"Surviving Defeat, Surviving Victory"[1]
By John C. Bogle

When I was paid the high honor of being inducted into the FIASI Hall of Fame on November 10, 1999, I spoke about the triumph of indexing—the investment strategy based on passively-managed funds designed to track, at rock-bottom cost, the returns earned by broad market indexes of stocks and bonds, and to be held forever—a long-term investor's entire investment lifetime.

Then, I mentioned the struggle to survive the early defeat of the world's first index mutual fund, founded in 1975. (Now known as Vanguard 500 Index Fund, tracking the returns of the S&P 500 Stock Index.) Before exploding upward in the late 1990s, our acceptance grew at a glacial pace. Similarly, our early municipal bond funds, first offered in 1977, were also slow to gain investor favor. But, defeated at the outset, both would survive, and then prosper. Patience!

In my 1999 acceptance speech, I also expressed my concerns about the high growth rates and burgeoning assets that the Vanguard family of stock and bond funds were experiencing—then nearly $100 billion, now closing in on $5 trillion. Vanguard's remarkable growth has been driven by our index funds, now numbering 59 stock funds, 18 bond funds, and 61 balanced funds (largely our target-date retirement funds-of-funds, a field in which our market share exceeds one-third). So I also wondered if we could survive victory. The words of the poet Stephen Vincent Benét aptly summed up that concern:

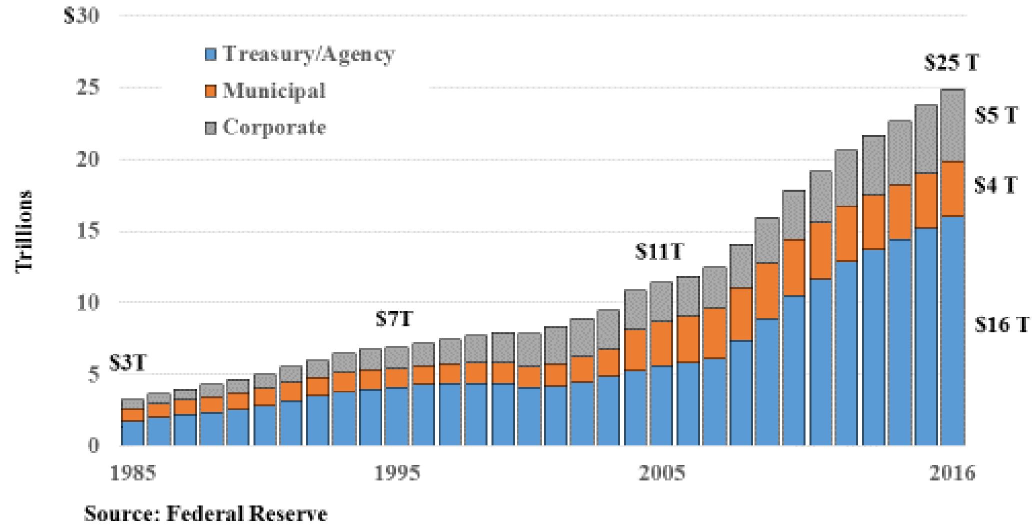
If the idea is good, it will survive defeat. It may even survive victory.

A Brief History of the Bond Fund

To set a broad perspective on bond mutual funds and their role in bond investing, let's go back some three decades. **(Exhibit 1)** Since 1985, bond professionals have enjoyed a great era in which to ply their trade, with the total market cap of U.S. bonds rising from $3 trillion to $25 trillion. Today, that bond debt includes $5 trillion of corporate bonds, $4 trillion of municipals, and $16 trillion of U.S. Treasuries. Yes, this has been an era of increased government, corporate, and consumer debt, much of it based on soaring mortgage debt and a debt category that barely existed in 1945—student loans, now at $1.5 trillion. It would be unwise to ignore the unknown consequences of America's current massive debt burden.

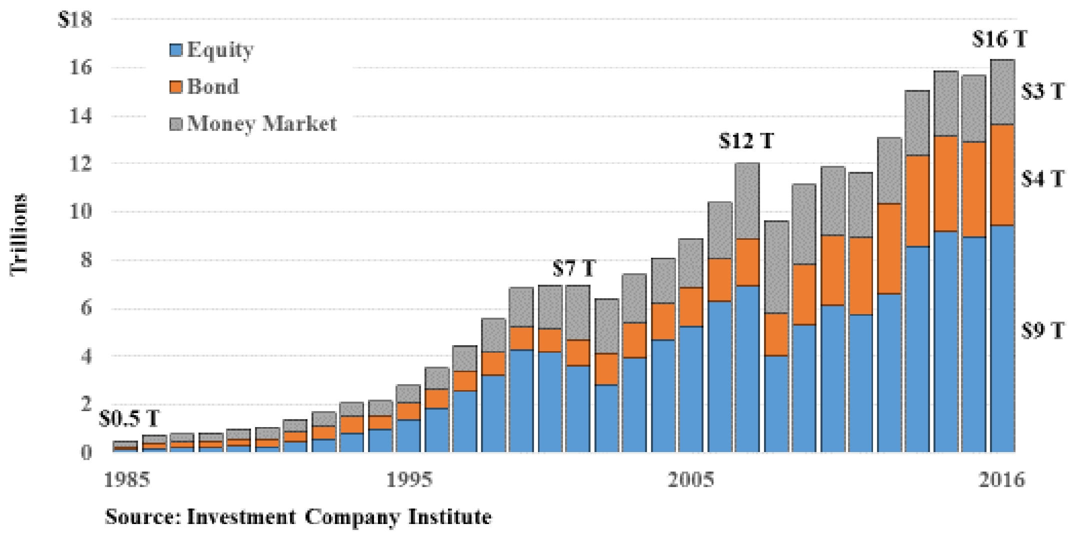
[1] This essay draws largely from remarks before the Fixed Income Analysts Society, Inc. (**FIASI**) on October 24, 2017 in New York.

Exhibit 1:
Market Capitalization of U.S. Bonds



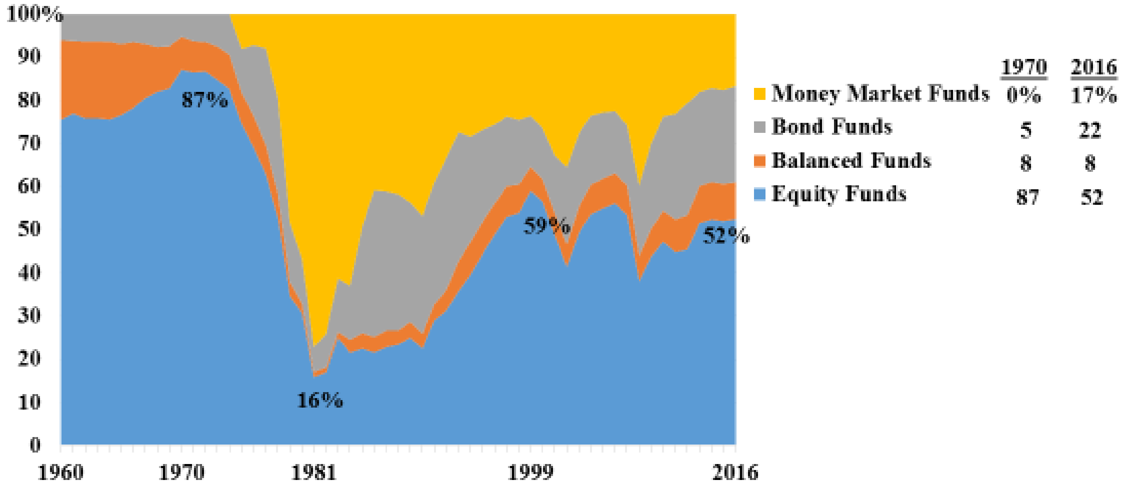
Assets of U.S. mutual funds have also soared, from $500 billion in 1985 to $16 trillion currently. **(Exhibit 2)** But the composition of fund assets has fluctuated widely—in 1970, an equity fund business—87% equity funds, 8% in balanced funds, only 5% bond funds. **(Exhibit 3)** Then came the 1973-4 stock market crash. It almost killed the equity fund business. Equity fund assets dropped from $56 billion to $29 billion—a near-50% plunge.

Exhibit 2:
U.S. Mutual Fund Assets



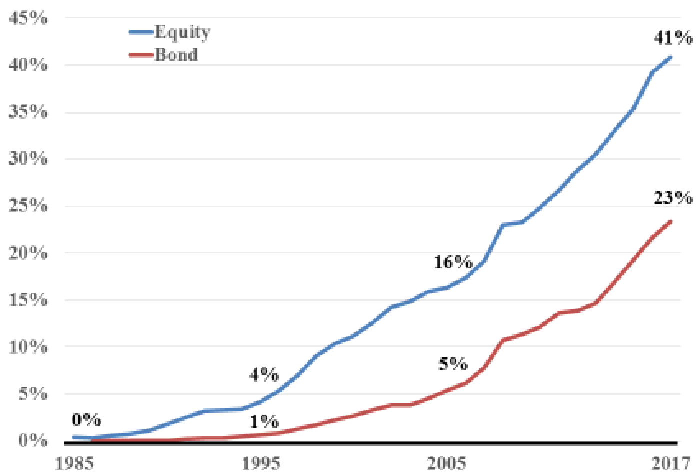
Bond funds helped to cushion the blow, and then, miraculously—and not a moment too soon—money market funds were created, bailing out the fund industry. By 1981, money market funds accounted for 77% (!) of industry assets, bond funds 6%, balanced funds a mere 1%, and only 16% in equity funds. As money market funds faded, bond fund assets rose—to 22% of industry assets currently, with money markets at 17%, balanced at 8%, and equities at 52%.

Exhibit 3:
Changing Composition by Asset Class



Yes, there has been much fluctuation in the relative positions of stock, bond, balanced, and money market funds since 1960. But, beginning in 1976, there was one constant—the steady rise of the importance of stock and bond index funds. **(Exhibit 4)** From a 1985 position of less than 1% of all stock fund assets and 0% of bond fund assets, both penetrations have marched steadily upward in market share of industry assets to this year's high of 23% of bond funds and 41% of stock funds. *Yes, there's an index revolution going on, and it is accelerating!*

Exhibit 4: Indexing's
Share of Mutual Fund Assets



Background to Bonds: "Balance" and Wellington Fund

Now a bit of history about my interest in bonds. From the time that I joined Wellington Management Company in July 1951 right out of college—my first "grown-up" job—I was imbued with the philosophy of the balanced fund: Wellington Fund, our only mutual fund from the firm's founding on December 28, 1928 until we added Wellington Equity Fund (now Windsor Fund) in October 1958, three decades later.

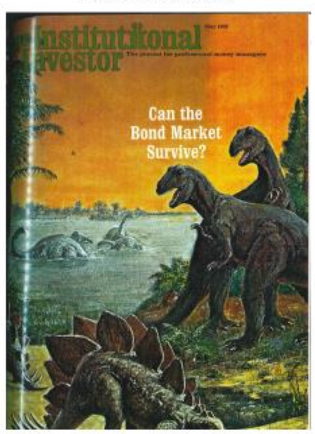
As assistant to Wellington's founder, president, and fund industry pioneer Walter L. Morgan, the philosophy of balance was drummed into me unremittingly and passionately by Mr. Morgan himself. Wellington's balance typically ran about 65% blue-chip stocks and 35% investment-grade corporate bonds.

In 1951, on that lucky day when I walked into Wellington's Philadelphia offices for the first time, the Fund's assets under management totaled $145 million. Tiny by today's standards, we were then the sixth largest mutual fund and the only dealer-distributed balanced fund among the industry's "Big Ten" funds. (In those ancient days, most fund managers ran but a single fund. Today, the ten largest fund firms run an average of 244 funds.)

I was indoctrinated into the Wellington philosophy—stocks for capital appreciation, bonds for income and risk reduction—and totally bought into it. The stock/bond balance was remarkably successful as a marketing concept, and the Fund was (as I recall) the most widely-sold dealer-distributed mutual fund in the nation, year after year.

In those days, bond funds were but a tiny factor in the fund industry. Even by 1971, there were but 38 bond funds among the industry's 361 mutual funds. But I was a contrarian, and when I became CEO of Wellington Management Company in 1965, I couldn't shake the idea of adding a bond fund to Wellington's conservative menu. My conviction was reinforced when a sassy new magazine, *Institutional Investor*, ran a story in 1969 slamming bonds, illustrated with a cover replete with dinosaurs. **(Exhibit 5)** Title: "Can the Bond Market Survive?" It would be hard to miss the message!

Exhibit 5



The "Go-Go" Era

Earlier, in 1966, the fund marketplace had shifted its emphasis from its traditional middle-of-the road, Dow-Jones-Average-type, investment-grade, large-cap stock funds. We had entered the "Go-Go" era—equity funds laced with speculative issues, "story stocks," and phony accounting. (Shares were bought from corporate insiders by funds at discounts of some 50% from market value, then quickly marked up to market value, creating an immediate, if illusory, 100% return.)

In that short-lived era when these speculative "aggressive growth" mutual funds were in the industry's driver's seat, both stupidly (from an investment standpoint) and brilliantly (from a marketing standpoint), I merged Wellington Management with Boston's tiny Thorndike, Doran, Paine, and Lewis, adding a hot "Go-Go" fund to our menu. (Ivest Fund, meteor-like, lit-up the skies for a few years, and then burned out and crashed, its ashes finally deposited in the dustbin of history in 1980.)

My new partners at Ivest *hated* bonds. When I proposed forming a bond fund in 1970, one of them quickly put the kibosh on the idea: *"Don't you realize that bonds are yesterday? Stocks are tomorrow."* But I finally persuaded my colleagues to form an income fund, 60% bonds and 40% dividend-paying stocks. (Today, the assets of Vanguard Wellesley Income Fund total $54 billion.) Then times changed (a little!) and we formed our first "pure" bond fund in July 1973—now Vanguard Long-Term Investment Grade Bond Fund—the first step in our gradual rise to dominance in the bond fund sector of our industry.

An Industry-Changing Event

The ill-begotten merger finally collapsed, and in January 1974, my new partners mustered the votes to fire me. (It's not fun to be fired!) A painful struggle followed, resolved only when I persuaded the directors of the then-Wellington Funds to retain me as their chief executive, and to operate the funds at cost, on a truly mutual basis. I named the new firm Vanguard—"leader in a new trend." It was founded on September 24, 1974.

The fund directors barred Vanguard from engaging in the investment management of our funds and in the marketing and distribution of fund shares. (They retained Wellington Management to continue to perform those two duties. Given the abject failure of those managers in advising Ivest Fund and Wellington Fund, a truly incredible decision.)

We were on our own now. Fortunately, a door opened that gave the new firm an unexpected opportunity. In 1976, Congress passed legislation that allowed mutual funds to "pass through" municipal bond interest income to their shareholders. Municipal bond funds quickly came into being as a new investment category, a permanent factor in our industry.

Almost immediately, a score or more fund sponsors answered the call. All were "managed" municipal bond funds, presumably meaning that their managers would shorten maturities just before interest rates rose (and prices fell), and lengthen maturities just before rates fell (and prices rose). I believed—*as any champion of the index fund must believe*—that such a flawed premise was nonsense. Where were these experts who could successfully time the bond market?

So Vanguard took a different approach. We formed a series of three separate "defined maturity" bond funds—long-term, intermediate-term, and short-term. Each would hold to their particular mandate. With each series focused, *not* on shifting maturities but on credit quality, investors could decide for themselves what combination of risk and yield would best meet their financial goals. For example, those who were seeking a higher yield and were willing to assume the higher price volatility that inevitably accompanies it, the long portfolio, and so on.

Changing the Standard for Bond Funds

This solution gave Vanguard a large competitive edge. For sorting the funds into three maturities muted much of the "noise" in the performance of "managed" municipal bonds. With comparative performance of the funds sorted by maturities, the lowest-cost funds would be almost sure to win, and Vanguard was already the fund industry's lowest-cost provider of bond funds.

Over time, investors' perceptions of bond funds changed. The three-tier (or more!) approach became the industry standard—not only in municipal bond funds, but in taxable bond funds as well. Today, with $150 billion of assets, Vanguard's tax-exempt and taxable bond funds are the collection of bond funds largest in the industry. **(Exhibit 6)** Six Vanguard muni funds are ranked among the industry's ten largest. Our taxable bond funds also adopted a similar defined maturity strategy, with assets that now total $836 billion. Three Vanguard funds made the list of the top ten taxable bond funds. Our Total Bond Market Index Fund, with assets of $328 billion, is a mere $229 billion larger than the #2 fund with assets of $99 billion.

Exhibit 6: Largest Bond Mutual Funds

Taxable Bond Funds	Assets $B	Tax-Exempt Bond Funds	Assets $B
Vanguard Total Bond Market Index*	$328	Vanguard Interm-Term Tax-Exempt	$56
PIMCO Income	99	Vanguard Limited-Term Tax-Exempt	25
Metropolitan West Total Return Bond	80	Nuveen High Yield Municipal Bond	16
PIMCO Total Return	74	Franklin CA Tax-Free Income	16
Vanguard Short-Term Investment-Grade	63	Vanguard Short-Term Tax-Exempt	15
DoubleLine Total Return Bond	54	American Funds Tax-Exempt Bond	14
Dodge & Cox Income	52	Vanguard CA Interm-Term Tax-Exempt	13
Vanguard Short-Term Bond Index	51	Franklin Federal Tax-Free Income	12
iShares Core US Aggregate Bond ETF	50	Vanguard High-Yield Tax-Exempt	12
Lord Abbett Short Duration Income	42	Vanguard Long-Term Tax-Exempt	11
Total	$894	Total	$190

*Includes Vanguard Total Bond Market Index II

In all, bond investments under the Vanguard mantle now total just short of $1.1 trillion (See **Appendix I**), including some $260 billion our balanced funds, LifeStrategy Funds, and Target Retirement Funds. We also manage more than $220 billion in money market fund assets. Together, these funds represent by far the largest aggregation of fixed-income assets in the fund industry.

Managing Vanguard's Fixed-Income Funds

If the simple decision to create defined-maturity bond funds could be described as "brilliant," my choice of an external manager to run the new mutual funds was quite the opposite. We selected giant

Citibank, N.A., as the adviser to the funds. Alas, the bank was simply not up to the task. As 1980 began, Vanguard determined to terminate the relationship.

At the same time, our large ($420 million) money market funds were paying high fees to their then-manager, Wellington Management Company. This was the moment, I thought, to recommend a giant step: having Vanguard replace Citi as manager of our municipal bond funds,[2] and simultaneously have Vanguard build its own in-house management staff to replace Wellington as manager of our money market funds, in part to reduce fees, and in part to obtain "critical mass" for providing economies of scale.

The Board meeting, held in September 1980, was contentious. On the one hand, replacing Citibank as adviser to the muni funds was a non-issue. Replacing Wellington with Vanguard as adviser to the money funds would generate substantial savings, largely the result of Vanguard's "at-cost" structure. But the retention of a new staff of bond professionals at Vanguard carried its own risk. In the end, my recommendation carried, another important step in the expansion of Vanguard's responsibilities. We also determined to apply the defined maturity concept to our new taxable bond funds, and have our in-house staff manage them.

With the board's approval, we began to build the Vanguard staff to manage our bond assets. The leader of our new Fixed Income Group was Ian MacKinnon, who put together a team of about six professionals plus a small administrative staff. When we began to manage our municipal bond and money market funds, then combined assets came to about $1.75 billion.

As our assets have grown, so has our staff, both in number and in professional skill. Greg Davis led the Fixed Income Group for 3 years until he was named Vanguard's Chief Investment Officer in July 2017. He was succeeded by John Hollyer, a 28-year Vanguard veteran and a solid bond professional, formerly in charge of Vanguard's risk management efforts. At present, our Fixed Income Group includes more than 140 professionals, including 62 CFA charterholers, with global offices in Valley Forge, PA; Scottsdale, AZ; London; and Melbourne, Australia. Dare I say that the sun never sets on the Vanguard bond empire?

An Index Fund for Bonds

The internalization of fixed income asset management in 1981set the stage for Vanguard's rise to dominance among bond fund managers. But the climactic change was still to come: the creation of the bond index fund. As 1986 came to a close, given the decade-long success of our stock index fund in tracking the returns of the S&P 500 Index, I decided to create a *bond* index fund, Vanguard Total Bond Market Index Fund. (The SEC staff objected to the name, "Vanguard Bond Index Fund.") The new bond fund opened its doors to investors on December 11, 1986. Slow to grow at first, its assets topped the $100 million mark in 1989 and the $1 billion mark in 1995. With current assets of $380 billion, Total Bond Market is now, far and away, the world's largest bond fund.[3]

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[2] We had arguably "broken the ice" in acting as an investment adviser to mutual funds in 1975 when we created Vanguard S&P 500 Index Fund in 1975. Or not.

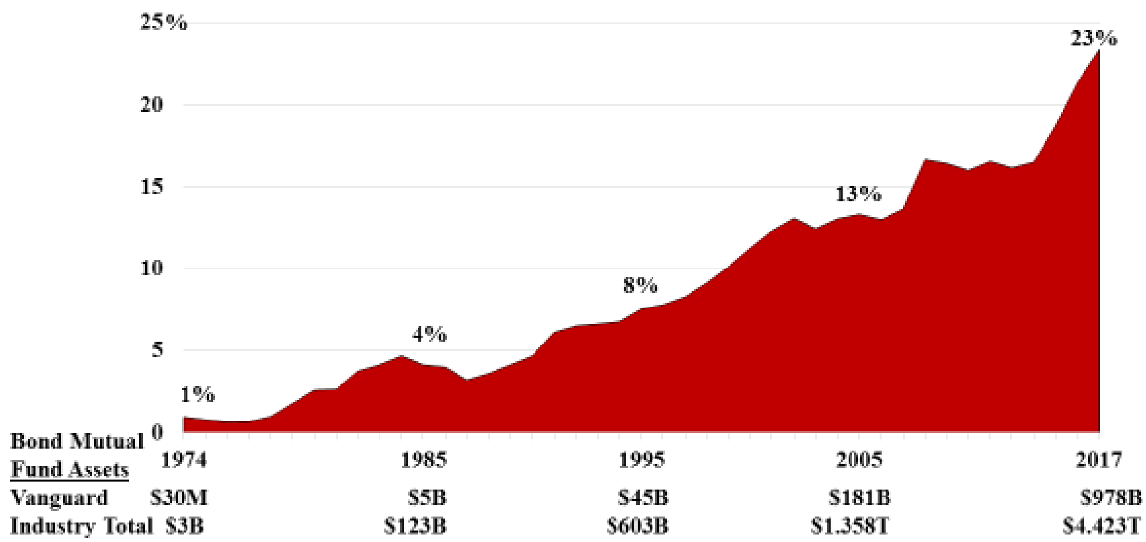
[3] There are actually two such Vanguard funds, with substantially identical portfolios.

The addition of the bond index fund to Vanguard's internally-managed asset base was followed by our creation of major additions to our menu of bond funds: three Admiral (lowest-cost) U.S. Treasury funds in 1991; the Intermediate-Term Investment-Grade (taxable) Bond fund in 1993; and Short-Term, Intermediate-Term, and Long-Term Bond Index Funds in 1994. This new wave of funds grew slowly but surely, with aggregate assets of $140 billion in October 2017.

Industry Leadership

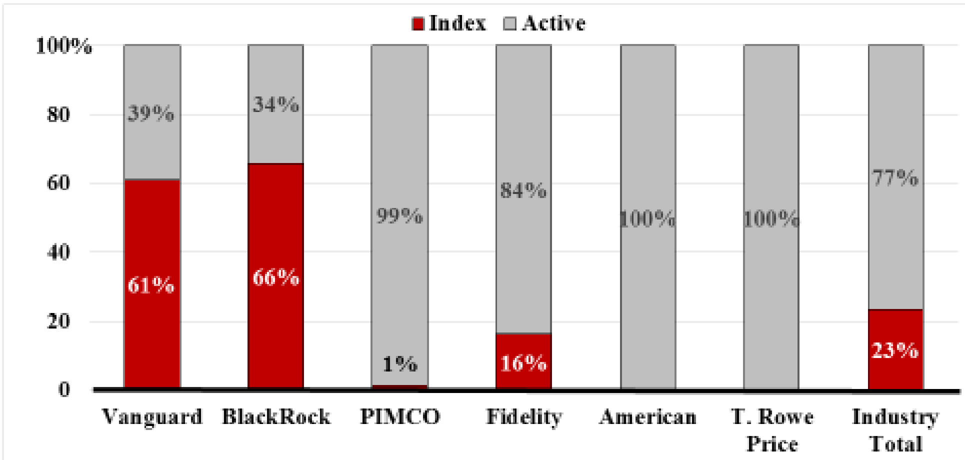
Together, the combination of the bond market index fund and its defined-maturity cousins (and, of course, our rock-bottom costs) brought Vanguard to its leadership in the bond fund arena. **(Exhibit 7)** From a mere 4% of bond mutual fund assets three decades ago to 13% in 2005, to 23% today.

Exhibit 7: Vanguard's Market Share of Bond Mutual Fund Assets



Today, industry leadership is highly concentrated. The six largest bond fund sponsors **(Exhibit 8**) oversee a dominant 50% share of total assets of bond funds of all types. Vanguard's bond fund assets are more than two-and-one-half *times* the $390 billion of our next largest peer.

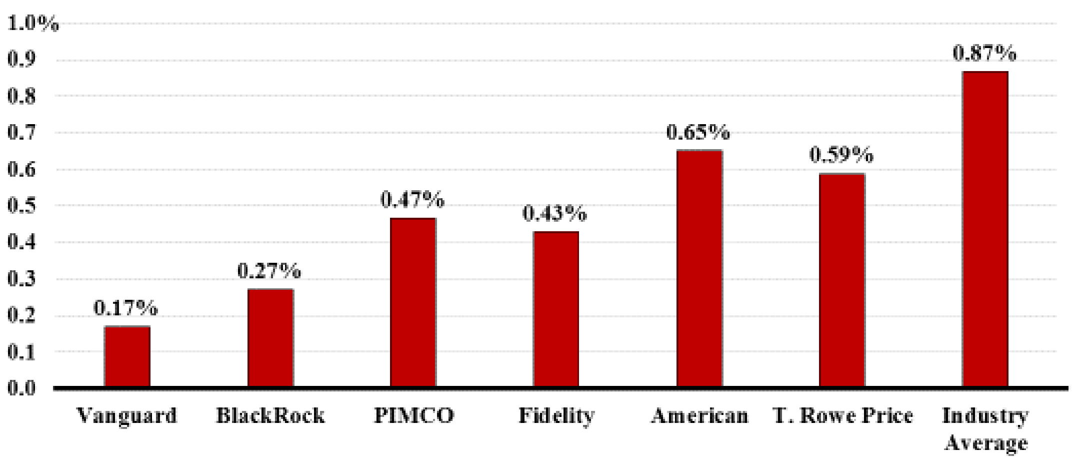
Exhibit 8: Largest Managers of Bond Mutual Funds, Index vs. Active



	Vanguard	BlackRock	PIMCO	Fidelity	American	T. Rowe Price	Industry Total
Bond Fund Assets	$978B	$389B	$310B	$284B	$132B	$110B	$4.423T
Market Share	23%	9%	7%	6%	3%	2%	100%

Our huge expense ratio advantage accounts for much of Vanguard's success. **(Exhibit 9)** The expense ratios of Vanguard's bond funds are some 40% below our closest competitor (0.27%) and 80%(!) below the industry norm of 0.87%.

Exhibit 9: Bond Mutual Fund Expense Ratios



Bond *index* funds account for 61% of Vanguard's bond assets, and some 72% of Vanguard's taxable bond fund assets, with our actively managed bond funds accounting for but 28%. In reality, "actively-managed" is somewhat of a misnomer, since the firm's defined-maturity municipal funds, held to rather precise maturity standards and closely tracking comparable muni indexes, represent about one-third of the "active" total. Perhaps "virtual index funds" would be the more appropriate term form them.

Vanguard's dominant share of bond fund assets—and the concentration of assets in bond index funds—tells us *what* has happened in the bond fund marketplace, but it doesn't tell us exactly *why* it has happened. Two reasons stand out: One, our remarkably higher yields, so critical for bond investors today, driven largely by our huge expense ratio advantage. Two, the absence of sales loads on our funds, making them far more attractive to individual bond fund buyers and corporate thrift plans, whose administrators have no interest in incurring the unnecessary drag of sales loads.

Small wonder, then, that index funds are gradually winning the battle for investor assets in the bond fund arena. While the $1 trillion invested in bond index funds represents a 23% share of all bond fund assets—lower than the 41% presently in stock index funds—that figure seems destined to grow. Since 2011, cash flows into bond index funds have totaled $802 billion, fully 38% of the total flows of $2.1 trillion into bond funds.

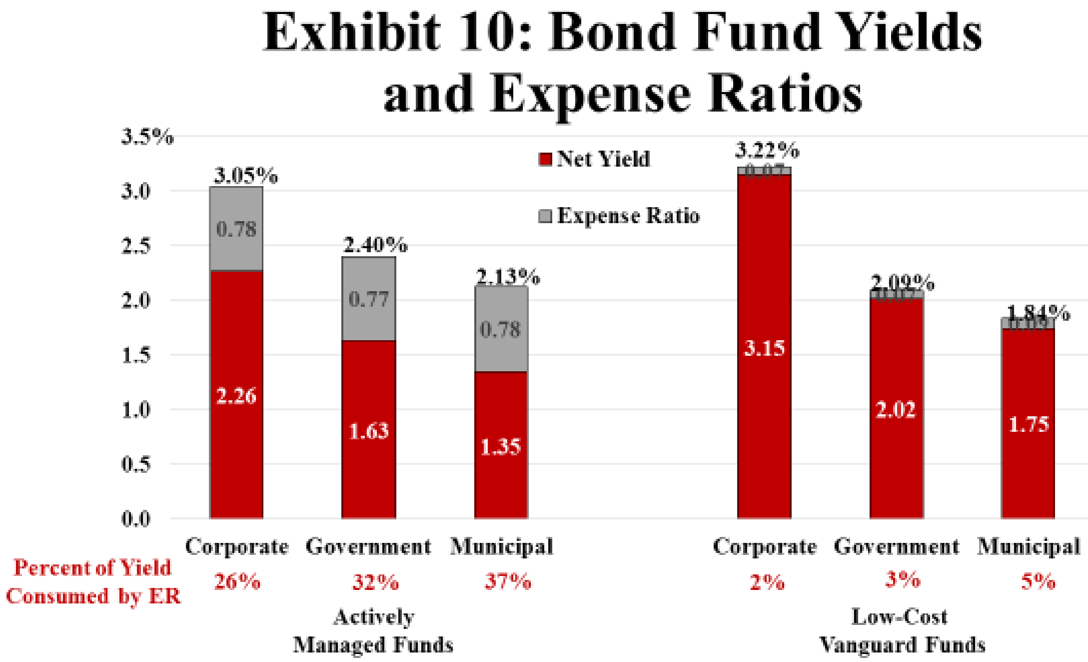
High Fees, High Loads, and "Compromises"

Given the critical advantage of rock-bottom expenses, (relatively) low portfolio turnover, and superior expected risk-adjusted returns, it's a small wonder that bond index funds are becoming a significant and growing factor in the bond fund marketplace.

First, consider fund expense ratios (annual expenses as percentage of fund assets) for bond index funds vs. actively-managed bond funds.[4] Not merely the yield differential itself, but the huge percentage of portfolio yields that is confiscated by the expenses borne by investors in actively managed funds.

Let's examine these differences in three bond categories. In active corporate bond funds **(Exhibit 10)**, the average fund's gross yield of 3.05% comes with expenses of 0.78%, consuming 26% of the yield and leaving an actual net yield of 2.26%. Compare that outcome with the corporate bond index fund: gross yield 3.22%, expense ratio 0.07%, income consumed just 2%. Net yield 3.15%, 35%(!) higher than the active fund. Similarly, actively managed government bond funds consume 32% of income vs. 3% for the low-cost funds. For active munis, 37% consumed vs. 5% for the low-cost funds.

[4] Vanguard's actively managed bond funds carry expense ratios much lower than the industry average—even those that are managed by outside managers. For example, the GNMA Fund, with $25 billion in assets, is managed by Wellington Management Company for an advisory fee of a mere 0.01%. Its asset-weighted expense ratio is only 0.14%.



Mutual fund managers and their boards of directors have a fiduciary duty to their fund shareholders. But when fund expenses are consuming as much as 37% of a bond fund's yield and comparable index funds are consuming as little as 2%, we have no choice but to ask ourselves: "Have the fund directors who approved the advisory contracts that result in such confiscation breached their fiduciary duty to shareholders? Have fund sponsors who distribute such funds violated their fiduciary duty? Have brokers who sell such funds to their clients failed to place their client's interests first?" It is high time for industry participants to examine the issue of the excessive fund costs that confiscate such mammoth portions of the investment income earned on the vast majority of active bond funds.

Sales loads are another important factor. While nearly all bond *index* funds are available solely on a "no-load" basis, fully 2,300 share classes of actively managed bond funds require the payment of sales commissions to brokers and investment advisers. Today, those loads run in the range of 1% to 4% for bond funds, averaging about 2 ½%. How much is 2 ½%, you ask? Well, if you pay such a load, you relinquish more than your entire net investment income during the first year that you hold the fund's shares.

Given the obvious hardship imposed on investors by sales loads on active bond funds, leading fund distributors are attempting to compromise. How? By offering a large variety of share classes for a single fund. Essentially, brokers and advisors sell to their clients funds with huge loads and lower expenses, or other funds with low or no loads but with higher expenses. Here's one example[5] of this increasingly widespread "compromise" marketing strategy. **(Exhibit 11)**

[5] This firm is one of the largest active managers in the fund industry, struggling to serve two masters: distributors—broker dealers and registered investment advisers (RIAs)—on the one hand, and individual "do-it-yourself" investors on the other.

Distribution Alphabet Soup—
Share Classes of a Leading Bond Fund

Share Class	Assets ($ billion)	Expense Ratio	Front Load	Deferred Load	12b-1 Fee	SEC Yield
A	$19,674	0.62	3.75		0.25	1.75
C	1,078	1.40		1.00	1.00	1.02
F1	782	0.64			0.25	1.74
F2	3,746	0.36				2.06
F3	1,758	0.26				2.15
R1	35	1.37			1.00	1.04
R2	462	1.35			0.74	1.07
R2E	19	1.05			0.60	1.34
R3	632	0.91			0.50	1.51
R4	590	0.60			0.25	1.81
R5	173	0.31				2.10
R6	5,962	0.25				2.16
529A	938	0.70	3.75		0.24	1.67
529C	311	1.45		1.00	0.99	1.00
529E	47	0.90			0.50	1.54
529F	82	0.46				1.96
Total	$36,289	0.56	2.13	0.04	0.21	1.83

Note that the confiscation of income is as high as 60% for the 529 C class. Also note that some of the convoluted mathematics involved in deciding which of the 16(!) classes the broker will offer clients from a single sponsor of the same fund with such different costs. Some classes have front-end loads, some have deferred loads, 11(!) have hidden loads paid by the investor in the form of 12b-1 fees for fund distribution. As a result, the net dividend yields received by investors in the 16 classes vary—in this case, from a low of 1% for the 529 C class to high of 2.16% for R6 class of this intermediate-term bond fund. Since the gross (pre-expense) yield of this fund was 2.4%—43% of the yield has been effectively confiscated. If that table tells us anything, it is that the salesmen must be paid. That's fine for a particular firm, I guess, but investors should make sure that they receive commensurate value in return.

The Metamorphosis of an Index

Let me close with a few broad thoughts about how the world of bonds might change in the years ahead. As the driver of Vanguard's dominant 23% share of bond fund assets, Vanguard Total Bond Market Index Fund offers an interesting case study of how bond market indexing works.

In 1986, when I first considered the creation of a bond index fund, the sole broad bond index was the Salomon Brothers Investment Grade Bond Index. Then, U.S. Treasury bonds accounted for 50% of its weight, government agency obligations 32%, and corporate bonds 18%.

Move the clock forward from 1987 to 2017, and we see a somewhat different pattern. (A lot can happen over forty years!) U.S. Treasury 36%, agency obligations 38%, and corporates 26%. Clearly, the most significant change in the total bond index (now known as the Bloomberg Barclays U.S. Aggregate Bond Index) is the rise in the weight of corporate bonds from 18% of the total to 26%.

As I look at these changes, I cannot help but wonder: "Is a position of 18%—or even 26%—in corporate bonds the optimal level for an individual investor? Might not some informed investors prefer a portfolio of, say, 65% in investment-grade corporates and 35% in Treasuries and agencies with a slightly higher yield that would come hand-in-hand with slightly higher volatility and a slight reduction in credit quality?" Much as I believe in the bond index fund (and the index it tracks), it occurs to me that the final form of an index fund tracking the bond market may yet be determined.

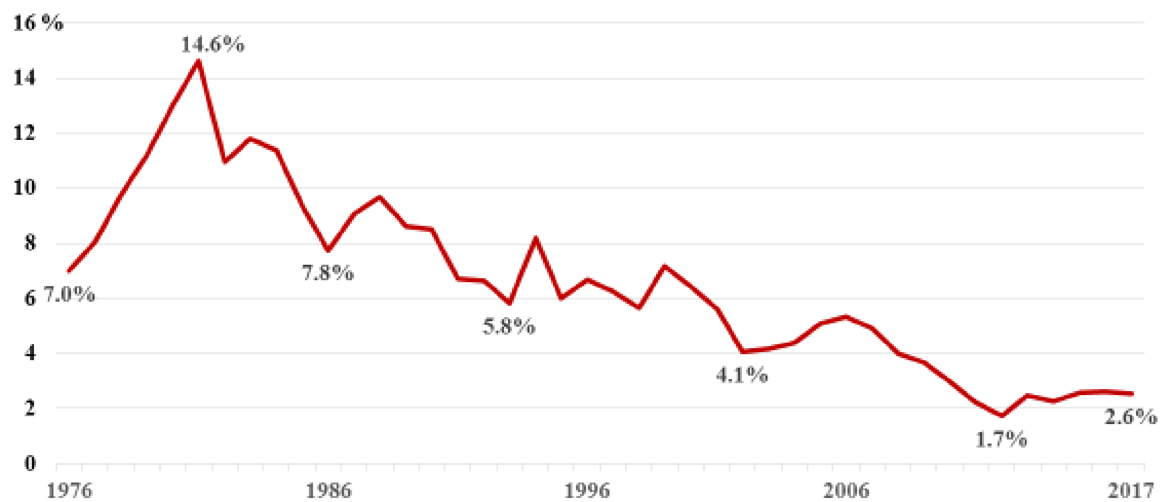
The Future of Bonds . . . and Bond Funds

Most of today's bond investors have experienced only the sharp and unremitting drop in bond fund yields that has occurred over the past 35-plus years—the yield on the Bloomberg Barclays Aggregate Bond Index has plummeted from 14.6% at the close of 1981 to 2.6% today, a decline of a mere 83%. **(Exhibit 12)**

Today's low rates have led some experts to say that we're in a bond fund bubble, one which will soon burst and send yields soaring and prices tumbling. Since anything can happen in a financial crisis, these predictions may prove correct. But I believe bursting bubbles is a concern largely for short-term speculators in bond prices, not long-term investors planning for their financial futures.

After all, if an investor purchases a 30-year U.S. Treasury bond paying an annual coupon of 2.8% for the next three decades, that investor has made a bargain that will be honored—no bubble there!. For the vast majority of investors, bonds should be bought and held for relative price stability and regular income, not traded in a vain attempt to capitalize on momentary fluctuations in market price.

Exhibit 12: Bloomberg Barclays Aggregate Bond Index Yield



Despite the current low interest rate environment, bond mutual funds, driven largely by the total bond market index fund, have flourished in this challenging environment. In 2017, cash flow has totaled some $335 billion. About 50% of that total ($162 billion) has flowed into bond index funds. Given the remarkable advantages of bond index funds—lower costs, no sales loads, less confiscation of investment income—I believe that the index share of bond fund cash flow and assets will not only continue its historical rise, but even accelerate.

And, given the remarkable cost advantages based on its simple mutual, investor-first structure and the staggering economies of scale the firm has achieved for its shareholders, I see no reason that Vanguard cannot continue to build on our present base, lead the field in the bond fund industry, and be an active participant in the issues of the day affecting the bond market.

As I look ahead, I'm no Pollyanna. Times will change. Believing that the future will closely resemble the past ("presentism") and ignoring the inevitable uncertainty of investing—and of life—is to forget the lessons of history.

* * *

In November 1998, almost exactly 19 years ago—you conferred on me the honor of admission to the FIASI Hall of Fame. Here's part of what you said:

> In the mid-1970s, Jack helped pioneer the differentiation of bond funds by maturity, a simple, but important concept which connects investor risk and objectives with fund structure [and helps] investors define and measure risk.
>
> Intellectual curiosity, innovation and an independent spirit have all been hallmarks of a long and extremely successful career. And Jack has become one of the most articulate and thoughtful spokesmen for the investment management business today. All of us look forward to many more years of Jack's ideas and opinions.

Presenting some ideas and opinions is what I've tried to do today. Good luck to all of you bond professionals (including you active bond managers), and to the entire fixed-income community. Yes, having survived defeat, I'm confident that Vanguard and indexing will continue to survive victory.

Appendix I: Vanguard Fixed Income Funds

Fund Name	**Inception Date**	**Bond Assets October 2017 ($ Mil)**
Wellington Fund (35% bonds)*	7/1/1929	$36,367
Wellesley Income (60% bonds)*	7/1/1970	32,859
Long-Term Investment-Grade*	7/9/1973	16,217
Inter-Term Tax-Exempt	9/1/1977	56,041
Long-Term Tax-Exempt	9/1/1977	10,928
Short-Term Tax-Exempt	9/1/1977	15,128
High-Yield Corporate*	12/27/1978	24,958
High-Yield Tax-Exempt	12/27/1978	12,332
GNMA*	6/27/1980	24,885
Short-Term Investment-Grade	10/29/1982	63,943
STAR (25% bonds)	3/29/1985	5,317
CA Long-Term Tax-Exempt	4/7/1986	3,904
NY Long-Term Tax-Exempt	4/7/1986	4,409
PA Long-Term Tax-Exempt	4/7/1986	3,531
Long-Term Treasury	5/19/1986	3,579
Total Bond Market Index	12/11/1986	191,680
Limited-Term Tax-Exempt	8/31/1987	25,033
Short-Term Federal	12/31/1987	5,339
NJ Long-Term Tax-Exempt	2/3/1988	2,105
OH Long-Term Tax-Exempt	6/18/1990	1,195
Inter-Term Treasury	10/28/1991	6,287
Short-Term Treasury	10/28/1991	7,844
Balanced Index (40% bonds)	11/9/1992	14,356
Inter-Term Investment-Grade	11/1/1993	29,292
Inter-Term Bond Index	3/1/1994	34,379
Long-Term Bond Index	3/1/1994	10,774
Short-Term Bond Index	3/1/1994	51,218
CA Inter-Term Tax-Exempt	3/4/1994	12,912
Tax-Managed Balanced (50% bonds)	9/6/1994	1,889
LifeStrategy Funds (45% bonds)	9/30/1994	19,726
MA Tax-Exempt	12/9/1998	1,692
Inflation-Protected Securities	6/29/2000	27,371
Target Retirement Funds (30% bonds)	10/27/2003	109,288
Extended Duration Treasury Index	11/28/2007	1,629
Managed Payout (20% bonds)	5/2/2008	411
Total Bond Market II Index	1/26/2009	142,185
Inter-Term Corp Bond Index	11/19/2009	19,480
Long-Term Corporate Bond Index	11/19/2009	2,957
Short-Term Corp Bond Index	11/19/2009	26,681
Emerging Markets Govt Bond Index	5/31/2013	1,323
Total Intl Bond Index	5/31/2013	8,553
Ultra-Short-Term Bond	2/24/2015	3,273
Instl Inter-Term Bond	6/19/2015	13,976
Instl Short-Term Bond	6/19/2015	7,239
Tax-Exempt Bond Index	8/21/2015	2,023
Emerging Markets Bond	3/10/2016	20
Core Bond	3/28/2016	892
Global Wellesley Income (60% bonds)*	10/18/2017	134
Global Wellington (35% bonds)*	10/18/2017	119
Bond and Balanced Funds		**$1,097,674**
Money Market Funds		**$220,108**
Fixed Income Funds Total		**$1,317,782**

*Managed in whole or in part by Wellington Management Company