharpe, Fischer Black, Myron Scholes, Merton Miller, and Robert C. Merton among them, studied the stock, bond, and options markets to see how they actually worked. They examined what investment returns had been delivered by stocks, bonds, and cash equivalents in the past; how stock, bond, and option prices were actually set by investors, and how those prices could be calculated; and how investors actually chose, often subconsciously, between stocks and other assets; and how they created portfolios of stocks. In addition, these economists developed ways to measure the risk of a stock, a bond or an option, or a whole portfolio, and theories about how risk could be reduced. This new branch was finally recognized in the 1990s with the award of Nobel Prizes for economics to Markowitz, Sharpe, Scholes, Miller, and Merton. Fischer Black was excluded solely because he had died.

The findings of the academics led to new investment approaches and new techniques. Pension executives and their money managers were the first to adopt these new approaches, but later mutual fund managers and other investors also adopted them. Pension executives and money managers were able to structure portfolios to meet specific levels of risk and could measure the amount of risk taken to achieve a particular return. They were able to examine the results of money managers in detail to determine how and why the managers outperformed or lagged the markets or why one manager outperformed another. They adopted risk measures that individuals now use in selecting mutual funds to meet their risk tolerances. The findings of the academics also led to the development of index funds, funds that are designed to exactly match market performance and that now form the core portfolio of most large pension funds. Index mutual funds are also the fastest growing vehicle for individual investors.

A New Industry

The revolution in pension fund investment created a new industry—*institutional investment management*—whose purpose was to provide sophisticated, professional, long-term investment management for the assets of pension funds and other large, tax-exempt institutions such as charitable foundations and college and university endowments. The industry involved parts of the banking and insurance industries, but the executives from those industries came to think of themselves as part of the new industry, not the existing industries of their nominal employers. It involved the mutual fund industry and powered exceptional growth for it. It also involved whole new institutions, known as *investment counseling firms*, or *investment management boutiques*, which sprang up solely to manage the assets of pension funds.

These new institutions developed new ways to identify the stocks and bonds likely to provide the best investment returns and began to combine them into portfolios. Over time the companies often specialized. First there was *specialization in asset class*, with managers moving from managing balanced portfolios of stocks and bonds to managing portfolios composed only of stocks or bonds. Then there was *intra-asset class*, or *style*, *specialization* in which managers specialized in different types of stocks, growth stocks or value stocks. And then there was *specialization within style*, for example, large-growth or small-growth stocks. Again the pension funds and their managers led the way that mutual funds and individual investors would follow a decade later. Some managers specialized in real estate investing, whereas others focused on venture capital on leveraged buyout investing, or investing in non-U.S. stock and bond investments. They were swamped with money. At the beginning of 2000, a money management firm overseeing "only" half-a-billion dollars was considered a minor player. This was an industry, as Jan Twardowski, president of Frank Russell Securities, commented, "that money rained upon."[16] Mutual fund companies, which at the beginning of the pension fund revolution came in just one or two varieties, increasingly adopted one among the multitude of investment approaches pioneered by pension funds, so that individual investors now have virtually the same choices of investment as pension funds.

Disciplining Government

Whether in the United States or in other countries, U.S. pension fund managers could and did act as brakes on government actions. In the United States, bond managers in particular could frustrate government policies with which they disagreed, and particularly after the inflationary period of the late 1970s, they often did. The bond managers had been burned by the high inflation and demanded higher interest rates to offset that inflation. But higher interest rates on new bonds slashed the value of the bonds already in their portfolios. As a result, bond managers tended to view government economic policy actions with suspicion, especially the actions of the Federal Reserve Board. If the government attempted to stimulate the economy with a loose monetary policy designed to bring down interest rates, and the bond managers thought the policy was likely to stimulate inflation, they demanded higher interest rates before they would buy government or corporate bonds. In the end, the government wound up with higher rather than lower interest rates. The higher rates would likely hurt corporate earnings and slow corporate expansion, causing stock prices to fall, consumer confidence to drop, and the economy to slow further.

Until the early 1980s, when pension assets flooded into institutional money management firms willing and able to move assets into and out of the stock and bond markets, the Federal Reserve had virtually a free hand. As pension assets grew, the Federal Reserve's hands became less free and its tools less effective. In addition, unwelcome fiscal policies could also trigger negative feedback from the stock and bond markets, which could sometimes counter the intended effect. Foreign governments hoping to raise money in U.S. markets or from U.S. pension fund managers had to tailor their securities offerings, as well as their economic policies, to the demands of the money managers; otherwise, the managers refused to buy the offerings.

Besides disciplining the government, the pension funds and their managers also disciplined the managements of corporations when those companies appeared to be underperforming and using assets inefficiently. They did this first by helping to finance change through leveraged buyouts and second by using the power of the shareholder vote to push management to do better, even forcing some chief executive officers from their posts when companies continued to underperform. This approach became known as the *corporate governance movement*, and U.S. pension funds even exported the concept to other countries.

Government Meddling

The flood of money into defined benefit pension funds, together with the strong growth of the assets from investment gains, of course tempted the government to meddle. The very success of defined benefit pension plans, the rapid growth of assets, led the government to take a series of actions that not only halted their growth, but eventually put them on a path toward extinction. The first of these actions, the passage of pension reform legislation in 1974, was driven by the need to correct some abuses in pension plans and to set clear rules for pension funding and investing. For example, some companies had been using pension assets for their own purposes, such as building factories or warehouses. Others had channeled pension assets to friends for investment and found ways to deny long-term employees their promised pensions. Initially, the law strengthened pension funds and contributed greatly to the money flood by requiring companies to fund their pension promises over 30 years.

Some companies, however, found the increased regulation under ERISA too burdensome and terminated their pension plans. Except where a pension plan is part of a negotiated union contract—a minority of cases—companies are free to terminate a pension plan at any time. Other, later government actions were driven by the fear that exempting company contributions to pension funds and the investment earnings of funds from taxation was keeping too much tax revenue out of government hands. The Congress's steps to reduce that leakage of tax revenues weakened the interest of corporate managements in pension plans, especially defined benefit plans, which are the most expensive plans for companies to maintain.

Finally, thanks to Senator Howard Metzenbaum, companies were effectively prevented from recapturing any surplus assets that might accumulate in their pension funds through accidental (or deliberate) overfunding or through excellent investment returns. Corporate executives saw little reason to continue to support defined benefit plans when the company was stuck with the cost and risk of funding a long-term obligation without any possibility of benefiting if it did a good job.

Defined benefit plans have been replaced at many companies by defined contribution plans, particularly 401(k) plans. Defined contribution plans relieved companies of the long-term liabilities of defined benefit plans, replacing them with the short-term obligation to make contributions matching those of the employees. The employees inherited the investment risk from the employer. On the other hand, the growth of 401(k) pension plans has led employers to offer investment education to their employees. Now many individual investors are far better prepared to make investment decisions than they were even 10 years ago.

The surging growth of defined contribution plans has further complicated government economic policy making. Workers' pensions are now directly tied to the performance of the capital markets. If the government tightens fiscal or monetary policy, or both, and provokes a bear market, those policies will permanently damage the retirement income of hundreds of thousands of workers who retire during the bear market, or who lose their jobs and have to cash out their pension assets at much reduced prices. If an employee retires in a bear market, his or her retirement income will be smaller than if retirement had taken place during a bull market. When the nation's pension funds were mostly defined benefit plans, an employee's retirement benefits were not hurt if he or she retired during a bear market brought on by tight monetary or fiscal policies. That is because the pension benefit was guaranteed by the employer. If the employer was unable to keep the promise because of financial difficulty, the Pension Benefit Guaranty Corporation (PBGC), a government corporation established after the passage of ERISA, guaranteed the payment. The PBGC does not guarantee anything for 401(k) or other defined contribution plan participants.

The United States has not experienced a sustained bear market since the growth of 401(k) plans. Therefore, 401(k) plan investors have not experienced a significant loss in their balances in any year since they joined the plan. How they will react in the event of a bear market is unknown, but those who have to retire or cash out of their plans during a bear market will no doubt make their unhappiness heard in Washington. As a result, the federal government and the Federal Reserve Board will have to be far more careful in their economic policies in the future. Although in the past recessions caused employees to lose their jobs for a time, they could recover after the recession was over. Retirees who cash out of the market while it is down will have suffered a permanent loss of wealth.

The Winners

Who have been the winners of this revolution? Certainly those 50 million-plus employees covered by a private or state and local government pension plan. First, a far higher percentage of such workers is covered by pension plans than in 1948. Second, the pension promises made to those employees are far more secure today than those made 50 years ago because of the growth of pension assets largely through investment. Whereas pension promises were poorly funded in 1949, most large corporate pension plans today have more than sufficient assets to pay their pension obligations, and most public employee pension plans are also almost fully funded. In addition, many of these employees have direct daily control over their pension assets. They can decide how they should be invested, how much risk to take, and how much return to seek.

In addition, every taxpayer has been a winner. The growth in gross domestic product, financed in part by the flood of pension assets and their efficient investment, has helped raise the nation's standard of living far above what it would have been without pension funds. In addition, the improvements in corporate efficiency that pension fund investments helped finance have helped create or preserve jobs and keep prices lower than they otherwise would have been.

This book tells the story, up to 1998, of this flood of money and the revolution it powered. It describes the first companies to recognize that the money flood had been unleashed and to begin to prepare for it; the pension executives who pioneered new ways of investing the burgeoning pension assets, often at the risk of their jobs; the money managers who left large, stable institutions to start new organizations to manage the assets and try new investment approaches; the Nobel Prize-winning academics whose research and insights showed pension executives and money managers better ways to invest and to control risk; the evolution of the various techniques and asset classes that have been developed to cope with and direct the flood; and the bureaucrats and politicians who, for better or worse, attempted to influence the direction flood's course. Finally, it raises the issue of what will happen as the flood of money changes direction and inevitably begins to dry up.

The revolution is 50 years old, but it is a continuing revolution and so remains unfinished. In a paraphrase of Winston Churchill's words: We are not yet at the end, not even the beginning of the end. But it is, perhaps, the end of the beginning.