BLOOMBERG INTELLIGENCE: ETF TRAFFIC LIGHT SYSTEM

Definitions of factors involved in Bloomberg Intelligence’s ETF Traffic Light System as seen on {BI ETF <GO>}

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BI ETFS – TRAFFIC LIGHT

System Summary

The Bloomberg Intelligence ETF Traffic Light System is not a ratings system, nor a recommendation of products to purchase. The system has been created to complement the unique ways institutional and retail investors are using Exchange Traded Funds (ETFs) today. ETFs are not only being used in long-term allocation decisions, but for short-term tactical trading, hedging, cash equitization, or liquidity sleeves, to name a few examples. While an ETF may be a bad product for one particular use case, it may be the best product on the market for a separate use case. This makes it extremely difficult to assess and ‘rate’ an ETF with one broad brush because there may be 10 different use cases for each product. This system avoids any attempt at giving such a rating. The Bloomberg Intelligence Traffic Light System is simply meant to alert investors to the potential surprises from investing in an ETF based on its underlying structure, underlying holdings, and/or past pricing issues.

A new ETF launches every day in the United States, on average. Globally, that number jumps to three. This is positive for investors as it increases their breadth of choices. This increase in investment options also creates a greater need for proper due diligence on product selection. It is very common for ETFs to look and sound very similar, but the correct selection of one product over the other (depending on intended use and investor circumstances) can create excess return, known as Product Selection Alpha. The basis of this system is to empower investors to make educated decisions that best suit their investment needs.

“The existence of children does not mean that people shouldn’t be able to watch R-rated movies.”

A simple real world example of this is found in long volatility/VIX products, some of which have lost 99% of their value since inception. On the other hand, these same ETFs may be used by sophisticated investors to hedge against a spike in volatility. Generally speaking, these products are not meant for long term investment, but they may be an ideal solution for hedging volatility.

The System is not meant to be used as the sole input for an investment decision. It is simply meant to provide an initial level of due diligence to help warn investors of potential pitfalls down the road.

Use case example: if an investor were looking to invest in Master Limited Partnerships (MLPs) through an ETF. There are essentially two product types to choose from if they solely desire MLP exposure: are either via an Exchange traded note (ETN), which has credit risk, or an ETF with the underlying structure of a C-corporation, which has complicated tax situation causing a pseudo hidden fee. Neither is wrong, but an investor should be aware of the nuances/risks of each.

Every ETF that has been assessed is given a score and a list of the relevant factors included in that score.

The Traffic Light score is almost completely automated based on underlying Bloomberg data. Therefore, changes to an ETP’s data points within the Bloomberg database may affect that ETP’s score.

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BI ETFS – TRAFFIC LIGHT

Factors Summary

<table>
<thead>
<tr>
<th>Flag/Factor</th>
<th>Short description</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative Tax Treatment</td>
<td>Structure and underlying investments can cause unforeseen paperwork and/or additional costs that differ from traditional equity investments</td>
<td>1 Point</td>
</tr>
<tr>
<td>Alternative Weighting</td>
<td>Non-market capitalization weighted passive products may have differentiated returns from the underlying market.</td>
<td>1 Point</td>
</tr>
<tr>
<td>Fund Is Actively Managed</td>
<td>Actively managed ETFs are subject to the decisions of the fund managers and returns may differ from the underlying broad market.</td>
<td>1 Point</td>
</tr>
<tr>
<td>Hidden Fees</td>
<td>Some ETFs have additional costs that are not transparently stated. Examples of these fees are acquired fund fees, deferred tax liabilities, shorting costs, etc.</td>
<td>1 Point</td>
</tr>
<tr>
<td>Credit Risk</td>
<td>Investors should be aware that their investments are not secured by actual holdings and are subject to the solvency of the instrument’s issuer/guarantor.</td>
<td>2 Points</td>
</tr>
<tr>
<td>Low Trading Volume</td>
<td>ETFs are trading vehicles and minimal trading may cause adverse price movement when entering or exiting a position. Risk of fund closure.</td>
<td>1 Point</td>
</tr>
<tr>
<td>Less Liquid Holdings</td>
<td>These ETFs are most vulnerable to issues with liquidity and pricing during a crisis or tail risk event.</td>
<td>2 Points</td>
</tr>
<tr>
<td>Potential NAV Tracking Issues</td>
<td>Passively managed ETFs are expected to track their indices closely.</td>
<td>1 Point</td>
</tr>
<tr>
<td>Discount/Premium Issues</td>
<td>NAV is considered fair value, and if the price is not at the fair value this can cause issues for the investor.</td>
<td>Large D/P Range = 1 Point Large Avg D/P = 1 Point Max = 2 Points</td>
</tr>
<tr>
<td>Leverage</td>
<td>Creates path dependent returns and increased risk.</td>
<td>Inverse/Minimal Leverage = 2 Point Heavy Leverage/Daily Reset = 5 Points Max = 5 Points</td>
</tr>
<tr>
<td>Potential Futures Roll Costs</td>
<td>Additional costs can occur from the rolling of futures contracts and can have a large impact on returns.</td>
<td>4 Points</td>
</tr>
</tbody>
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Points Summary

1. ETP’s with 1 point or less are given a green light.
2. ETP’s with 2-4 points are given a yellow light.
3. ETP’s with 5 points or greater are given a red light.

Factor Descriptions, Explanations, and Examples

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1. Alternative Tax Treatment
   The tax treatment flag is reserved for funds that use a structure or have underlying investments that will cause investors to have a tax treatment different from normal equity investments.
   a. Examples:
      i. Funds structured as a commodity pool (a form of a limited partnership) will require the completion of a K-1 form alongside or instead of the normal 1099 form.
      ii. Underlying investments in Gold and precious metals will be taxed where relevant at the Short Term Capital Gains rate. But, instead of moving down to the Long Term Capital Gains rate when the investment is held for a time greater than one year, these investments will be taxed at the collectibles tax rate. Currently, long term (greater than one year) investments in gold are taxed at a maximum of 31.8% rather than the typical long term capital gains rate (currently at a max of 20%).
      iii. Currency ETPs structured as grantor trusts are always taxed as ordinary income and are not subject to the lower Long Term Capital Gains tax rate.

2. Alternative Weighting
   This flag denotes a passive product whose underlying holdings are weighted differently from a conventional Market Capitalization scheme. This is to allow investors to be aware that there is likely to be factor tilts and/or differentiation from the overall market that the fund is tracking.

3. Fund is Actively Managed
   Used to denote a fund that is actively managed. This is to make sure investors are aware that there is a person actively making decisions that may cause their investment to diverge from the underlying market (Positively or negatively).

4. Hidden Fees
   The hidden fees flag is used to denote funds with underlying costs inherent in their strategy or structure. These fees or costs will not be blatantly stated in documentation for the funds but should be something that an investor is aware of. Some negligible while others may be notable.
   a. Examples:
      i. Funds that implement some sort of hedging/shorting in their underlying strategy. There are additional costs in shorting/borrowing against a security or market. Interest rate hedging and currency hedging are included here.
      ii. Funds structured as C-Corporations (C-corps), typically MLP Funds. Because these “funds” are structured as corporations, they do not have the pass through provisions provided in a typical Regulated Investment Company (RIC) under the Investment Company Act of 1940 (‘40 Act) and are taxable entities. This forces the entity to incur Deferred Tax Assets (DTAs) or Deferred Tax Liabilities (DTLs) depending on the performance of the fund. Any DTL will cause a corresponding decrease in the fund’s net asset value (NAV), and it will present as an additional cost to a fund.
         1. Funds solely invested in MLPs (Master Limited Partnerships) are structured as C-corps to avoid a specific provision from The American Jobs Creation Act of 2004. The Jobs Creation Act clarified income rules allowing the inclusion of net income from qualified publicly traded partnerships to be considered as qualified income. But, the provision also restricted RICs under the ‘40 Act from having more than 25% of their assets in qualified publicly traded partnerships. C-corps are not considered RICs.
      iii. Fund of Funds. Fund of funds have their own management and structure expenses but their investments in underlying funds also have expenses. This shows up as an Acquired Funds Fee.
5. **Credit Risk**
   Used to denote the credit risks associated with debt instruments. Exchange Traded Notes (ETNs) are different from Exchange Traded Funds (ETFs) because they do not actually hold the underlying assets. The return of an ETN is guaranteed by the guarantor of the debt. This is typically a large bank. Thus, the returns and assets in an ETN are subject to the credit risk of the guarantor/issuer of the debt.

6. **Low Trading Volume**
   ETFs have what is referred to as two levels of liquidity (Primary and Secondary). There is liquidity in the primary market based on the underlying holdings and the ability to use the Creation/Redemption process that is unique to ETFs. The second and more commonly known level of liquidity is “on-screen” trading volume. To analyze the secondary level of liquidity (volume) of an ETF, Average Daily Turnover (also known as ‘Traded Value’ or ‘Dollar Volume’) is used. Any ETF with an average daily turnover (past 1 year) lower than $20,000 USD, is given a notice of “Low Trading Volume”. This may present additional costs in the form of wider spreads and/or the inability to enter or leave a position. Another risk associated with low trading volume is the possibility for the closure of the product. Limit orders should be used for products with this flag.
   
   a. Turnover is defined as:
      i. **“The total amount traded in the security’s currency. This value represents all trade prices, multiplied by the number of shares relating to each price. This value is then summed.”**

7. **Less Liquid Holdings**
   The ‘Less Liquid Holdings’ flag is used to denote a fund with underlying assets that are considered to be traded in an illiquid market. This is based on the second level of liquidity mentioned in the “Low Trading Volume” heading. In the event of a crisis or tail risk event, these types of ETFs are most likely to have issues with liquidity and pricing. It should also be stated that these issues would be a product of the markets being invested in. ETFs reflect their underlying market and when there are issues in the underlying market, it is likely to show in an ETF via wider spreads and other factors. If an investor does not feel comfortable investing in a market directly, they should think carefully about investing in ETFs that track that market.
   
   a. **Examples** (of these markets):
      i. High Yield Debt
      ii. Frontier Markets

8. **Potential NAV Tracking Issues**
   ETPs flagged with NAV Tracking Issues are passively managed funds that have deviated from the returns of their underlying index over the past year. This is an alert that signifies there is potential for a form risk similar to basis risk. Basis risk is the risk that the value of a hedge (or ETF in this case) does not move in line with that of the underlying exposure (an index). This can be seen in the form of under or out-performance (Tracking Difference). Tracking difference is defined as the difference between the performance of the fund and the performance of the underlying index. This is analyzed over a 1 year time span to see how much the NAV of a fund has differed from its underlying benchmark. An ETF is flagged after satisfying two separate criteria (an absolute and a relative criterion). For the system’s purposes, the adjusted tracking difference is used (adjusted after adding back expense ratio costs) as the absolute measure. If the adjusted tracking difference is at least 0.5%, the first criterion is met. The second criterion is that the performance difference must amount to at least 25% of the absolute value of the underlying index return. If these are satisfied, an ETF will...
be flagged as having “Potential NAV Tracking Issues”. In the event that the Index performance was lower than the absolute value of 0.2%, the adjusted tracking difference (inclusive of expense ratio) is used and the fund must have an absolute tracking difference greater than 0.5%.

**a.** It is important to note that a fund may be flagged in this criterion for *outperforming* its index. While this is typically good for investors, it may not be for all. ETFs can be shorted, and investors should be aware of this potential discrepancy. There are numerous reasons that a passive ETF may have been able to outperform its benchmark. To name a few examples, the fund may have deviated from the underlying index investments or the fund may have engaged in securities lending.

**b. Example:**

i. An ETF with ticker ABC underperforms its index by 0.8%, but its expense ratio of 0.65% explains almost all of that underperformance. The adjusted tracking difference (inclusive of the expense ratio) is 0.15%. This 0.15% is below the 0.5% threshold and thus not flagged.

ii. An ETF with ticker XYZ outperforms its benchmark by 0.12% and has an expense ratio of 0.65%. This means that the ETF’s adjusted tracking difference was 0.77% which is above the 0.5% threshold. The next test is to look at the performance of the underlying index and view this on relative terms. In this example, the index returned 1.5% over that year. This ETF will be flagged with potential NAV tracking issues because the (0.77%) / (1.50%) = 51.33%. 51.33% is greater than the 25% threshold used to view tracking on a relative basis.

**9. Discount/Premium Issues**

A fund is at a discount when its Price is below the Net Asset Value (NAV). A premium is the opposite situation, where the fund closes at a price higher than its NAV. This flag is used to identify ETPs with significant potential for discount and premium issues based on the historical track record of an ETP. This is analyzed in two separate ways and funds can be given a total of 2 points. The first is using the highest premium and the lowest discount to ascertain how wide the range of Discount to Premium has been for a given ETF. The system is looking for an ETP with a historical range that is at least 10% over the past two years. The second way that the funds are assessed is based on the average discount/premium percent over a given time period. This takes into account each day and gives the average premium or discount. If the absolute value of this average discount/premium is over 0.75%, it is seen as an indication that this fund may have discount/premium issues. (Internationally focused ETPs are excluded from this second discount premium criterion)

**a.** Many funds given a point in this criterion are likely to have internationally traded holdings. Internationally focused ETPs are not trading at the same time as their underlying assets and because of this fact, there are often slight discrepancies in the calculation of NAV against the closing price of the ETP. This is simply a byproduct of investing in these markets. If possible, investors should be trading and buying ETPs when the underlying assets are also trading.

i. **Example:**

1. US Listed ETPs with a European geographical focus should be traded in the morning when possible because the European markets are open during the US’s morning trading hours. This allows for better price discovery and efficiency for those products.

2. For exposures in Asia, trading during the underlying market hours is not possible because there is no overlap with the US’s trading hours.

**10. Leverage (multiple flags)**

Leverage in an ETF is created using derivative instruments such as swaps that reset on a daily basis. These funds typically diversify the counterparty risk of the underlying swaps by using multiple Banks. While leverage has the ability to potentially increase returns, it will also increase risk and volatility.
This alone makes leveraged funds more risky. But, leveraged funds also have to deal with what is referred to as volatility decay (AKA leverage decay and/or beta slippage). To explain the decay in this situation, a simple 4 day example of returns and math problem will be used.

a. Example:
   i. **Index Returns:** +5%, -5%, +5%, - 5%
   ii. In a normal passively managed ETF tracking this index, its return would be about **-0.5%**. In the case of a 300% (3X) positively leveraged ETF, it would return 3 times the performance of the underlying index on a daily basis. An uninformed investor might expect their returns to simply be 3 times that of the index at roughly -1.5%, but that is not the case. It will return about **-4.5%** due to the fact that these funds reset on a daily basis. This unexpected increase in loss of nearly 3.0% over the expected -1.50% is the ‘decay’ referenced above. For the example of a 300% negatively leveraged (-3X) ETF, one might expect to earn a positive return of roughly 1.50%. Tracking the same index, the daily returns of such a fund would also be about **-4.5%**, a difference in expectations of 6% and a loss rather than a gain!
   iii. All of this means that the returns of a leveraged ETP are completely **path dependent**.

b. Flags:
   i. **Heavy Leverage/Daily Resetting**
      The notice of heavy leverage is used to indicate a fund that uses leverage of at least 200% (in either the bullish/positive direction or the bearish/negative direction of returns) and is given 5 points
   ii. **Inverse/Minimal Leverage**
      The notice of Inverse/Minimal leverage is used for funds that have a leverage factor below 200%. These funds will have higher risks than a non-leveraged fund but these effects will be less than a fund indicated with “Heavy Leverage”. These are given 2 points.

11. **Potential Futures Roll Costs**
    This flag is used to denote funds that may be subject to potential roll costs from rolling underlying futures contracts. These roll costs can end up hurting or improving product return depending on the futures curve and whether or not the underlying futures are in Backwardation or contango. Funds with potential Roll Costs are automatically given 4 points. They are given 4 points because an investor may invest in a bullish futures based ETF and correctly predict that its spot price will improve over the next 6 months, but still end up seeing their investment give them a negative return due to the roll costs of a futures market in contango.

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\[ \text{Index Returns: } +5\%, -5\%, +5\%, -5\% \]
\[ \text{Actual Total Return: } ((1.05 \times 0.95 \times 1.05 \times 0.95) - 1) = -0.4994\% \]
\[ \text{3X Positively Leveraged ETF daily returns: } +15\%, -15\%, +15\%, -15\% \]
\[ \text{Uninformed Investors Expected Return: } -0.4994\% \times 3 = -1.4982\% \]
\[ \text{Actual Total Return: } ((1.15 \times 0.85 \times 1.15 \times 0.85) - 1) = -4.4949\% \]
\[ \text{Difference: } 2.9512\% \]
\[ \text{3X Negatively Leveraged ETF daily return: } -15\%, +15\%, -15\%, 15\% \]
\[ \text{Uninformed Investors Expected Return } = -0.4994\% \times -3 = +1.4982 \]

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Actual Total Return: \((\times.85\times1.15\times.85\times1.15)-1\) = \(-4.4494\%\)
Difference: 5.9476%

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