Using Fed Policy Signals to Capture Alpha: The IFED Strategy

December 2022

Synopsis

This article provides insight to the origins of the IFED strategy and its efficacy. The IFED strategy is rules-based and represents a unique combination of top-down and bottom-up investment approaches. The strategy relies on twelve firm-specific financial metrics to select stocks, which integrates a bottom-up dimension into the strategy. The weights applied to the twelve metrics, however, are conditional on the market environment, as defined by gauging Fed policy signals. Relying on Fed policy signals to guide stock selection introduces a top-down dimension that makes the IFED strategy dynamic and forward looking.

Combining the two dimensions into an executable investment approach led to the launch of the Nasdaq IFED Large-Cap US Equity™ Index (Nasdaq IFED-L™) on June 9, 2020. Since its June 2020 launch, Nasdaq IFED-L has been the best performing large-cap US equity index, producing a total return of 54.0%. Furthermore, the index has produced an average alpha (vs the S&P 500) of 11.45% per year over its entire backtested history from January 1, 1999 through June 9, 2020, plus its live history through December 31, 2022.

Economic Index Associates (EIA) is excited to partner with Nasdaq in promoting the IFED strategy to the global investment community. We look forward to future collaboration on a suite of indexes that apply the IFED approach.

Creation of EIA and the IFED Strategy

EIA’s three founders (Robert Johnson, Gerald Jensen and Luis Garcia-Feijoo) are the authorities on the association of Fed monetary policy with security returns – combined they have published over 200 academic articles, which have over 10,000 citations. As illustrated in the following timeline, EIA’s major milestones revolve around the founders’ academic pursuits. Their first seminal research article was refereed by Nobel laureate, Eugene Fama, and was published in 1996 in the Journal of Financial Economics. Throughout the firm’s early history, its accomplishments were academic achievements.
Timeline – EIA Milestones

1966
EIA founders (Robert Johnson, Gerald Jensen and Luis Garcia-Feijoo) evaluate Fed Monetary Policy data as far back as 1966 (over 50 years)

1996
EIA founder’s seminal research assessing Fed policy impact on security return patterns is published in Journal of Financial Economics

2000
EIA’s founders publish a CFA Institute monograph titled “The Role of Monetary Policy in Investment Management”

2015
EIA’s founders publish a book titled “Invest with the Fed”

2018
Economic Index Associates (EIA) is formed

2020
EIA launches first IFED customized index (IFED-L)

2020
First separately managed accounts applying the IFED strategy are opened

2021
UBS launches two NYSE-listed ETNs that track IFED-L

2022
EIA partners with Nasdaq on the Nasdaq IFED-L

The basic premise of the founders’ original research is captured in their book - *Invest with the Fed*, which was published by McGraw-Hill in 2015. After garnering considerable acclaim for their book – including having it featured in the *Wall Street Journal*, the three were eventually persuaded by industry professionals to translate the strategy into investible products. The founders are true “reluctant investment practitioners” as their intentions were to produce academic research, rather than creating products for the investment community. Economic Index Associates (EIA) was created several years after *Invest with the Fed* was published and only after having audience members at ETF conferences and CFA society presentations request “how to” instructions on implementing the strategy.

Components of the IFED Strategy

The following exhibit outlines the process that underlies the IFED strategy. The process is presented with respect to Nasdaq IFED-L; however, the process is consistent across the various IFED indexes. In addition to Nasdaq IFED-L, EIA maintains a suite of prototype IFED indexes for prospective licensees that can be customized according to any number of parameters.

A key component of the IFED strategy involves the classification of market conditions into alternative environments. Based on the founders’ extensive research, EIA created the IFED market indicator, which assesses Federal Reserve policy signals to classify market conditions as expansive, restrictive or indeterminate.

Once the market environment is identified, the strategy relies on twelve firm-specific financial metrics to assign an IFED score to each stock. A stock’s IFED score indicates the stock’s ability to prosper during the market environment identified by the IFED market indicator. Stocks with higher IFED scores have features that align more closely with prevailing market conditions.
STARTING UNIVERSE AND STOCK SCORING

- 500 largest stocks listed on NYSE and Nasdaq with 3+ years of financial data
- EIA’s proprietary monetary indicator uses Fed policy signals to classify the environment as expansive, restrictive or indeterminate
- 12 firm-specific metrics* are used to assign each stock an IFED score based on its ability to benefit from prevailing market conditions

COMPOSITION & WEIGHTING

- Each stock is ranked by its IFED score
- 100 stocks with highest scores for prevailing conditions are selected as potential constituents
- Stocks are weighted by IFED score; constraints are applied for liquidity, stock and sector weight
- Result is a final index with approximately 75 stocks

INDEX REBALANCE TIMING

- IFED indexes are rebalanced when the market environment changes to avoid applying an out-of-favor investment approach
- IFED model reacts to signaled shifts in Fed policy, rather than relying on existing rate levels or economic conditions
  - Integrates a forward-looking aspect

As noted in the exhibit, Nasdaq IFED-L is composed of approximately 75 stocks, which is also the case for the IFED prototype indexes. The weighting mechanism applied to the IFED indexes is unique as the weights are based on each stock’s IFED score. Thus, each IFED index includes the stocks best aligned with market conditions, and also weights the stocks in the index by their ability to prosper in the prevailing environment.

Finally, IFED indexes rebalance when necessary to maintain alignment with market conditions. If market conditions change, as reflected by a signaled shift in Fed policy, the indexes rebalance to update the holdings to match the new environment. In addition, on June 1, if there has been no environment change for the prior six months, the indexes refresh to reflect changes in the twelve financial metrics.

For more information on the Nasdaq IFED-L and its index methodology please visit our website: www.economicindexassociates.com

Validation of the Twelve Financial Metrics

The following exhibit provides insight regarding the twelve firm-specific financial metrics used in the IFED strategy. The first panel in the exhibit identifies each metric’s influence in the IFED model for each of the three market environments. For example, market capitalization is identified as having a negative coefficient during expansive environments and a zero coefficient during restrictive and indeterminate environments. The negative influence indicates that the IFED methodology favors small firms during expansive market conditions, whereas market capitalization is considered unimportant during restrictive and indeterminate environments.
conditions.

The second metric, long-term market performance has a negative coefficient during expansive conditions and positive coefficients during the other environments. Thus, weaker long-term performance is favorable when conditions are expansive (a stock return rebound is anticipated), whereas strong performance is favored otherwise. While the table stipulates the direction of relation, it does not indicate the size of the coefficient in the IFED model. In addition to different coefficient signs, the IFED model applies different size coefficients to the metrics across the three environments.

The middle panel in the exhibit identifies a prominent research article that promoted each of the financial metrics as a return driver. For each metric, there were ultimately several studies that confirmed the metric’s relevance, however, only one study is recognized here. Importantly, EIA’s founders’ research showed that the return patterns established by other researchers varied significantly based on Fed policy signals. For example, the founders determined that the small firm premium, which was promoted by Banz in 1981, was only significant during expansive conditions. Thus, in the IFED methodology, the market capitalization metric has a negative coefficient in expansive periods and a zero coefficient otherwise.

### Table: IFED Scorecard

<table>
<thead>
<tr>
<th>Market Metric</th>
<th>Expansive</th>
<th>Indeterminate</th>
<th>Restrictive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Holdings</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Positive</td>
</tr>
<tr>
<td>Change in Operating Assets</td>
<td>Negative</td>
<td>Neutral</td>
<td>Negative</td>
</tr>
<tr>
<td>Debt Ratio</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>Equity Quality</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>Gross Profit Margin</td>
<td>Positive</td>
<td>Positive</td>
<td>Neutral</td>
</tr>
</tbody>
</table>

### IFED-Driven Publications


### EIA Key Research Connecting Fed Policy & Returns


The final panel in the table presents a chronological list of selected research studies performed by EIA’s founders as a basis for the IFED strategy. Leveraging the founders' extensive research, the IFED methodology was designed to most effectively capture the return patterns identified in the research. This effort is ongoing as the final study on the list is a working paper that investigates the relation between Fed policy signals and firm fundamentals. The EIA team does not anticipate changing the IFED strategy; however, we stand ready to refine the strategy if new research indicates such action is warranted.

### Effectiveness of the IFED Strategy

To provide insight regarding the IFED scoring model, the following chart illustrates the effectiveness of the IFED scores in distinguishing between the different echelons of stock alignment with market conditions i.e., their ability to prosper in the prevailing market environment. The chart shows stock return performance for the 1500 largest U.S. corporations ranked by their IFED scores. Those 300 stocks with the highest IFED scores are placed in quintile 1, the next highest 300 in quintile 2, on down to the 300 stocks with the lowest IFED scores in quintile 5. Note, the ~75 stocks in Nasdaq IFED-L are selected from the 300 stocks in quintile 1.

There are several conclusions that are supported by the above chart. First, the IFED strategy is very effective at distinguishing between stocks that are well-suited for the prevailing environment versus those that are
poorly suited. The annual return difference from top to bottom quintile is over 12%, 17.56% versus 5.32%.

Second, the strategy even effectively differentiates between the minor gradations of score differences across the inner quintiles. There is greater than a 2% return difference across each step in the progression. The monotonic drop in returns as one progresses from the stocks with the highest to those with the lowest IFED scores strongly supports the strategy’s proficiency. This indicates that the IFED methodology is robust and is not driven by a small group of stocks or an isolated time frame.

Third, weighting by IFED score is more effective than weighting by market cap. Four of the five quintiles outperform the market average even though logic suggests it should only be two of five. The reason for this is that the stocks within each quintile are weighted by IFED score, whereas the market average is based on market-cap weighting.

Clearly, weighting index constituents by IFED score is superior to the most common alternative.

**Consistency of IFED Strategy Outperformance**

The following exhibits report long-term, backtested performance for the Nasdaq IFED-L index relative to the S&P 500. Comparable results are produced for other IFED indexes that EIA maintains, including Mid, Small and All-Cap indexes. Nasdaq IFED-L is selected for presentation because it was the first customized index launched by EIA. Since Nasdaq IFED-L launched in June of 2020, it has offered the opportunity to present a live track record for comparison purposes.

Please note that all performance/returns data prior to the live calculation of the index beginning on June 9, 2020 is back-tested. All back-tested index values for periods prior to the launch date of an index are merely indicative, and they are provided "AS IS" for informational and educational purposes only. Nasdaq makes no guarantee as to the accuracy, timeliness, completeness, or fitness for any particular purpose of or for any index values, either historical or back-tested. Nothing contained herein should be construed as investment advice, either on behalf of a particular security or an overall investment strategy. Past performance is not indicative of future results.
The table below shows Nasdaq IFED-L performance by market environment. Over the 23+ year time frame, Nasdaq IFED-L produced a significant level of outperformance (alpha) in each of the market environments, which further supports the strategy’s robustness. It is perhaps not surprising that the strategy is least effective during indeterminate periods given that those periods are defined by conflicting Fed policy signals. It is reassuring that even during indeterminate periods, the strategy continues to produce a significant level of outperformance.

**Nasdaq IFED-L Performance Measures (Jan 1999 – Dec 2022)**

<table>
<thead>
<tr>
<th></th>
<th>Full Period</th>
<th>Expansive</th>
<th>Indeterminate</th>
<th>Restrictive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return - Nasdaq IFED-L</td>
<td>18.26%</td>
<td>11.72%</td>
<td>20.80%</td>
<td>20.63%</td>
</tr>
<tr>
<td>Return - S&amp;P 500</td>
<td>6.81%</td>
<td>1.56%</td>
<td>7.46%</td>
<td>9.60%</td>
</tr>
<tr>
<td>Annual Alpha (Mean) vs S&amp;P 500</td>
<td>11.45%</td>
<td>10.15%</td>
<td>13.48%</td>
<td>11.06%</td>
</tr>
<tr>
<td>Sharpe Ratio – Nasdaq IFED-L</td>
<td>0.92</td>
<td>0.71</td>
<td>0.85</td>
<td>1.11</td>
</tr>
<tr>
<td>Sharpe Ratio – S&amp;P 500</td>
<td>0.38</td>
<td>0.04</td>
<td>0.35</td>
<td>0.66</td>
</tr>
<tr>
<td>Information Ratio</td>
<td>1.07</td>
<td>0.92</td>
<td>1.29</td>
<td>1.02</td>
</tr>
</tbody>
</table>

As noted previously, the average annual alpha of Nasdaq IFED-L has been an impressive 11.45%, over the period January 1, 1999 to December 31, 2022. Perhaps more impressively, as shown below, Nasdaq IFED-L beat the S&P 500 3-year and 5-year rolling returns 86% and 99% of the time during that same time frame. The IFED strategy relies on long-term established return patterns that occasionally are obscured by unusual events e.g., a financial crisis or pandemic, but the patterns ultimately prevail in the long run.

**Nasdaq IFED-L Outperformance vs S&P 500 (Jan 1999 – Dec 2022)**

<table>
<thead>
<tr>
<th>Rolling Period</th>
<th>Rolling Month</th>
<th>Rolling Quarter</th>
<th>Rolling Year</th>
<th>Rolling 2 Years</th>
<th>Rolling 3 Years</th>
<th>Rolling 5 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>56.25%</td>
<td>63.64%</td>
<td>69.68%</td>
<td>76.23%</td>
<td>86.17%</td>
<td>98.69%</td>
</tr>
</tbody>
</table>

The following graph illustrates the timing of the outperformance and offers additional insights. Note the following observations from the time-series graph:

- The periods of underperformance are few in number, small in magnitude and are short in duration. For 5-year performance, the only underperformance was a miniscule amount observed for a short time in 2016;
- After any short period of underperformance, the strategy has rebounded consistently and produced strong outperformance for an extended time frame thereafter;
- The IFED strategy has consistently outperformed across the past 23+ year period even though this period has witnessed several unusual events, e.g., pandemic, financial crisis, negative interest rates, etc. The IFED strategy was designed based on patterns identified by academic research that extended back to the 1960s, yet the strategy has continued to produce superior performance.

Please note that all performance/returns data prior to the live calculation of the index beginning on June 9, 2020 is back-tested. All back-tested index values for periods prior to the launch date of an index are merely indicative, and they are provided “AS IS” for informational and educational purposes only. Nasdaq makes no guarantee as to the accuracy, timeliness, completeness, or fitness for any particular purpose of or for any index values, either historical or back-tested. Nothing contained herein should be construed as investment advice, either on behalf of a particular security or an overall investment strategy. Past performance is not indicative of future results.
**IFED Strategy Recent Performance (Through December 31, 2022)**

The effectiveness of the IFED approach is supported by Nasdaq IFED-L's 22.2% total alpha since the index was launched on June 9, 2020. Furthermore, as illustrated in the following graph, the 54.0% total return over this two-year-plus period far surpasses that of the other prominent large-cap indexes. By repositioning index holdings to align with changing market conditions, Nasdaq IFED-L outperformed other indexes over a very challenging market environment that included several historic events, including a pandemic, record inflation, Russia’s invasion of Ukraine, and historic supply-chain disruptions.

*Please note that many of the returns presented here are sourced from ETFs tracking these indexes due to various constraints accessing index data.*
Nasdaq *IFED-L*’s superior performance has continued, as it maintained its top position in 2022, producing a total return of -1.0% vs -18.1% for the S&P 500. This consistency of outperformance supports the strategy’s overall robustness as the overall period from its June 9, 2020 launch through December 31, 2021 was a generally favorable period for the market, whereas, 2022 witnessed an unfavorable market for stocks. Furthermore, the consistency of outperformance compares favorably with the other indexes. For example, the second-best performer from June 9, 2020 through December 31, 2022 was the Russell 1000 Invesco Dynamic Multifactor Index; however, that index drops to ninth best in 2022 performance.

![Total Index Returns: Nasdaq IFED-L vs. Other Large-Cap Indexes, FY'22](chart.png)

**The IFED Strategy Sources Alpha from Stock Selection**

The *IFED* strategy is an active stock selection approach that is guided by signaled shifts in Fed policy. The strategy does not maintain any consistent sector or factor exposure biases because it relies on twelve firm-specific financial metrics. In contrast, most investment approaches rely on a small and static set of firm features or factor exposures. The twelve metrics underlying the *IFED* strategy reflect diverse features of the underlying stocks, and furthermore, they are varied by market conditions. The result is that *IFED* index composition reflects a diverse portfolio of environment-aligned holdings.

Both sector and factor attribution analyses (see charts below) confirm that the Nasdaq *IFED-L*’s alpha is sourced from its stock selection process, namely using twelve firm-specific metrics to identify stocks appropriately aligned with the market environment. To seek outperformance and avoid holding a portfolio that has become out-of-favor, the *IFED* strategy relies on Fed policy signals to assign appropriate weights to the twelve metrics.
**RETURN ATTRIBUTION (JAN 1999 - DEC 2022)**

<table>
<thead>
<tr>
<th>Nasdaq IFED-L: Alpha Attributable to Sectors</th>
<th>Nasdaq IFED-L: Alpha Attributable to Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stock Selection</strong></td>
<td><strong>Stock Selection</strong></td>
</tr>
<tr>
<td>-2.1%</td>
<td>59.1%</td>
</tr>
<tr>
<td><strong>Utilities</strong></td>
<td></td>
</tr>
<tr>
<td>-2.1%</td>
<td></td>
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<tr>
<td><strong>Real Estate</strong></td>
<td></td>
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<tr>
<td>-0.5%</td>
<td></td>
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<tr>
<td><strong>Materials</strong></td>
<td></td>
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<tr>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td><strong>Information Technology</strong></td>
<td></td>
</tr>
<tr>
<td>21.0%</td>
<td></td>
</tr>
<tr>
<td><strong>Industrials</strong></td>
<td></td>
</tr>
<tr>
<td>-3.8%</td>
<td></td>
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<tr>
<td><strong>Health Care</strong></td>
<td></td>
</tr>
<tr>
<td>3.1%</td>
<td></td>
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<tr>
<td><strong>Financials</strong></td>
<td></td>
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<tr>
<td>24.2%</td>
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<tr>
<td><strong>Energy</strong></td>
<td></td>
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<tr>
<td>-1.9%</td>
<td></td>
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<tr>
<td><strong>Consumer Staples</strong></td>
<td></td>
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<tr>
<td>-4.2%</td>
<td></td>
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<tr>
<td><strong>Consumer Discretionary</strong></td>
<td></td>
</tr>
<tr>
<td>-0.1%</td>
<td></td>
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<tr>
<td><strong>Communication Services</strong></td>
<td></td>
</tr>
<tr>
<td>0.4%</td>
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</tbody>
</table>

**Future Nasdaq IFED Indexes**

Economic Index Associates (EIA) is a developer and licensor of active index strategies that are replicable, investable, rules-based and transparent. EIA believes that Fed policy signals can be used to position a portfolio so that it is appropriately aligned with the prevailing market environment.

The Nasdaq IFED-L index was created via a partnership with Nasdaq whereby an existing successful index, IFED-L, was rebranded. The original IFED-L index was launched by EIA on June 9, 2020. EIA and Nasdaq plan to launch additional indexes applying the IFED strategy in coming months.

In partnering with EIA, Nasdaq recognizes the value of dynamic rules-based indexes that are based on robust research and empirical evidence. With its Nasdaq partnership, EIA is pleased that its indexes will reach a broader audience to allow more investors to benefit from having their portfolios properly positioned for changing market conditions.

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