Bogleheads XIV

As My 65th Anniversary and 87th Birthday Approach, Still an Active Life

John C. Bogle

Philadelphia, PA

October 15, 2015
Welcome, Bogleheads…
Why are you here?
Kiplinger’s journalist Daren Fonda asked: “Why would all those Bogleheads come all the way to Valley Forge when they must know exactly what you’ll tell them?”

My Response: When Pope Francis made his resent visit to the United States, everyone also knew what he would speak about: the importance of faith; keeping families strong; caring for those less fortunate; religious liberty; environmental issues. And yet wherever he went, tens of thousands—even hundreds of thousands—came to hear him speak.

Perhaps we don’t expect our leaders to say something new whenever they speak. We want them to reinforce the truth—to speak from the heart about the things they care about. We do not seek novelty in our leaders, but knowledge, conviction, passion, integrity, common sense, and some fun. These are the things that I will try to deliver during these next few days.

***

Of course, I’m no Pope, even though one of our veteran crew members thought that the analogy was fair:

Note from a Veteran Vanguard Crew Member:
YOU are Vanguard’s Pope. Your heart and soul has always been with Vanguard. No one knows what the future holds, but as long as you stay the course we here at Vanguard will strive to follow in your footsteps to keep Vanguard the best in the world. YOU are Vanguard’s Shepherd—past, present, and future—and may you always feel the presence of God with you!

WHATEVER THE CASE, I’M STILL HERE . . .
Despite the Empty Chair. Ouch!

*Forbes*, June 2015

*Bloomberg Markets*, April 2015

LET’S FIX THIS IMPRESSION . . .
Still in the Empty Chair. Yes!

Photoshopped by a Vanguard client, September 2015

NOW LET’S GET TO THE PAST YEAR . . .
A Year in My Life … I. Books and Papers

• **Wiley Investment Classics:** Two more books with new introductions
  – *Bogle on Mutual Funds: New Perspectives for the Intelligent Investor*
  – *John Bogle on Investing: The First 50 Years*

• **A Book Chapter:** *Adam Smith: His Life, Thought, and Legacy* (*Princeton University Press, forthcoming*)

• **Articles in Professional Journals**
  – *Journal of Portfolio Management*
  – *Financial Analysts Journal*
Dear Jack: I read your book from cover to cover and enjoyed it immensely. It is honest, sensible, and readable—a very rare combination. Your book is going to be an important one for mutual fund investors for many years to come.

—Warren E. Buffett
1993
Jack, I just re-read parts of “The First 50 Years”—and the remarkable thesis! Rest easy. It is an “investment classic.” Maybe the investment classic.

I take pride in my small part!

—Paul A. Volcker
2015
AND THEN THERE’S MY LITTLE BOOK...
The Little Book of Common Sense Investing

The #1 best-seller on Amazon in the Mutual Funds category since its release on March 5, 2007, some 3,137 out of 3,162 days.


Number of Amazon Reviews: 362, 104 so far in 2015:

- 5 Star 77
- 4 Star 20
- 3 Star 5
- 2 Star 1
- 1 Star 1

Total 104

WHAT ABOUT THAT 1-STAR REVIEW? . . .
The One-Star Review for *The Little Book*

Keyed towards one set of answers rather than an exploration. A mutual fund company seems to have hired people to write books recommending it.
Bogle Book Sales

Weekly Sales

- Little Book of Common Sense Investing
- Common Sense on Mutual Funds (10th Anniversary Edition)
- Clash of the Cultures

Cumulative Sales:
- Little Book: 202,415
- Common Sense on Mutual Funds (all editions): 113,838
- Clash of the Cultures: 34,803
- Enough.: 90,694
- Bogle Books Total: 875,000

A WORD ABOUT ENOUGH. TRUE MEASURES OF MONEY, BUSINESS, AND LIFE . . .
Competition for *Enough*?

*LOTS OF BOOKS, YES, BUT ALSO LOTS OF PAPERS . . .*
Journal Papers by John C. Bogle
Financial Analysts Journal (10 papers)

Forthcoming
The Index Mutual Fund—
40 Years of Growth, Change, and Challenge

Jan/Feb 2014
The Arithmetic of "All-In" Investment Expenses

Mar/Apr 2009
The End of "Soft Dollars"?

Jan/Feb 2009
*Markets in Crisis (Interview w/ Rodney Sullivan)

Mar/Apr 2008
*Black Monday and Black Swans

Nov/Dec 2005
The Relentless Rules of Humble Arithmetic

Jan/Feb 2005
The Mutual Fund Industry 60 Years Later:
For Better or Worse?

Jan/Feb 1980
Institutional Investment Performance Compared…
(with Jan M. Twardowski)

Nov/Dec 1970
Mutual Fund Performance Evaluation:
Conventional vs. Unconventional

May/June 1960
*The Case for Mutual Fund Management
(as John B. Armstrong)

*Graham and Dodd award winners

AND THE JPM. . .
Journal Papers by John C. Bogle
Journal of Portfolio Management (14 papers)

Winter 2016 (Forthcoming) Putting Investors First
Fall 2015 (Forthcoming) Occam’s Razor Redux: Establishing Resonable Expectations for Financial Market Returns (with Michael W. Nolan)
Summer 2014 No Speed Limits: High-Frequency Trading and Flash Boys
Fall 2013 Big Money in Boston…
Spring 2011 The Clash of the Cultures
Fall 2009 * The Fiduciary Principle: No Man Can Serve Two Masters
Summer 2009 Peter Bernstein Commemorative Issue
Winter 2008 * A Question So Important…
Spring 2002 An Index Fund Fundamentalist
Summer 1998 The Implications of Style Analysis…
Summer 1995 The 1990s at the Halfway Mark
Winter 1992 Selecting Equity Mutual Funds
Fall 1991 Investing in the 1990s--Occam's Razor Revisited
Spring 1991 Investing in the 1990s

* “Outstanding Article” Award

FROM “OCCAM’S RAZOR REDUX”…
Occam's Razor Redux: Establishing Reasonable Expectations for Financial Market Returns

John C. Bogle and Michael W. Nolan, Jr.

In three articles published in this journal, Bogle [1991a, 1991b, 1995] presented a new, simple methodology for establishing reasonable expectations for returns on the two primary financial assets—stocks and bonds—over decade-long periods. In the first of these articles, Bogle noted that Occam's razor, the fourteenth-century postulate of Sir William of Occam, had inspired his methodology. His rule suggested, in substance, that the simplest solution to a problem is the solution most likely to be correct, and that problems should not be complicated more than necessary ("the law of parsimony").

In this article, we review the models first presented in those earlier articles and of John Maynard Keynes, originally cited in Bogle's 1951 honors thesis at Princeton University (Bogle, 2001). In Chapter 12 of his General Theory of Employment, Interest, and Money—"On the State of Long-Term Expectations"—Keynes had also described the value of simplicity. There, Keynes warned, "it is dangerous to apply to the future inductive arguments based on past experience, unless we can distinguish the broad reasons for what the past was" (Keynes, 1936).

Keynes' solution was Occam-like. We must consider the sources of stock returns. He enumerated just two: enterprise and speculation. Enterprise refers to the actual business results of corporations—the stuff of
Cumulative Total Returns
Investment and Speculative Returns, 1900-2015

Value of Initial $1
$100,000

Cumulative Investment Return
Initial Dividend Yield + 10-Year Earnings Growth

Cumulative Speculative Return
Annualized Impact of P/E Change

Annual Real Return
9.2%
0.4%

DON’T FORGET REVERSION TO THE MEAN (RTM) . . .

*Stock Market Return = Investment Return + Speculative Return

Market Returns Revert to Fundamental Investment Returns
The Bogle Sources of Return Model for Stocks


Correlation = 0.81
R-squared = 0.65

Actual S&P 500 Return vs. Estimated Return

BUT I DO MORE THAN WRITE . . .
18 PrimeCap 30th Anniversary Meeting with Principals.
22 NYC Bloomberg “Most Admired Investor” Forum (with AQR’s Cliff Asness).

October 17 Speech, Easttown (PA) Library.
22-24 BOGLEHEADS XIII!
31 Speech, Georgetown Law School (D.C.).

November 4 Visit from Georgetown Law Students.
14 Interview Session with Wharton Executive MBA Students.
20 Princeton—Business Ethics Seminar.

December 16 Full day’s visit from Stanford MBA Class.
30 White House Staff Re: DOL Fiduciary Standards.

2015 January 16 Skype Interview, Durham Bogleheads.
26 Phone Meeting with White House Staff Re: Fiduciary Duty.
28 Phone Meeting with White House Staff Re: Fiduciary Duty.
29 Presentation: Committee for Fiduciary Responsibility.

March 12 Jon Stein, Betterment (Robo Advisor)
17 Quarry Ridge (Vanguard) talk with Crew.
A Year in My Life . . . II. Vanguard

April 7 NYC – “Great Debate” on Indexing, at publisher James Grant’s Forum.
16 Lecture, Aspen Institute, D.C.
20 Blair Academy—Speech to student assembly.
28 Lecture, SEC Enforcement Staff, D.C.

May 6-7 ICI General Membership Meeting.

June 4 Speech to the CFA Society of Philadelphia, “Putting Investors First.”

July/August “Working Vacation” in Adirondacks. Editing book chapter on Adam Smith, AQR extended interview, and JPM papers, correspondence; DOL and Labor Secretary Perez on fiduciary duty rule; and more.

September 24 Skype Interview, iMoney
29 SEC-Lead Presenter at 1940 Act 75th Anniversary Forum.

October 2 Princeton Humanities Seminar.
7 Princeton Lecture on “Business Ethics and Modern Religious Thought.”
14-16 Bogleheads XIV!

. . . . And the “Day-to-Day” Events:

<table>
<thead>
<tr>
<th>Awards for Excellence</th>
<th>21</th>
<th>TV Appearances</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client Visits</td>
<td>18</td>
<td>Crew/Team Meetings</td>
<td>84</td>
</tr>
<tr>
<td>PR Interviews</td>
<td>45</td>
<td>Speeches</td>
<td>32</td>
</tr>
</tbody>
</table>

TOTAL 211*

*Oh, yeah. Also 17 appointments with doctors. And 40 physical therapy sessions.

NOW LET’S TURN TO THE INDUSTRY . . .
My Long Career in the Fund Industry
How Many Hits, How Many Eras?
(“Follow the Money”)

An Industry that Sells What It Makes
• 1924-59. The mutual fund industry in its promising formative era

An Industry that Makes What Will Sell
• 1960-64. Public ownership of advisors—The New Paradigm
• 1965-69. The “Go-Go” Era—Equity “junk”
• 1970-74. The rise and fall of the “Favorite [Nifty?] Fifty”
• 1975-90. Money market funds and bond funds—a new industry
• 1991-01. The Information Age and the rise of technology funds
• 1995-07. The TIF (Traditional Index Fund) Era
• 2008-15. The ETF (Exchange-Traded Index Fund) Era

What’s Next?
• 2015-25. The return to a new normalcy—The triumph of TIF indexing

A GROWING INDUSTRY . . .
"I Was There (And I Am Here!)
A Tiny Industry Grows into a Behemoth

TOTAL ASSETS
August 2015

<table>
<thead>
<tr>
<th>Asset Type</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>$9.4T</td>
<td>58%</td>
</tr>
<tr>
<td>Bond</td>
<td>3.7T</td>
<td>22 %</td>
</tr>
<tr>
<td>Money Market</td>
<td>2.6T</td>
<td>16%</td>
</tr>
<tr>
<td>Balanced</td>
<td>704B</td>
<td>4%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$16.3T</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL ASSETS
December 1951

<table>
<thead>
<tr>
<th>Asset Type</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>$2.45B</td>
<td>78%</td>
</tr>
<tr>
<td>Balanced</td>
<td>680M</td>
<td>22%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$3.13B</td>
<td></td>
</tr>
</tbody>
</table>

Annual Growth Rate
1951-2015: 15%

BUT A LARGELY UNRECOGNIZED EARLY FLAW . . .
Along the Way, a Funny Thing Happened
Ownership of 50 Largest Mutual Fund
Management Companies—2015

Privately Owned (10)
Plus Mutual (1)
11 (Includes 3
largest firms)

Publicly Owned
11

Conglomerate
28

Total Firms with Public Ownership: 39
Note: Firms with Public Ownership in 1951: 1

BUT LOTS OF OTHER BIG CHANGES, INCLUDING THE RISE OF INDEXING . . .
### Old Times or New,
The Durability of Index Fund Superiority

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Equity Fund</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Return</td>
<td>9.7%</td>
<td>9.6%</td>
</tr>
<tr>
<td>Index Advantage</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Cumulative Return</td>
<td>1539%</td>
<td>1548%</td>
</tr>
<tr>
<td>Index Advantage</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>16.4%</td>
<td>16.8%</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
<td>0.38</td>
<td>0.39</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.96</td>
<td>0.99</td>
</tr>
</tbody>
</table>

| **S&P 500 Index**      |                                                             |                                                                          |
| Annualized Return      | 11.3%                                                       | 11.2%                                                                    |
| Index Advantage        | 1.6%                                                        | 1.6%                                                                     |
| Cumulative Return      | 2402%                                                       | 2494%                                                                    |
| Index Advantage        | 963%                                                        | 946%                                                                     |
| Standard Deviation     | 18.6%                                                       | 17.3%                                                                    |
| Sharpe Ratio           | 0.42                                                        | 0.48                                                                     |
| R-Squared              | 1.00                                                        | 1.00                                                                     |

**YES, THE U.S. INDEX FUND IS CHALLENGED. BUT . . .**
Reversion to the Mean I.

MSCI EAFE Outperforming S&P 500

1970-2007

<table>
<thead>
<tr>
<th>Year</th>
<th>S&amp;P 500 Annual Return</th>
<th>MSCI EAFE Annual Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>11.1%</td>
<td>10.9%</td>
</tr>
<tr>
<td>2007</td>
<td>8.8%</td>
<td>4.7%</td>
</tr>
</tbody>
</table>

TRUE EVEN IN EMERGING MARKETS . . .
Reversion to the Mean II.

<table>
<thead>
<tr>
<th>Year Range</th>
<th>S&amp;P 500 Annual Return</th>
<th>Emerging Markets Annual Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987-2015</td>
<td>10.1%</td>
<td>4.3%</td>
</tr>
<tr>
<td>1993-2015</td>
<td>8.8%</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

Emerging Markets Outperforming 1998-2010

SO WHY NOT JUST BUY FUNDS THAT WIN? . . .
## Equity Fund Returns:
No, Pal, The Past Is Not Prologue. RTM

<table>
<thead>
<tr>
<th>Quintile</th>
<th>5-Year Return*</th>
<th>Number of Funds</th>
<th>Where they ranked in the subsequent 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Highest Quintile</td>
</tr>
<tr>
<td>1</td>
<td>Highest</td>
<td>1,091</td>
<td>14%</td>
</tr>
<tr>
<td>2</td>
<td>High</td>
<td>1,083</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>Medium</td>
<td>1,084</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>Low</td>
<td>1,085</td>
<td>14</td>
</tr>
<tr>
<td>5</td>
<td>Lowest</td>
<td>1,032</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,375</strong></td>
<td></td>
<td><strong>14%</strong></td>
</tr>
</tbody>
</table>

*Excess return vs. benchmark.

Note: Number of failed funds—1,499

NOW LET’S TURN TO THIS CHANGING INDUSTRY . . .
Changes in Mutual Fund Leadership: Then and Now

<table>
<thead>
<tr>
<th>Rank</th>
<th>1951 Fund Name</th>
<th>Total Assets* (Millions)</th>
<th>2015 Manager Name</th>
<th>Total Assets (Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M.I.T.</td>
<td>$472</td>
<td>Vanguard</td>
<td>$2,988</td>
</tr>
<tr>
<td>2</td>
<td>Investors Mutual</td>
<td>365</td>
<td>Fidelity</td>
<td>1,615</td>
</tr>
<tr>
<td>3</td>
<td>Keystone Funds**</td>
<td>213</td>
<td>BlackRock***</td>
<td>1,230</td>
</tr>
<tr>
<td>4</td>
<td>Tri-Continental</td>
<td>209</td>
<td>American Funds</td>
<td>1,216</td>
</tr>
<tr>
<td>5</td>
<td>Affiliated Funds</td>
<td>209</td>
<td>JPMorgan Funds***</td>
<td>519</td>
</tr>
<tr>
<td>6</td>
<td>Wellington Fund</td>
<td>194</td>
<td>State Street Global***</td>
<td>497</td>
</tr>
<tr>
<td>7</td>
<td>Dividend Shares</td>
<td>186</td>
<td>T Rowe Price</td>
<td>493</td>
</tr>
<tr>
<td>8</td>
<td>Fundamental Investors</td>
<td>179</td>
<td>Franklin Templeton</td>
<td>480</td>
</tr>
<tr>
<td>9</td>
<td>State Street Investment**</td>
<td>106</td>
<td>PIMCO***</td>
<td>375</td>
</tr>
<tr>
<td>10</td>
<td>Boston Fund**</td>
<td>106</td>
<td>Federated***</td>
<td>272</td>
</tr>
</tbody>
</table>

Total $2,239
Percentage of Industry 72%

Total industry assets: $3.1 billion.

Total $9,686
Percentage of Industry 57%

Total industry assets: $16.9 trillion

*Includes associated funds.
** No longer in business.
***New leaders.

THE NUMBER OF FUNDS EXPLODES . . .
Number of Funds—1951 & Today

<table>
<thead>
<tr>
<th>Original Name</th>
<th>Total Assets (Millions)</th>
<th>No. of Funds Managed</th>
<th>Current Name</th>
<th>Total Assets (Billions)</th>
<th>No. of Funds Managed</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.I.T.</td>
<td>472</td>
<td>2</td>
<td>MFS</td>
<td>180</td>
<td>78</td>
</tr>
<tr>
<td>Investors Mutual</td>
<td>365</td>
<td>3</td>
<td>Columbia</td>
<td>165</td>
<td>116</td>
</tr>
<tr>
<td>Affiliated</td>
<td>209</td>
<td>3</td>
<td>Lord Abbett</td>
<td>108</td>
<td>37</td>
</tr>
<tr>
<td>Wellington</td>
<td>194</td>
<td>1</td>
<td>Vanguard</td>
<td>2,988</td>
<td>140</td>
</tr>
<tr>
<td>Eaton &amp; Howard</td>
<td>90</td>
<td>2</td>
<td>Eaton Vance</td>
<td>101</td>
<td>130</td>
</tr>
<tr>
<td>Fidelity</td>
<td>64</td>
<td>1</td>
<td>Fidelity</td>
<td>1,615</td>
<td>321</td>
</tr>
<tr>
<td>Putnam</td>
<td>52</td>
<td>1</td>
<td>Putnam</td>
<td>81</td>
<td>77</td>
</tr>
<tr>
<td>American</td>
<td>27</td>
<td>2</td>
<td>American</td>
<td>1216</td>
<td>35</td>
</tr>
<tr>
<td>T. Rowe Price</td>
<td>1</td>
<td>1</td>
<td>T. Rowe Price</td>
<td>493</td>
<td>116</td>
</tr>
<tr>
<td>Dreyfus</td>
<td>0.8</td>
<td>1</td>
<td>Dreyfus</td>
<td>248</td>
<td>151</td>
</tr>
<tr>
<td><strong>Total/Average</strong></td>
<td><strong>$1,475</strong></td>
<td><strong>1.7</strong></td>
<td><strong>Total/Average</strong></td>
<td><strong>$7,195</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

FUND EXPENSES EXPLODE TOO . . .
## Mutual Fund Expense Ratios 1951 and 2014

<table>
<thead>
<tr>
<th>Ownership type</th>
<th>1951 Assets</th>
<th>1951 Expenses</th>
<th>2014 Assets</th>
<th>2014 Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional Model (above firms)</td>
<td>$1B</td>
<td>$7M</td>
<td>$3.8 T</td>
<td>$40 B</td>
</tr>
<tr>
<td>New Model</td>
<td>--</td>
<td>--</td>
<td>$3.0 T</td>
<td>$5 B</td>
</tr>
</tbody>
</table>

Ownership types: (C) Conglomerate, (SH) public shareholders, (P) private, (M) mutual

EQUITY FUNDS BECOME LESS HOMOGENEOUS, MORE RISKY . . .
Equity Funds—Less Relative Predictability
More Risk

<table>
<thead>
<tr>
<th>Relative Volatility*</th>
<th>1951-56</th>
<th>2009-15**</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 1.11</td>
<td>0%</td>
<td>18%</td>
<td>+18%</td>
</tr>
<tr>
<td>0.95-1.11</td>
<td>34</td>
<td>53</td>
<td>+19</td>
</tr>
<tr>
<td>0.85-0.94</td>
<td>30</td>
<td>16</td>
<td>-14</td>
</tr>
<tr>
<td>0.70-0.84</td>
<td>36</td>
<td>10</td>
<td>-24</td>
</tr>
<tr>
<td>Below 0.70</td>
<td>0</td>
<td>4</td>
<td>+4</td>
</tr>
</tbody>
</table>

*S&P 500 = 1.00
**Sample of the 200 largest equity funds.

FUND INVESTOR HOLDING PERIODS SHORTEN DRAMATICALLY . . .
Then, Long-Term Shareholders, Now . . . ?

Equity Fund Redemption Rates

Redemptions and Exchanges Out as a Percentage of Average Net Assets

ACTIVE MANAGERS CONTINUE TO LAG . . .
Do You Like These Odds?

Percentage of Active Funds Outperforming Their Benchmarks
15 Years through 2014

Average: 20% Outperform

Source: Vanguard, Morningstar.
Vanguard Dominates Industry Cash Flow

Mutual Fund Industry Net Cash Flow YTD Through August 2015

Vanguard accounted for 141% of the mutual fund industry’s year-to-date net cash flow through August 2015.
Annually, in billions

* Annualized based on actual data through 8/2015.

DRIVEN BY INDEX FUNDS . . .
The Triumph of Indexing: Rolling 3-Year Net Cash Flow

"The Indexers" Vanguard, BlackRock, and State Street

The Rest of the Industry

RESULT: COMPETITION’S LEFT IN THE DUST . . . SO FAR . . .

Net Cash Flow 2009-2015

$1.3 T

-$4.5 B
Competition!

Vanguard: $3.0 T
Fidelity: $1.6 T
American: $1.2 T
BlackRock: $1.2 T
JP Morgan: $525 B
Billions of Dollars

RESULT: OUR MARKET SHARE GROWTH CONTINUES . . .
Vanguard’s Market Share of Stock and Bond Funds, 1974-2015

The Hard Times

The Momentum — “Staying the Course”

Our principles have changed the industry...
Growth of Equity Fund Assets—Active vs. Index

Yet the original principles of indexing have been challenged . . .
The Rise of the ETF

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TIFs*</td>
<td>$48B</td>
<td>$1.63T</td>
<td>+19%</td>
<td>+19%</td>
</tr>
<tr>
<td>ETFs</td>
<td>$1B</td>
<td>$1.68T</td>
<td>+59%</td>
<td>+19%</td>
</tr>
<tr>
<td>Total</td>
<td>$49B</td>
<td>$3.31T</td>
<td>+25%</td>
<td>+19%</td>
</tr>
</tbody>
</table>

*Traditional Index Funds

THERE IS A DIFFERENCE . . .
Yes, There Is a Difference

Traditional Index Funds vs. Exchange-Traded Funds

First Index Mutual Fund (1974)—Principles

• Own the U.S. stock market
• Diversify to the Nth degree
• Minimize transaction costs
• Tiny expense ratio—500 Index: 0.05% (Admiral)
• Bought to be held “forever” (redemption rate 10%)

Exchange-Traded Index Funds (1993)—Principles

• Pick your own index (1,100 now available)
• Diversify within sector you chose
• Lower expenses … but not too low (0.50%)
• Bought to be traded (average annual turnover of large ETFs: 1244%)

“BUY AND HOLD” vs. “TRADE IN REAL TIME” . . .
Speculation or Investment? A Tale of Two Strategies Trading in the 100 Largest Stocks and ETFs

<table>
<thead>
<tr>
<th>Year</th>
<th>100 Largest Stocks</th>
<th>100 Largest ETFs</th>
<th>ETF $ Vol % of Stock</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$ Trading Volume</td>
<td>Turnover Ratio</td>
<td>$ Trading Volume</td>
</tr>
<tr>
<td>1995 (Low)</td>
<td>$2.4 T</td>
<td>128%</td>
<td>$4.5 B</td>
</tr>
<tr>
<td>2000</td>
<td>17.0 T</td>
<td>222</td>
<td>1.2 T</td>
</tr>
<tr>
<td>2005</td>
<td>10.6 T</td>
<td>166</td>
<td>4.7 T</td>
</tr>
<tr>
<td>2008 (High)</td>
<td>23.0 T</td>
<td>326</td>
<td>23.7 T</td>
</tr>
<tr>
<td>2010</td>
<td>18.3 T</td>
<td>262</td>
<td>16.7 T</td>
</tr>
<tr>
<td>2015*</td>
<td>19.2 T</td>
<td>167</td>
<td>17.1 T</td>
</tr>
<tr>
<td>Growth Rate</td>
<td>11%</td>
<td></td>
<td>51%</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>188%</td>
<td>1895%</td>
</tr>
</tbody>
</table>

*Annualized

HOWEVER, WITHIN ETFs, MANY DIFFERENCES
All ETFs Are Not the Same
Assets, Institutional Ownership, and Turnover

<table>
<thead>
<tr>
<th>Largest ETF Sponsors</th>
<th>Total Assets</th>
<th>Institutional Ownership</th>
<th>Annualized Turnover</th>
<th>Annualized Turnover %</th>
</tr>
</thead>
<tbody>
<tr>
<td>BlackRock</td>
<td>$809 B</td>
<td>62%</td>
<td>$4,910 B</td>
<td>606%</td>
</tr>
<tr>
<td>Vanguard</td>
<td>469</td>
<td>43</td>
<td>908</td>
<td>193</td>
</tr>
<tr>
<td>State Street Global</td>
<td>409</td>
<td>63</td>
<td>8,692</td>
<td>2,122</td>
</tr>
<tr>
<td>Total</td>
<td>$1,687 B</td>
<td>56%</td>
<td>$14,510 B</td>
<td>859%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Most Active ETF Sponsors</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerShares</td>
<td>$97 B</td>
<td>40%</td>
<td>$928 B</td>
<td>953%</td>
</tr>
<tr>
<td>ProShares</td>
<td>25</td>
<td>12</td>
<td>873</td>
<td>3,444</td>
</tr>
<tr>
<td>Direxion</td>
<td>9</td>
<td>5</td>
<td>506</td>
<td>5,551</td>
</tr>
<tr>
<td>VelocityShares</td>
<td>3</td>
<td>7</td>
<td>299</td>
<td>10,308</td>
</tr>
<tr>
<td>Total</td>
<td>$134 B</td>
<td>16%</td>
<td>$2,606 B</td>
<td>1,936%</td>
</tr>
</tbody>
</table>

TIFs MAY HAVE CLOSE “ACTIVE” COUNTERPARTS . . .

Vanguard Fund Correlations

The Triumph of Indexing (and Virtual Indexing)

R2: The percentage of a fund’s return explained by the return of its best-fit index.

<table>
<thead>
<tr>
<th>Fund Name</th>
<th>R2 (10-Year)</th>
<th>R2 (3-Year)*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Index Funds</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Stock Market Index</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Total Bond Market Index</td>
<td>0.99</td>
<td>0.99</td>
</tr>
<tr>
<td><strong>Active Funds</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAR Fund</td>
<td>0.99</td>
<td>0.99</td>
</tr>
<tr>
<td>Explorer Fund</td>
<td>0.99</td>
<td>0.97</td>
</tr>
<tr>
<td>Wellington Fund</td>
<td>0.97</td>
<td>0.97</td>
</tr>
<tr>
<td>Intermediate-Term Tax-Exempt</td>
<td>0.97</td>
<td>0.99</td>
</tr>
<tr>
<td>Windsor Fund</td>
<td>0.95</td>
<td>0.94</td>
</tr>
<tr>
<td>PRIMECAP Fund</td>
<td>0.93</td>
<td>0.88</td>
</tr>
<tr>
<td>Health Care Fund</td>
<td>0.92</td>
<td>0.90</td>
</tr>
<tr>
<td>Average Vanguard Active Equity Fund</td>
<td>0.95</td>
<td>0.93</td>
</tr>
<tr>
<td>Average Industry Active Equity Fund</td>
<td>0.88</td>
<td>0.79</td>
</tr>
</tbody>
</table>
“Relative Predictability” Dominates Vanguard’s Asset Base

91% of Vanguard’s Assets Have High Relative Predictability
(Average pre-cost returns . . . superior post-cost returns)

Note: “Virtual Index Fund” – R-Squared of 0.96 or higher relative to best-fit index.

NOW LET’S LOOK AHEAD AT FUTURE RETURNS ON STOCKS AND BONDS . . .
Looking Ahead 1.—No Great Alternatives
Reasonable Expectations for Stocks—Below Long-Term Norms

Sources of Annual Returns on Stocks

<table>
<thead>
<tr>
<th></th>
<th>Historical</th>
<th>Next 10 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings Growth*</td>
<td>4.7%</td>
<td>6%</td>
</tr>
<tr>
<td>Dividend Yield</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Speculative Return*</td>
<td>2%</td>
<td>-1%</td>
</tr>
</tbody>
</table>

Historical

| Gross Return | 9% |
| Costs        | -2 |
| Net Return   | 7% |

Prospective

| Gross Return | 6%  | 6% |
| Costs        | -2  | -0.05 |
| Net Return   | 4%  | 5.95% |

*Assumed decline in P/E from 20x to 17x

WHAT ABOUT BONDS? . . .
Looking Ahead 2.—No Great Alternatives

Reasonable Expectations for Bond Returns—Below Long-Term Norms

Source of Annual Returns on Bonds—Initial Yield

*Assumes accepting slight additional credit risk and interest rate risk vs. the broad bond market

YET, **REAL** INTEREST RATES CLOSE TO LONG-TERM NORMS . . .
SO, EXPECTATIONS FOR LOW RETURN ON A BALANCED PORTFOLIO . . .
Looking Ahead 3.—No Great Alternatives
Balanced Portfolio Returns Also Below Norm of 7%

Reasonable Expectations: Nominal Gross Return
(50/50 Stock/Bond):
4.5%

Don’t Forget These Deductions
-1.5% Active Fund Costs
or
-0.05% Index Fund Costs
* * *
-2% Inflation
-0.5% Taxes
-1.5% Investor Behavior

YET MUTUAL FUNDS WILL CONTINUE TO DOMINATE INVESTOR SAVINGS. WHY? . . .
Mutual Funds Are the Only Practical Investment Option for Individual Investors

“The vast majority of American families are sentenced to a lifetime of investing in the existing mutual fund penal system. But if they’re smart, they’ll do their time in an index fund.”

John Bogle
Grant’s “Great Debate”
April 7, 2015

AS YOU CONSIDER YOUR FUND STRATEGY, REMEMBER THESE WORDS . . .
1. Tibble v. Edison
Unanimous ruling of the U.S. Supreme Court reaffirming fiduciary duty for retirement plans

From *The New York Times*, 2/24/2015:

Jonathan Hacker, a lawyer for Edison, said it can’t be the case that companies have to “constantly look and scour the market for … cheaper investment options,” for retirement-plan participants.

“Well, you certainly do, if that’s what a prudent trustee would do,” Justice Anthony Kennedy responded.
“... Fund managers’ real loyalty lies with the firm that runs the funds, rather than with the investors who are the owners of the fund. The relationship is incestuous, and investors lose. Many directors of the mutual fund—especially the board chair—are insiders of the investment advisory firm. Fund directors usually do not, and in many cases cannot, independently verify the information given by the advisor. Separating the fund’s governance from its sponsor is not enough to ensure protection of the investors.”
“Ultimately, a passive index fund managed by a non-for-profit investment management organization represents the combination most likely to satisfy investor aspirations. ... Out of the enormous breadth and complexity of the mutual-fund world, the preferred solution for investors stands alone in stark simplicity.”
4. Adam Smith
From *The Wealth of Nations*, 1776

“The interest of the **producer** ought to be attended to, only so far as it may be necessary for promoting that of the **consumer**. The maxim is so perfectly self-evident, that it would be absurd to attempt to prove it. … The interest of the **consumer** must be the ultimate end and object of all industry and commerce.”

Yes, the interests of fund shareholders (consumers) will, finally, triumph over the interests of fund managers (producers).

Thank you for your confidence. “**STAY THE COURSE**”