Testimony of John C. Bogle
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Before the Finance Committee of the United States Senate
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I. Background – Retirement Plans for Our Citizens

I've studied the issues facing American's retirement system for many decades, and have written extensively on this subject. I'm appending to this testimony three of my recent writings on these issues:

- First, **Chapter 7 of my 2012 book, *The Clash of the Cultures***. The chapter is entitled "America's Retirement System–Too Much Speculation, Too Little Investment." I conclude that, "our nation's system of retirement security is imperiled, headed for a serious train wreck." I describe easily achievable reforms in funding the retirement plans of our citizens, "if only we have the wisdom and courage to implement them." (**Appendix I**)
- Second**, my paper entitled "The 'All-In' Costs of Mutual Fund Investing."** It was published in the January/February 2014 issue of the *Financial Analysts Journal*, and focuses on defined contribution (DC) retirement plans, which are gradually replacing the traditional and once-dominant defined benefit (DB) pension plans. Here, I focus on mutual funds, the largest single pool of assets in the DC field. I conclude that the high costs of ownership of mutual fund shares, over the long-term, are likely to *confiscate as much as 65 percent or more of the wealth that retirement plan investors could otherwise easily earn,* simply by diverting market returns from fund investors to fund managers. (**Appendix II**) Many of the infirmities of our retirement system are the result of the heavy costs incurred by investors because of our bloated financial system.
- Third, **my essay for *The Wall Street Journal's* 125th anniversary issue on July 7, 2014,** titled **"The Incredibly Shrinking Financial System."** Looking to the future, I predicted that: 1) The financial industry will shrink from its present all-time high of about 10% of GDP, as investors continue to adopt simple, middle-of-the-road investment strategies. 2) Speculation will decline, as investors take heed of the mounting evidence that consistently shows that the stock trading done on Wall Street subtracts value from the

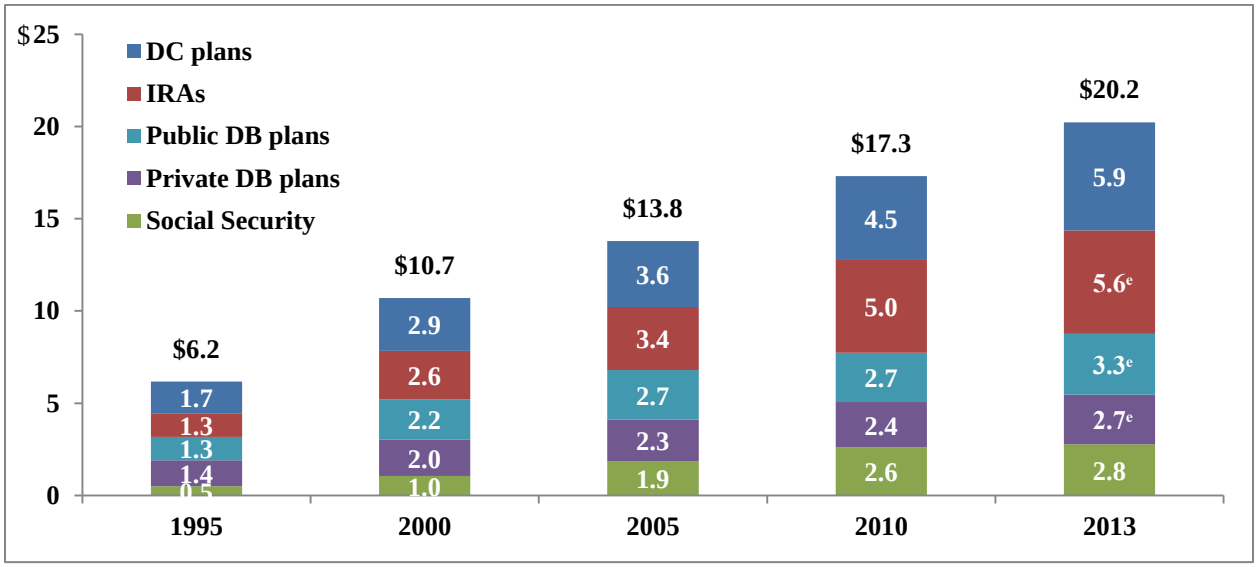
market returns that investors earn. 3) Distrust of active managers will grow as investors continue to adopt index funds as the core of their investment portfolios. 4) Corporate governance will finally emerge as a top priority of institutional money managers, which collectively hold more than 65% of all shares of U.S. stocks. These agents hold virtual control over corporate America. They will come to recognize their fiduciary duty to do what is right for their clients, and take seriously the rights and responsibilities of corporate ownership. (**Appendix III**)

II. The Nation's Retirement System

The failure of our retirement system is pervasive. Today's system constitutes, if you will, a three-legged stool, and all three legs are faltering. These retirement systems constitute an enormous portion of the financial assets held by our nation's families—some $20 trillion. **Exhibit 1** presents the assets of the major components:

Exhibit 1: U.S. Retirement System Assets

Trillions of dollars



Sources: Investment Company Institute, Federal Reserve Board, Department of Labor, National Association of Government Defined Contribution Administrators, American Council of Life Insurers, Social Security Administration, Bureau of Economic Analysis and Internal Revenue Service Statistics of Income Division.

Excludes plans not listed, such as all fixed and variable annuity reserves at life insurance companies (less annuities held by IRAs, 403(b) plans, 457 plans), and federal pension plans.

This system faces profound challenges across the board:

- **Social Security**: Now significantly underfunded, the result of decades in which, essentially, payroll tax revenues have fallen short of payments to beneficiaries. To protect the long-term solvency of the system, we need to implement a gradual increase in the maximum income level subject to the payroll tax; a change in the formula for establishing benefit levels from the present wage-increase-based formula to an inflation-based formula; a gradual increase in the retirement age to, say, 69; and a modest means test that limits payouts to our wealthiest citizens. Voila! The job will be done! While it will take statesmanship and determination on the part of our policymakers and legislators to take action, **these changes are well within our nation's means.**

- **Defined Benefit Plans**: The role of *private* DB plans in our retirement system has sharply diminished, although present assets—some $2.7 trillion—remain substantial. In an effort to reduce corporate operating expenses and increase earnings to shareholders, our corporations have gradually abandoned or altered DB plans in favor of defined contribution (DC) plans. On the other hand, *public* DB plans (largely state and local governments and agencies) have tripled since 1995, to some $3.3 trillion today.

  These plans are already underfunded by hundreds of billions of dollars. What's more, virtually all plans—private and public alike—are assuming overly optimistic future investment returns of about 8% per year on their pension assets. The assumption of an 8% return seems absurd. Today, U.S. Treasury bonds have yields of around 3%, and future stock returns seem likely to be in the 7% range. Under these assumptions, a 60/40 stock/bond portfolio might be expected to return about 5½% during the coming decade—much less than 5½% after the costs of investing are deducted. This "bad math"—assuming an 8% return when something on the order of 5% seems more realistic—must be corrected, with increased funding and realistic expectations for future returns. **These changes will be disruptive and painful.**

- **Defined Contribution Plans**: I've saved until last my comments on this third leg of our nation's retirement stool. These plans presently represent the core of our nation's

commitment to retirement security, and they will drive the future growth in retirement plan assets. Since 1995, DC plans (including IRAs) have grown four-fold, to about $12.4 trillion, and account for almost two-thirds of the aggregate assets of our retirement system. As I'll explain shortly, our DC plan system is structurally unsound. **But it's relatively easy to repair without huge costs or major changes in its terms and conditions.**

Defined Contribution Plans

Serious questions surround the DC concept. Most importantly, as private DB plans are replaced by DC plans, there is a massive transfer of investment risk from corporations to individual investors, many—perhaps most—of whom lack the knowledge and understanding of the principles of sound investing. At the same time, the maximum protection against longevity risk (the risk of outliving one's income) provided to beneficiaries of DB plans has vanished. DC plans offer essentially no protection whatsoever against longevity risk. These two problems only scratch the surface of the slate of problems facing DC participants.

It is in IRAs—with $6.5 trillion in assets, the largest portion of DC plans—that we find the most serious problems. Contributions are voluntary, so there is no discipline to invest regularly. Most investors start their IRAs too late in life, when contributions required to build a meaningful nest-egg must be far higher than if the plan were started at the beginning of one's career. (In fairness, many families give the accumulation of education funds for their children a higher priority.) Withdrawals of capital can be made almost at will, with only a modest tax penalty. (Imagine how well Social Security would work if we could withdraw our capital at will.)

But the biggest problem—and the biggest opportunity—lies in how IRA holders invest their hard-earned wealth. Decisions regarding appropriate asset allocation between stocks and bonds is often far too casual. Investment choices seem based largely on the past performance of actively managed funds; accomplishments that almost always (always?) fade away. Further, there are often substantial investments in employer stock, combining investment risk with career risk. Despite the reality that higher transaction activity (trading) leads to lower investment returns, trading by IRA participants rises once Wall Street's salesmen get involved, often when a DC plan is "rolled over" to an IRA when the participant retires.

The Powerful Role of Investment Costs

I now turn to the *absolutely essential need* to reduce the costs of investing for investors in both corporate defined contribution plans and IRAs. My message to the Finance Committee is **"Little things mean a lot."**

Here, I draw on my paper published in *Financial Analysts Journal* earlier this year, "The Arithmetic of 'All-In' Investment Expenses." I expound on a year-earlier article entitled "The Arithmetic of Investment Expenses," by Stanford professor and Nobel Laureate William Sharpe. Dr. Sharpe's paper, calculated by using relative expense ratios (fund expenses as a percentage of fund assets), investing in a low-cost stock market index fund gave investors an *additional* annual return of about 1% over investing in typical actively managed equity funds. Over the long term, this difference becomes enormous. In his words:

> *... a person saving for retirement who chooses low-cost investments would have a standard of living throughout retirement more than 20% higher than that of a comparable investor in high-cost investments.*

My paper simply took Dr. Sharpe's analysis of expense ratios to a more comprehensive comparison of "all-in" fund costs—including cash drag, portfolio turnover costs, and sales loads and fees for investment oversight and advice. Including these items brings total investment costs of actively managed, high-cost funds to an estimated 2.2% per year, double Dr. Sharpe's differential. (He applauded my analysis.)

My data showed (assuming a 7% nominal annual return on equities) that a 30-year-old investor, earning a $30,000 annual salary that grows at 3% per year, investing 10% of annual compensation in a tax-deferred retirement plan, and retiring at age 70 would have built the following retirement fund accumulations:

—Actively Managed Fund - $561,000.

—Index Fund - $927,000.

That is, using Dr. Sharpe's framework, but with a more comprehensive estimate of fund costs:

A person saving for retirement who chooses low-cost investments could have a standard of living throughout retirement ***more than 65% higher*** *than that of a comparable investor in high-cost investments*.

So why do investors use high-cost mutual funds? "Buttonwood," writing in London's *Economist* explains it bluntly:

Everyone knows that if you go to a casino, the odds are rigged in favour of the house. But people still dream of making a killing. The same psychology seems to apply to fund management, where investors flock to high-cost mutual funds even though the odds are against them. Russel Kinnel, the director of fund research at Morningstar, has described fund costs as "the most dependable predictor of performance. It is really a simple matter of maths."

The *Economist* columnist endorsed my perspective. "Some will argue that Mr. Bogle's numbers are exaggerated . . . However, such arguments do not make much of a dent in Mr. Bogle's case."

Additional Flaws

While the obvious and essential role of fund costs in shaping the long-term returns of retirees who choose mutual funds is by far the major issue affecting retirement plan adequacy, the very structure of DC plans is also profoundly flawed.

A major part of the problem is that corporate DC plans were designed as *thrift* plans, not *retirement* plans. To a greater or lesser degree, corporate DC plans simply (and paradoxically) give their beneficiaries and owners too much flexibility. A few examples:

1) **Limited participation.** Fully 20% of eligible participants fail to join corporate plans.
2) **Early withdrawals.** "Hardship" withdrawals are granted far too easily.
3) **Loans** against DC plan assets are not adequately strict, and repayments too easily extended.
4) **Job changes** allow investors immediate access to their plan assets; some investors keep their plans, some move them to their new employer; some simply spend them.

In IRAs, this flexibility is virtually unlimited (except for modest tax penalties on withdrawals), and the potential damage to retirement-funding commensurately larger.

These flaws can be corrected with relative ease, but we can expect enormous resistance from lobbyists for mutual fund managers and industry associations. Yet provided that changes that correct these flaws were implemented, the DC plan can prove to be an even sounder route to investment success than its DB cousin. In DC plans, investors can set asset allocations that suit *their own* investment objectives and risk tolerance. The investment cost differential in favor of DB plans could easily be mitigated or even eliminated with the use of low-cost index fund providers. (A requirement that *only* index funds be eligible investments is desirable, but unlikely to survive fund industry opposition.)

Setting a New Paradigm for IRA Investors

However little recognized, the essential syllogism in our financial system is obvious and unarguable:

1. Wealth is created by corporate America, not by Wall Street.
2. That wealth—essentially the dividend yield plus the earnings growth of a corporation—accounts for 100% of the long-term returns generated in the stock market.
3. Investors, as a group, own the entire stock market, and earn 100% of its return, *before the intermediation costs that they incur*.
4. Investors who pay the lowest intermediation costs (mostly management fees, trading costs, and the costs of share distribution) earn higher return than all other investors as a group.

Conclusion: *If we investors collectively own the market, but individually compete to beat our fellow market participants, we lose. But if we abandon our inevitably futile attempts to obtain an edge over other market participants and simply buy and hold our share of the market portfolio, we win.*

Too many IRA investors seem blithely unaware of this tautology. They subject themselves to high-cost actively-managed mutual funds, often trading them with alacrity, a counterproductive behavior that destines them, paradoxically, to earning lower returns than the returns earned by the funds that they choose.

An Industry Grows, and Loses Its Way

When a profession with elements of a business becomes a business with elements of a profession—an accurate description of the gradual change I have witnessed during my 63 years in the mutual fund industry—the producers (fund managers and marketers) are advantaged at the expense of the consumers (fund investors).

For example, since 1999 the assets of all stock and bond mutual funds have risen from $5.2 trillion to $12.2 trillion. Yet the staggering economies of scale that characterize money management have been largely arrogated by fund managers to themselves, rather than shared with their fund shareholders. Consequently, despite a more than doubling of the asset base, expenses incurred by mutual fund investors have actually *risen* substantially during this period—by a staggering 81%—from $48 billion to $87 billion.[1]

Result: Since 1999, fund investors have paid their money managers some $840 billion—when 2014 ends, almost $1 trillion. That drag on returns has helped to create an enormous dent in the returns that fund investors earn. Those costs are largely responsible for the seeming anomaly that the returns earned by actively-managed equity funds have fallen well short of the returns earned by passively-managed (and largely low-cost) index funds.

How is it possible that fund managers were motivated to enrich themselves at the expense of their own shareholders to whom they owe a fiduciary duty? The major factor, in my view, is that the one-time "mom-and-pop" industry of $4 billion that I joined in 1951—relatively small management companies, largely owned and controlled by investment professionals—became the largest pool of assets in our nation, now overseeing some $15 trillion of investor assets (including money market funds).

[1] Data source: Investment Company Institute Fact Book, 2014. The ICI expense table is entitled, incorrectly, "Expenses Incurred by Mutual Fund Investors Have *Declined* Substantially . . ." But expenses have actually increased by 81%. It is expense *ratios* that have declined, but not total expenses. Further, more than one-half of the drop in expense ratios has been created, not by managers selflessly cutting their fees, but by the explosive rise in index funds, now almost one-third of all equity fund assets. The expense ratios of actively-managed equity funds averaged about 0.87% in 2013, vs. the 0.74% reported by the ICI. For what it's worth, the average weighted expense ratio in 1950 was 0.60, at a time when fund assets were but $2.5 billion and total expenses of all funds combined were only $15 million!

As the mutual fund industry became bigger, then big, and then the biggest single pool of investments in our nation, these small, closely controlled management companies of yore began to focus on "the bottom line," i.e., their own profitability. In 1958, catastrophically, the U.S. Court of Appeals, 9th Circuit, effectively allowed management companies to "go public," and a spate of initial public offerings (IPOs) quickly followed. Soon, giant U.S. and international financial conglomerates began to acquire these now-highly-profitable fund management companies. Today, among the 50 largest management companies, only ten remain privately owned (including Vanguard). 40 are publicly held, 10 directly by outside shareholders, and 30 by financial conglomerates.

The mutual fund industry has lost its way. That's my view! But this critical analysis of the mutual fund industry is not mine alone. Hear this from another investor, David F. Swensen, Chief Investment Officer of Yale University, a man who has produced one of the most impressive investment records of the modern era, and who also has an impeccable reputation for character and intellectual integrity,:

> *The fundamental market failure in the mutual fund industry involves the interaction between sophisticated, profit-seeking providers of financial services and naïve, return-seeking consumers of investment products. The drive for profits by Wall Street and the mutual fund industry overwhelms the concept of fiduciary responsibility, leading to an all too predictable outcome: . . . the powerful financial services industry exploits vulnerable individual investors . . . The ownership structure of a fund management company plays a role in determining the likelihood of investor success . . .*

Saving for Retirement

The central question facing the future welfare of America's retirees is: "Are we saving enough?" First of all, fully one-third of our 122.5 million U.S. households have *no* retirement plan except Social Security—that's 40 million families. (See **Exhibit 2**.) Second, most of the rest of us who have IRAs or corporate DC plans (or both) have accumulated savings that, truth told, are grossly inadequate to the task. In fact, according to the Center for Retirement Research at Boston College, the average balances of those of us nearing retirement (age 55-64) come to just $120,000.

Exhibit 2: U.S. Retirement Plan Ownership

	Percentage	Millions of Households
Did not have IRA or employer-sponsored retirement plan	**33%**	**40.4**
Had IRA and employer-sponsored retirement plan	**32%**	**39.2**
Had employer-sponsored retirement plan only	**29%**	**35.5**
Had IRA only	**6%**	**7.4**

Sources: Investment Company Institute and U.S. Census Bureau.

Think of it this way: What amount of annual income would $120,000 produce today? The yield on stocks is about 2%; the yield on stock mutual funds averages only about 1%. (Those excessive investment expenses take their toll.) The yield on a portfolio of U.S. Treasury and investment-grade corporate bonds is around 3%. Combine these yields, even haphazardly, and the yield on a balanced portfolio is something like 2%. On $120,000, that's $2,400 a year, or $200 a month. Better than nothing, but not really *enough*.

But $120,000 is merely the *average* accumulation for those of us nearing retirement. For the top quintile of households, the accumulation averages $450,000. For the bottom quintile, the accumulation is but $18,000—likely to produce income of about $30 per month. Yes, most experts believe that a 4 % annual withdrawal rate (let's say 2% from income and 2% from capital) is likely to be sustainable over a retiree's lifetime. They're probably right. *Probably*.

At this hearing, I expect you'll hear from some experts who will argue that "all is well" for our retirement system that gives investors such a wide range of choices. An ICI survey, for example, suggests that those in their 60s have account balances averaging $147,600 ($239,000 for those who have been participating in their firm's plan for 30 years or more). But the ICI survey covers only "consistent participants" in 401(k) plans—those who have accumulated plan balances each year since 2007—so it hardly belies the $120,000 average balance reflected in the Boston College survey.

Are We Adequately Prepared?

The average retirement balance for investors at or near retirement age then ranges from $120,000 for *all* plan holders to $147,600 for *consistent plan participants*. The answer to the question "Are we saving enough for retirement?" is, unequivocally, "No."

And yet fund industry advocates (including the ICI) seem rather sanguine about today's retirement readiness, claiming, "Contrary to conventional wisdom, most Americans are properly preparing for retirement." Given that "most" could mean as few as 51% of households, this odd formulation would be true even if 49% were totally unprepared.

ICI presents data from four different studies, two of which support broad retirement readiness. One of these two studies tells us that 71% of households are prepared for retirement, the other avers that 84% are prepared. But the ICI also tells us that fully 33% of U.S. households have *no* employer-sponsored retirement plans whatsoever. Thus you would be unwise to give much credence to those two surveys.

The other two studies of this subject considered by the ICI suggested between 48% and 57% of households are estimated to be prepared for retirement. These data clearly reaffirm what we see in the modest retirement accumulations cited earlier for those at or near retirement. Indeed, a Federal Reserve Board study concludes that only about one-fourth of individuals appear to be planning for their own retirement.

If one presumes that common sense and objective reality trump speculative data from surveys making a plethora of mind-boggling assumptions, *then of course we are not saving enough.* David Brooks, columnist for *The New York Times,* describes the reality:

> *The people who created this country built a moral structure around money. The Puritan legacy inhibited luxury and self-indulgence. Benjamin Franklin spread a practical gospel that emphasized hard work, temperance and frugality.*
>
> *Over the past 30 years, much of that has been shredded. The social norms and institutions that encouraged frugality and spending what you earn have been undermined. The institutions that encourage debt and living for the moment have been strengthened . . . the most rampant*

decadence today is financial decadence, the trampling of decent norms about how to use and harness money.

[This] transformation has led to a stark financial polarization. On the one hand, there is … the investor class. It has tax-deferred savings plans, as well as an army of financial advisers. On the other hand, there is the lottery class, people with little access to 401(k)'s or financial planning but plenty of access to payday lenders, credit cards and lottery agents.

Facing the Facts

Let's face the facts: in 2013, twenty percent of our households received income below $20,599. (In current dollar terms, slightly *below* the $20,633 figure for 1970—an astonishing 33 years of stagnation.) Can you imagine trying to save for your retirement when you earn $20,000 a year *before taxes*? For the record, our households in the fifth percentile (earning more than 95% of U.S. households) earned $191,156 in 2012, up from 28,950 in 1975, which equals $138,122 in 2012 dollars, a *real* increase of almost 40%.

So for those in David Brooks' "lottery class," the *only* way to approach adequacy in retirement security is to enhance Social Security (or some new supplemental federal program) for those at the lowest income levels in our society. Given the constraints of today's federal budget deficit, this will not be easy to accomplish.

For the "investor class," those at the very top of the income ladder need little additional support for their retirement. At lower levels, greater tax incentives for retirement savings would help, but a tax-*credit* would be a wiser policy than a tax-*deduction,* for it would limit further reductions in tax revenues by the federal government due to tax-favored retirement plans. That loss in revenue totaled an estimated $164 billion in 2012 alone.

It is not at all clear that public policy should continue to encourage retirement savings for our wealthiest citizens, who have the resources (and more!) to prepare for retirement without needing tax incentives. But we must be careful in how we handle this politically charged issue. It stands to reason that in order to gain tax advantages for themselves, employers (especially in small- and medium-sized companies) may well be more likely to provide 401(k) plans for their employees, surely a social good.

A Federal Standard of Fiduciary Duty for Money Managers

Finally, I offer one simple, essential principle that is required to underscore the more shareholder-oriented (as opposed to manager-oriented) mutual fund industry that I envision: a federal standard of fiduciary duty for our nation's institutional money managers (including, of course, mutual fund managers).[2] Such a standard of fiduciary duty for institutional money managers would include:

1. A requirement that all fiduciaries must act solely in the long-term interests of their beneficiaries.
2. An affirmation by government that an effective shareholder presence in all public companies is in the national interest.
3. A demand that all institutional money managers should be accountable for the compulsory exercise of their proxy votes, in the sole interest of their shareholders.
4. A demand that any ownership structure of managers that entails conflicts of interest be eliminated.

It is a curious and, finally, unpalatable fact that so far the subject of fiduciary duty has touched just about every aspect of investing *except* money management. For example, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, under section 913(g)(1), enables the SEC to "promulgate rules to provide that the standard of conduct for all brokers, dealers, and investment advisers, when providing personalized investment advice about securities to retail customers … shall be to act in the best interest of the customer without regard to the financial or other interest of the broker, dealer, or investment adviser providing the advice."

The omission of mutual fund managers (and other institutional money managers) was clearly deliberate. For section 913(g)(2) explicitly states "the Commission shall not ascribe a meaning to the term 'customer' that would include an investor in a private fund managed by an investment adviser, where such private fund has entered into an advisory contract with such adviser."

The Department of Labor (DOL) has also ducked on the issue of fiduciary duty for fund managers, limiting their attempt to broaden the standards applied to retirement plans to include financial advisers to the plans (i.e., firms offering investment advice to individual plan participants and employee

[2] While a fiduciary standard is not required under the Investment Company Act of 1940, the Act's preamble makes it clear that honoring the fiduciary standard is expected. To wit, Section 1(b)(2) states that mutual funds must be "organized, operated, and managed" in the interests of their shareholders rather than in "the interests of [their] directors, officers, investment advisers … underwriters, brokers , or dealers."

retirement plans). The DOL first made this proposal in 2010. At that time the fiduciary standard applied only to registered investment advisers (RIAs).

But even without proposing that fund investment managers be subject to the same standard, the DOL proposal has been the victim of fierce criticism and long delays, and still awaits even more meetings with the various interest groups. What's more, the SEC has warned the DOL *not* to implement its rule until the commission advances its own rule on a uniform fiduciary duty standard on *retail investment advice.*

I cannot fathom how this crabbed, narrow application of a fiduciary standard can ignore the most important element in the entire retirement plan system—the money managers who essentially run the funds that compose not only the entire universe of defined contribution plans, but the entire universe of managers who oversee virtually all of the savings of American citizens who have entrusted the care of their assets to their trustees (whether we call them by that name or not).

Fiduciary duty for all individuals and institutions who touch Other Peoples Money is an idea whose time has come. The financial industry and its lobbyists had better get prepared for it.

Where Do We Go from Here?

Look, members of the Senate Finance Committee: DC plans (including IRAs) are the *only* realistic alternative for investors seeking to achieve a comfortable retirement. But we must demand significant (some might say, radical) changes in the structure of DC plans, and in helping investors to get their money's worth out of each dollar they invest. There are, in fact, some notable examples of DC plans that work, and that work with great efficiency in helping employees accomplish their financial goals.

The most obvious example—which strikes close to home here in Washington, DC—is the Thrift Savings Plan (TSP). It is large: $385 billion, among the 25 largest pools of institutional money management. It is, well, cheap, with an annual expense ratio of less than 0.03% (three basis points). It is largely indexed: *100%* of its long-term assets—some $212 billion—are composed of four index funds. (The remaining $172 billion is invested in a money-market-like account composed of U.S. government securities specially issued to TSP.)

TSP is generous. Each participant may invest up to $17,500 per year in the plan, and there is an automatic deduction of 3% of salary unless the participant opts out. An additional matching contribution of up to 4% is also available. Yes, members of the committee; you are all eligible to participate in the Federal Employees Retirement System. You have a fine DC option right at your fingertips.

And, I should add, so have I. At the beginning of my career at Wellington Management Company in 1951, the company provided a defined contribution pension plan in which each employee's compensation was set aside in Wellington Fund, a balanced (bond/stock) mutual fund, even then among the lowest-cost funds in the industry. Yes, as times and circumstances changed, the provisions of the plan changed, and in recent years our Vanguard Retirement Savings Plan (RSP) has provided a company contribution of 10% of base compensation, plus 5.7% of compensation in excess of the Social Security wage base. The company also matches, dollar for dollar, up to the first 4% of an employee's voluntary contribution.

Yes, this is an extraordinarily generous DC plan, but it was designed to obviate the need for a DB plan. And, as a plan participant for 63 years now—still focused importantly on Wellington Fund, but otherwise relying largely on Vanguard index funds—my retirement plan is the largest asset in my estate. *The magic of long-term compounding of investment returns, absent the tyranny of long-term compounding of investment costs, works!*

* * *

DC plans can work—and they *must* work. DC plans already are the mainstay of our nation's retirement system, and they become more important with each passing day. But these one-time *thrift plans* must take on the best attributes of *retirement plans*. They must be restructured, entailing the lowest possible cost burdens on investors and operated by managers that are held to a federal standard of fiduciary duty. All of these improvements are within our reach, and it is high time we begin the long march toward their accomplishment.

Chapter 7

America's Retirement System

Too Much Speculation, Too Little Investment

> It is within our reach to move capitalism in a direction that is more wealth creating, more sustainable, less crisis-prone, and more legitimate than the "headwinds" capitalism we have today . . . to "pension fund capitalism." . . . It requires the redesign of pension fund organizations so that they themselves become more effective and hence more productive stewards of the retirement savings of young workers and pensioners alike.
>
> —*Keith Ambachtsheer*

An Introductory Note

We don't usually think of the retirement systems of our nation as, well, speculative. But, in fact, our defined benefit (DB) pension plans entail two distinct kinds of speculation. First, our pension managers are hardly free of the same counterproductive biases and emotions as their

individual investor counterparts. Second, the defined benefit payments promised by pension plans to our retired citizens are, in effect, based on speculation as to whether today's highly optimistic projected investment returns will actually be earned. If not, the providers of these plans will prove to have made too little investment, and corporations will face huge shortfalls in funding.

Corporate sponsors of private pensions would have to raise their annual contributions to fund the plans—no mean task for corporations now aggressively seeking to slash costs in order to increase the earnings they report to their shareholders. For our state and local governments—now struggling to hold down costs—future budgets calling for higher annual plan contributions would not be popular with taxpayers. Even the necessary changes to Social Security are a matter of speculation. Can we rely on a Congress that is at an impasse—conflicted by partisan wrangling and gridlock—to ensure that future payments will continue to be made at present levels to retirees from this backstop of our national retirement system?

In our defined contribution (DC) plans, too many individual plan participants have behaved much like speculators. To name the major faults of these retirement plan investors: excessive turnover of their fund investments; betting on the selection of funds that are expected to outperform their peers in the future; gambling that fund managers can, despite their excessive costs, outpace the market; and failing to adequately diversify by making ill-considered asset allocation choices. It turns out that individual investors make the same mistakes in their retirement savings plans as they do in their personal investment portfolios. (How could one expect an individual investor to have two different mindsets?) Together, those particular chinks in the armor of sound long-term investment combine to result in the biggest speculation of all: the odds that participants will earn returns on their savings plans that will be adequate to ensure their comfortable retirement.

This chapter discusses the "Seven Deadly Sins" of the retirement system, and five of its obvious flaws. Where there are sins and flaws, I note, there are opportunities to fix them, including my proposal to create a Federal Retirement Board to oversee the diffuse and complex elements of our multiple variety of defined contributions plans—IRAs, 401(k) thrift savings plans, and 403(b) plans offered by nonprofit

organizations—and focus on serving the needs of our nation's citizen/investors.

I conclude the chapter with some provocative ideas on "The New Pension Plan," suggesting a redesign of today's system in the interests of the investors who are saving for their retirements. I present recommendations and simplifications, including reducing Wall Street's over-sized role in today's system, and focusing not only on investment risk, but longevity risk as well. These reforms should serve to increase in the long-term wealth accumulations by DB plans, by DC plans, and by IRA investors. In all, these reforms would move us away from today's culture in which speculation is rife, and far closer to a culture of long-term investing.

Today our nation's system of retirement security is imperiled, headed for a serious train wreck. That wreck is not merely waiting to happen; we are running on a dangerous track that is leading directly to a serious crash that will disable major parts of our retirement system. Federal support—which, in today's world, is already being tapped at unprecedented levels—seems to be the only short-term remedy. But long-term reforms in our retirement funding system, if only we have the wisdom and courage to implement them, can move us to a better path toward retirement security for our nation's families.

The Inadequacy of Our National Savings

Underlying the specific issues affecting our retirement plan system is that our national savings are inadequate. We are directing far too little of those savings into our retirement plans in order to reach the necessary goal of self-sufficiency. "Thrift" has been *out* in America; "instant gratification" in our consumer-driven economy has been *in*. As a nation, we are not saving nearly enough to meet our future retirement needs. Too few citizens have chosen to establish personal retirement accounts such as IRAs and 403(b)s, and even those who have established them are funding them inadequately and only sporadically. These investors and potential investors are, I suppose, speculating that their retirement will be fully funded by some combination of Social Security, their pensions, their unrealistically high expectations for future investment returns, or (as a last resort) from their families.

Broadly stated, we Americans suffer from a glut of spending and a (relative) paucity of saving, especially remarkable because the combination is so counterintuitive. Here we are, at the peak of the wealth of the world's nations, with savings representing only about 3 percent of our national income. Among the emerging nations of the world—with per capita incomes less than $5,000 compared to our $48,000—the saving rate runs around 10 percent, and in the developed nations such as those in Europe, the savings rate averages 9 percent, with several major nations between 11 and 13 percent. Our beleaguered pension system is but one reflection of that shortfall.

Box 7.1

Rebalancing the Financial Priorities of Our Citizens

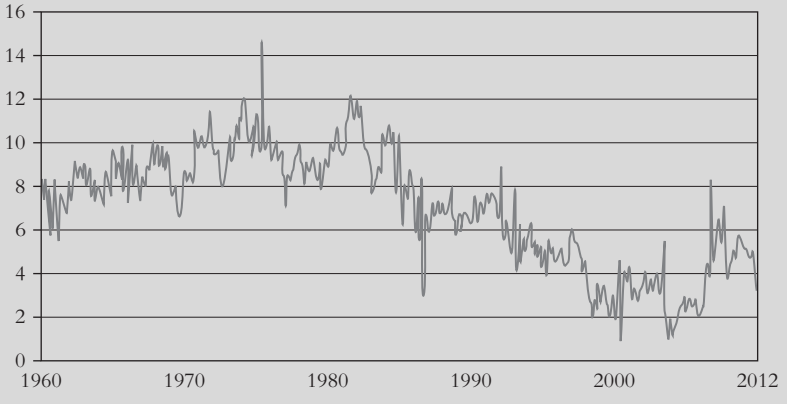
The failure of American citizens to adequately fund their retirement plans is but one manifestation of our national preference for spending over saving. "I'll enjoy the consumer goods I can buy today (and even borrow from the future so I can enjoy them now) and worry about far off needs later on." As Scarlett O'Hara famously said, "I'll worry about it tomorrow." As if tomorrow will never come.

Paradoxically, our economy depends on consumer spending. Some 70 percent of our gross domestic product (GDP) is accounted for by spending. Not only on the daily necessities—food, shelter, medical care—but on luxury goods that represent "conspicuous consumption." I don't argue with that as such, but by shortchanging our needs for retirement, our lives will not be as we might expect when the time comes. We must save more (and borrow less), for in the long run, a healthy U.S. economy depends on the financial stability of our households. Yet our household savings rates, while they have risen during the recent recession, are far below historic norms.

As the following exhibit shows, from the 1960s through the 1980s, household savings ranged around 9 percent of income.

Then the rate began a gradual decline all the way down to the 2 percent range—a 75 percent decline—during 2000–2007, recovering to about 6 percent thereafter. But the most recent report shows a U.S. savings rate at just 3 percent.

U.S. Household Savings Rates (1960-2012)



Paradoxically, although we are one of the world's wealthiest nations (average household income of $48,000), we save relatively less than the citizens of most others. Household wealth in Germany is similar to ours ($44,000), but their savings rate is 11 percent. (Other major European nations average about 9 percent.) And even in the world's emerging economies, where annual household incomes run from $1,500 (India) to $5,200 (China), savings rates can easily run far higher than ours.

What's to be done? Better investor education; more efficient regulation; substantial protection against financial fraud for our citizens (the new Consumer Financial Protection Bureau, for example); greater tax incentives for our less wealthy brethren to save; and more rigorous credit standards for borrowers. More profoundly, we must move over time toward an economy less dependent on short-term spending and more dependent on long-term saving.

"The Seven Deadly Sins"

Let's now move from the general to the particular, and examine some of the major forces in today's retirement systems that have been responsible for the dangerous situation we now face.

Deadly Sin 1: Inadequate Retirement Accumulation

The modest median balances so far accumulated in 401(k) plans make their promise a mere shadow of reality. At the end of 2009, the median 401(k) balance is estimated at just $18,000 per participant. Indeed, even projecting this balance for a middle-aged employee with future growth engendered over the passage of time by assumed higher salaries and real investment returns, that figure might rise to some $300,000 at retirement age (if these assumptions prove correct). While that hypothetical accumulation may look substantial, however, it would be adequate to replace less than 30 percent of preretirement income, a help but hardly a panacea. (The target suggested by most analysts is around 70 percent, including Social Security.)

Part of the reason for today's modest accumulations are the inadequate participant and corporate contributions made to the plans. Typically, the combined contribution comes to less than 10 percent of compensation, while most experts consider 15 percent of compensation as the appropriate target. Over a working lifetime of, say, 40 years, an average employee, contributing 15 percent of salary, receiving periodic raises, and earning a real market return of 5 percent per year, would accumulate $630,000. An employee contributing 10 percent would accumulate just $420,000. If those assumptions are realized, this would represent a handsome accumulation, but substantial obstacles—especially the flexibility given to participants to withdraw capital, as described below—are likely to preclude their achievement. (In both cases, with the assumption that every single contribution is made on schedule—likely a rare eventuality.)

Deadly Sin 2: The Stock Market Collapse

One of the causes of the train wreck we face—but hardly the only cause—was the collapse of our stock market, on balance taking its value

from $17 trillion capitalization at the October 2007 high in U.S. stocks, to a low of $9 trillion in February 2009. Much of this stunning loss of wealth has been recovered in the rally that followed, and as 2012 begins, the market value totals $15 trillion. Nonetheless, our nation's DB pension plans—private and government alike—are presently facing staggering deficits. And the participants in our DC plans—thrift plans and IRAs alike—have accumulations that fall short of what they will need when they retire.

Deadly Sin 3: Underfunded Pensions

Our corporations have been funding their defined benefit (DB) pension plans on the mistaken assumption that stocks would produce future returns at the generous levels of the past, raising their prospective return assumptions even as the stock market reached valuations that were far above historical norms. And the DB pension plans of our state and local governments seem to be in the worst financial condition of all. (Because of poor transparency, inadequate disclosure, and nonstandardized financial reporting, we really don't know the dimensions of the shortfall.) The vast majority of these plans are speculating that future returns will bail them out.

Currently, most of these DB plans are assuming future annual returns in the 7.5–8 percent range. But with stock yields at 2 percent and, with the U.S. Treasury 30-year bond yielding 3 percent, such returns are a pipedream. It is ironic that in 1981, when the yield on the long-term Treasury bond was 13.5 percent, corporations assumed that future returns on their pension plans would average just 6 percent, a similarly unrealistic—if directly opposite—projection as 2012 begins.

Corporations generate earnings for the owners of their stocks, pay dividends, and reinvest what's left in the business. In the aggregate, the sole sources of the long-term returns generated by the equities of our businesses should provide investment returns at an annual rate of about 7–8 percent per year over the next decade, including about 2 percent from today's dividend yield and 5–6 percent from earnings growth. Similarly, bonds pay interest, which is the sole source of their long-term returns. Based on today's yield, the aggregate return on a portfolio of corporate and government bonds should average about 3.5 percent.

A portfolio roughly balanced between these two asset classes might earn a return in the range of 5–6 percent during the coming decade.

Deadly Sin 4: Speculative Investment Options

A plethora of unsound, unwise, and often speculative investment choices are available in our burgeoning defined-contribution (DC) plans. Here, individuals are largely responsible for managing their own tax-sheltered retirement investment programs—individual retirement accounts (IRAs) and defined-contribution pension plans such as 401(k) thrift plans that are provided by corporations, and 403(b) savings plans provided by nonprofit institutions. Qualified independent officials of their employers seem to provide little guidance. What's more, they often focus on spurious methodology that is too heavily based on *historical* data, rather than the timeless *sources of returns* that actually shape the long-term investment productivity of stocks and bonds, misleading themselves, their firms, and their fellow employees about the hard realities of investing.

Deadly Sin 5: Wealth-Destroying Costs

The returns in our stock market—whatever they may turn out to be—represent the *gross* returns generated by the publicly owned corporations that dominate our system of competitive capitalism (and by investment in debt obligations). Investors who hold these financial instruments—either directly or through the collective investment programs provided by mutual funds and defined benefit pension plans—receive their returns only *after* the cost of acquiring them and then trading them back and forth among one another. Don't forget that our financial system is a greedy one, consuming from 1 to 2 percentage points of return, far too large a share of the returns created by our business and economic system. So we must recognize that individual investors and pension funds alike will receive only the net returns, perhaps in the 4–5 percent range, after the deduction of those costs. To significantly enhance that return, as shown in Box 7.2, less conventional portfolios using "alternative" investments will have to deliver returns that far exceed their own historical norms. To say the least, that is one more speculative bet.

Box 7.2

The Elusive 8 Percent

With reasonable expectations for a nominal return of roughly 7 percent on stocks over the coming decade, and, with somewhat more assurance, a return of roughly 3 percent on bonds, a traditional 65/35 stock/bond policy portfolio of a defined benefit (DB) pension plan might reasonably expect to earn a 5.5 percent annual return. Given the cost efficiencies in managing and administering portfolios with substantial assets, I assume a cost of 1 percent, bringing the return to 4.5 percent. Let's be generous and call it 5 percent.[1]

So is that the return that our corporate DB plans are projecting? No, it is not. The typical return projection is 8 percent, with a few plans—corporate and local government alike— as high as 9 percent and a few as low as 7 percent, or even slightly less. (Berkshire Hathaway is using a 6.9 percent assumption.) Where do these estimates come from? Well, here is what one large corporation tells us: "We consider current and expected asset allocations, as well as *historical* and expected returns on various categories of plan assets . . . evaluating general market trends as well as key elements of asset class returns such as expected earnings growth, yields and spreads. Based on our analysis of future expectations of asset performance, *past return results*, and our current and expected asset allocations, we have assumed an 8.0 percent long-term expected return on those assets" (italics added, General Electric Annual Report, 2010). Such disclosure has become sort of annual-report boilerplate.

All well and good, but, as they say, let's add some "granularity" (a word I don't much care for), making some assumptions

(*Continued*)

[1]While the returns that I describe are measured in *nominal* terms (current dollars), even an inflation rate of only 2 percent would result in a *real* return of just 3 percent.

that are arbitrary but not unrealistic. The table below shows one version of how various markets and asset-class managers must perform in order for a pension plan to reach that elusive goal.

A Template for DB Returns During the Coming Decade

				(2 + 3)		(4 − 5)
Class	1. Allocation	2. Projected Annual Return	3. Value Added by Managers	4. Adjusted Annual Return	5. Less Investment Costs	6. Net Return
Traditional Policy Portfolio						
Equities	40%	7.0%	+2.5%	9.5%	−1.0%	8.5%
Bonds	30	3.0	+0.5	4.0	−0.5	3.5
Alternative Investments						
Venture Capital	10	12.0	+3.0	15.0	−3.0	12.0
Hedge Funds	20	12.0	+3.0	15.0	−3.0	12.0
Total	**100%**	**7.3%**	**2.2%**	**9.5%**	**−1.5%**	**8.0%**

In effect, I present in the chart the very analysis that at least some corporations use—yet without their disclosure of the specific numbers they use. Here's the Exxon Mobil explanation for the process that underlies the corporation's expected return assumption of 7.5 percent for its pension plan: "a forward-looking, long-term return assumption for each asset class, taking into account factors such as the expected return for each." (Note that the firm totally ignores the costs of investing.)

Now let's consider how realistic the data in the table might be. First, the stock and bond returns are fully consistent with the reasonable expectations cited earlier. The returns for venture capital are generous but perhaps not unreasonable. But the required returns for hedge funds are far above historical norms. As to the value added by managers, my long experience tells me

that it is extremely unlikely that any manager can possibly deliver the 3 percentage points of excess return that are required. Good luck in picking one in advance. What's more, for DB plan managers as a group—competing with one another—zero Alpha is the expected outcome. (In fact, with the typical costs that I've assumed, pension managers will, in the aggregate, produce *negative* Alpha.) Even if our asset class returns for equities and bonds are realized, venture capital and hedge funds would have to earn returns that are far above historical norms. If those asset classes fail to do so, the actual realized return for this example would fall by 2 percentage points, to 6 percent per year.

Mark your calendars for 2022, 10 years hence, and see who's made the best estimate. For me, subjectively, even 6 percent is an ambitious goal. (The 10-year U.S. Treasury bond is presently yielding less than 2 percent, the 30-year Treasury about 3 percent.) And even if that 6 percent return is in fact achieved, the financial implications of the cumulative deficit from the 8 percent assumption will be staggering, particularly when today's cumulative deficit in corporate pensions is almost $500 billion. By then, I hope, our corporations will be required to report the *actual* 10-year returns of their DB plans, a disclosure that, absurdly, has never been mandated.

Deadly Sin 6: Speculation in the Financial System

Speculation is rife throughout our financial system (and our world). As Chapter 1 discusses, high stock market volatility; risky, often leveraged, derivatives; and extraordinary turnover volumes have exposed the markets to mind-boggling volatility. As I note earlier, some of this hyperactivity is necessary to provide the liquidity that has been the hallmark of the U.S. financial markets. But trading activity has grown into an orgy of speculation that pits one manager against another—one investor (or speculator) against another—a "paper economy" that has, predictably, come to threaten the real economy where our citizens

save and invest. It must be obvious that our present economic crisis was, by and large, foisted on Main Street by Wall Street—the mostly innocent public taken to the cleaners, as it were, by the mostly greedy financiers.

Deadly Sin 7: Conflicts of Interest

Conflicts of interest are rife throughout our financial system: Both the managers of mutual funds that are held in corporate 401(k) plans and the money managers of corporate pension plans face potential conflicts when they hold the shares of the corporations that are their clients. It is hardly beyond imagination that when a money manager votes proxy shares against a company management's recommendation, it might not sit well with company executives who select the plan's provider of investment advice. (There is a debate about the extent to which those conflicts have actually materialized.)

But there's little debate in the mind of Lynn Turner, former chief accountant of the SEC: "Asset managers who are charging corporations a fee to manage their money have a conflict in that they are also trying to attract more money which will increase their revenues, and that money often comes from companies who set up retirement accounts for their employees. There is not disclosure, from the asset manager to the actual investors whose capital is at risk, of the amount of fees they collect from the companies whose management they are voting on. It appears the institutional investors (including managers of mutual funds) may vote their shares at times in their best interests rather than the best interests of those whose money they are managing."

In trade union plans, the conflicts of interest are different, but hardly absent. Insider dealing among union leaders, investment advisers, and money managers has been documented in the press and in the courts. In corporate defined benefit pension plans, corporate senior officers face an obvious short-term conflict between minimizing pension contributions in order to maximize the earnings growth that market participants demand, versus incurring larger pension costs by making timely and adequate contributions to their companies' pension plans in order to assure long-term security for the pension benefits they have promised

to their workers. These same forces are at work in pension plans of state and local governments, where the reluctance (or inability) to balance budgets leads to financial engineering—rarely disclosed—in order to justify future benefits.

Extracting Value from Society

Together, these Seven Deadly Sins echo what I've written at length about our absurd and counterproductive financial sector. Here are some excerpts regarding the costs of our financial system that were published in the Winter 2008 issue of *Journal of Portfolio Management*: ". . . mutual fund expenses, plus all those fees paid to hedge fund and pension fund managers, to trust companies and to insurance companies, plus their trading costs and investment banking fees . . . have soared to all-time highs in 2011. These costs are estimated to total more than $600 billion. Such enormous costs seriously undermine the odds in favor of success for citizens who are accumulating savings for retirement. Alas, *the investor feeds at the bottom of the costly food chain of investing*, paid only *after* all the agency costs of investing are deducted from the markets' returns. . . . Once a profession in which business was subservient, the field of money management has largely become a business in which the profession is subservient. Harvard Business School Professor Rakesh Khurana is right when he defines the standard of conduct for a true professional with these words: '"*I will create value for society, rather than extract it.*' And yet money management, by definition, extracts value from the returns earned by our business enterprises."

These views are not only mine, and they have applied for a long time. Hear Nobel laureate economist James Tobin, presciently writing in 1984: ". . . we are throwing more and more of our resources into financial activities remote from the production of goods and services, into activities that generate high private rewards disproportionate to their social productivity, a 'paper economy' facilitating speculation which is short-sighted and inefficient." (In validating his criticism, Tobin cited the eminent British economist John Maynard Keynes. But he failed to cite Keynes's profound warning, cited earlier, that business enterprise has taken a back seat to financial speculation.) The multiple failings of our flawed financial sector are jeopardizing not only the

retirement security of our nation's savers but also the economy in which our entire society participates.

Our Retirement System Today

The present crisis in worker retirement security is well within our capacity to measure. The picture it paints is not a pretty one:

Social Security. While it is the massive backstay of our nation's retirement system, its future is speculative. Today, we can only guess whether Congress will continue to support its deficits. Or will the grit and resolve to make the simple changes required to assure its long-term solvency prevail?[2] All it would take is some combination of a gradual increase in the maximum income level for wage earners paying into the plan; a change from the wage-increase-based formula for increasing benefits to an inflation-based formula; a gradual increase in the retirement age to, say, 69; and a modest means test, limiting retirement payouts to those citizens with considerable wealth. (If Congress wishes to appoint me as the czar to implement these reforms, I'd be glad to accept the challenge.)

Defined Benefit Plans. Until the early 1990s, investment risk and the longevity risk of pensioners (the risk of outliving one's resources) were borne by the defined benefit (DB) plans of our corporations and our state and local governments, the pervasive approach to retirement savings outside of that huge national DB plan we call Social Security. But in the face of a major shift away from DB plans in favor of DC plans, DB growth has essentially halted. Largely because of the stock market's sharp decline, assets of corporate pension plans have declined from $2.1 trillion as far back as 1999 to an estimated $1.9 trillion as 2012 began. As noted at the outset, these plans are now severely underfunded. For the companies in the Standard & Poor's 1500 Index, pension plan

[2]If Congress does nothing, however, Social Security will continue. But according to a recent report, payments to retirees would fall to about 75 percent of today's levels by 2033.

assets to cover future payments to retirees face a deficit of almost $500 billion as 2012 begins. The deficits in state and local pension plans have been estimated at over $4 *trillion*, even as promises for higher future benefits continue to rise.

This deficit is reflected in the sharp drop in funding ratios of the pension plans (plan assets as a percentage of plan liabilities). The funding ratios for the giant corporations in the S&P 500 have fallen from 105 percent in 2007 to 80 percent in 2011; the ratio for public plans from 95 percent to 75 percent. What's more, the corporate plans show little sign of improvement; their average investment return of 4.4 percent in 2011 was barely one-half of their typical 8 percent return assumption. With bond yields in early 2012 remaining near their historic lows, only highly aggressive returns earned by the plans' equities and alternative investments will bail out these pension plans, a most speculative assumption, as shown in Box 7.2. If that desideratum does not happen, our companies will incur far larger pension expenses.

The Pension Benefit Guaranty Corporation. This federal agency, responsible for guaranteeing the pension benefits of failing corporate sponsors is itself faltering, with a $14 billion deficit in mid-2011. Early in 2008—just before the stock market's collapse—the agency made the odd decision to raise its allocation to diversified equity investments to 45 percent of its assets, and add another 10 percent to "alternative investments," including real estate and private equity. The decision to double the PBGC's equity participation came at what turned out to be the worst possible moment. (We don't yet know how that change worked out.) The fact is that the PBGC will ultimately require more funding if it is to meet its obligations. We don't know whether or how the issue will be resolved; we can only speculate.

Defined Contribution Plans. DC plans are gradually replacing DB plans, a massive transfer of *investment risk and return* as well as the *longevity risk* of retirement funding from business enterprises to their employees. While DC plans have been available to provide the benefits of tax-deferral for retirement savings for well

over a half-century,[3] it has only been with the rise of employer thrift plans such as 401(k)s and 403(b)s, beginning in 1978, that they have been widely used to accumulate retirement savings. The growth in DC plans has been remarkable. Assets totaled $500 billion in 1985; $1 trillion in 1990; $3 trillion in 2000; $4.5 trillion in 2010. The 401(k) and 403(b) plans dominate this total, with respective shares of 67 percent and 21 percent, or 88 percent of the DC total.

Individual Retirement Accounts. IRA assets presently total about $4.7 trillion, about the same as the $4.8 trillion total in 2007, before the stock market crash. Mutual funds (now some $2 trillion) continue to represent the largest single portion of these investments. Yet with some 49 million households participating in IRAs, the average balance is but $55,000, which at, say, a 5 percent average return, would provide but $2,750 per year in retirement income for a household, a nice but far-from-adequate increment in a case where the wage-earner retired today. Younger workers with such a balance would of course see it grow remarkably over time. For example, such a balance assuming a 6 percent future return on the account, would grow to $565,000 over the next 40 years.

Focusing on 401(k) Retirement Plans

Defined contribution pension plans, as noted earlier, have gradually come to dominate the private retirement savings market, and that domination seems certain to increase. Further, there is some evidence that DC plans are poised to become a growing factor in the public plan market. The federal employees' Thrift Savings Plan is the largest single factor. With assets of about $250 billion, it has operated as a defined

[3]I have been investing 15 percent of my annual compensation in the DC plan of the company (and its predecessor) that has employed me ever since July 1951, when I first entered the work force. I can therefore give my personal experience that tax-deferred defined-contribution pension plans, added to regularly; reasonably allocated among stocks and bonds; highly diversified, managed at low cost; and compounded over a long period, are capable of providing wealth accumulations that, after my 61 years of participation, seem little short of miraculous.

contribution plan since its inception in 1986. As 401(k) plans have come to dominate the DC market, mutual fund shares have come to dominate the 401(k) market. Assets of mutual funds in DC plans have grown from a mere $35 billion in 1990 (9 percent of the total) to an estimated $2.3 trillion in 2012 (53 percent).

Given the plight in which our defined benefit plans have found themselves, and the large (and, to some degree, unpredictable) bite that future funding costs will take out of corporate earnings, it is small wonder that what began as a gradual shift became a massive movement to defined contribution plans. Think of General Motors, for example, as a huge pension plan, now with perhaps $94 billion of assets—and likely even larger liabilities—surrounded by a far smaller automobile business, operated by a company with a current stock market capitalization of just $38 billion.

I would argue that the shift from DB plans to DC plans is not only an inevitable move, but a move in the right direction in providing worker retirement security. In this era of global competition, U.S. corporations must compete with non–U.S. corporations with far lower labor costs. So this massive transfer of the two great risks of retirement plan savings—investment risk and longevity risk—from corporate balance sheets to individual households will relieve pressure on corporate earnings, even as it will require our families to take responsibility for their own retirement savings. A further benefit is that investments in properly designed DC plans can be tailored to the specific *individual* requirements of each family—reflecting its prospective wealth, its risk tolerance, the age of its bread-winner(s), and its other assets (including Social Security). DB plans, on the other hand, are inevitably focused on the *average* demographics and average salaries of the firm's work force in the aggregate.

The 401(k) plan, then, is an idea whose time has come. *That's the good news*. We're moving our retirement savings system to a new paradigm, one that ultimately will efficiently serve both our nation's employers—corporations and governments alike—and our nation's families. *Now for the bad news*: Our existing DC system is failing investors. Despite its worthy objectives, the deeply flawed implementation of DC plans has subtracted—and subtracted substantially—from the inherent value of this new system. Given the responsibility to look after their own investments,

participants have acted contrary to their own best interests. Let's think about what has gone wrong.

A Deeply Flawed System

Since it has become the dominant force in pension funding, I now turn to the defined contribution plan. The major flaws that continue to exist in our 401(k) system (and, to some extent, in our IRA system) require radical reform. For our task is to give employees the fair shake that must be the goal if we are to serve the national public interest and the interest of investors. In addition to the shortfall in national savings illustrated in Box 7.1, the major problems in our retirement plan system that cry out for reform lie in the following five areas.

Too Much Flexibility. 401(k) plans, designed to fund retirement income, are too often used for purposes that subtract directly from that goal. One such subtraction arises from the ability of employees to borrow from their plans, and fully 20 percent of participants do exactly that. Even when—and if—these loans are repaid, investment returns (assuming that they are positive over time) would be reduced during the time that the loans are outstanding, a dead-weight loss in the substantial savings that might otherwise have been accumulated at retirement.

Even worse is the dead-weight loss—in this case, largely permanent—engendered when participants "cash out" their 401(k) plans when they change jobs or when their family circumstances change. The evidence suggests that fully 60 percent of all participants in DC plans who move from one job to another cash out at least a portion of their plan assets, using that money for purposes other than retirement savings. To understand the baneful effect of borrowings and cash-outs, just imagine in how much worse shape our beleaguered Social Security System would find itself if the contributions of workers and their companies were reduced by borrowings and cash-outs, flowing into current consumption rather than into future postretirement pay. It is not a pretty picture to contemplate.

Another kind of excess flexibility, clearly demonstrated during the recent recession, is the freedom given to corporations to modify,

suspend, or even abandon their employee retirement plans. Counterproductively, this means that the benefits of "dollar cost averaging" are often suspended during tough times, just when stock prices tend to be most attractive for long-term investors. The IRA situation, sadly, is even more flexible, for sticking to a regular payment schedule is totally at the option of the IRA owner, and withdrawals can be made easily, albeit subject to significant penalties.

Inappropriate Asset Allocation and Faulty Investment Selection. One reason that 401(k) investors have accumulated such disappointing balances is due to unfortunate decisions in the allocation of assets between stocks and bonds.[4] While virtually all investment experts recommend a large allocation to stocks for young investors and an increasing bond allocation as participants draw closer to retirement, a large segment of 401(k) participants fails to heed that advice.

Nearly 20 percent of 401(k) investors in their 20s own zero equities in their retirement plan, holding, instead, outsized allocations of money market and stable value funds, options that are unlikely to keep pace with inflation as the years go by. On the other end of the spectrum, more than 30 percent of 401(k) investors in their 60s have more than 80 percent of their assets in equity funds. Such an aggressive allocation likely resulted in a decline of 30 percent or more in their 401(k) balances during the present bear market, imperiling their retirement funds precisely when the members of this age group are preparing to draw upon it.

Company stock is another source of unwise asset allocation decisions, as many investors fail to observe the time-honored principle of diversification. In plans in which company stock is an investment option, the average participant invests more than 20 percent of his or her account balance in company stock, an unacceptable concentration of

[4]These data are derived from a Research Perspective dated December 2008, published by the Investment Company Institute, the association that represents mutual fund management companies, collecting data, providing research, and engaging in lobbying activities.

risk. Those who are far too conservative, those who are far too "aggressive," and those who bet the ranch (or a large part of it) on tying their careers to their retirement plan are all speculating about what the future holds, rather than true investing, diversifying those risks (but not market risk itself) away.

ERISA restricts a pension plan's allocation in company stock to 10 percent of assets (still far too high a concentration for any individual equity). No similar restriction exists for 401(k) plans, although a recent Department of Labor regulation requires corporations to allow employees to diversify out of company stock after a certain period of time. Concerns about the concentration of assets in company stock, which can be exacerbated by employer matches issued in the form of company stock, led FINRA to issue an alert warning investors against this behavior. According to a 2009 study conducted by the Employee Benefit Research Institute, over one-half of employees having the option to invest in company stock do so. This concentration in a single asset puts employees in a precarious position where both their job and their life savings can be wiped out by shocks to a single company—a sort of "double jeopardy" that is extremely unwise.

Yet another form of speculation is placing one's retirement plan bets on which managers will provide the highest returns in the future. Years ago, the betting was focused on individual stocks (company stock is a good example). But today it is largely speculation on future mutual fund performance where the past, alas, is rarely prologue to the future. Participants in DC plans are presently betting on an astonishing total of 562 different mutual funds, the vast majority of which are actively managed, often assuming extra market risk (see Box 7.3).

It is only in recent years that broadly diversified, passively managed index funds have come into their own. But despite their obvious suitability in DC plans, index funds represent but 25 percent of DC assets, albeit up from a 15 percent share 15 years ago. The increasingly popular "target date funds" (making portfolios gradually more conservative as the retirement date nears) are also beginning to make inroads. Despite their obvious sense, suitability, and low cost, target-date *index* funds have yet to dominate the field. (Most target date funds are actively managed.)

Excessive Costs. As noted earlier, excessive investment costs are the principal cause of the inadequate long-term returns earned by both stock mutual funds and bond mutual funds. The average equity fund carries an annual expense ratio of about 1.3 percent per year (somewhat lower when weighted by fund assets), consuming an incredible 65 percent of their current dividend yield of 2 percent, and leaving a puny yield of just 0.7 percent. But that is only part of the cost. Mutual funds also incur substantial transaction costs, reflecting the rapid turnover of their investment portfolios.

Last year, the average actively managed fund had a turnover rate of an astonishing 96 percent. Even if weighted by asset size, the turnover rate is still a shocking—if slightly *less* shocking—65 percent. Admittedly, the costs of this portfolio turnover cannot be measured with precision. But it is reasonable to assume that trading activity by funds adds costs of 0.5 percent to 1.0 percent to the dilution inflicted on returns by the expense ratio. So the all-in-costs of fund investing (*excluding* sales loads, which are generally waived for large retirement accounts) can run from, say, 1.5 percent to 2.3 percent per year. By contrast, low-cost market index funds—which I've discussed earlier—have expense ratios as low as 0.10 percent or less, with transaction costs that are close to zero.

In investing, costs truly matter, and they matter even more when related to real (after-inflation) returns. Let's assume again that future nominal investment return on a balanced retirement account were, say, 5.5 percent per year (3.5 percent nominal return for bonds, 7–8 percent for stocks). Adjusted for, say, 2.5 percent inflation, the real return would be just 3 percent. An annual cost of 2.0 percent would therefore consume fully 67 percent of that annual return, while a low-cost index fund with a cost of 0.1 percent would consume but 5 percent. Even worse, over an investment lifetime of, say, 50 years, these costs of active management would consume a staggering share of the potential wealth accumulation. It is an ugly picture.

Given the centrality of low costs to the accumulation of adequate purchasing power in retirement savings plans, it is high time that both the impact of inflation and the toll taken by costs are disclosed to participants. The disclosure must include the *all-in* costs of investing, not merely the expense ratios. However, I confess to being skeptical about a recent regulatory proposal that would apply cost-accounting processes to the

Box 7.3

Speculation: Betting on Mutual Funds by Retirement Plan Participants

When 401(k) thrift plans began to develop some 30 years ago, the list of choices was usually limited to those funds under a given sponsor's management, but what gradually developed was a sort of "open architecture" plan, in which—while a single sponsor was responsible for the record keeping of participant accounts—a whole range of other funds could be selected. It is now typical for mutual fund managers to offer a wide selection of their funds to retirement plan participants. If "the more the choices, the better the outcome" were the rule, that expansion in options would be called progress. But the history of fund choice suggests that the reverse is true.

Let's look at the record, and examine the amounts held by 401(k) participants in individual mutual funds in 1997, then in 2012. The table below shows the 20 largest fund holdings, and the cumulative returns provided by each during the past 15 years and in 2012.

Domestic Equity Funds Most Used by DC Plans

	1997				2012		
			Return: 15 Years Ending March 2012				
	Fund	Assets (billions)	Annual	Cumulative	Fund	Assets (billions)	Return: 1 Year March 2012
1	Fidelity Magellan	$30.3	4.5%	94.0%	American Funds Growth	$67.6	3.5%
2	Vanguard 500 Index	14.8	6.0	140.3	Vanguard 500 Index	62.2	8.3
3	Fidelity Growth & Income	11.4	3.1	58.3	Fidelity Contrafund	44.7	9.4
4	Fidelity Contra	9.5	9.2	276.7	Fidelity Spartan 500 Index	23.7	8.4
5	Fidelity Equity Income	9.0	5.4	122.5	Fidelity Growth Co.	22.4	12.6

	1997				2012		
			Return: 15 Years Ending March 2012				
	Fund	Assets (billions)	Annual	Cumulative	Fund	Assets (billions)	Return: 1 Year March 2012
6	Twentieth Century Ultra	8.2	5.6	127.0	Fidelity Low-Priced Stock	17.0	7.2
7	Vanguard Windsor	7.7	5.9	137.9	Vanguard PRIMECAP	13.4	2.9
8	Fidelity Growth Co.	5.6	9.2	276.8	Fidelity Magellan	10.6	−2.3
9	Fidelity Spartan 500 Index	5.0	5.9	139.1	American Funds Fundamental	9.6	2.6
10	Vanguard Windsor II	4.0	6.9	174.0	Vanguard Windsor II	9.5	8.3
11	Investment Co. of America	4.0	7.1	180.2	American Funds Washington	9.5	8.4
12	Fidelity Blue Chip Growth	3.9	5.9	137.4	Investment Co. of America	8.5	4.6
13	Putnam Voyager	3.7	5.7	130.8	T. Rowe Price Midcap Growth	8.4	2.8
14	Capital Research Washington	3.6	6.8	169.1	Columbia Acorn	7.6	4.2
15	Merrill Lynch Basic Value	2.9	6.5	159.3	Neuberger Genesis	7.3	2.3
16	Twentieth Century Growth	2.7	6.5	159.3	Fidelity Equity Income	6.5	−1.2
17	Vanguard U.S. Growth Portfolio	2.5	2.2	38.6	T. Rowe Price Equity Income	5.6	4.5
18	T. Rowe Price Equity Income	2.4	6.8	170.5	Fidelity Midcap Stock	5.2	3.3
19	Neuberger & Berman Guardian	2.4	4.7	100.3	Fidelity Blue Chip Growth	5.1	9.2
20	Janus	2.4	5.0	110.3	Goldman Sachs Midcap Value	5.1	−0.06

SOURCE: Pensions & Investments.

(*Continued*)

Some Lessons

- There's a continuing change in leadership during the period. By 2011 six funds had disappeared from the 1997 list (often because of faltering performance), replaced by six new entrants (often with recent past returns that were superior).
- Magellan Fund, the top-performing fund of the 1970s and 1980s, stumbled badly (next to last performer during the past 15 years), and its long-time #1 rank in popularity fell to #10 in 2012. (Holdings by participants fell from $30 billion to $10 billion.)
- Index Funds rose sharply in popularity. Vanguard 500 rose from #8 to #2, with 401(k) holdings soaring from $9 billion to $62 billion. Similarly, Fidelity's Spartan U.S. Equity Index Fund jumped from #10 ($5 billion) to #4 ($24 billion.)
- Little magic can be found in the actively managed equity selections offered by 401(k) leaders Fidelity, Vanguard, and American Funds. During the 15-year period, these three firms had both winners and losers. For Fidelity, Magellan and Growth and Income stumbled badly, but Contrafund and Growth Fund enjoyed positive returns that were almost symmetrical, but in reverse. For Vanguard, Windsor II shone, but U.S. Growth failed badly. Both of the American Funds—Investment Company of America and Washington Mutual—had superlative records.
- The 15-year records illustrate the folly of believing that the past is prologue. It wasn't. In 2012, the returns for the top 20 funds were random. Magellan's earlier shortfall relative to the S&P 500 sharply accelerated. PRIMECAP did extremely well, and Vanguard's Windsor II continued to win. At Fidelity, Contrafund lagged slightly and Equity Income tumbled. At American, Growth, now the most popular fund in 401(K) plans ($67 billion), performed poorly, as did Investment Company of America, but Washington Mutual experienced a one-year return that was first rate.

The inability of plan participants (and their advisers) to predict, in advance, patterns of performance seems obvious. If we look to, not merely the top 20 choices, but to *all* of the funds selected by participants, that message is magnified. Currently, participants have selected 562 individual funds, more what one would expect of stock-pickers rather than fund-pickers. The winning number, as it were, for 2012 was the 400th largest fund, Federated Strategic Value, with an 11.5 percent gain for the year; the losing number, Columbia Acorn, with a 16.5 percent loss—a spread of nearly 30 percentage points from best to worst. (The gap between the top and bottom deciles was of course smaller—+6 percent versus −10 percent, a 16-percentage-points spread. But that spread still made a huge difference.)

The 500 index funds of Vanguard and Fidelity were, inevitably, the surest bet; that is, the safest way to avoid both the extremes of underperformance and, necessarily, of over-performance. But by minimizing speculation on who will win and who will lose, that safe course guarantees—as it always has—that 401(k) participants who chose index funds will garner their fair share of whatever returns the stock market earns (or fails to earn).

allocation of fund expenses among investment costs, administrative costs, marketing costs, and record-keeping costs. What's important to plan participants is the amount of *total* costs incurred, not necessarily the allocation of those costs among the various functions as determined by accountants and fund managers who have vested interests in the outcome.

Failure to Deal with Longevity Risk. Even as most DC plan participants have failed to deal adequately with inflation risk, investment risk, and selection risk, so they (and employers and fund sponsors) have also failed to deal adequately with longevity risk. It must be obvious that at some point in an investment lifetime, most plan participants would be well served by having at least some portion of their retirement savings

provide income that they cannot outlive. But despite the fact that the 401(k) plan has now been around for three full decades, systematic approaches to annuitizing payments are rare and often too complex to implement. Further, nearly all annuities carry grossly excessive expenses, often because of high selling and marketing costs. Truly low-cost annuities remain conspicuous by their absence from DC retirement plan choices. (TIAA-CREF, operating at rock-bottom cost and providing ease and flexibility for clients using its annuity program, has done a good job in resolving both the complexity issue and the cost issue.)

Lack of Investor Education. While defined contribution plans give investors the ability to customize their retirement accounts to their specific circumstances, far too often investors have not been given the tools that they need to make financial decisions that are in their own best interests. The shift towards defined contribution retirement plans has essentially thrust the head of each participating household into the role of pension plan manager, a role for which they are not properly prepared and are often reluctant to assume. As a result, retirement savers make many of the mistakes already discussed—not saving enough, being either too conservative or too aggressive in their asset allocation, taking loans from a 401(k), cashing out early—simply because they've received inadequate preparation for these critical investment decisions. The fund industry has not helped, marketing their hottest funds and giving inadequate attention to the critical role played by asset allocation.

The New Pension Plan

Given the tenuous funding of DB plans, the widespread failures in the existing DC plan structure—including both 401(k) plans and IRAs—we ought to carefully consider and then implement changes that move us to a retirement plan system that is simpler, more rational, and less expensive. The new system must be one that will be increasingly and inevitably focused on DC plans, albeit those that can to some degree emulate the security of DB plans. (Our Social Security System and, at least for a while, our state and local government systems would continue to provide the DB backup as a "safety net" for all participating U.S. citizens.) It is time

for reform—a reform that serves, not fund managers and our greedy financial system, but plan participants and their beneficiaries.

I am hardly alone in my critique of today's retirement system, nor in my struggle to build a better one. Consider the words that follow from the respected pension strategist Keith Ambachtsheer, Director of the Rotman International Centre for Pension Management at the University of Toronto. In his remarks, prepared for a *FairPensions* event at Westminster Hall, Houses of Parliament, London, on November 15, 2011, he provides excellent ideas about how to assure wealth across the generations. Some excerpts are presented in Box 7.4.

Box 7.4

Wealth across Generations: Can Pension Funds Shape the Future of Capitalism?

By Keith Ambachtsheer

It is within our reach to move capitalism in a direction that is more wealth-creating, more sustainable, less crisis-prone, and more legitimate than the "headwinds" capitalism we have today. Why specifically pension funds (including both defined contribution and defined benefit plans)? Because they are the only global investor class which has a fiduciary duty to invest across generations. In determining their investment strategies, pension funds are duty-bound to be even-handed between the financial needs of today's pensioners and those of young workers whose retirement years lie 30, 40, 50 years ahead of them.

However, this transformation to "pension fund capitalism" will not be easy for two reasons: (1) It requires the redesign of pension systems so these systems themselves become more sustainable and intergenerationally fair. (2) It requires the redesign of pension fund organizations so that they *themselves* become more effective and hence more productive

(*Continued*)

stewards of the retirement savings of young workers and pensioners alike.

The designs of traditional DC and DB plans are both problematical:

1. Traditional DC plans force contribution rate and investment decisions on participants that they cannot, and do not want to make. Also, little thought has been given to the design of the post-work asset decumulation phrase. As a result, DC plan investing has been unfocused, and post-work financial outcomes have been, and continue to be highly uncertain, raising fundamental questions about the effectiveness and sustainability of this individualistic pension model.
2. Traditional DB plans lump the young and the old on the same balance sheet, and unrealistically assume they have the same risk tolerance and that property rights between the two groups are clear. These unrealistic assumptions have had serious consequences. Over the course of the last decade, aggressive return assumptions and risk-taking—together with falling asset prices, falling interest rates, and deteriorating demographics—have punched gaping holes in many DB plan balance sheets, to which unfocused responses have ranged the full spectrum—from complete de-risking at one end to piling on more risk at the other . . .

Pension systems have two goals: (1) a pension affordability for workers (and their employers), and (2) certainty for pensioners. Therefore they must offer participants two instruments: a long-horizon (LH) return maximization instrument to support the affordability goal, and an asset-liability matching instrument to support the payment certainty goal. Logically, younger workers should favor return maximization, and pensioners should favor payment certainty. Over the course of their working lives, participants should transition steadily from the former goal to the latter.

> Unfortunately, there continues to be considerable resistance to adopting this more transparent, robust "two goals/two instruments" pension model. Some continue to defend traditional DB models for emotional rather than rational reasons; others continue to defend the "caveat emptor" philosophy of traditional DC plans because they profit from it. But the "two goals two instruments" design feature is critically important to pension funds ability to reshape capitalism. Without the existence and legitimacy of highly focused, well-managed long-horizon return-maximization instruments, pension funds *cannot* play the wise intergenerational investor role that we have cast them in. . . .
>
> I put to you that if we could achieve that vision, we would not just create more wealth for current and future pensioners. We would in the process transform today's "headwinds" capitalism into a more sustainable, wealth-creating version that is less prone to generate the financial bubbles and crises of the last decade, and more legitimate in the skeptical eyes of today's occupiers of Wall Street.

What's to Be Done?

Where there are multiple sins and flaws, as there are in today's retirement system, there are multiple opportunities for improvement. So as we work toward the ideal of "The New Pension Plan" just described—with pension funds helping to shape the future of capitalism—here are five specific recommendations toward that end.

Simplify the DC System

Offer a single DC plan for tax-deferred retirement savings available to all of our citizens (with a maximum annual contribution limit), consolidating today's complex amalgam of traditional DC plans, IRAs, Roth IRAs, 401(k) plans, 403(b) plans, and the federal Thrift Savings Plan. I envision the creation of an independent Federal Retirement Board to oversee both the employer sponsors and the plan providers, assuring that the interests of plan participants are given the highest priority. This new

system would remain in the private sector (as today), with asset managers and record keepers competing in costs and in services. (Such a board might also create a public sector DC plan for wage earners who are unable to enter the private system or whose initial assets are too modest to be acceptable in that system.)

Get Real about Stock Market Return and Risk

Financial markets, it hardly need be said today, can be volatile and unpredictable. But common stocks remain a perfectly viable—and necessary—investment option for long-term retirement savings. Yet stock returns have been oversold by Wall Street's salesmen and by the mutual fund industry's giant marketing apparatus. In their own financial interests, they ignored the fact that the great bull market we enjoyed during the final 25 years of the twentieth century was in large part an illusion, creating what I call "phantom returns" that would not recur. Think about it: From 1926 to 1974, the average annual real (inflation-adjusted) return on stocks was 6.1 percent. But during the following quarter-century, stock returns soared, an explosion borne, not of the return provided by corporations in the form of dividend yields and earnings growth, but of soaring price-to-earnings ratios, what I define as *speculative* return. By 1999, that long-term rate of real returns had jumped to 12 percent.

This higher market valuation reflected investor confidence—along with greed—produced an extra speculative return of 7 percent annually—resulting in a cumulative increase of 400 percent in final value for the full 25 years, a staggering accretion without precedent in financial history. This speculative return almost doubled the market's *investment* return (created by dividend yields and earnings growth), bringing the market's total real return to nearly 12 percent per year. From these speculative heights, the market had little recourse but to return to normalcy, by providing far lower returns in subsequent years. And in fact, the real return on stocks since the turn of the century in 1999 has been minus 7 percent per year, composed of a negative *investment* return of −1 percent and, as price-earnings multiples retreated to (or below) historical norms, a negative *speculative* return of another −6 percent.

The message here is that investors in their ignorance, and financial sector marketers with their heavy incentives to sell, well, "products," failed to make the necessary distinction between the returns earned by business (earnings and dividends) and the returns earned by irrational exuberance and greed. In retrospect, we now realize that much of the value we saw reflected on our quarterly 401(k) statements in 1999 (and again in 2007) was indeed *phantom wealth*. But as yesteryear's stewards of our investment management firms became modern-day salesmen of investment products, they had every incentive to disregard the fact that this wealth could not be sustained. Our marketers (and our investors) failed to recognize that only fundamental (investment) returns apply as time goes by. As a result, we misled ourselves about the realities that lay ahead, to say nothing of the risks associated with equity investing.

Reduce Participant Flexibility

Both the "open architecture" plan that I described earlier and the near-freedom to withdraw assets from DC plans have ill-served investors. Limiting choices is relatively easy to understand and to achieve. But it will take major reform to reduce the flexibility that plan participants presently enjoy to draw down their cash almost at will (albeit sometimes with tax penalties). If the DC plan is to reach its potential as a retirement savings vehicle, there must be substantial limits—including larger penalties—on cash-outs and loans, no matter how painful in the short term. (Just imagine what would have happened to our Social Security if participants had withdrawal rights!) Importantly, 401(k) plans were originally designed as *thrift savings plans*. They need to have far more emphasis on their role as *thrift retirement plans* than we expect them to play today.

A poignant example of the flaws in our 401(k) savings plans, shared by our IRA plans, came from financial writer (*A Piece of the Action: How the Middle Class Joined the Money Class*, Simon & Schuster, 1994) and *The New York Times* editorial board member Joe Nocera. In his April 28, 2012 column, entitled, "My Faith-Based Retirement," he identified many of the procedural and human barriers that stand between opening a retirement account, and building it into a meaningful asset to fund one's retirement. Box 7.5 presents some excerpts.

Box 7.5

My Faith-Based Retirement

By Joe Nocera

"My 60th birthday is less than a week and a half away. . . . The only thing I haven't dealt with on my to-do checklist is retirement planning . . . [But] I can't retire. My 401(k) plan, which was supposed to take care of my retirement, is in tatters. Like millions of other aging baby boomers, I first began putting money into a tax-deferred retirement account a few years after they were legislated into existence in the late 1970s. The great bull market, which began in 1982, was just gearing up.

"As a young journalist, I couldn't afford to invest a lot of money, but my account grew as the market rose, and the bull market gave me an inflated sense of my investing skills. I became an enthusiast of the new investing culture, and I argued that the little guy have the same access to the markets as the wealthy. In the boom, I didn't make much of the decline of pensions. After all, we were in the middle of the tech bubble by then.

"The bull market ended with the bursting of that bubble in 2000. My tech-laden portfolio was cut in half. A half-dozen years later, I got divorced, cutting my 401(k) in half again. A few years after that, I bought a house that needed some costly renovations. Since my retirement account was now hopelessly inadequate for actual retirement, I reasoned that I might as well get some use out of the money while I could. So I threw another chunk of my 401(k) at the renovation. That's where I stand today. . . .

"The 401(k) is a failed experiment. . . . It is time to rethink it. . . . Most human beings lack the skill and emotional wherewithal to be good investors. Linking investing and retirement has turned out to be a recipe for disaster."

Own the Stock Market

Investors seem to largely ignore the close link between lower costs and higher returns—what I have called earlier "The Relentless Rules of Humble Arithmetic." Plan participants and employers also ignore this essential truism: In the aggregate, we investors are all "indexers." That is, all of the equity owners of U.S. stocks together own the entire U.S. stock market. So our collective gross return inevitably equals the return of the stock market itself.

And because providers of financial services are largely smart, ambitious, aggressive, innovative, entrepreneurial, and, at least to some extent, greedy, it is in their own financial interest to have plan sponsors and participants ignore that reality. Our financial system pits one investor against another, buyer versus seller. Each time a share of stock changes hands (and today's daily volume totals some 10 billion shares), one investor is (relatively) enriched; the investor on the other side of the trade is (relatively) impoverished. That diverse collection of 562 equity funds now held in 401(k) plans, combined in the aggregate, in fact owns the stock market itself. In substance, the winning funds' excess returns are offset by the losing funds' shortfalls. The obvious conclusion: *We're all indexers now.*

But, as noted earlier, this is no *zero-sum game*. The financial system—the traders, the brokers, the investment bankers, the money managers, the middlemen, "Wall Street," as it were—takes a cut of all this frenzied activity, leaving investors as a group inevitably playing a *loser's game*. As bets are exchanged back and forth, our attempts to beat the market, and the attempts of our institutional money managers to do so, then, enrich only the croupiers, a clear analogy to our racetracks, our casinos, and our state lotteries.

So, if we want to encourage and maximize the retirement savings of our citizens, we must drive the money changers—or at least most of them—out of the temples of finance. *If we investors collectively own the markets, but individually compete to beat our fellow market participants, we lose. But if we abandon our inevitably futile attempts to obtain an edge over other market participants and all simply hold our share of the market portfolio, we win.* (Please re-read those two sentences!) Truth told, it *is* as simple as that. So our Federal Retirement Board should not only foster the use of broad-market index funds in the new DC system (and offer them in its own "fallback"

system described earlier) but approve only private providers who offer their index funds at minimum costs.

Balance Risk and Return through Asset Allocation

The balancing of return and risk is the quintessential task of intelligent investing, and that task too would be the province of the Federal Retirement Board. If the wisest, most experienced minds in our investment community and our academic community believe—as they do—that the need for risk aversion increases with age; that market timing is a fool's game (and is obviously not possible for investors as a group); and that predicting stock market returns has a very high margin for error, then something akin to roughly matching the bond index fund percentage with each participant's age with the remainder committed to the stock index fund, is the strategy that is most likely to serve most plan participants with the most effectiveness. Under extenuating—and very limited—circumstances, participants could have the ability to opt out of that allocation.

This allocation pattern is clearly accepted by most fund industry marketers, in the choice of the bond/stock allocations of their increasingly popular "target retirement funds." However, too many of these fund sponsors apparently have found it a competitive necessity to hold stock positions that are significantly higher than the pure age-based equivalents described earlier. I don't believe competitive pressure should be allowed to establish the allocation standard, and would leave those decisions to broad policies set by the new Federal Retirement Board.

I also don't believe that past returns on stocks that include, from time to time, substantial phantom returns—born of swings from fear to greed to hope, back and forth—are a sound basis for establishing appropriate asset allocations for plan participants. Our market strategists, in my view, too often deceive themselves by their slavish reliance on past returns, rather than focusing on what returns may lie ahead, based on the projected discounted future cash flows that, however far from certainty, represent the intrinsic values of U.S. business in the aggregate.

Once we spread the risk of investing to investors as a group, we've accomplished the inevitably worthwhile goal: a low-cost financial

system that is based on the wisdom of long-term investing, eschewing the fallacy of the short-term speculation that is so deeply entrenched in our markets today. To do so, we must first eliminate the risk of picking individual stocks, of picking market sectors, and of picking money managers, leaving only market risk, which cannot be avoided. Such a strategy effectively *guarantees* that all DC-plan participants will garner their fair share of whatever returns our stock and bond markets are generous enough to bestow on us (or, for that matter, mean-spirited enough to inflict on us). Compared to today's loser's game, that would be a signal accomplishment.

Under the present system, some of us will outlive our retirement savings and depend on our families. Others will go to their rewards with large savings barely yet tapped, benefiting their heirs. But like investment risk, longevity risk can be pooled. So as the years left to accumulate assets dwindle down, and as the years of living on the returns from those assets begin, we need to institutionalize, as it were, a planned program of conversion of a portion of our retirement plan assets into annuities. (It could well be integrated with a plan most of us already have, one that includes defined benefits, an inflation hedge, and virtually bulletproof credit standing. It is called "Social Security.")

This evolution will be a gradual process; it could be limited to plan participants with assets above a certain level; and it could be accomplished by the availability of annuities created by private enterprise and offered at minimum cost, again with providers overseen by the proposed Federal Retirement Board (just as the federal Thrift Savings Plan has its own board and management, and operates as a private enterprise).

Focus on Mutuality, Investment Risk, and Longevity Risk

The pooling of the savings of retirement plan investors in this new pension fund environment is the *only* way to maximize the returns of these investors as a group. The pool would feature a widely diversified, all-market strategy, a rational (if inevitably imperfect) asset allocation, and low costs, and be delivered by a private system in which investors automatically and regularly save from their own incomes, aided where possible by matching contributions of their employers, and would prove that an annuity-like mechanism to minimize longevity risks is the

optimal system to assure maximum retirement plan security for our nation's families.

There remains the task of bypassing Wall Street's croupiers, an essential part of the necessary reform. Surely our Federal Retirement Board would want to evaluate the need for the providers of DC retirement plan service to be highly cost-efficient, or even to be *mutual* in structure; that is, management companies that are owned by their fund shareholders and operated on an "at-cost" basis; and annuity providers that are similarly structured. The arithmetic is there, and the sole mutual fund firm that is organized under such a mutual structure has performed with remarkable effectiveness.[5]

Of course that's my view! But this critical analysis of the structure of the mutual fund industry is not mine alone. Hear this from another investor, one who has not only produced one of the most impressive investment records of the modern era but who has an impeccable reputation for character and intellectual integrity, David F. Swensen, Chief Investment Officer of Yale University:

> The fundamental market failure in the mutual fund industry involves the interaction between sophisticated, profit-seeking providers of financial services and naïve, return-seeking consumers of investment products. The drive for profits by Wall Street and the mutual fund industry overwhelms the concept of fiduciary responsibility, leading to an all too predictable outcome: . . . the powerful financial services industry exploits vulnerable individual investors. . . . The ownership structure of a fund management company plays a role in determining the likelihood of investor success. . . .
>
> Mutual fund investors face the greatest challenge with investment management companies that provide returns to public shareholders or that funnel profits to a corporate parent—situations that place the conflict between profit generation and

[5]I'm only slightly embarrassed again to be referring to Vanguard, the firm I founded 35 years ago. But it's difficult to argue with Vanguard's leadership in providing superior investment returns, in operating by far at the lowest costs in the field, in earning shareholder confidence, and in developing positive cash flows into our mutual funds (even in the face of huge *outflows* from funds operated by our rivals).

fiduciary responsibility in high relief. When a fund's management subsidiary reports to a multi-line financial services company, the scope for abuse of investor capital broadens dramatically. . . .

Investors fare best with funds managed by not-for-profit organizations, because the management firm focuses exclusively on serving investor interests. No profit motive conflicts with the manager's fiduciary responsibility. No profit margin interferes with investor returns. No outside corporate interest clashes with portfolio management choices. Not-for-profit firms place investor interests front and center. . . . Ultimately, a passive index fund managed by a not-for-profit investment management organization represents the combination most likely to satisfy investor aspirations.

What Would an Ideal Retirement Plan System Look Like?

However difficult to implement, it is easy to summarize the five elements of an ideal system for retirement savings that I've presented.

1. Social Security would essentially remain in its present form, offering basic retirement security for our citizens at minimum investment risk. (However, policymakers must promptly deal with its longer-run deficits.)
2. For those who have the financial ability to save for retirement, there would be a single DC structure, dominated by low-cost—even mutual—providers, inevitably focused on all-market index funds investing for the long term, and overseen by a newly created Federal Retirement Board that would establish sound principles of asset allocation and diversification in order to ensure appropriate investment risk for plan participants, as well as stringent limits on participant flexibility.
3. Retirement savings would continue to be tax-deferred, but with a dollar limitation on aggregate annual contributions by any individual, and a similar limit on the amount that is tax-deductible.
4. Longevity risk would be mitigated by creating simple low-cost annuities as a mandatory offering in these plans, with some portion

of each participant's balance going into this option upon retirement. (Participants should have the ability to opt out of this alternative.)

5. We should extend the existing ERISA requirement that plan *sponsors* meet a standard of fiduciary duty to encompass plan *providers* as well as the corporations themselves. (As noted earlier, I also believe that a federal standard of fiduciary duty for all money managers should be enacted.)

The system I'd like to see may not be—indeed, it is not—a system free of flaws. But it is a radical improvement, born of common sense and elemental arithmetic, over the present system, which is driven by the interests of Wall Street rather than Main Street. With the creation of an independent Federal Retirement Board, we have the flexibility to correct flaws that may develop over time, and assure that the interests of workers and their retirement security remain paramount. But the central principle remains: *minimize the impact of all of the various forms of speculation that plague our complex present-day national retirement plan system, vastly simplify it, slash the costs of it, assure its fairness to society, and maximize its focus on long-term investment.*

* * *

The perils of speculation and the merits of investment are not merely concepts. They are real factors in determining how the process of asset allocation and portfolio management actually functions. My career has fortified my strong views of this distinction, made real and tangible by my first-hand experience in the management of Wellington Fund during 61 years of its 83-year history. The next chapter tells this tale of triumph and tragedy and triumph.

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PERSPECTIVES

The Arithmetic of "All-In" Investment Expenses

John C. Bogle

This article represents a rare (if not unique) attempt to estimate the drag on mutual fund returns engendered by "all-in" investment expenses, including not only expense ratios (until now, the conventional measure of fund costs) but also fund transaction costs, sales loads, and cash drag. Compared with costly actively managed funds, over time, low-cost index funds create extra wealth of 65% for retirement plan investors.

I read William Sharpe's essay "The Arithmetic of Investment Expenses" (2013) with interest and applause (of course!). It brought to my mind what was likely his first article on the subject of fund costs—"Mutual Fund Performance"—published way back in 1966. In that article, Dr. Sharpe was right in his conclusion that "all other things being equal, the smaller a fund's expense ratio, the better the results obtained by its stockholders" (p. 137).

Sharpe's credibility, objectivity, and quantification expertise are peerless. He was the 1990 recipient of the Nobel Prize in Economic Sciences and is now professor emeritus of finance at Stanford University, where he has taught thousands of students over some 43 years. He was right again in his 2013 article: "A person saving for retirement who chooses low-cost investments could have a standard of living throughout retirement more than 20% higher than that of a comparable investor in high-cost investments" (p. 34). However, as I will explain, he *understated* the gap in favor of low-cost investments.

The 1991 Article

Sharpe has taken up this subject often. In "The Arithmetic of Active Management" (Sharpe 1991), he analyzed mutual fund returns and found the same forces at work:

> Statements such as ["the case for passive management rests only on complex and unrealistic theories of equilibrium in capital markets"] are made with alarming frequency by investment professionals. In some cases, subtle and sophisticated reasoning may be involved. More often (alas), the conclusions can only be justified by assuming that the laws of arithmetic have been suspended for the convenience of those who choose to pursue careers as active managers.
>
> If "active" and "passive" management styles are defined in sensible ways, it *must* be the case that (1) before costs, the return on the average actively managed dollar will equal the return on the average passively managed dollar and (2) after costs, the return on the average actively managed dollar will be less than the return on the average passively managed dollar. These assertions will hold for *any* time period. Moreover, they depend *only* on the laws of addition, subtraction, multiplication and division. Nothing else is required. . . .
>
> Because active and passive returns are equal before cost, and because active managers bear greater costs, it follows that the after-cost return from active management *must* be lower than that from passive management.
>
> . . . The proof is embarrassingly simple and uses only the most rudimentary notions of simple arithmetic.
>
> Enough (lower) mathematics. . . .
>
> . . . Properly measured, the average actively managed dollar must underperform the average passively managed dollar, net of costs. Empirical analyses that appear to refute this principle are guilty of improper measurement. (pp. 7–8)

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The 1966 Article

Surprising as it may seem, Sharpe's 1991 article was published a quarter century after his first article on this subject. Although the role of costs in shaping the relative performance of mutual funds was integral to my career even before I founded Vanguard in 1974, it took me a while to pay adequate attention to that seminal article. The following are excerpts from Sharpe's 1966 article:

> Past performance [based on the ratio of annual fund returns to volatility in net asset values] appears to provide a basis for predicting future performance. . . . The high correlation among mutual fund rates of return suggests that most accomplish the task of diversification rather well. Differences in performance are thus likely to be due to either differences in the ability of management to find incorrectly priced securities or to differences in expense ratios. If the market is very efficient, the funds spending the least should show the best (net) performance. . . . The results tend to support the cynics: good performance is associated with low expense ratios. . . .
>
> . . . All other things being equal, the smaller a fund's expense ratio, the better the results obtained by its stockholders. . . . But the burden of proof may reasonably be placed on those who argue the traditional view—that the search for securities whose prices diverge from their intrinsic values is worth the expense required. (pp. 131–132, 137–138)[1]

The Arithmetic of "All-In" Investment Expenses

I enthusiastically endorse Sharpe's conclusions and his perceptive analysis, but the use of a mutual fund's expense ratio offers only a pale approximation of the total costs paid by investors in actively managed equity funds. Using only that measure, Sharpe compared the reported expense ratio of 1.12% for the average large-cap blend fund (unweighted by assets) with the ratio of 0.06% for the Vanguard Total Stock Market Index Fund. The advantage of the low-cost investment over the higher-cost investments was 1.06 percentage points per year. In this article, I shall provide careful, if inevitably imprecise, estimates of the additional costs that investors in actively managed equity funds incur—few, if any, of which are incurred by index fund investors.

Focusing on the issue of fees charged by brokers in his 1966 article, Sharpe perceptively referred to the fact that the costs included in mutual fund expense ratios fail to capture the all-in costs borne by fund investors:

> One reservation is in order. Expense ratios as reported do not include all expenses; brokers' fees are omitted. Thus the expense ratio does not capture all the differences in expenses among funds. It is entirely possible that funds with performance superior to that predicted by the traditional expense ratio engage in little trading, thereby minimizing brokerage expense. It was not feasible to attempt to measure total expense ratios for this study; had such ratios been used, a larger portion of the difference in performance might have been explained in this manner, and the apparent differences in management skill might have been smaller. (p. 134)

Despite the sharp decline in the commission *rates* charged by brokers, the costs of the portfolio transactions incurred by actively managed funds are substantial; fund portfolio turnover (based on aggregate industry data) has leaped almost fivefold since the early 1960s—from 30% to 140% today.[2]

In addition, Sharpe neglected to note that front-end sales loads were a major cost. But their impact on annual returns depends on the (unknowable) holding period of the investor. Furthermore, front-end loads are far less common today; they have typically been replaced by deferred sales loads and annual fees charged by brokers and advisers. Also, there are far more pure no-load funds in the fund industry of today.

Moreover, whereas index funds are fully invested at all times, portfolios of actively managed funds typically carry a cash position of about 5%, causing the funds to lose a portion of the long-term equity premium.

Finally, for most investors, relative tax efficiency is a critically important element of total costs. Funds with low expense ratios (notably, index funds), which operate with minimal portfolio turnover, are relatively tax efficient. Actively managed funds, with their far higher expense ratios, not only incur substantial transaction costs on their portfolio turnover but also realize capital gains, generating significant tax inefficiency. Taxes represent an additional drag on the returns earned by mutual fund investors in taxable accounts, but they are of no immediate concern to investors in tax-deferred retirement plans.

In this article, I shall estimate the impact of (1) the first three of these extra cost categories—transaction costs, cash drag, and sales loads—on the net returns that funds deliver to their retirement plan investors and, separately, (2) all four costs, including excess taxes, on the returns delivered to taxable fund investors.

Quantitative Imprecision

The issue of all-in fund costs has rarely, if ever, been subject to careful examination, likely because data on these costs are difficult, if not impossible, to quantify with precision. So, where is a businessman like me (albeit one educated in economics) to turn? The kind of quantitative precision that the academic community properly demands in most cases is simply not possible with respect to these four costs that fund investors incur over and above the expense ratio. I will provide reasonable estimates for each based on a variety of sources and data, buttressed by my industry experience. Lest I overstate the advantages of indexing, I have made these cost estimates for actively managed funds as conservative as possible.

Transaction Costs

The first "invisible" fund costs are the transaction costs incurred by the funds themselves. Two academic studies have produced rather different estimates of the drain of fund trading costs in order to calculate their annual impact on fund returns. One study was conducted by Dr. John A. Haslem (2006). Brokerage commissions are now required to be specified by equity mutual funds, and from this source, Haslem identified a performance drag on fund annual returns of 39 basis points (bps). After taking into account implicit trading costs (timing delays, market impact, etc.), he estimated that the trading costs of actively managed funds produced an annual impact on fund returns of –60 bps.

Edelen, Evans, and Kadlec (2013) provided another extensive study of this issue. They examined the annual expenditures on trading costs incurred by 1,758 domestic equity funds over 1995–2006 and calculated average annual trading costs of 1.44%, far in excess of the average expense ratio of 1.19% for the funds they examined.

That surprisingly large number astonished at least one independent expert. Don Phillips, president of the investment research division at the mutual fund data provider Morningstar, described it as "preposterous." But he conceded that "trading is a real cost and an activity that is often counterproductive in asset management." He presented his own estimate of annual transaction costs of "about 30 bps, which does not include certain other costs," such as the substantial market impact, which he did not quantify (Phillips 2013, p. 80).

I have been examining this issue for many years and have shown that high turnover is negatively correlated with fund performance (Bogle 2012, p. 148). In this article, I use the actual measure of fund trading: portfolio purchase of stocks *plus* portfolio sales as a percentage of fund average assets. For reasons lost in history, however, funds now calculate turnover as the *lesser* of portfolio purchases or sales as a percentage of fund average assets—a figure that obviously understates transaction activity and is, therefore, irrelevant in the calculation of total transaction costs.

I am also aware that because mutual fund managers are trading largely with one another and with other institutional fund managers, market impact must resemble a zero-sum game for fund managers as a group (and their fund shareholders). Because a fund "taking a haircut" on selling a large block of stock results in a better price for the buying counterparty, I am inclined to consider market impact costs to be close to zero. But for investors as a group, after accounting for bid–ask spreads and commissions that brokers pay to brokers and dealers, trading obviously becomes a loser's game.

So for my analysis, I use an estimate that is far more conservative than the 1.44% calculated by Edelen et al. (2013) and even lower than the Haslem (2006) estimates. My estimate is likely consistent with the expanded estimate provided by Phillips. Because precision here is impossible—and I do not want to risk overstating these costs—I opt for the ease of "rounding" and assume just 50 bps for the transaction costs of actively managed funds.

Although index funds obviously incur some transaction costs, they are so minimal that they have had no significant impact on the returns of those funds. That is, the annual returns of major large-cap index funds lag those of their target indices by only the amount of their expense ratios, meaning that net transaction costs are too small to affect the precision with which they track their target indices. So, I assume zero total transaction costs for the index fund.

Cash Drag

Another additional cost is the drag of cash. Active funds fairly consistently carry cash in the range of 5% of assets, whereas index funds are normally fully invested. If we assume an annual long-term equity premium for stocks over cash of as little as 6%, there would be an additional 30 bp drag on active fund returns. Some of the larger active

equity funds doubtless "equitize" part of this cash by holding index futures. But data on that usage are simply not available. So, I will add a cost of just 15 bps to account for the cash holdings of active funds.

Sales Loads: Direct and Indirect

The costs paid directly by investors for fund distribution are rarely, if ever, taken into account in the analysis of fund expenses and returns. Nonetheless, these expenses incurred by most mutual fund "retail" investors represent a major drag on fund returns. That cost was once relatively easy to estimate because this industry originally grew through a "sales push" distribution system. From the inception of the fund industry in 1924 through the late 1970s, it was dominated by fund distributors that charged sales loads averaging about 8% of the dollar amount of shares purchased. (Then, few firms operated on a "no-load" basis.)

So in those days of yore, the math was fairly straightforward: For the typical investor who paid an 8% front-end load and held his shares for eight years, the amortized load was 100 bps per year; for a 16-year holder, 50 bps per year. (The norm was likely closer to 100 bps.) Today, however, the distribution system has undergone a radical transformation, and we can only make reasonable estimates based on limited data.

First, no-load funds have soared in importance: They now account for almost half of long-term industry assets (excluding assets of institutional funds).[3] Further, the typical front-end sales load has dropped from 8% to 5%. Also, the "retail" distribution system is rapidly changing from a front-end load model to an annual asset charge. And even load funds often waive sales charges for pension plans and corporate thrift plans, as well as for registered investment advisers and brokers, who charge their clients an annual fee, replacing the earlier front-end commission-based model. Recent estimates suggest that only 40% of the traditional "A" front-end load shares carry sales loads and 60% are sold at net asset value.

To further muddle the calculation of "distribution drag," some individual investors are DIY ("do it yourself") investors, incurring few, if any, extra costs. But most rely on brokers and advisers who charge fees for their services. A recent survey, based on a limited sample, placed the proportion of equity fund owners in this adviser-assisted category at 56% of total no-load fund sales.[4]

In this new environment, fees paid by investors to brokers and investment advisers typically run to about 1% per year, (indirectly) reflecting the costs of fund share distribution. Therefore, with some investors incurring almost no additional distribution costs and others subject to costs in the range of 1% or more, I will conservatively use an average annual distribution cost of 0.5% for individual investors in actively managed funds, which includes total annual broker and adviser costs and sales loads. Because no major index fund charges sales loads and because investors in traditional index funds are largely, but not entirely, DIY investors (often in defined contribution plans for which the sponsoring company provides the fund menu), I take the liberty of assuming in my basic analysis no such distribution costs for index funds.[5] (Readers who believe that I have overstated or understated the distribution costs for either actively managed funds or index funds may simply insert their own cost assumptions into **Table 1**.)

Note that investors in corporate defined contribution (DC) plans are a major force in retirement plan investing and may well be subject to lower distribution costs.[6] But individual retirement accounts (IRAs) have an even larger asset base ($5.4 trillion versus $5.1 trillion for DC plans at the end of 2012).[7] A significant portion of IRA assets are the result of DC plan rollovers at retirement, and such investors seem more likely to retain brokers and advisers for their IRAs, incurring the distribution costs noted above.

Table 1. All-In Investment Expenses for Retirement Plan Investors

	Actively Managed Funds	Index Funds	Index Advantage
Expense ratio[a]	1.12%	0.06%	1.06%
Transaction costs	0.50	0.00	0.50
Cash drag	0.15	0.00	0.15
Sales charges/fees[b]	0.50	0.00	0.50
All-in investment expenses	2.27%	0.06%	2.21%

[a]Data are from Sharpe (2013).

[b]The 0.50% estimate for sales charges/fees is the midpoint of the range between 0% for DIY investors and 1% for investors who pay sales loads and fees to brokers and registered investment advisers. I have chosen not to include the "service charges" for loans, withdrawals, and so forth, often paid by investors in 401(k) retirement plans.

Putting It All Together

Table 1 details the all-in aggregate fund costs, beginning with Sharpe's data and then including the additional elements described previously. I will start by looking at these all-in costs from the perspective of Sharpe's 2013 article: the tax-deferred retirement plan of the individual investor.

Note that the pervasive acceptance of presenting expenses as a percentage of fund asset values, as in Table 1, greatly diminishes the perception of the substantial impact that costs have on fund annual returns. For example, assuming a 7% stock market return, the 2.27% estimated annual cost of the actively managed funds would consume almost 33% of the return, whereas the 0.06% annual cost of the index fund would consume less than 1% of the return—a dramatic difference.

Preparing for Retirement

What does this annual differential mean to an investor who prepares for retirement by owning mutual funds over the long term? For illustrative purposes, I have assumed that a 30-year-old investor begins to save for retirement at age 70, a span of 40 years, by investing in a tax-deferred 401(k) or IRA plan. She earns $30,000 annually at the outset, and I assume that her compensation will grow at a 3% annual rate thereafter. In **Table 2**, I present a comparison of the retirement plan accumulation if the investor were to invest 10% of her compensation each year in either (1) an actively managed large-cap equity fund or (2) the Vanguard Total Stock Market Index Fund, the subjects of Sharpe's 2013 analysis. The table summarizes the results over the four decades that follow.

The advantage provided by the index fund is substantial, and as time passes, it grows by leaps and bounds. By the time retirement comes, when the investor in the example is 70 years old, $927,000 would have been accumulated in the index fund versus $561,000 in the active fund, an astonishing gap of $366,000 and a 65% enhancement in capital. Even if we assume that the actively managed fund investor incurs no distribution costs, the 40-year accumulation would total $626,000. If the index fund investor incurs distribution costs of 0.5% per year, the accumulation would total $824,000 and the index fund investor would nonetheless maintain a $198,000 advantage over the investment lifetime—still a 32% enhancement.

When Sharpe considered only the difference in expense ratios for index and actively managed funds, he concluded that "a person saving for retirement who chooses low-cost investments could have a standard of living throughout retirement more than 20% higher than that of a comparable investor in high-cost investments" (2013, p. 34). But when all-in costs—which obviously (1) exist and (2) are substantial, whatever their precise amount—are considered, the assumed retirement wealth accumulation enhancement provided by the low-cost index fund as shown in Table 2 leaps to fully 65% higher, ranging (depending on the assumptions presented in the table) from 32% to 86% higher. Regardless of the assumptions used, the index fund would provide a truly remarkable potential improvement in the standard of living for retirees. For example, using my primary calculations and assuming a 4% annual withdrawal rate at retirement, the average active fund investor would receive a monthly check for $1,870 whereas the index fund investor would receive $3,090.

Taxes and Taxable Investors

For taxable fund investors, the gap widens even further. The high tax *efficiency* of the index fund gains a significant advantage over the painful tax *inefficiency* of the average actively managed fund.

Table 2. Total Wealth Accumulation by Retirement Plan Investors, Assuming a 7% Nominal Annual Return on Equities

	Actively Managed Fund	Index Fund	Index Enhancement	
Gross annual return	7.00%	7.00%	—	
All-in costs	2.27	0.06	–2.21%	
Net annual return	4.73	6.94	+2.21	
Accumulation period				% Increase
After 10 Years	$44,000	$50,000	$6,000	13%
After 20 Years	130,000	164,500	34,500	27
After 30 Years	286,000	412,000	126,000	44
After 40 Years[a]	561,000	927,000	366,000	65

[a]For the DIY investor in the active fund who incurs 0% distribution costs, the accumulation would amount to $626,000. For an active fund investor who incurs the full 1% distribution cost, the accumulation would total $504,000. For the index fund investor who incurs distribution costs of 0.5%, the accumulation would total $824,000.

Again, it is impossible to make precise calculations here. Therefore, for active managers and the index fund, I have used as a guideline the pretax and after-tax returns provided by Morningstar for the 10-year period ending 30 April 2013.

Over this period, the total stock market index had an average annual return of 8.7%. The return for actively managed large-cap blend funds was 7.5%, of which about 75 bps was lost to taxes; the broad market index fund lost about 30 bps to taxes.[8] So, I will use a conservative and rounded tax differential estimate of 45 bps, which likely understates the extra tax costs incurred by investors in actively managed funds. With taxes considered, the total all-in costs added by actively managed mutual funds amount to about 317 bps per year for taxable investors (**Table 3**).

This rough snapshot of the annual impact of taxes may suggest that tax costs are inconsequential. But when compounded over 40 years (as in the previous example), they bring the extra costs of actively managed funds to a truly overwhelming annual level of 3.02%. In **Figure 1**, I assume that a taxable fund investor begins with a $10,000 investment in (1) a tax-efficient index mutual fund and (2) a tax-inefficient actively managed fund and simply holds each for the subsequent four decades.

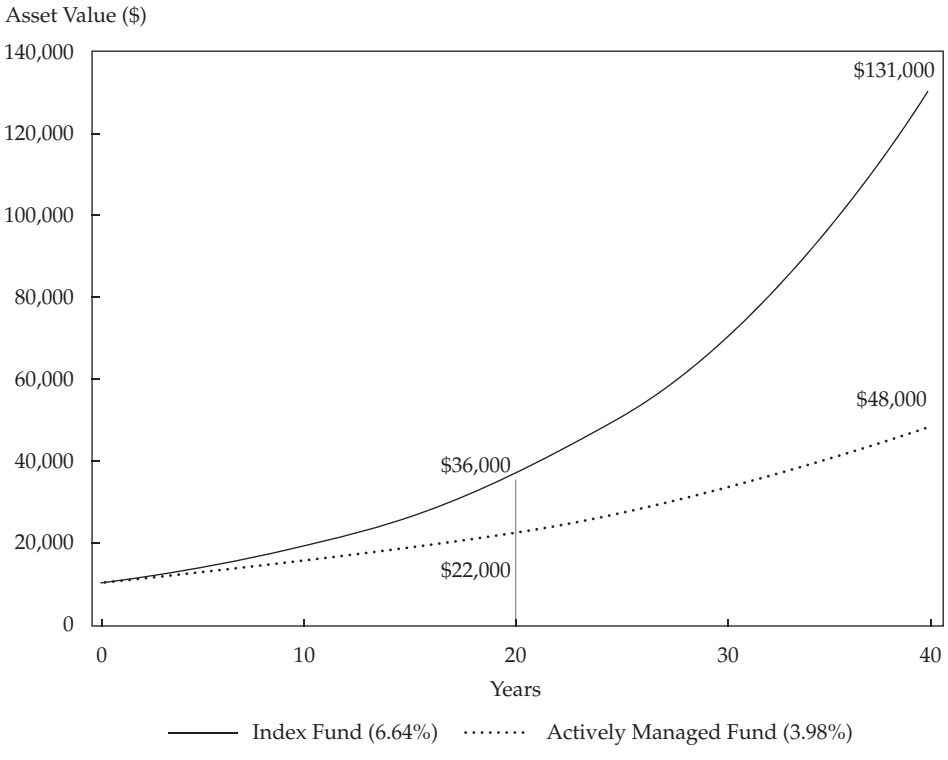
The calculated terminal value of the active fund grows steadily over time—$15,000 after 10 years, $22,000 after 20 years, and $48,000 after 40 years. The index fund grows far more swiftly, ending up with a value of $131,000, a remarkable enhancement of $83,000, or almost 175%. Indeed, taxes are a vital consideration.[9]

Table 3. All-In Fund Costs Including Tax Differential, 10 Years Ending 30 April 2013

	Actively Managed Fund	Index Fund	Index Advantage
Assumed stock market return	7.00%	7.00%	—
All-in costs (from Table 1)	2.27	0.06	2.21%
Tax inefficiency	0.75	0.30	0.45
Total costs[a]	3.02	0.36	2.66
Assumed net fund return	3.98	6.64	2.66

[a]Here, costs (including taxes) consume 43% of the returns for the active funds, compared with 5% for the index fund.

Figure 1. Growth of a $10,000 Investment Based on All-In After-Tax Costs, Assuming a 7% Gross Annual Return on Stocks



Real vs. Nominal Returns

So far, I have reported fund returns on a *nominal* basis, unadjusted for the impact of inflation. But investors must rely on *real* returns to maintain their standard of living. Although mutual funds almost exclusively report only their nominal returns, I believe that fund investors must consider their real returns as well. Making this adjustment has an important negative impact on both active funds and index funds.

For example, if we assume a future annual rate of inflation of only 2%—the approximate present spread between the inflation-adjusted 10-year Treasury Inflation-Protected Security and the 10-year US Treasury note itself—it reduces the assumed nominal annual market return of 7% to a real return of 5%. Thus, the real return after all-in costs for actively managed funds would fall to 1.98% from its nominal 3.98%, and the index fund real return would fall to 4.64% from a nominal return of 6.64%.[10] Compounded over 40 years, a $10,000 initial investment in active funds would grow to just $22,000 in real terms whereas the index fund would grow to $61,000—a nearly threefold enhancement. These numbers may be scary and almost unbelievable, but the data do not lie.

Counterproductive Investor Behavior

Throughout this article, I have presented the returns as reported by the mutual funds themselves—essentially, the percentage change in the funds' net asset values, adjusted for the reinvestment of all dividends and distributions. As the record makes clear, however, mutual fund investors are too often tempted to add to their equity holdings when markets are rising, to withdraw their investments when markets tumble, and to move into funds that have performed well in the recent past only to revert to the mean (or below) thereafter. Such counterproductive investor behavior proves to be another advantage for index fund investors.

For example, over the 15 years ending 30 June 2013,[11] the actively managed large-cap blend funds evaluated by Sharpe (2013) reported an average annual return of 4.50%—*for the funds that survived the period*. But Morningstar calculated that the asset-weighted return earned by *investors* over the same period was just 2.59%, a "behavior gap" of 1.91 percentage points in return per year. (As it happens, in this particular period, investors in the Total Stock Market Index Fund exhibited moderately productive timing, earning a slightly *higher* annual return than the fund reported.) A loss of almost 2 more percentage points of annual return for active investors—over and above fund expense ratios, other costs, and taxes—is a high penalty to pay for the combination of high costs and counterproductive movement of their money from one fund to another.[12]

Reconciliation

Now I will explore how consistent these all-in cost estimates are with the returns earned by large-cap equity funds relative to the returns earned by the Total Stock Market Index Fund. First, let us assume, as so many academic studies indicate, that active equity mutual funds as a group provide, before costs, a return equal to that of the stock market itself at the same level of risk ("zero alpha"). Therefore, the subtraction of direct all-in fund expenses should essentially reflect the difference between the market return and the managed fund return. The exercise is a bit complex because some of the expenses I have reviewed so far are internal to the funds themselves and others are paid directly by the fund investors. **Table 4** should clarify this distinction.

The concept is that the net returns achieved by large active funds should lag the returns earned by the Total Stock Market Index Fund by the amount of direct costs paid out of fund gross returns—1.77 percentage points annually. The costs of sales and distribution fees, extra taxes, and imprudent (or opportunistic) investment behavior—another 2.15 percentage points in aggregate—are not included here because they are borne directly by the investors themselves. How does that theory work in practice? Quite nicely, as it turns out. For example, over the two decades ending 31 December 2012, the average actively managed large-cap core fund earned a compound annual return of 6.50% (adjusted for survivorship bias, as described later in this section), falling short of the 8.3% return of the Total Stock Market Index Fund by 1.80 percentage points per year. That shortfall is remarkably close to the annual differential between index fund

Table 4. Allocation of Costs of Actively Managed Funds (from Tables 1 and 2)

	Costs Borne by Fund	Costs Borne by Investor
Expense ratio	1.12%	—
Transaction costs	0.50	—
Cash drag	0.15	—
Sales charges	—	0.50%
Tax inefficiency	—	0.45
Investor behavior	—	1.20[a]
Total	1.77%	2.15%

[a]A conservative estimate, well below the 1.91 percentage point lag realized over the past 15 years.

direct costs and active fund direct costs of 1.77 percentage points, as shown in Table 4.

This near precision, I must report, is no more than a happy coincidence, simply because the calculations of costs and returns presented in this article are, as noted earlier, inevitably imprecise. Even a larger difference in the results for the past two decades—say, plus or minus 50 bps—would nonetheless confirm the strong relationship between fund costs and fund returns. The costs are based on the results over the past two decades, using limited data and some experienced judgment. Therefore, take this fragile precision only as proof, in principle, that the influence of costs must dominate the relationship between the returns earned by active funds and the returns earned by index funds.

One of the principal challenges in calculating the average returns of the funds is the need to eliminate what is called "survivorship bias"—that is, to take into account not only the returns of funds that survived a given period but also those that failed to do so. Obviously, data that are not free of survivorship bias are inappropriate (after all, funds with poor records are less likely to survive), but there are myriad methods of calculating the difference. I have found the data provided by Lipper to be quite reliable. Using its data for the two decades ending 31 December 2012, for example, the *surviving* large-cap core funds earned an annual return of 7.86%. But, as shown above, all the funds in that category, including those that did not survive, earned only 6.50%, or 1.36 percentage points less. Given the persistent high failure rate of equity mutual funds,[13] this adjustment for survivorship bias is essential.

Earlier studies of the relative returns of actual mutual funds and the broad market indices confirm the reasonableness of these estimates of the impact of direct costs incurred by investors. For example, in his book *Unconventional Success: A Fundamental Approach to Personal Investment*, Yale endowment fund manager David Swensen (2005) summarized research conducted by Robert Arnott, Andrew Berkin, and Jia Ye and reported that for the 20 years ending 31 December 1998, the average actively managed fund underperformed a broad stock market index fund by 2.1 percentage points per year before taxes. (Numerous other studies confirm a spread in this range.) Current data also confirm a shortfall of this magnitude. As noted earlier in this section, over the 20 years ending 31 December 2012, the underperformance of the active funds relative to the index was almost identical—1.8 percentage points per year. Broadly speaking, *the reality confirms the theory.*

Conclusion

By examining mutual fund expense ratios, Dr. Sharpe began the saga of how much the draining impact of expense ratios erodes the returns delivered to fund investors over the long term. My analysis in this article builds on that foundation, but I estimated the *all-in* costs incurred by mutual funds—expense ratios *plus* the other fund costs—which are numerous and substantial in the case of actively managed funds but far less numerous and less substantial for index funds. It is simply a story that must be told.

I re-emphasize the inevitable imprecision of my data, even as I reiterate that I have tried to use conservative estimates—selecting the lowest reasonable number in each case and, in all likelihood, understating the confiscatory impact of the additional transaction costs, cash drag, sales loads, distribution costs, tax inefficiency, and counterproductive investor behavior. Others will no doubt find fault with my data and estimates, and I urge industry participants and academics alike to offer constructive criticism of my data, including their own estimates of these costs.

I also urge mutual fund investors not only to consider the conventional *annual* impact of expense ratios and other costs but also to recognize how much these differences matter as time horizons lengthen. In the short term, the impact of costs may appear modest, but over the long run, investment costs become immensely damaging to an investor's standard of living. *Think long term!* For those who are investing for their retirement and for their lifetimes, understanding the cost issue is vital to success in investing. An increase of 65% in the wealth accumulated by retirement plan investors is not trivial! After analyzing the data over many years, I feel confident in reaffirming the warning that I have consistently given to fund investors over the years: *Do not allow the tyranny of compounding costs to overwhelm the magic of compounding returns.*

This article qualifies for 0.5 CE credit.

Notes

1. Sharpe's assignment of the "burden of proof" to fund managers echoes Paul Samuelson's "Challenge to Judgment" (1974). In that article, he demanded "brute evidence" of the superiority of active management. As far as we know, no such evidence was ever produced.
2. These turnover measures represent the total portfolio purchases and sales of equity funds each year as a percentage of assets, not the traditional—albeit inexplicable—formula that is in general use today: the lesser of purchases and sales as a percentage of assets. My recent speech "Big Money

in Boston—The Commercialization of the 'Mutual' Fund Industry" details my methodology and is available at www.johncbogle.com.

3. Investment Company Institute, *2013 Investment Company Fact Book*, 53rd ed. (2013, p. 86, Figure 5.11).
4. Strategic Insight, "The Strategic Insight 2012 Fund Sales Survey: Perspectives on Intermediary Sales by Distribution Channel and by Share Class" (May 2013, p. 27).
5. In Table 2, I provide a footnote that illustrates the impact on the returns of index funds assuming the same 50 bp distribution cost estimate used for active funds.
6. It seems likely that many corporate DC plans (especially those with substantial assets) would fall on the lower side of the 50 bp distribution cost estimate, whereas most IRAs (which cannot take advantage of the economies of scale available to large DC plans) would fall on the higher side.
7. Investment Company Institute, *2013 Investment Company Fact Book*, 53rd ed. (2013, p. 114, Figure 7.4).
8. The loss to taxes by active funds is *increased* by the capital gains realized by their high turnover but *reduced* by their high expense ratios, which consume almost 60% of their dividend income. (For 2012, gross dividend yield was 2.1%, the average expense ratio was 1.2%, and the net taxable yield was 0.9%.) In contrast, the low turnover of the index fund leads to a far *smaller* capital gain tax burden, but its low expense ratio, 0.06%, confiscates only 3% of income, leaving its 2.1% gross yield barely impaired.
9. Note that taxes on both the active funds and the index fund are based on "pre-liquidation, after-tax returns" as provided by Morningstar. That is, each fund is assumed to be held through the end of the period. On a post-liquidation basis (i.e., when sold at the end of the period), the index fund advantage still exists but is smaller.
10. Again, relative to the assumed *real* return on stocks of 5%, active fund costs would consume 60% of the return, compared with 7% of the return of the index fund.
11. As of this writing, this is the date of the most recent and comprehensive available Morningstar data on investor returns.
12. Alas, even the 1.98% real return for investors in actively managed equity funds is *before* the (conservative) estimate of 1.20% lost annually to counterproductive investor behavior. I leave it to the reader to do the subtraction.
13. A recent study by Vanguard found that of 1,540 managed US equity funds in 1998, only 842 survived through 2012, or barely 55% of those in existence at the beginning of the period. In addition, only 275, or 18% of the total, both survived *and* outperformed their benchmarks—further confirmation of the proven success of index funds.

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INVESTING

The Incredibly Shrinking Financial System

John C. Bogle argues that investors will continue to turn their backs on active management and speculation

ONE MAJOR PRINCIPLE HAS SHAPED MY 63-year career in investments: "When there is a gap between perception and reality, it is only a matter of time until reality takes over." In considering the future of investing over the coming decades, that's a good place to begin. So what's ahead?

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1. A MUCH SMALLER FINANCIAL SYSTEM.

Investors will increasingly "see the light" and choose low-cost, low-turnover, middle-of-the-road strategies, buying and holding their investment portfolios for the long term. The reality is that hyperactive trading strategies offer incomprehensible complexity that ultimately destroys value. As investors continue to favor value-creating simplicity, and realize that their positive perception of finance conflicts with that reality, they will demand a smaller and less-costly financial system.

Today, our nation's financial system is generally perceived as a smoothly functioning national asset. But the reality is that its cost has soared from a low of 4% of gross domestic product in 1950 to an estimated 10% of GDP in 2013—$1.6 trillion.

The wealth generated for the system's insiders—senior financial executives, mutual-fund managers, hedge-fund operators, entrepreneurs and financial buccaneers—has grown to epic levels.

Simply put, I predict that the wealth arrogated to itself by our bloated financial system will be rejected by the largest set of participants in finance—our investors.

2. A MARKED DECLINE IN SPECULATION.

As investors come to recognize the long-term financial penalty of excessive trading activity, they will begin to demand their fair share of the value created by our publicly traded corporations. The perception held by too many investors that they can beat the market will give way to the reality that, on balance, trading grotesque trillions of dollars with one another—last year alone, a record $56 trillion—is to no avail.

In fact, America's corporations are the true value creators. Wall Street firms, with their excessive intermediation costs, are value destroyers. Investors are simply the residual beneficiaries. That's the ultimate reality. The perception that short-term speculation can add value will fade, if only slowly.

3. A GROWING DISTRUST OF ACTIVE MANAGERS.

Looking ahead, the trend of investors moving away from actively managed mutual funds and toward passive index funds will strengthen. Index funds now account for 34% of U.S. equity mutual-fund assets. Since 2007, investors have added $930 billion to their investments in passively operated U.S. equity index funds, and they have withdrawn $240 billion from their holdings in actively managed equity funds. That's a swing of more than $1.17 trillion in investor preferences. In the years ahead, that trend will accelerate.

The "secret" of the traditional index fund is a combination of low cost, broad diversification and a long-term horizon. Investors can enjoy the magic of compounding long-term returns, while avoiding the severe penalty inflicted by compounding costs. Broad-market index funds can cost as little as 0.05% a year, compared with the 1% to 2% annual drag from the costs of active management.

As investors increasingly see the benefits of the index fund, their perception that active fund managers as a group are able to add value will fade. In the coming era, active managers will have to make hard choices about their fees, their strategies, their portfolio turnover, their tax inefficiency, and their susceptibility to large capital inflows—and outflows—depending on their returns.

4. THE RISE OF CORPORATE GOVERNANCE.

Over the coming decades, institutional money managers will become far more active in engaging the managements of the corporations whose shares are held in their portfolios. The perception is that the giant money managers that dominate today's intermediation society represent a powerful force in corporate governance. The reality is that their latent power remains unexercised. For example, asset managers regularly endorse management's nominees for directors and shy away from supporting proxy proposals by minority shareholders.

Both our corporate and financial manager/agents have too often placed their own interests before the interests of their shareowner/principals. We now operate in an unprecedented "double agency" society, a tacit conspiracy between these two sets of agents—corporate managers, and institutional asset managers—leaving our system of capitalism largely bereft of the checks and balances demanded by elementary principles of sound governance.

The 300 largest institutional money managers—largely mutual funds and pension funds—now own some 65% of all U.S. stocks by market capitalization. (The largest 10 managers alone own 32%.) They therefore hold absolute power over our nation's corporations, a share that is likely to increase over time. That largely unexercised power will be exercised in the coming era, aided by a federal standard of fiduciary duty for these trustees of Other People's Money. As we become a Fiduciary Society, our corporate and financial system will finally place first the interests of investors.

In 1949, writing in "The Intelligent Investor," Benjamin Graham said that, in theory, "stockholders as a class are king. Acting as a majority they can hire and fire managements and bend them completely to their will." The behavior of stockholders has long suggested that such power is largely theoretical. But I predict that it must—and will—become a reality in the years ahead, as institutional investors are forced to recognize not only their rights, but their responsibilities of corporate ownership and control.

The four changes that I've outlined here are coming. The financial system will shrink in relative importance; much of today's short-term speculation will gradually be displaced by long-term investment; index funds will rise and active management will fall; and public opinion and public policy will together demand that the managers of Other People's Money act as good corporate citizens.

These challenges to the status quo will be fought aggressively by entrenched special interests of the financial sector. But when investors demand change, money managers will, in their own self-interest, accede to their wishes. After all, as Adam Smith wrote in 1776, the interest of the consumer must be the ultimate end and object of all industry and commerce. In the world of investing, Adam Smith's maxim will finally become reality.