Index Funds
The 12-Step Recovery Program for Active Investors

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IFA’s Investment Philosophy

1) Financial Markets Are Efficient
   Prices in free markets fully incorporate available information, and prices change to reflect any unexpected new information so that the current price is the best estimate of a fair price.

2) Risk and Return Are Inseparable
   While there is no such thing as return without risk, not all risks are rewarded. Long-term historical risk and return data informs IFA’s investment selection process, and IFA’s Index Portfolios seek to capture the risk factors that have shown to most appropriately compensate investors for risks taken. These risk factors include market, size, value, and profitability for equity and term and default for fixed income.

3) Diversification Is Essential
   Diversification both within and among asset classes allows investors to effectively capture the returns offered by the financial markets, in accordance with their risk capacity.

4) Structure Explains Performance
   The expected return of a diversified portfolio is determined by its exposure to the compensated risk factors, as explained previously. The high costs and risks of active management are unnecessary and potentially harmful to an investor’s long-term outlook.

5) Advisor Advantage
   There are distinct and quantifiable benefits to enlisting the services of a passive advisor. These benefits include disciplined rebalancing, tax loss harvesting, asset location, behavioral coaching, and glide path.
THE VALUE OF A PASSIVE ADVISOR

As low-cost index fund investing continues to gain in popularity, numerous researchers have turned their attention to quantifying the value a passive advisor can bring to an index portfolio. One such study conducted by Vanguard, the leading provider of index funds quantified the “advisor alpha” at 3%. This advisor alpha is the sum of the value added by advisors who adhere to the principles of controlling costs, maintaining discipline and tax awareness, relative to other advisors or unadvised investors. The greatest contribution a passive advisor brings is behavioral coaching, according to the study — or as William Bernstein so succinctly puts it: “Wall Street is littered with the bones of those who knew just what to do, but could not bring themselves to do it.” The breakdown of the advisor alpha set forth in Vanguard’s study is shown below.

<table>
<thead>
<tr>
<th>Breakdown of Vanguard Advisor’s Alpha</th>
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<tr>
<td>Implementation with Cost-Effective Funds</td>
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<td>Disciplined Rebalancing</td>
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<td>Behavioral Coaching</td>
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<td>Asset Location</td>
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<td>Annual Withdrawal Strategy</td>
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<td>Determining an Appropriate Asset Allocation</td>
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<td>Total Return Investing vs. Reaching for Yield</td>
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IFA has compiled the findings of 20 financial industry studies (including our own internal studies) that have explored the success investors have had at capturing fund returns. Collectively, the summary of the research reveals that the average active investor and do-it-yourself indexer did not capture the full return of the funds they invested in. The advised indexer—or an investor who relies on the services of a passive advisor—did better. Specifically, active fund investors without passive advisors (blue bars) captured an average of 50% of the actual returns delivered by the funds over various time periods (Data for all studies is found in the Appendix). Do-it-yourself indexers without passive advisors (purple bars) did better than active investors, but still only captured an average of 79% of the index fund return. A knowledgeable passive advisor can provide several services, including the critical discipline needed to combat emotional, reflex reactions. When advice is combined with funds from DFA, a science-based passive fund company, investors avail themselves of the opportunity to keep more of what the market delivers. A 10-year study conducted by Morningstar concluded that those who invested in DFA funds captured up to 109% of the fund returns20, thanks to “very smart behavior” that is practiced by passive investment advisors who have committed to helping their clients understand the sources of stock market returns, the impact of emotions, and the value that science-based investing can bring to a portfolio. 1-20
OVERVIEW OF INDEX FUNDS:
The 12-Step Recovery Program for Active Investors

**STEP 1 - ACTIVE INVESTORS: Recognize an Active Investor**
Active investors try to pick winners among the many stocks, times, managers, and investment styles. These investors must not realize that markets are moved by news, which is unpredictable and random. Markets are also efficient, meaning that news is rapidly reflected in market prices. As a result, active investing is not expected to be a profitable strategy. A more reliable source of long-term returns is consistent exposure to economic risk factors backed by more than 91 years of historical data.

**STEP 2 - NOBEL LAUREATES: Defer to the Higher Knowledge of Academia**
The research of many academics and Nobel Prize winners has explained the efficiency of financial markets and the risk and reward connection. Their findings are unbiased, as these academics aren’t trying to earn a commission or sell magazines and newspapers. More than a hundred years of academic research point to index funds investing as a sound investment strategy. Sadly, the great majority of investors have never read these academic studies and continue to actively invest.

**STEP 3 - STOCK PICKERS: Accept That Stock Pickers Do Not Beat the Market**
Stock picking is similar to gambling in that bets are placed on certain companies in the market. An academic study found that 99.4% of active fund managers (who supposedly should be among the best stock-pickers) displayed no evidence of genuine stock-picking skill, and the 0.6% of managers who did outperform the index were “just lucky.” An additional study conducted by Standard and Poor’s found that there is no persistence of stock-picking ability beyond what we would expect from chance alone.

**STEP 4 - TIME PICKERS: Accept That Time Pickers Cannot Time the Market**
There is no evidence that market timing “gurus” can consistently time the market. A peer-reviewed study analyzed more than 15,000 predictions by 237 market-timing investment newsletters from June 1980 through December 1992. The authors found that almost 95% of the newsletters had gone out of business, with an average length of operations of about four years. They also found that over 75% of the newsletters actually eroded value relative to a simple mix of cash and the S&P 500 Index. The authors concluded, “There is no evidence that newsletters can time the market.”

**STEP 5 - MANAGER PICKERS: Realize That Winning Managers Were Just Lucky**
The so-called “star” money managers have a knack for attracting new mutual fund investors, charging a hefty fee for gambling with clients’ money. Even more disturbing, results of a study of 8,755 institutional managers show that, on average, the managers who beat their benchmarks for three years before being hired under performed their benchmarks in the following three years. The same study also looked at 660 hiring and firing decisions and concluded that the managers who were fired beat the new hires in the next 3-year period. Attempting to choose the next hot fund manager is futile.

**STEP 6 - STYLE DRIFTERS: Comprehend Active Management Style Drift**
About half of mutual fund managers drift from one recent style winner to another, playing carelessly with investors’ money. The investment objective stated in the prospectus of funds is altered by these changes. The Standard & Poor’s Indices Versus Active Funds Scorecard (SPIVA®) is a report that provides information on the consistency or “persistence” of funds staying true to their styles. Data from the Year-End 2018 report shows that only 40.35% of domestic mutual funds remained style consistent from 2003 - 2018.
STEP 8 - RISKESE: Understand How Risk, Return and Time are Interconnected
Do you speak Riskese? Learning the language of risk will afford you a basic understanding of risk, return, time, and diversification. Most investors chase the short-term returns of stocks, markets, managers, and styles, because they don’t understand that risk is the source of stock market returns. Returns of diversified stock portfolios are explained by their exposure to specific dimensions of risk: market, size, value, and profitability for stocks, and term and default for bonds. All of these factors are depicted in the renowned Fama/French Multi-Factor Model, which serves as a framework for designing and analyzing diversified investment portfolios.

STEP 9 - HISTORY: Historical Risks and Returns of Indexes
Long-term data is required to improve the estimates of the expected risk and return for different investments. We now have more than 91 years of monthly risk and return data on 21 important IFA indexes. Since you cannot predict the future based on a small sample of recent events, the study of long-term stock market data is a valuable source of meaningful information, leading investors to a better characterization of the risks and expected returns of various asset classes and whole index portfolios.

STEP 10 - RISK CAPACITY: Analyze Your Five Dimensions of Risk Capacity
What's your risk capacity? A simple survey can analyze your five dimensions of risk capacity: time horizon, attitude toward risk, net worth, income, and investment knowledge. Risk capacity can be regarded as a measurement of an investor’s ability to earn stock market returns. Calculating risk capacity is the first step in deciding which portfolio will be most appropriate for each investor. A risk capacity score determines the proper risk exposure for an investor’s portfolio.

STEP 11 - RISK EXPOSURE: Analyze Your Five Dimensions of Risk Exposure
Investors can expect to achieve optimal results when their risk capacity score is matched with one of IFA's 100 Index Portfolios of comparable risk exposure. At IFA, we call this “matching people with portfolios.” Taking on the appropriate amount of risk enables investors to maximize their expected outcome. Each Index Portfolio is constructed with a specific blend of asset class funds that capture a quantifiable level of risk exposure. A properly designed index portfolio will include more than 13,000 stocks and bonds from over 45 countries around the world.

STEP 12 - INVEST & RELAX: Rebalance, Tax Loss Harvest, Glide Path, and Asset Locate
Once you understand the lessons provided in this booklet, you will be able to invest and relax. That’s what clients of IFA allow themselves to do when they experience IFA’s commitment to fiduciary duty, ongoing sound advice, long-term risk and return data, rebalancing, asset allocation, asset location, the glide path, tax loss harvesting, and emotions management. These are just a sampling of the many advisory services that IFA provides its valued clients.
STEP 1: ACTIVE INVESTORS
Recognize an Active Investor

Active investing is a strategy that investors use when trying to beat a market or appropriate benchmark. Active investors rely on speculation about short-term future market movements and ignore vast amounts of historical data. They commonly engage in picking stocks, times, managers, or investment styles.

These self-defeating practices of active investors unnecessarily increase their risk, expenses, taxes, and anxiety. Most importantly, the sport of speculation deprives investors of the returns they could earn if they would simply buy and hold a passively managed blend of globally diversified index funds matched to their risk capacity.

The chart below tells the story. It reflects the findings of a 2019 Dalbar study, revealing that the average equity fund investor significantly underperformed the S&P 500® over a 20-year period. The study shows that during the 20 years from 1999 through 2018, the average equity fund investor earned returns of only 3.88% per year, while the S&P 500 returned 5.62%. This means that the average equity fund investor grew a $100,000 investment to $153,627, while the growth of $100,000 invested in the S&P 500 would have been $298,465. Even better, we see that a simulated passive investor who owned an all-equity, small-value-tilted, globally diversified index portfolio such as IFA’s Index Portfolio 100 would have grown a $100,000 investment to $475,278 over the same 20-year period.

The Dalbar Study: 20 Years of Average Equity Fund Investor vs. Indexes

20 Years (1/1/1999 - 12/31/2018)

<table>
<thead>
<tr>
<th></th>
<th>Average Annualized Return</th>
<th>Growth of $100,000</th>
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</thead>
<tbody>
<tr>
<td>Inflation</td>
<td>2.17%</td>
<td>$153,627</td>
</tr>
<tr>
<td>Average Equity Fund Investor</td>
<td>3.88%</td>
<td>$214,111</td>
</tr>
<tr>
<td>S&amp;P 500 Index</td>
<td>5.62%</td>
<td>$298,465</td>
</tr>
<tr>
<td>Global Equity IFA Index Portfolio 100</td>
<td>8.11%</td>
<td>$475,278</td>
</tr>
</tbody>
</table>

Note: IFA Index Portfolio 100 are net of 90bps of advisory fees.
Sources: Dalbar 2019 QAIB Study, © Morningstar, Inc., IFA

See the attached disclosures for more details on the construction and historical data of IFA Index Portfolios.

“Most investors would be better off in an index fund.”
STEP 2: NOBEL LAUREATES  
Defer to the Higher Knowledge of Academia

Active investors disregard some of history’s most important lessons. Most do not read the peer-reviewed academic studies and Nobel Prize-winning economic research available. They instead rely on media messages to guide their investing decisions, largely unaware of the fact that media outlets profit handsomely from the advertising dollars of online brokers, trading services and active trader publications that encourage us to trade. Nearly 300 years of statistical, scientific and economic research explain why investors who buy, hold and rebalance an investment in global capitalism reap rewards in proportion to the risks they take. Three centuries of study from notable scientists and researchers regarding risk, probability theory, statistics, the random nature of prices and asset-pricing theory have been painstakingly studied, analyzed and summarized by the legends of financial science, some of whom are depicted below. Collectively, these great minds have delivered to us a method of investing that is founded on the principles of market efficiency, the returns of capital markets, and the “Invisible Hand” which guides market forces, prices, allocation of resources, the cost of capital, and the returns of capitalism. Investing according to the findings of these legends enables you to be a better investor.
STEP 3: STOCK PICKERS
Accept That Stock Pickers Do Not Beat the Market

The financial press largely focuses on the daily movements of stocks and markets, showering rewards on those who are lucky enough to be in the right place at the right time. But it is virtually impossible for a stock picking fund manager or individual stock picking investor to consistently predict and invest in the stocks that will be future winners, based on the tenets of market efficiency. Stock pickers tend to be overly confident in their “skill” to generate alpha (defined as any return above the benchmark return), but studies have shown that their “winning performance” is usually due to luck, not skill. Professors Laurent Barras, Olivier Scaillet and Russell Wermers conducted a study of 2,076 mutual fund managers over a 32-year period. They found that from 1975 – 2006, 99.4% of these managers displayed no evidence of stock picking skill, and the 0.6% of managers who did outperform the index were “statistically indistinguishable” from zero. In other words, they were “just lucky.”

“"If there are 10,000 people looking at the stocks and trying to pick winners, well, one in 10,000 is going to score, by chance alone, a great coup, and that’s all that’s going on. It’s a game, it’s a chance operation, and people think they are doing something purposeful... but they’re really not.”


Sources: "False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas" by Laurent Barras, Olivier Scaillet, Russell Wermers; Mark Hulbert, "The Prescient are Few," NY Times, July 13, 2008
STEP 4: TIME PICKERS
Accept That Time Pickers Cannot Time the Market

Time pickers (market timers) mistakenly believe they can predict the future movement of the stock market, moving into the market before it goes up and getting out before it goes down. Such decisions usually do not fare well, because they are based on the fallacy that the direction of future price movements can be predicted. At any point in time, any investor can only know the current and past price of any given security. Nonetheless, market timing can be alluring, likely because investors don’t understand that the market continuously sets prices in response to news, which is unpredictable.

In a study titled, “Likely Gains from Market Timing,” Nobel Laureate William Sharpe concluded a market timer must be correct 74% of the time in order to outperform a passive portfolio at a comparable level of risk. In 1992, SEI Corporation updated Sharpe’s study to include the average 9.4% stock return from the period 1901 – 1990. This study determined that gurus must be right at least 69% of the time.

CXO Advisory Group tracks public forecasts of self-proclaimed market timing “gurus.” The chart below shows the percentage grades of 28 market timers who had made more than 100 forecasts from 2000 through 2012. The study shows that not one of the “gurus” was able to meet Sharpe’s requirement of 74% accuracy, or SEI’s minimum 69%, thereby failing to deliver accuracy sufficient to beat a simple index portfolio.

### Forecast Accuracy: 74% Required to Beat the Market

<table>
<thead>
<tr>
<th>Guru*</th>
<th>Forecasts</th>
<th>Accuracy Required to Outperform the Market</th>
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<tbody>
<tr>
<td>Ken Fisher</td>
<td>120</td>
<td>66.40%</td>
</tr>
<tr>
<td>Louis Navellier</td>
<td>152</td>
<td>60.00%</td>
</tr>
<tr>
<td>Jason Kelly</td>
<td>126</td>
<td>59.70%</td>
</tr>
<tr>
<td>Dan Sullivan</td>
<td>115</td>
<td>59.10%</td>
</tr>
<tr>
<td>Carl Swenlin</td>
<td>128</td>
<td>54.90%</td>
</tr>
<tr>
<td>Bob Doll</td>
<td>161</td>
<td>54.70%</td>
</tr>
<tr>
<td>Mark Arbeter</td>
<td>230</td>
<td>53.20%</td>
</tr>
<tr>
<td>Gary Kalbbaum</td>
<td>144</td>
<td>53.10%</td>
</tr>
<tr>
<td>Don Luskin</td>
<td>201</td>
<td>52.00%</td>
</tr>
<tr>
<td>Tobin Smith</td>
<td>281</td>
<td>50.20%</td>
</tr>
<tr>
<td>Doug Kass</td>
<td>186</td>
<td>49.20%</td>
</tr>
<tr>
<td>Clif Droke</td>
<td>100</td>
<td>48.60%</td>
</tr>
<tr>
<td>S&amp;P Outlook</td>
<td>145</td>
<td>48.30%</td>
</tr>
<tr>
<td>James Stewart</td>
<td>115</td>
<td>47.00%</td>
</tr>
<tr>
<td>Dennis Slothower</td>
<td>145</td>
<td>45.60%</td>
</tr>
<tr>
<td>Bill Cara</td>
<td>208</td>
<td>45.60%</td>
</tr>
<tr>
<td>Gary Savage</td>
<td>134</td>
<td>45.00%</td>
</tr>
<tr>
<td>Marc Faber</td>
<td>164</td>
<td>44.60%</td>
</tr>
<tr>
<td>Tim Wood</td>
<td>182</td>
<td>43.80%</td>
</tr>
<tr>
<td>Jim Jubak</td>
<td>144</td>
<td>43.40%</td>
</tr>
<tr>
<td>Martin Goldberg</td>
<td>109</td>
<td>43.10%</td>
</tr>
<tr>
<td>Price Headley</td>
<td>352</td>
<td>42.00%</td>
</tr>
<tr>
<td>John Mauldin</td>
<td>211</td>
<td>39.90%</td>
</tr>
<tr>
<td>Comstock Partners</td>
<td>224</td>
<td>37.90%</td>
</tr>
<tr>
<td>Bill Fleckenstein</td>
<td>148</td>
<td>37.30%</td>
</tr>
<tr>
<td>Richard Russell</td>
<td>168</td>
<td>36.50%</td>
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<tr>
<td>Steven Jon Kaplan</td>
<td>104</td>
<td>32.10%</td>
</tr>
<tr>
<td>Robert McHugh</td>
<td>132</td>
<td>28.60%</td>
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Active investors unnecessarily increase their risk, expenses, taxes, and anxiety. Numerous studies have shown actively managed investments generally carry more risk and lower returns than globally diversified, risk-calibrated index portfolios. Despite this fact, investors frequently fall prey to the allure of past winners, hiring the hottest new fund managers only to fire them later because their past performance doesn’t persist in subsequent periods.

A 10-year study conducted by Amit Goyal of Emory University and Sunil Wahal of Arizona State University found that manager hiring and firing decisions made by consultants, board members and trustees were a complete waste of time and money. The study, “The Selection and Termination of Investment Management Firms by Plan Sponsors,” reveals the negative impact of manager picking. The results of hiring 8,755 managers shown below, illustrate that during the 10-year period from 1994 through 2003, managers that were hired had outperformed their benchmarks by 2.91% over the three years before being hired. However, over the following three years the managers underperformed their benchmarks by 0.47% per year. Plan sponsors often proceeded to fire their underperforming managers in favor of other recent top performers, only to repeat the cycle again. The study concluded, “In light of such large transaction costs and positive opportunity costs, our results suggest that the termination and selection of investment managers is an exercise that is costly to plan beneficiaries.”

“Most people think they can find managers who can outperform, but most people are wrong. I will say that 85% to 90% of managers fail to match their benchmarks, if you properly specify their benchmarks.”

— Jack Meyer, former Harvard Management CEO, Harvard University Endowment

Businessweek.com, Interview Excerpt, Dec. 27, 2004
Style drift occurs when an active manager drifts from a specific style, asset class or index that is described as the stated investment purpose of a fund. Style drift is a serious problem for investors who believe they are invested in a portfolio that matches their risk capacity. Since managers of active funds seek to outperform the benchmark, they often wander outside the boundaries of the benchmark, altering the fund’s exposure to risk and its volatility of returns.

One particularly egregious example of style drift is the Fidelity Magellan Fund as shown in the top figure below. In the 37-year period from 1982 to 2018, Magellan morphed and evolved several times. For example, in mid-1995, the fund looked like a large value fund, despite the fact that its benchmark was the large blend S&P 500.

In contrast to the style drifting tendencies of actively managed funds like Fidelity’s Magellan, passively managed funds (specifically those provided by DFA) adhere to strict rules of construction and are held constant regardless of market conditions. The figure on the bottom shows the relative style purity of the DFA U.S. Large Company Portfolio, which also has the S&P 500 as its benchmark.
STEP 7: SILENT PARTNERS
Recognize The Partners in Your Returns

There are many silent partners that quietly but determinably eat away at an active investor’s returns pie. A partial list of silent partners that erode investors’ returns includes state and federal taxes, sales commissions, mutual fund expense ratios, fund turnover, and transaction costs.

A John Bogle study concluded that over a 25-year period, $10,000 invested in the average managed equity fund grew to a pre-tax value of $108,300, and an after-tax value of $71,700. In contrast, $10,000 invested in the S&P 500 grew to a pre-tax value of $181,800 and an after-tax value of $159,000.\(^5\)

Part of the disparity in ending wealth is due to active managers charging higher fees than passive managers as compensation for their perceived “skill.” In both U.S. and non-U.S. strategies, the average actively managed fund is more expensive than the average passive fund.

The bar chart reveals the disparity in average expense ratios between all mutual funds and IFA Index Portfolio 60. As of December 2018, a similar portfolio of all mutual funds would have been more than three times as costly as IFA Index Portfolio 60.

Turnover is also a silent devourer of wealth. Active mutual funds are known to have higher turnover rates than passive funds, creating tax liabilities that erode returns. Even for non-taxable investors, high turnover can be expensive. A recent article in the Financial Analysts Journal stated that the average annual cost of trading incurred by equity mutual funds was 1.44%, which even exceeds the average expense ratio of 1.19%.\(^6\)

Although most index funds are tax efficient by nature, some indexes can be further tax-managed to save an investor more in taxes. Tax-managed index funds are efficient at offsetting realized gains with realized losses, deferring the realization of net capital gains and minimizing the receipt of dividend income. The benefit is that unrealized capital gains remain a growing part of the net asset value of a fund and assist in overall wealth accumulation.

“Some of active management’s true believers will shift assets from expensive products to more reasonably priced products. Impetus for this move will be the growing realization that high fees sap the performance potential of even skillful managers.”

— Richard M. Ennis, editor, Financial Analysts Journal, as quoted in John C. Bogle’s The Little Book on Common Sense Investing

See the attached disclosures for more details on the construction and historical data of IFA Index Portfolios.
Index funds investors are optimally rewarded for understanding and shouldering stock market risk. In fact, the very reason investors should expect to earn a return is because of the risks they take. The key is to take the risks that have shown to compensate investors and to diversify away uncompensated risks. Stock concentration, fund manager speculation, performance chasing, market timing, and sector concentration are uncompensated risks that carry no additional expected return beyond that of a market portfolio.

The beneficial relationship between risk and return for passive investors is set forth in the scatter plot shown below. The chart plots the risk and return characteristics for a spectrum of the 100 IFA Index Portfolios (numbered) and their composite indexes (lettered) for a 50-year time period. Also shown are the indexes that IFA underweights (letters in squares). These asset classes are underweighted because they have shown to deliver higher risk without an adequate corresponding return. For example, the U.S. Small Growth Index carried significant risk but had lower returns than the Emerging Markets Value Index. The IFA Index Portfolios are comprised of funds that enable reasonable returns for the risks involved. This is why investors should take on as much of the right risks as their risk capacity allows, rebalance and just hold on for as long as they can.

“Some investments do have higher expected returns than others. Which ones? Well, by and large they’re the ones that will do the worst in bad times.”

STEP 9: HISTORY
Historical Risks and Returns of Indexes

Historical stock market data provides investors with a powerful set of tools for constructing portfolios that can maximize expected returns at given levels of risk. By analyzing the historical returns for various asset classes, including stocks, bonds, private equity, real estate, and even precious metals, an investor can see the difference between compensated and uncompensated risk over time.

Most investors tend to make investment decisions based on the most recent 1, 3, and 5-year returns and assume that recent past performance will persist. But long-term data can be more valuable than short-term data.

The chart below shows the annualized returns and risk for value, blend and growth indexes around the world over various periods of time: 91 years of history for U.S. large and small capitalization stocks, 44 years of stock history for non-U.S. developed markets, and 30 years of stock history for emerging markets. The chart illustrates the impact of size and value investing across global asset classes. Across each asset class shown, small and value indexes carried increased risk and return characteristics. IFA’s Index Portfolios tilt towards small and value indexes, allowing clients to increase their expected return without increasing their overall stock to bond allocation.

“Those who are ignorant of investment history are bound to repeat it. Historical investment returns and risks of various asset classes should be studied. Investment results for an asset over a long enough period (greater than 20 years) are a good guide to the future returns and risks of that asset. Further, it should be possible to approximate the future long-term return and risk of a portfolio consisting of such assets.”

— William Bernstein, The Intelligent Asset Allocator
In order to optimize investment outcome from a risk and return perspective, it is IFA’s view that investors should take on as much risk as their risk capacity allows. Risk capacity can be regarded as a measurement of an investor’s ability to earn stock market returns. The problem is that most investors invest without a clear understanding of risk or with an improper measure of how much risk is right for them.

Through IFA’s Risk Capacity Survey at ifa.com, investors learn the amount of risk that is appropriate for them. The results of the survey provide a personalized Risk Capacity Score, which is based on the following five dimensions for each investor: time horizon and liquidity needs, attitude toward risk, net worth, income and savings rate, and investment knowledge. This score is the primary tool IFA uses to determine the proper asset allocation for each client. A higher score suggests a capacity of tolerating high risk investing to obtain the potential for higher returns. A lower score indicates a risk aversion and the need to invest more conservatively. Each score corresponds to one of IFA’s 100 Index Portfolios.
STEP 11: RISK EXPOSURE
Analyze Your Six Dimensions of Risk Exposure

To achieve optimal results, investors need to match their Risk Capacity Score with a specific risk exposure. At IFA, we call this process, “matching people with portfolios.” Many investors choose a common 60/40 (stock/bond) asset allocation, regardless of their risk capacity. A more prudent strategy is to invest in a portfolio that directly corresponds to a particular risk capacity.

IFA’s 100 Index Portfolios cover the spectrum of risk and expected return, with portfolios ranging from very high risk to very low risk. Each IFA Index Portfolio is constructed with a specific blend of asset class index funds that capture a quantifiable level of risk exposure.

This is accomplished through exposure to six dimensions of risk—dimensions which have been responsible for approximately 96% of returns. Based on the extensive research of Eugene Fama and Kenneth French, these dimensions are: exposure or sensitivity to the market, as a whole, the degree to which the portfolio is tilted toward size (market capitalization), value (book-to-market ratio), and direct profitability (gross profits scaled by book value) of the equity holdings, as well as exposure to term and default risk for the fixed income holdings. Each of IFA’s Index Portfolios offers a sophisticated risk-appropriate approach, capturing risk exposure in order to maximize expected returns at a given level of risk exposure.

SIX DIMENSIONS OF RISK EXPOSURE

- Market
- Size
- Value
- Profitability
- Term
- Default
STEP 12: INVEST AND RELAX
Rebalance, Tax Loss Harvest, Glide Path, & Asset Locate

IFA’s clients enjoy the benefits of investing in 100 risk-appropriate, style-pure index portfolios that carry more than 91 years of risk and return data. These portfolios are formulated using investment science based on economic theories and isolated risk factors that have been shown to carry higher returns over time. In summary, clients of Index Fund Advisors are able to invest confidently and comfortably as they step off of the expensive, emotional roller coaster of active investing.

REBALANCE
IFA’s clients benefit from strategies that facilitate investment success. In particular, IFA’s ongoing professional account management includes quarterly analysis for rebalancing opportunities to ensure that portfolio risk exposure remains in line with an individual’s risk capacity.

TAX-LOSS HARVEST
An additional value added feature available to IFA’s clients is opportunistic tax-loss harvesting. By selling funds that have experienced significant losses, investors can “bank” capital losses to offset future gains. Once the IRS wash sale rules have been met, the funds are repurchased. Careful consideration is given to the appropriateness of this strategy on a case-by-case basis.

GLIDE PATH
IFA’s clients may choose to take advantage of a sophisticated Glide Path feature, creating a “set it and forget it” approach for a successful and less stressful investment strategy. When clients choose the Glide Path option, their portfolios will automatically experience a reduction of one risk level each year, thus permitting a smooth and effortless “glide” into retirement.

ASSET LOCATION
Just as important as asset allocation is asset location. For a client who has a mixture of accounts, such as taxable, traditional IRAs and Roth IRAs, taxes can be minimized by constructing an overall portfolio that includes multiple investment vehicles located in different types of accounts. IFA evaluates each account to determine if it should be a stand-alone or part of an asset location strategy.

RETIREMENT ANALYZER
A retirement analysis utilizing Monte Carlo simulation helps clients understand key factors in retirement investing. IFA adds these significant enhancements to its suite of services in order to provide a high standard of care to clients who entrust the management of their valued assets to the firm.
IFA INDEX PORTFOLIOS

IFA offers 100 globally diversified Index Portfolios allocated among three broad asset classes: fixed income (bonds), U.S. stocks, and non-U.S. stocks. The stocks are further divided by size and value.

General asset allocations for 20 of these portfolios are presented below. The portfolios are labeled 5 through 100 in five-point increments. IFA Index Portfolio 5, which has the lowest expected risk and return, is tilted toward fixed income with a minor investment in stocks. Conversely, IFA Index Portfolio 100, which has the highest expected risk and return, has no fixed income and the stock indexes are tilted toward small and value companies in the U.S. and international markets.

The tables on the next two pages show the risk and return for the same 20 Index Portfolios (starting with Portfolio 100), including the highest and lowest rolling period returns for each Portfolio.

Following the Risk/Return Data are fact sheets for four IFA Index Portfolios. The data for each portfolio consists of a list of the indexes contained in the portfolios, simulated returns and volatility data, charts that represent annual returns and growth of $1, corresponding annualized returns, and a 50-year monthly rolling period analysis, which provides a simulation of passive investor experiences. After the fact sheets are the disclosures for backtested performance data and the sources and description of data used to simulate risk and return characteristics, including the mutual funds needed to implement these portfolios.

“The best way in my view is to just buy a low-cost index fund and keep buying it regularly over time, because you’ll be buying into a wonderful industry, which in effect is all of American industry… People ought to sit back and relax and keep accumulating over time.”

-Warren Buffett, MarketWatch, May 7, 2007
## IFA INDEX PORTFOLIO DATA

### Risk & Reward Table

<table>
<thead>
<tr>
<th>1 Year ending</th>
<th>1 Year ending</th>
<th>1 Year ending</th>
<th>1 Year ending</th>
<th>3 Years</th>
<th>5 Years</th>
<th>7 Years</th>
<th>10 Years</th>
<th>20 Years</th>
<th>35 Years</th>
<th>50 Years</th>
<th>91 Years</th>
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<tbody>
<tr>
<td><strong>Growth %</strong></td>
<td>10.961</td>
<td>6.176</td>
<td>1.151</td>
<td>0.96</td>
<td>1.03</td>
<td>1.14</td>
<td>1.16</td>
<td>1.18</td>
<td>1.15</td>
<td>1.03</td>
<td>0.87</td>
</tr>
<tr>
<td><strong>Return %</strong></td>
<td>-1.37</td>
<td>1.725</td>
<td>-0.115</td>
<td>9.96</td>
<td>0.93</td>
<td>1.08</td>
<td>1.18</td>
<td>1.16</td>
<td>1.15</td>
<td>1.03</td>
<td>0.87</td>
</tr>
<tr>
<td><strong>Growth %</strong></td>
<td>10.961</td>
<td>6.176</td>
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<td>0.96</td>
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<td>1.14</td>
<td>1.16</td>
<td>1.18</td>
<td>1.15</td>
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<td>0.87</td>
</tr>
<tr>
<td><strong>Return %</strong></td>
<td>-1.37</td>
<td>1.725</td>
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<td>9.96</td>
<td>0.93</td>
<td>1.08</td>
<td>1.18</td>
<td>1.16</td>
<td>1.15</td>
<td>1.03</td>
<td>0.87</td>
</tr>
</tbody>
</table>

**Notes:**
- **Growth $** represents the percentage change in the value of the index portfolio.
- **Return %** indicates the annual return of the portfolio.
- **Risk %** measures the volatility of the portfolio.
- **Risk & Reward Table** shows the performance of IFA Index Portfolios and the S&P 500 Index over 91 years.

See the attached disclosures for more details on the construction and historical data of IFA Index Portfolios.
### IFA INDEX PORTFOLIO DATA

The Annualized, Highest and Lowest Returns for 20 IFA Index Portfolios

<table>
<thead>
<tr>
<th>Year Range</th>
<th>Highest 20</th>
<th>Highest 10</th>
<th>Highest 5</th>
<th>Highest 3</th>
<th>Highest 1</th>
<th>Lowest 20</th>
<th>Lowest 10</th>
<th>Lowest 5</th>
<th>Lowest 3</th>
<th>Lowest 1</th>
<th>Average Annualized Return</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Years</td>
<td>-48.41%</td>
<td>29.72%</td>
<td>19.94%</td>
<td>19.26%</td>
<td>19.07%</td>
<td>-38.63%</td>
<td>23.00%</td>
<td>16.52%</td>
<td>15.61%</td>
<td>14.79%</td>
<td>14.79%</td>
<td>8.05%</td>
</tr>
<tr>
<td>10 Years</td>
<td>-47.53%</td>
<td>28.83%</td>
<td>19.94%</td>
<td>19.26%</td>
<td>19.07%</td>
<td>-38.63%</td>
<td>23.00%</td>
<td>16.52%</td>
<td>15.61%</td>
<td>14.79%</td>
<td>14.79%</td>
<td>8.05%</td>
</tr>
<tr>
<td>20 Years</td>
<td>-47.63%</td>
<td>28.83%</td>
<td>19.94%</td>
<td>19.26%</td>
<td>19.07%</td>
<td>-38.63%</td>
<td>23.00%</td>
<td>16.52%</td>
<td>15.61%</td>
<td>14.79%</td>
<td>14.79%</td>
<td>8.05%</td>
</tr>
<tr>
<td>30 Years</td>
<td>-47.74%</td>
<td>28.83%</td>
<td>19.94%</td>
<td>19.26%</td>
<td>19.07%</td>
<td>-38.63%</td>
<td>23.00%</td>
<td>16.52%</td>
<td>15.61%</td>
<td>14.79%</td>
<td>14.79%</td>
<td>8.05%</td>
</tr>
<tr>
<td>40 Years</td>
<td>-47.84%</td>
<td>28.83%</td>
<td>19.94%</td>
<td>19.26%</td>
<td>19.07%</td>
<td>-38.63%</td>
<td>23.00%</td>
<td>16.52%</td>
<td>15.61%</td>
<td>14.79%</td>
<td>14.79%</td>
<td>8.05%</td>
</tr>
<tr>
<td>50 Years</td>
<td>-47.95%</td>
<td>28.83%</td>
<td>19.94%</td>
<td>19.26%</td>
<td>19.07%</td>
<td>-38.63%</td>
<td>23.00%</td>
<td>16.52%</td>
<td>15.61%</td>
<td>14.79%</td>
<td>14.79%</td>
<td>8.05%</td>
</tr>
</tbody>
</table>

**Sources:** Updates and Disclosures © Morningstar, Inc. | fii.com

**Notes:** See the attached disclosures for more details on the construction and historical data of IFA Index Portfolios.
IFA Index Portfolio 100
Most Aggressive

Suitable for investors who have at least 15 years before needing approximately 20% of their investments and are willing to accept a very high degree of volatility in exchange for maximum portfolio growth potential.

Simulated Returns and Volatility Data

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Growth of $1 ($)</td>
<td>0.86</td>
<td>1.18</td>
<td>1.16</td>
<td>0.96</td>
<td>1.03</td>
<td>1.18</td>
<td>1.16</td>
<td>2.79</td>
<td>4.75</td>
<td>39.14</td>
<td>196.37</td>
<td>12,252</td>
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<tr>
<td>Annualized Return (%)</td>
<td>-14.22</td>
<td>18.15</td>
<td>16.22</td>
<td>-4.49</td>
<td>3.32</td>
<td>5.61</td>
<td>3.06</td>
<td>10.80</td>
<td>8.10</td>
<td>11.05</td>
<td>11.14</td>
<td>10.90</td>
</tr>
<tr>
<td>Standard Deviation (%)</td>
<td>14.68</td>
<td>4.20</td>
<td>13.08</td>
<td>12.47</td>
<td>10.28</td>
<td>12.04</td>
<td>11.66</td>
<td>16.75</td>
<td>16.73</td>
<td>15.65</td>
<td>16.00</td>
<td>22.03</td>
</tr>
</tbody>
</table>

Annual Returns: 50 Years (1/1/1969 - 12/31/2018)

Growth of Dollar: 50 Years (1/1/1969 - 12/31/2018) - Log Scale


See the attached disclosures for more details on the construction and historical data of IFA Index Portfolios.
IFA Index Portfolio 100
Simulated Passive Investor Experiences (SPIEs)
Based on 50 Years of Monthly Data: 600 Months (January 1, 1969 to December 31, 2018)

Examples of 15-Year Monthly Rolling Periods¹

<table>
<thead>
<tr>
<th>Rolling Period Return Data: 50 Years (1969 to 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Period</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>0.08</td>
</tr>
<tr>
<td>0.25</td>
</tr>
<tr>
<td>0.5</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
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<tr>
<td>5</td>
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<tr>
<td>6</td>
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<td>7</td>
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<tr>
<td>8</td>
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<tr>
<td>9</td>
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<tr>
<td>11</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>15</td>
</tr>
</tbody>
</table>

15-Year¹ Monthly Rolling Periods: 50 Years (1969 to 2018) Total of 421 Rolling Periods

1. 15-years represents the suggested average holding period for investors who score 100 on the Risk Capacity Survey at ifa.com.
2. The Median Annualized Returns, Return Range, and Median Growth of $1 shown for 1, 3, and 6 month periods are not annualized.
Sources, Updates, and Disclosures: ifabt.com. Returns are net of IFA & DIA fees. Past performance does not guarantee future results.

See the attached disclosures for more details on the construction and historical data of IFA Index Portfolios.

Index Fund Advisors, Inc.
**IFA Index Portfolio 75**

Moderately Aggressive

Suitable for investors who have at least 13 years before needing approximately 20% of their investments and are willing to accept a higher degree of volatility in order to achieve higher portfolio growth potential.

### Simulated Returns and Volatility Data

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Growth of $1 ($)</strong></td>
<td>0.90</td>
<td>1.14</td>
<td>1.12</td>
<td>0.97</td>
<td>1.03</td>
<td>1.14</td>
<td>1.13</td>
<td>2.26</td>
<td>3.90</td>
<td>25.20</td>
<td>116.84</td>
<td>4,307</td>
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</tbody>
</table>

### Annual Returns: 50 Years (1/1/1969 - 12/31/2018)

![Annual Returns Chart](chart.png)

### Growth of Dollar: 50 Years (1/1/1969 - 12/31/2018) - Log Scale

![Growth of Dollar Chart](chart.png)


See the attached disclosures for more details on the construction and historical data of IFA Index Portfolios.
Examples of 13-Year Monthly Rolling Periods

Rolling Period Return Data: 50 Years (1969 to 2018)

<table>
<thead>
<tr>
<th>Per Period</th>
<th>Number of Months</th>
<th># of Rolling Periods</th>
<th>Median Annu'zd Return (50th %ile)</th>
<th>Return Range (High minus Low)</th>
<th>Median Growth of $1</th>
<th>Lowest Rolling Period Date</th>
<th>Lowest Rolling Period Return</th>
<th>Growth of $1 in Lowest Period</th>
<th>Highest Rolling Period Date</th>
<th>Highest Rolling Period Return</th>
<th>Growth of $1 in Highest Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.08</td>
<td>1</td>
<td>600</td>
<td>1.09%^2 33.67%^2</td>
<td>$1.01^2 1/08-10/08 -16.83%</td>
<td>$2.08^1 1/75-1/75</td>
<td>17.03%</td>
<td>$1.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25</td>
<td>3</td>
<td>598</td>
<td>3.25%^2 54.99%^2</td>
<td>$1.03^2 9/08-11/08 -26.54%</td>
<td>$0.73^1 3/09-5/09</td>
<td>28.45%</td>
<td>$1.28</td>
<td></td>
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</tr>
<tr>
<td>0.5</td>
<td>6</td>
<td>595</td>
<td>5.70%^2 79.93%^2</td>
<td>$1.06^2 9/08-2/09 -35.86%</td>
<td>$0.64^1 3/09-8/09</td>
<td>44.08%</td>
<td>$1.44</td>
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<tr>
<td>1</td>
<td>12</td>
<td>589</td>
<td>13.17% 92.75%</td>
<td>$1.13^1 3/08-2/09 -37.31%</td>
<td>$0.63^1 3/09-2/10</td>
<td>55.44%</td>
<td>$1.55</td>
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<tr>
<td>2</td>
<td>24</td>
<td>577</td>
<td>12.31% 59.99%</td>
<td>$1.26^1 3/07-2/09 -22.50%</td>
<td>$0.60^1 3/09-2/11</td>
<td>37.48%</td>
<td>$1.89</td>
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<tr>
<td>3</td>
<td>36</td>
<td>565</td>
<td>10.98% 42.51%</td>
<td>$1.37^1 3/06-2/09 -12.11%</td>
<td>$0.68^1 8/84-7/87</td>
<td>30.40%</td>
<td>$2.22</td>
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<tr>
<td>4</td>
<td>48</td>
<td>553</td>
<td>10.66% 34.43%</td>
<td>$1.50 3/05-2/09 -6.23%</td>
<td>$0.77^1 7/82-6/86</td>
<td>28.20%</td>
<td>$2.70</td>
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<tr>
<td>5</td>
<td>60</td>
<td>541</td>
<td>11.09% 30.04%</td>
<td>$1.69^1 3/04-2/09 -2.69%</td>
<td>$0.87^1 8/82-7/87</td>
<td>27.35%</td>
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<td>6</td>
<td>72</td>
<td>529</td>
<td>10.71% 27.50%</td>
<td>$1.84 1/69-12/74 -3.54%</td>
<td>$0.81^1 1/75-12/80</td>
<td>23.96%</td>
<td>$3.63</td>
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<td>7</td>
<td>84</td>
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<td>$2.06 1/69-12/75 1.59%</td>
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<td>22.70%</td>
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<tr>
<td>8</td>
<td>96</td>
<td>505</td>
<td>11.27% 18.67%</td>
<td>$2.35 3/01-2/09 2.18%</td>
<td>$1.19^1 1/75-12/82</td>
<td>20.85%</td>
<td>$4.55</td>
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<td>9</td>
<td>108</td>
<td>493</td>
<td>11.13% 19.11%</td>
<td>$2.59 3/00-2/09 2.35%</td>
<td>$1.23^1 1/75-12/83</td>
<td>21.46%</td>
<td>$5.75</td>
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<tr>
<td>10</td>
<td>120</td>
<td>481</td>
<td>10.77% 16.53%</td>
<td>$2.78 3/99-2/09 4.06%</td>
<td>$1.49^1 9/77-8/87</td>
<td>20.59%</td>
<td>$6.50</td>
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<tr>
<td>11</td>
<td>132</td>
<td>469</td>
<td>11.07% 17.77%</td>
<td>$3.18 3/98-2/09 3.14%</td>
<td>$1.41^1 1/75-12/85</td>
<td>20.91%</td>
<td>$8.08</td>
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<tr>
<td>12</td>
<td>144</td>
<td>457</td>
<td>10.99% 16.94%</td>
<td>$3.53 3/97-2/09 4.08%</td>
<td>$1.62^1 1/75-12/86</td>
<td>21.02%</td>
<td>$9.87</td>
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<tr>
<td>13</td>
<td>156</td>
<td>445</td>
<td>11.21% 16.57%</td>
<td>$3.98 3/96-2/09 4.81%</td>
<td>$1.84^1 10/74-9/87</td>
<td>21.38%</td>
<td>$12.41</td>
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</tbody>
</table>


1. 13-years represents the suggested average holding period for investors who score 75 on the Risk Capacity Survey at ifa.com.
2. The Median Annualized Returns, Return Range, and Median Growth of $1 shown for 1, 3, and 6 month periods are not annualized.

Sources, Updates, and Disclosures: ifabt.com. Returns are net of IFA & DFA fees. Past performance does not guarantee future results.
**IFA Index Portfolio 50**

**Moderate**

Suitable for investors who have 8 years before needing approximately 20% of their investments and are willing to accept a moderate degree of volatility in order to achieve moderate portfolio growth.

### Simulated Returns and Volatility Data

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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth of $1 ($)</td>
<td>0.93</td>
<td>1.09</td>
<td>1.08</td>
<td>0.98</td>
<td>1.02</td>
<td>1.10</td>
<td>1.10</td>
<td>1.80</td>
<td>3.01</td>
<td>15.03</td>
<td>61.48</td>
<td>1,063</td>
</tr>
<tr>
<td>Annualized Return (%)</td>
<td>-6.74</td>
<td>9.17</td>
<td>8.23</td>
<td>-2.31</td>
<td>1.80</td>
<td>3.29</td>
<td>1.85</td>
<td>6.03</td>
<td>5.67</td>
<td>8.05</td>
<td>8.59</td>
<td>7.96</td>
</tr>
<tr>
<td>Standard Deviation (%) (Annualized Volatility)</td>
<td>7.15</td>
<td>2.00</td>
<td>6.27</td>
<td>5.94</td>
<td>5.25</td>
<td>5.84</td>
<td>5.69</td>
<td>8.30</td>
<td>8.08</td>
<td>7.89</td>
<td>8.30</td>
<td>11.11</td>
</tr>
</tbody>
</table>

### Annual Returns: 50 Years (1/1/1969 - 12/31/2018)

![Bar chart showing annual returns from 1969 to 2018](chart.png)

### Growth of Dollar: 50 Years (1/1/1969 - 12/31/2018) - Log Scale

![Log scale graph showing growth of dollar](chart2.png)


See the attached disclosures for more details on the construction and historical data of IFA Index Portfolios.
### IFA Index Portfolio 50
Simulated Passive Investor Experiences (SPIEs)
Based on 50 Years of Monthly Data: 600 Months (January 1, 1969 to December 31, 2018)

#### Examples of 8-Year Monthly Rolling Periods

<table>
<thead>
<tr>
<th>Periods</th>
<th>8-Years</th>
<th>50th %ile</th>
<th>90th %ile</th>
<th>1st Decade</th>
<th>2nd Decade</th>
<th>3rd Decade</th>
<th>4th Decade</th>
<th>5th Decade</th>
<th>6th Decade</th>
<th>7th Decade</th>
<th>8th Decade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 69</td>
<td>8-Years</td>
<td>500</td>
<td>23.01%</td>
<td>10/87-10/87</td>
<td>11.39%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
</tr>
<tr>
<td>Feb 69</td>
<td>8-Years</td>
<td>598</td>
<td>23.01%</td>
<td>10/87-10/87</td>
<td>11.39%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
</tr>
<tr>
<td>Mar 69</td>
<td>8-Years</td>
<td>595</td>
<td>23.01%</td>
<td>10/87-10/87</td>
<td>11.39%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
</tr>
<tr>
<td>Apr 69</td>
<td>8-Years</td>
<td>589</td>
<td>23.01%</td>
<td>10/87-10/87</td>
<td>11.39%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
</tr>
</tbody>
</table>

#### Rolling Period Return Data: 50 Years (1969 to 2018)

<table>
<thead>
<tr>
<th>Period Number of Months</th>
<th># of Rolling Periods</th>
<th>Median Annualized Return (50th %ile)</th>
<th>Return Range (High minus Low)</th>
<th>Median Growth of $1</th>
<th>Lowest Rolling Period Date</th>
<th>Lowest Rolling Period Return</th>
<th>Growth of $1 in Lowest Period</th>
<th>Highest Rolling Period Return</th>
<th>Highest Rolling Period Date</th>
<th>Growth of $1 in Highest Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Yrs 10/07-10/18</td>
<td>505</td>
<td>9.32%</td>
<td>22.38%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
<tr>
<td>9 Yrs 10/07-10/18</td>
<td>493</td>
<td>9.38%</td>
<td>23.13%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
<tr>
<td>10 Yrs 10/07-10/18</td>
<td>481</td>
<td>9.21%</td>
<td>23.13%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
<tr>
<td>11 Yrs 10/07-10/18</td>
<td>469</td>
<td>9.40%</td>
<td>23.13%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
<tr>
<td>12 Yrs 10/07-10/18</td>
<td>457</td>
<td>9.33%</td>
<td>23.13%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
<tr>
<td>13 Yrs 10/07-10/18</td>
<td>445</td>
<td>9.33%</td>
<td>23.13%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
<tr>
<td>14 Yrs 10/07-10/18</td>
<td>433</td>
<td>9.58%</td>
<td>23.13%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
<tr>
<td>15 Yrs 10/07-10/18</td>
<td>421</td>
<td>9.57%</td>
<td>23.13%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
<tr>
<td>20 Yrs 10/07-10/18</td>
<td>361</td>
<td>10.47%</td>
<td>23.13%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
<tr>
<td>30 Yrs 10/07-10/18</td>
<td>241</td>
<td>10.21%</td>
<td>23.13%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
<tr>
<td>40 Yrs 10/07-10/18</td>
<td>121</td>
<td>9.83%</td>
<td>23.13%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
<tr>
<td>50 Yrs 10/07-10/18</td>
<td>1</td>
<td>8.59%</td>
<td>0.00%</td>
<td>1/69-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
<td>11.63%</td>
<td>1/75-1/75</td>
</tr>
</tbody>
</table>

#### 8-Year Monthly Rolling Periods: 50 Years (1969 to 2018) Total of 505 Rolling Periods

- For each 8-year period, the table provides the monthly rolling return data, including the annualized returns, return range, and median growth of $1.
- The table also includes the dates for the rolling periods and the lowest and highest rolling period returns.

---

1. 8-years represents the suggested average holding period for investors who score 50 on the Risk Capacity Survey at ifa.com.
2. The Median Annualized Returns, Return Range, and Median Growth of $1 shown for 1, 3, and 6 month periods are not annualized.

Sources, Updates, and Disclosures: ifabt.com. Returns are net of IFA & DFA fees. Past performance does not guarantee future results.
**IFA Index Portfolio 25**

**Conservative**

Suitable for investors who have 5 years before needing approximately 20% of their investments and are willing to accept a conservative degree of risk for incremental appreciation with emphasis on capital preservation.

**Simulated Returns and Volatility Data**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth of $1 ($)</td>
<td>0.97</td>
<td>1.05</td>
<td>1.04</td>
<td>0.99</td>
<td>1.01</td>
<td>1.06</td>
<td>1.06</td>
<td>1.40</td>
<td>2.20</td>
<td>8.33</td>
<td>28.71</td>
<td>184.95</td>
</tr>
<tr>
<td>Annualized Return (%)</td>
<td>-2.99</td>
<td>4.68</td>
<td>4.23</td>
<td>-1.22</td>
<td>1.04</td>
<td>1.91</td>
<td>1.10</td>
<td>3.43</td>
<td>4.03</td>
<td>6.24</td>
<td>6.95</td>
<td>5.90</td>
</tr>
<tr>
<td>Standard Deviation (%)</td>
<td>3.47</td>
<td>0.89</td>
<td>2.98</td>
<td>2.83</td>
<td>2.75</td>
<td>2.80</td>
<td>2.77</td>
<td>4.19</td>
<td>4.03</td>
<td>4.23</td>
<td>4.82</td>
<td>6.00</td>
</tr>
</tbody>
</table>

**Annual Returns: 50 Years (1/1/1969 - 12/31/2018)**

**Growth of Dollar: 50 Years (1/1/1969 - 12/31/2018) - Log Scale**


See the attached disclosures for more details on the construction and historical data of IFA Index Portfolios.
# IFA Index Portfolio 25

Simulated Passive Investor Experiences (SPIEs)

Based on 50 Years of Monthly Data: 600 Months (January 1, 1969 to December 31, 2018)

Examples of 5-Year Monthly Rolling Periods

<table>
<thead>
<tr>
<th>Periods</th>
<th>Jan 69</th>
<th>Feb 69</th>
<th>Mar 69</th>
<th>Apr 69</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5 Yrs</td>
<td>5 Yrs</td>
<td>5 Yrs</td>
<td>5 Yrs</td>
</tr>
<tr>
<td>2</td>
<td><em>Dec 73</em></td>
<td><em>5 Yrs</em></td>
<td><em>5 Yrs</em></td>
<td><em>5 Yrs</em></td>
</tr>
</tbody>
</table>

Rolling Period Return Data: 50 Years (1969 to 2018)

<table>
<thead>
<tr>
<th>Per Period</th>
<th>Number of Months</th>
<th># of Rolling Periods</th>
<th>Median Annualized Return (50th %ile)</th>
<th>Return Range (High minus Low)</th>
<th>Median Growth of $1</th>
<th>Lowest Rolling Period Date</th>
<th>Lowest Rolling Period Return</th>
<th>Growth of $1 in Lowest Period</th>
<th>Highest Rolling Period Date</th>
<th>Highest Rolling Period Return</th>
<th>Growth of $1 in Highest Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.08</td>
<td>1</td>
<td>600</td>
<td>0.63%²</td>
<td>12.17%²</td>
<td>$1.01²</td>
<td>10/87-10/87</td>
<td>-5.08%</td>
<td>$0.95</td>
<td>4/80-4/80</td>
<td>7.08%</td>
<td>$1.07</td>
</tr>
<tr>
<td>0.25</td>
<td>3</td>
<td>598</td>
<td>1.63%²</td>
<td>20.61%²</td>
<td>$1.02²</td>
<td>9/08-11/08</td>
<td>-7.11%</td>
<td>$0.93</td>
<td>4/80-4/86</td>
<td>13.50%</td>
<td>$1.13</td>
</tr>
<tr>
<td>0.5</td>
<td>6</td>
<td>595</td>
<td>3.26%²</td>
<td>28.46%²</td>
<td>$1.03²</td>
<td>7/09-2/09</td>
<td>-10.58%</td>
<td>$0.89</td>
<td>7/82-12/82</td>
<td>17.88%</td>
<td>$1.18</td>
</tr>
<tr>
<td>1</td>
<td>12</td>
<td>589</td>
<td>7.35%</td>
<td>40.38%</td>
<td>$1.07</td>
<td>3/08-2/09</td>
<td>-11.09%</td>
<td>$0.89</td>
<td>7/82-6/83</td>
<td>29.29%</td>
<td>$1.29</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
<td>577</td>
<td>7.08%</td>
<td>25.83%</td>
<td>$1.15</td>
<td>3/07-2/09</td>
<td>-5.05%</td>
<td>$0.90</td>
<td>7/84-6/86</td>
<td>20.77%</td>
<td>$1.46</td>
</tr>
<tr>
<td>3</td>
<td>36</td>
<td>565</td>
<td>7.16%</td>
<td>18.52%</td>
<td>$1.23</td>
<td>3/06-2/09</td>
<td>-1.20%</td>
<td>$0.96</td>
<td>7/82-6/85</td>
<td>17.33%</td>
<td>$1.62</td>
</tr>
<tr>
<td>4</td>
<td>48</td>
<td>553</td>
<td>7.16%</td>
<td>17.88%</td>
<td>$1.32</td>
<td>3/05-2/09</td>
<td>0.46%</td>
<td>$1.02</td>
<td>7/82-6/86</td>
<td>18.34%</td>
<td>$1.96</td>
</tr>
</tbody>
</table>

5-Year¹ Monthly Rolling Periods: 50 Years (1969 to 2018) Total of 541 Rolling Periods

---

1. 5-years represents the suggested average holding period for investors who score 25 on the Risk Capacity Survey at ifa.com.
2. The Median Annualized Returns, Return Range, and Median Growth of $1 shown for 1, 3, and 6 month periods are not annualized.

Sources, Updates, and Disclosures: ifabt.com. Returns are net of IFA & DFA fees. Past performance does not guarantee future results.

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See the attached disclosures for more details on the construction and historical data of IFA Index Portfolios.

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Index Fund Advisors, Inc.
DISCLOSURES FOR THE BACKTESTED PERFORMANCE OF MODEL INDEX PORTFOLIOS AND INDEXES

1. Past performance does not guarantee future results. There is a potential for loss in any investment. Index Fund Advisors, Inc. (IFA) does not guarantee any minimum level of investment performance or the success of any index portfolio or investment strategy. All investments involve risk and investment recommendations will not always be profitable. Impacts of federal and state taxes are not included in the results of index portfolio or index returns. Tax liabilities will vary per investor and can result from various activities in taxable and tax-deferred accounts. These activities include, but are not limited to rebalancing of portfolios, any sale of securities, tax loss harvesting, interest, dividends and capital gains distributions from equity funds and individual securities in taxable accounts. There are also tax liabilities associated with distributions from tax-deferred accounts.

2. Index Fund Advisors, Inc. is an SEC registered Investment Adviser. Information pertaining to IFA’s advisory operations, services, and fees is set forth in IFA’s current Form ADV Part 2 (Brochure) which is available upon request and at www.adviserinfo.sec.gov.

3. The IFA investment strategy is based on principles generally known as Modern Portfolio Theory and the Fama and French Four Factor Model for Equities and Two Factor Model for Fixed Income. Index portfolios are designed to provide substantial global diversification in order to reduce investment concentration and the resulting potential increased risk caused by the volatility of individual companies, indexes, or asset classes.

4. IFA defines index funds as funds that follow a set of rules of ownership that are held constant regardless of market conditions. An important characteristic of an index fund is that its rules of ownership are not based on a forecast of short-term events or the mispricing of securities. Therefore, an investment strategy that is limited to the buying and rebalancing of a portfolio of index funds is often referred to as passive investing, as opposed to active investing.

5. The performance information presented in certain charts or tables represents backtested performance based on a combination of simulated index data and live (or actual) mutual fund results from January 1, 1928 to the period ending date shown, using the strategy of buy and hold and annually rebalancing on the first of each year of the globally diversified portfolios of indexes. Backtested performance is hypothetical and does not reflect trading in actual accounts. It is provided for informational purposes only to indicate historical performance had the index portfolios been available over the relevant time period. IFA did not offer the index portfolios until November 1999. Prior to 1999, IFA did not manage client assets. There are limitations inherent in model results, particularly that model returns do not reflect actual trading and may not reflect the impact that material economic and market factors may have had on the adviser’s decision-making had the adviser actually managed client funds.

6. Simulated index data is based on the performance of indexes and live mutual funds as described in the IFA Indexes Data Sources page (see www.ifaindices.com). A review of the IFA Index Data Sources, IFA Indexes Time Series Construction (http://www.ifa.com/disclosures/charts/#timeseries) and several of the Dimensional Indexes (http://www.ifa.com/disclosures/charts/#dfafunds) is an integral part of this disclosure and should be read in conjunction with this explanation of backtested performance information presented.

7. The index mutual funds used in IFA’s Index Portfolios are IFA’s best estimate of a mutual fund that will come closest to the index data provided in the simulated indexes. Simulated index data is used for the period prior to the inception of the relevant live mutual fund data and a mutual fund expense ratio is deducted from simulated index data. Live (or actual) mutual fund performance is used after the inception date of each mutual fund. The IFA Indexes Times Series Construction goes back to January 1928, with an increasing diversification to international markets, emerging markets and real estate investment trusts as data became available. As of January 1928, there are four equity indexes and two bond indexes; in January 1970 there are a total of 8 indexes, and there are 15 indexes in March 1998 to present. See (https://www.ifa.com/disclosures/charts/#IFA_evolution) to see the analysis of the evolution of these portfolios.

8. Backtested performance is calculated by using a software program and monthly returns data set that starts with the first day of the given time period and evaluates the returns of simulated indexes minus fund fees and mutual funds returns. In 1999, tax-managed funds became available for many different mutual funds. The tax-managed funds are not used in calculating the backtested performance of the index portfolios, unless specified in the table or chart. Whenever the term IFA Index Portfolio Value Data is used, it is based on a starting value of one at the beginning of stated time period.

9. Backtested performance does not represent actual performance, trading costs or the impact of taxes and should not be interpreted as an indication of such performance. Actual performance for client accounts may be materially lower than that of the index portfolios. Backtested performance results have certain inherent limitations. Such results do not represent the impact that material economic and market factors might have on an investment adviser’s decision-making if the adviser were actually managing client money. Backtested performance also differs from actual performance because it is achieved through the retroactive application of model portfolios (in this case, IFA’s Index Portfolios) designed with the benefit of hindsight. As a result, the models theoretically may be changed from time to time and the effect on performance results could be either favorable or unfavorable. The next section includes details of changes in the models since inception.

10. History of Changes to the IFA Indexes: 1992-2000: IFA’s Original Index Portfolios 10, 30, 50, 70 and 90 were suggested by Dimensional Fund Advisors (DFA) in 1992 (ifa.com/pdfs/1992.pdf), as an example of globally diversified asset classes, with moderate modifications in 1995 (ifa.com/pdfs/1995.pdf), to reflect the availability of mutual funds that tracked the emerging markets asset class. Index Portfolios between each of the above listed portfolios were created by IFA in 2000 by interpolating between the above portfolios. Portfolios 5, 95 and 100 were created by IFA in 2000, as a lower and higher extension of the DFA 1992 risk and return line. There are numerous other changes that occurred from 2002 to present and they are all described in on www.ifa.com/disclosures/history/.
11. Backtested performance results assume the re-investment of dividends and capital gains and annual rebalancing at the beginning of each year. It is important to understand that the assumption of annual rebalancing has an impact on the monthly returns reported for IFA Index Portfolios. If IFA used monthly rebalancing, the monthly return would be calculated with the assumption that the portfolio is perfectly in balance at the beginning of each month. For annual rebalancing, the year-to-date and monthly return is calculated with the assumption that the portfolio is perfectly in balance at the beginning of each year. The latter assumption underlies the returns shown for the IFA Index Portfolios. In actual client portfolios, however, rebalancing occurs at no set time, and such actions are dependent on both market conditions and individual client cash inflows and outflows, along with the cost impact of such transactions on the overall portfolio.

12. The past performance of all IFA Index Portfolios, but not IFA Indexes, is shown net of IFA’s annual maximum investment management fee of 0.9%, by deducting 0.075% from month end returns, unless stated otherwise. We deduct investment management fees from IFA Index Portfolio returns because the creation, choice, monitoring and rebalancing of index portfolios the services of the investment advisor. Monthly fee deduction is used for backtesting. Actual IFA advisory fees are deducted quarterly, in advance. Depending on the amount of assets under management and other factors, investment management fees may be less. Unless indicated otherwise, data shown for each individual IFA Index is shown without a deduction of the IFA advisory fee. Since IFA accepts no fees from investment product firms, IFA compares funds based on net asset value returns, which are net of the mutual fund company expense ratios only. Although index mutual funds minimize tax liabilities from short and long-term capital gains, any resulting tax liability is not deducted from performance results. Performance results also do not reflect transaction fees and other expenses charged directly by custodians to the clients, which reduce returns.

13. For all data periods, annualized standard deviation is presented as an approximation by multiplying the monthly standard deviation number by the square root of 12. Please note that the number computed from annual data may differ materially from this estimate. We have chosen this methodology because Morningstar uses the same method. In those charts and tables where the standard deviation of daily returns is shown, it is estimated as the standard deviation of monthly returns divided by the square root of 22.

14. Performance results for clients that invested in accordance with the IFA Index Portfolio Models will vary from the backtested performance due to the use of funds for implementation that differ from those in the index data, market conditions, investments cash flows, mutual fund allocations, changing index allocations over time, frequency and precision of rebalancing, not following IFA’s advice, retention of previously held securities, tax loss harvesting and glide path strategies, cash balances, lower than 0.9% advisory fees, varying custodian fees, and/or the timing of fee deductions.

15. Not all IFA clients follow IFA’s recommendations and depending on unique and changing client and market situations, IFA may customize the construction and implementation of the index portfolios for particular clients. IFA provides various index portfolio implementation strategies, such as the use of tax-managed mutual funds, global extended maturity bond funds, municipal bond funds, social or sustainable screens added to funds, diversified portfolios of various index fund providers, use of core funds or global asset allocation funds. These various implementations of IFA Index Portfolios will likely have risks and returns that vary from the IFA Index Portfolio Models. As the result of these and other variances, actual performance for client accounts have been and are likely to be materially different and may be less than from the results shown in the IFA Index Portfolio Models. Clients should consult their account statements for information about how their actual performance compares to that of the index portfolios and ask your IFA Wealth Advisor to explain any differences.

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17. IFA is not paid any brokerage commissions, sales loads, 12b-1 fees, or any form of compensation from any mutual fund company or broker dealer. The only source of compensation from client investments is obtained from asset-based advisory fees paid by clients. More information about advisory fees, expenses, mutual fund fees, and prospectuses for mutual funds can be found at https://www.ifa.com/fees/.

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The following descriptions of IFA Indexes indicate how indexes are strung together to simulate similar risk and return characteristics back to 1928. This long-term data reduces the possible errors of interpreting a short-term return as being representative of other short-term returns. Such errors are especially high for periods of 20 years or less. When IFA Indexes are shown in Index Portfolios, all return data reflects a deduction of 0.9% annual investment advisory fee, which is the maximum advisory fee charged by IFA. Unless indicated otherwise, data shown for each individual IFA Index is shown without a deduction of the IFA advisory fee. This method is used because the creation, choice, monitoring and rebalancing of diversified index portfolios are the services of the independent investment advisor. Therefore, fees are deducted from the whole portfolio data but not the individual index data. Live Dimensional Fund Advisors’ (DFA) fund data reflects the deduction of mutual fund advisory fees, brokerage fees, other expenses incurred by the mutual funds, incorporates actual trading results, and is sourced from DFA. Simulated index data also reflects DFA’s current mutual fund expense ratios for the entire period. Both simulated and live data reflect total returns, including dividends, except for IFA/NSDQ Index. For updates on sources and descriptions of data see www.ifaindexes.com.

### IFA U.S. Large Company Index (LC)

**Investment Objective of Schwab S&P 500 Index (SWPPX)** The investment seeks to track the total return of the S&P 500® Index. The fund generally invests at least 80% of its net assets in stocks that are included in the S&P 500® Index. It generally gives the same weight to a given stock as the index does. The fund may invest in derivatives, principally futures contracts, and lend its securities to minimize the gap in performance that naturally exists between any index fund and its corresponding index. It may concentrate its investments in an industry or group of industries to the extent that its comparative index is also so concentrated.

**Time-Series Construction**
- Jan 1928 - Dec 1990: Dimensional US Large Cap Index Minus 0.00167%/mo (mutual fund exp ratio)
- Jan 1991 - Apr 2010: DFA U.S. Large Company Fund (DFLCX)
- May 2010 - May 2017: DFA U.S. Large Company Fund (DFUX)
- July 2017 - Present: Schwab S&P 500 Index (SWPPX)

**Average Annual Total Return**
- Schwab S&P 500 Index: 9.45%
- S&P 500 Index: 9.50%

**Number of Holdings**
- Schwab S&P 500 Index: 508
- S&P 500 Index: 3774.3M

**Wtd. Avg Dividend-to-Price Ratio**
- Schwab S&P 500 Index: 3.11
- S&P 500 Index: 2.71%

**Expense Ratio**
- Schwab S&P 500 Index: 0.27%
- S&P 500 Index: 0.02%

*All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

### IFA U.S. Large Company Value Index (LV)

**Investment Objective of DFA U.S. Large Company Value Portfolio I (DFLVX)** is to achieve long-term capital appreciation. The Portfolio is a feeder portfolio and pursues its objective by investing substantially all of its assets in its corresponding Master Fund, the U.S. Large Company Value Series, which has the same investment objective and policies as the U.S. Large Company Portfolio.

**Time-Series Construction**
- Jan 1928 - Feb 1993: Dimensional Large Value Index minus 0.0225%/mo (mutual fund exp ratio)
- Mar 1993 - Present: DFA U.S. Large Company Fund (DFUX)

**Average Annual Total Return**
- Russell 1000 Value Index: 5.67%
- Russell 2000 Value Index: 6.15%

**Number of Holdings**
- DFA: 314
- Russell 2000: 9734M

**Expense Ratio**
- DFA: 0.24%
- Russell 2000: 0.27%

*All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

### IFA U.S. Small Company Index (SC)

**Investment Objective of DFA US Small Cap Portfolio I (DFSTX)** is to achieve long-term capital appreciation.

**Time-Series Construction**
- Jan 1928 - Mar 1992: Dimensional Small Cap Index minus 0.0038%/mo (mutual fund exp ratio)
- Apr 1992 - Present: DFA U.S. Small Company Fund (DFSTX)

**Average Annual Total Return**
- Russell 2000 Index: 2.05%

**Exp. Ratio**
- DFA: 1.00%

*All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

### IFA U.S. Micro Cap Index (MC)

**Investment Objective of DFA US Micro Cap Portfolio I (DFSX)** is to achieve long-term capital appreciation.

**Time-Series Construction**
- Jan 1928 - Dec 1981: Dimensional US Micro Cap Index minus 0.0433%/mo (mutual fund exp ratio)
- Jan 1982 - Present: DFA U.S. Micro Cap Portfolio (DFSX)

**Average Annual Total Return**
- Russell 2000 Index: 2.05%

**Expense Ratio**
- 1.61%

*All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

### IFA U.S. Small Company Value Index (SV)

**Investment Objective of DFA Targeted Value Portfolio I (DFFVX)** is to achieve long-term capital appreciation.

**Time-Series Construction**
- Jan 1928 - Feb 2000: Dimensional Targeted Value Index minus 0.0308%/mo (mutual fund exp ratio)
- Mar 2000 - Present: DFA Targeted Value Fund (DFFVX)

**Average Annual Total Return**
- Russell 2000 Value Index: 0.17%

**Expense Ratio**
- 1.81%

*All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

### IFA Global REIT Index (RE)

**Investment Objective of DFA Global Real Estate Securities Portfolio (DFGEX)** is to achieve long-term capital appreciation.

**Time-Series Construction**
- Jan 1928 - Dec 1977: 50% IFA Small Cap (SC) + 50% IFA Small Value (SV)
- Jan 1978 - Jan 1992: Dow Jones US Select REIT Index minus 0.0205%/mo (mutual fund exp ratio)
- Feb 1993 - Jun 2008: DFA Real Estate Fund (DFFREX)
- Jul 2008 - Present: DFA Global Real Estate Fund (DFGEX)

**Average Annual Total Return**
- &P P Global REIT Index*: 13.93%

**Expense Ratio**
- 4.23%

*Net Dividends *All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.
### IFA International Value Index (IV)

**Investment Objective of DFA International Value Portfolio I (DFIVX)** is to achieve long-term capital appreciation. The portfolio pursues its objective by investing substantially all of its assets in its corresponding Master Fund, The International Value Series, which has the same investment objective and policies as the DFA International Value Portfolio.

<table>
<thead>
<tr>
<th>Average Annual Total Return</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
<th>Number of Holdings</th>
<th>Weighted Average Market Cap</th>
<th>Aggregated Price-to-Book</th>
<th>Turnover Ratio (as of 10/31/18)</th>
<th>Expense Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFA Intl. Value Index Portfolio</td>
<td>-9.30%</td>
<td>8.44%</td>
<td>1.07%</td>
<td>8.67%</td>
<td>541</td>
<td>$52.480M</td>
<td>2.20%</td>
<td>20.00%</td>
<td>4.36%</td>
</tr>
<tr>
<td>MSCI EAFE Index*</td>
<td>2.20%</td>
<td>8.67%</td>
<td>11.84%</td>
<td>12.25%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Net Dividends* "All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

### IFA International Small Company Index (IS)

**Investment Objective of DFA International Small Company Fund (DFISX)** is to achieve long-term capital appreciation.

<table>
<thead>
<tr>
<th>Average Annual Total Return</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
<th>Number of Holdings</th>
<th>Weighted Average Market Cap</th>
<th>Aggregated Price-to-Book</th>
<th>Turnover Ratio (as of 10/31/18)</th>
<th>Expense Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFA Intl. Small Cap Index</td>
<td>-11.09%</td>
<td>6.73%</td>
<td>3.05%</td>
<td>11.84%</td>
<td>4,447</td>
<td>$2,126M</td>
<td>1.32</td>
<td>23.00%</td>
<td>3.11%</td>
</tr>
<tr>
<td>MSCI World ex USA Small Cap Index*</td>
<td>-8.66%</td>
<td>7.28%</td>
<td>3.69%</td>
<td>12.25%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Price-Only *"All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

### IFA International Small Cap Value Index (ISV)

**Investment Objective of DFA International Small Cap Value Portfolio I (DISVX)** is to achieve long-term capital appreciation.

<table>
<thead>
<tr>
<th>Average Annual Total Return</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
<th>Number of Holdings</th>
<th>Weighted Average Market Cap</th>
<th>Aggregated Price-to-Book</th>
<th>Turnover Ratio (as of 10/31/18)</th>
<th>Expense Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFA Intl. Small Cap Value</td>
<td>-14.75%</td>
<td>5.11%</td>
<td>1.41%</td>
<td>11.18%</td>
<td>2,143</td>
<td>$1,921M</td>
<td>0.82</td>
<td>23.00%</td>
<td>0.68%</td>
</tr>
<tr>
<td>MSCI EAFE Small Cap Index*</td>
<td>-8.66%</td>
<td>7.28%</td>
<td>3.69%</td>
<td>12.25%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Price-Only *"All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

### IFA Emerging Market Index (EM)

**Investment Objective of DFA Emerging Markets Portfolio I (DFEMX)** is to achieve long-term capital appreciation. The portfolio pursues its objective by investing substantially all of its assets in its corresponding Master Fund, The Emerging Markets Series, which has the same investment objective and policies as the Emerging Markets Portfolio.

<table>
<thead>
<tr>
<th>Average Annual Total Return</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
<th>Number of Holdings</th>
<th>Weighted Average Market Cap</th>
<th>Aggregated Price-to-Book</th>
<th>Turnover Ratio (as of 10/31/18)</th>
<th>Expense Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFA Emerging Markets Portfolio I</td>
<td>-8.24%</td>
<td>9.92%</td>
<td>3.49%</td>
<td>9.11%</td>
<td>1,201</td>
<td>$46.567M</td>
<td>1.59</td>
<td>12.00%</td>
<td>2.58%</td>
</tr>
<tr>
<td>MSCI Emerging Markets Index*</td>
<td>-7.41%</td>
<td>10.68%</td>
<td>3.68%</td>
<td>8.94%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Gross Dividend* "All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

### IFA Emerging Market Value Index (EV)

**Investment Objective of DFA Emerging Markets Value Portfolio I (DFEVX)** is to achieve long-term capital appreciation. The portfolio pursues its objective by investing substantially all of its assets in its corresponding Master Fund, The Emerging Markets Value Portfolio, which has the same investment objective and policies as the Emerging Markets Portfolio.

<table>
<thead>
<tr>
<th>Average Annual Total Return</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
<th>Number of Holdings</th>
<th>Weighted Average Market Cap</th>
<th>Aggregated Price-to-Book</th>
<th>Turnover Ratio (as of 10/31/18)</th>
<th>Expense Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFA Emerging Markets Value Portfolio I</td>
<td>-7.70%</td>
<td>11.58%</td>
<td>3.41%</td>
<td>9.20%</td>
<td>2,539</td>
<td>$36.548M</td>
<td>0.95</td>
<td>13.00%</td>
<td>3.00%</td>
</tr>
<tr>
<td>MSCI Emerging Markets Index*</td>
<td>-7.41%</td>
<td>10.68%</td>
<td>3.68%</td>
<td>8.04%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Gross Dividend* "All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

### IFA Emerging Market Small Cap Index (ES)

**Investment Objective of DFA Emerging Markets Small Cap Portfolio I (DEMSX)** is to achieve long-term capital appreciation. The portfolio pursues its objective by investing substantially all of its assets in its corresponding Master Fund, The Dimensional Emerging Markets Value Portfolio, which has the same investment objective and policies as the Emerging Markets Value Portfolio.

<table>
<thead>
<tr>
<th>Average Annual Total Return</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
<th>Number of Holdings</th>
<th>Weighted Average Market Cap</th>
<th>Aggregated Price-to-Book</th>
<th>Turnover Ratio (as of 10/31/18)</th>
<th>Expense Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFA Emg. Markets Small Cap Portfolio</td>
<td>-11.56%</td>
<td>8.57%</td>
<td>4.13%</td>
<td>12.23%</td>
<td>4,213</td>
<td>$1,471M</td>
<td>1.25</td>
<td>12.00%</td>
<td>2.44%</td>
</tr>
<tr>
<td>MSCI Emerging Markets Index*</td>
<td>-7.41%</td>
<td>10.68%</td>
<td>3.68%</td>
<td>8.04%</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Gross Dividend* "All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

### IFA One-Year Fixed Income Index (1F)

**Investment Objective of DFA One-Year Fixed Income Portfolio (DFHFX)** is to achieve a stable real return in excess of the rate of inflation with a minimum of risk.

<table>
<thead>
<tr>
<th>Average Annual Total Return</th>
<th>One Year</th>
<th>Three Years</th>
<th>Five Years</th>
<th>Ten Years</th>
<th>Duration</th>
<th>Average Portfolio Maturity Range</th>
<th>Expense Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFA One-Year Fixed Income Portfolio</td>
<td>2.53%</td>
<td>1.33%</td>
<td>0.97%</td>
<td>0.82%</td>
<td>0.57 Years</td>
<td>0.70%</td>
<td>0.17%</td>
</tr>
<tr>
<td>One-Year US Treasury Note*</td>
<td>-7.41%</td>
<td>10.68%</td>
<td>3.68%</td>
<td>8.04%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*ICE BofA Merrill Lynch Index* "All Data as of Mar 31, 2019. Returns include the impact of reinvested dividends and capital gains distributions. For updates see www.ifaindexes.com.

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**Index Fund Advisors, Inc.**
**Investment Objective of DFA Two-Year Global Fixed Income Portfolio (DFGFX)** is to maximize total returns from the universe of debt obligations of the U.S. Government and U.S. government agencies.

**Investment Objective of DFA Five-Year Global Fixed Income Portfolio (DFGBX)** is to provide a market rate of return for a fixed income portfolio with low relative volatility of returns.

**Investment Objective of DFA Short Term Government Index (DVFIX)** is to track the total return of the S&P 500® Index. The fund generally invests at least 80% of its net assets in stocks that are included in the S&P 500® Index. It generally gives the same weight to a given stock as the index does. The fund may invest in derivatives, principally futures contracts, and lend its securities to minimize the gap in performance that naturally exists between any index fund and its corresponding index. It may concentrate its investments in an industry or group of industries to the extent that its comparative index is also so concentrated.

**Investment Objective of IFA NSDQ Index** The Nasdaq Composite Index is the market capitalization-weighted index of common equities listed on the Nasdaq stock exchange. The types of securities in the index include American depositary receipts, common stocks, real estate investment trusts (REITs) and tracking stocks, as well as limited partnership interests.

**Investment Objective of Vanguard US Total Market Index** The Vanguard US Total Market Index is a benchmark index that measures the performance of the broad U.S. stock market. It includes large, mid, and small capitalization stocks and is designed to reflect the performance of all U.S. equities. The index is maintained by Morgan Stanley Capital International (MSCI) and is intended to provide a broad and diversified representation of the U.S. stock market.

**Investment Objective of Vanguard Small-Cap Growth Index (VSGIX)** The investment seeks to track the performance of a benchmark index that measures the investment return of small-capitalization growth stocks. The fund employs a passive management investment approach designed to track the performance of the MSCI US Small Cap Growth Index, a broadly diversified index of growth stocks of smaller U.S. companies. It attempts to replicate the target index by investing all, or substantially all, of assets in the stocks that make up the index, holding each stock in approximately the same proportion as its weighting in the index.
REFERENCES

1-20. Source of studies for Investor Success chart


20. Morningstar. “Morningstar Index Yearbook 2005.” Morningstar, 12 May 2006. Web. 14 Nov. 2011. 3. http://indexes.morningstar.com/Index/PDF/MorningstarIndexYearbook2005.pdf. The 109% figure that was calculated in the Morningstar study occurred during a period when there was a high benefit to rebalancing. The 109% applied to individual mutual funds only and would not be applicable to the return shown for a portfolio of mutual funds across different asset classes.


33. Sample list taken from CXO Advisory Group, LLC, www.cxoadvisory.com/gurus/


37. Dimensional study of 44 institutional equity pension plans with $425 billion total assets, 2002.
The Investing Kit includes Mark Hebner’s highly-acclaimed book, *Index Funds: The 12-Step Recovery Program for Active Investors*, and a companion DVD of the documentary film of the same name based on the book. It also includes the *Galton Board - Stock Market Edition*, a device that demonstrates the similarities between the bell curve, cascading beads, and the stock market. The kit provides investors with a comprehensive education of how markets work, with each piece providing an integral component to deliver a multimedia demonstration of the futility of speculating in the stock market and the wisdom of buying, holding and rebalancing a risk-appropriate portfolio of index funds.

The Investing Kit is available on amazon.com.

Please Visit: IndexFundsBook.com | IndexFundsMovie.com | GaltonBoard.com/stockmarket
Index Funds
The 12-Step Recovery Program for Active Investors

Mark Hebner’s little jewel of a book packs a wealth of education in a beautiful, artistic and straightforward manner. Mark reveals how he invests his own clients’ money with a method based on long-term history and investing science. A must-read for every investor who wants to keep more of their returns, and fund their own retirement — not their broker’s.

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