ASTOR
INVESTMENT MANAGEMENT

FUNDAMENTALLY DRIVEN.

WHY THE ECONOMY PROVIDES THE RIGHT ROADMAP FOR MITIGATING RISK

De-Risking a Portfolio During Recessionary Periods

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When implementing a risk management strategy, it's not about trying to time the top of every downturn, it's more about managing against the right downturn. Periods of substantial market losses typically provide clues. Identifying them can make all the difference.

When wealth destroying drawdowns occur, they typically don't play out overnight.

- In fact, 80% of the drawdown itself tends to occur months after the market peaks.
- The economy contains many clues to these drawdown occurrences, and can help determine when the time is right to take action.

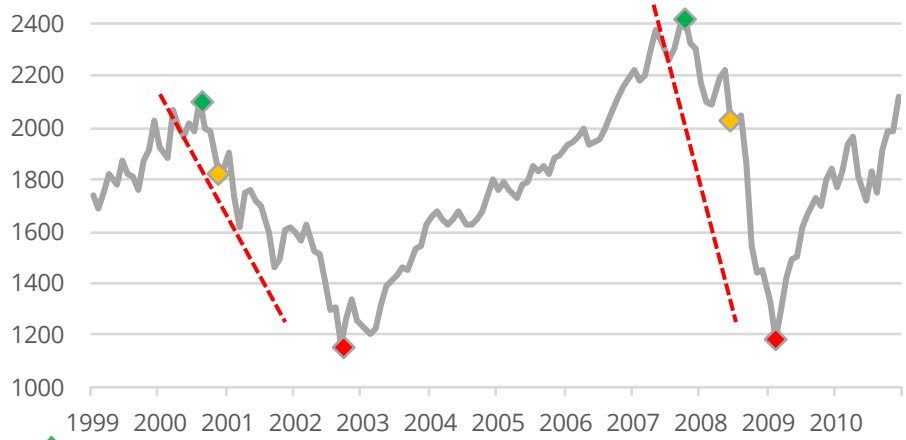
Wealth Destroying Periods

- -44.73% - Max drawdown of the S&P 500 TR during the 2001-2003 recession
- -50.95% - Max drawdown of the S&P 500 TR during the Great Recession of 2008 (late 2007-early 2009)

Source: MorningstarDirect

S&P 500 TR

01/01/1999 – 12/31/2010



Peak of S&P 500 before recessionary period

80% of the S&P 500's losses occurred after this marker.
In other words, 20% of the SP 500's drawdown occurred between the green marker and the yellow marker. 80% of the SP 500's losses occurred between the yellow marker and the red marker.

Bottom of S&P 500 during recessionary period

Data: Astor
Calculations: Astor
Illustration: Astor

Using Economic Data to Identify Periods of Sustained Weakness in Equity Markets

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Helping Investors Avoid Large Equity Downturns: By analyzing certain economic data points, Astor believes we can help investors avoid, or significantly reduce, losses during large equity market downturns.

The Study: Astor analyzed the behavior of certain economic data points during major drawdowns in the S&P 500. We wanted to demonstrate how major macro data points, including ones used in the Astor Economic Index®, corresponded with the rise and fall of the S&P 500 TR.

Astor analyzes these data points and when they show signs of deterioration/weakness, the Astor Investment Committee will most likely reduce equity-like risk in Astor strategies.

- **ISM Manufacturing PMI Index**: This is a national index that aggregates purchasing manager activity across regions that relates to manufacturing. This is important as it monitors employment, production, inventories, new orders and supplier deliveries.
- **Industrial Production:** Indicator of economic health for manufacturing and service sectors and is sensitive to rates and consumer demand. Tends to be a leading view for GDP and also used by the Fed in forecasting.
- **Non Farm Payrolls:** Influential statistic and economic indicator released monthly by the United States Department of Labor as part of a comprehensive report on the state of the labor market. Labor markets give insight into the consumer world as well as corporate, as higher confidence in the economy typically leads to higher employment activity.
- **The Astor Economic Index®:** Astor Investment Management reviews numerous economic date points, scoring key indicators that are used as inputs into the AEI model, (including ISM Manufacturing Index and Non-Farm Payrolls) and produces an overall score on the health of the U.S. Economy. This score is published monthly.

Source: Investopedia.com, Astor

Non Farm Payrolls

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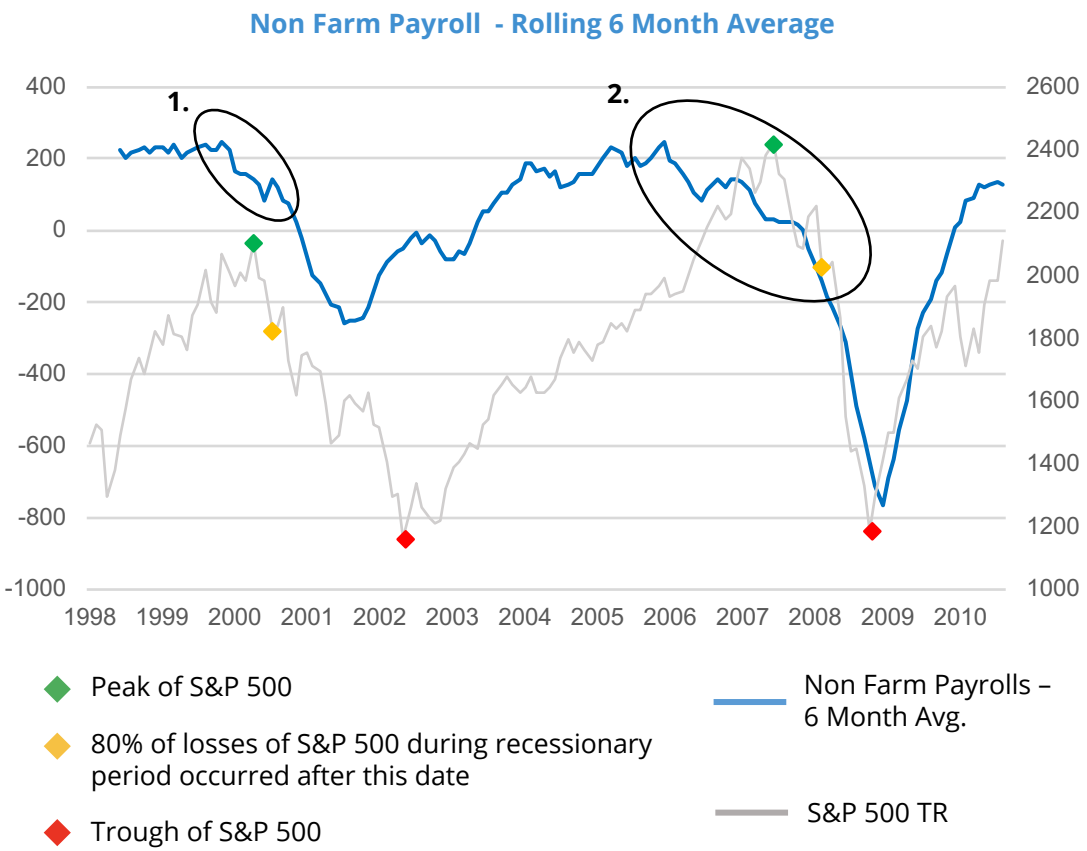
The employment picture is an extremely important economic variable. If more companies are hiring more people, that is typically a sign that the economy is healthy. Vice versa, if companies are laying people off and/or not hiring, that is typically associated with a weakening economy.

Non Farm Payrolls is an important statistic that investors, governments and companies use to gauge the overall employment picture in the U.S.

Historically, payroll growth is typically seen later in an economic cycle and peaks prior to equity market peaks.

1. Early 2000s: Non-Farm Payrolls started to slow down/decrease in March of 2000 – roughly 5 months before the S&P 500 peaked.
2. 2008 Financial Crisis: Payrolls started to show signs of weakness in 2006, well before the equity markets peaked in late 2007.



Data: Astor
Calculations: Astor
Illustration: Astor

Industrial Production - Output

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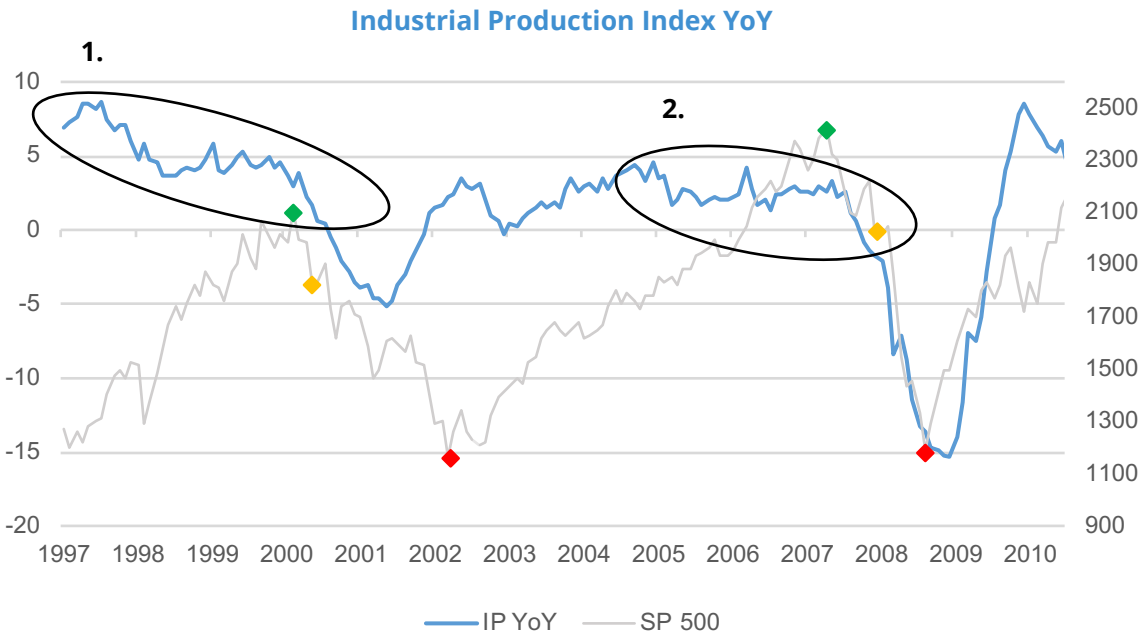
Industrial production is one of several statistics that measures the output of companies and workers across the United States. In theory, the movement of industrial production provides valuable insight into the direction of economic growth in the U.S.

During the 2000s recession and the Great Recession of 2008, Industrial Production was on a steady decline or flattening of peak before the S&P 500 TR entered "Bear Market Territory."

1. Early 2000s: Production started to weaken in early 1998 and had retrenched materially before the S&P 500 TR peaked in early 2000.
2. 2008 Financial Crisis: Production peaked in September of 2006 and somewhat wavered/flatlined until the S&P 500 TR peaked in late 2007.

It is important to note that Astor looks at the trend of economic data, not the particular value of a statistic on a given day.



Data: Astor
Calculations: Astor
Illustration: Astor

Manufacturing - Output

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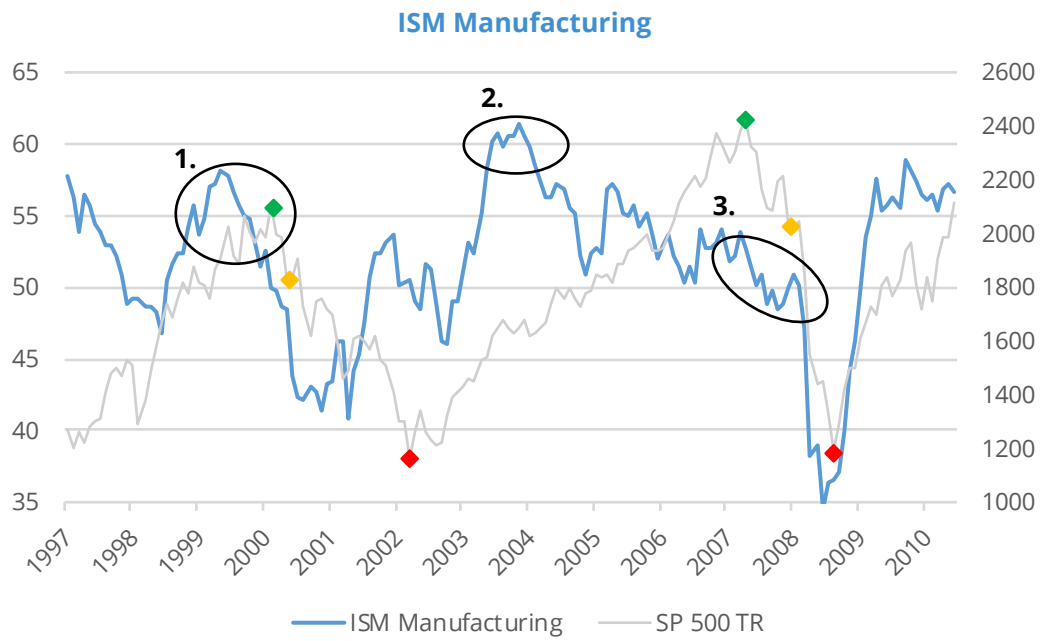
ISM Purchasing Managers Index reading gives comprehensive look at activity in manufacturing and the outlook by business executives. The Index aggregates purchasing manager activity across regions that relates to manufacturing. This is important as it monitors employment, production, inventories, new orders and supplier deliveries.

Levels below 50 are considered contractionary for the index.

ISM Manufacturing is one of the main economic data points that Astor analyzes in order to determine the overall health of the economy.

1. Early 2000s: ISM Manufacturing started decline in the late 90s and then improved into the later stages of the 90's bull market. Ultimately, the index showed signs of weakness several months before the S&P 500 TR peaked.
2. 2008 Financial Crisis: The index peaked in late 2004.
3. 2008 Financial Crisis: The index reading was below '50' (level considered 'contractionary' for the index) before the S&P 500 TR experienced 20% of the max drawdown of each recessionary periods.



Peak of S&P 500

80% of losses of S&P 500 during recessionary period occurred after this date

Trough of S&P 500

ISM Manufacturing

S&P 500 TR

Data: Astor
Calculations: Astor
Illustration: Astor

The Astor Economic Index®

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The Astor Economic Index® (AEI): A comprehensive, aggregate view of the U.S. Economy incorporating multiple economic data points.

The Astor Economic Index® is a tool created and used by the Astor Investment Committee to determine the overall health of the U.S. Economy. Various economic data points are collected and analyzed on a daily basis and, based on the movement of the specific economic data points (like ISM Manufacturing, Non-Farm Payrolls, Etc.), a score is published. **That score is the Astor Economic Index®.**

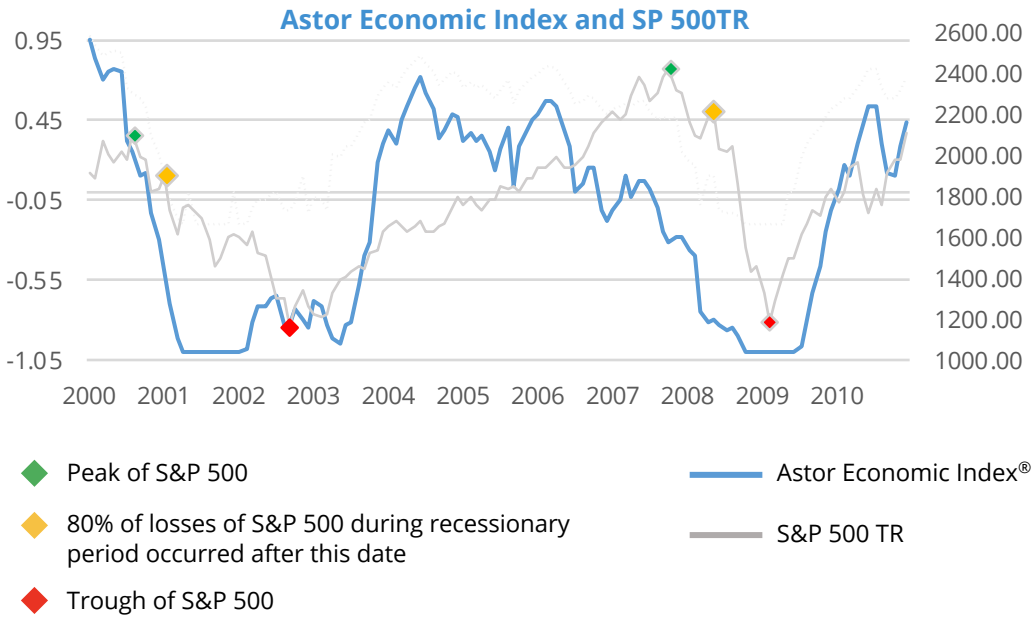
Astor believes that stock prices tend to go up when the U.S. Economy is healthy and/or getting healthier. When the **AEI** is rising, the Astor Investment Committee is comfortable increasing exposure to equity-like risk. Likewise, when the **AEI** is declining, the committee will most likely seek to reduce risk across Astor's strategies.

The Astor Economic Index®:

1. Early 2000s: The AEI declined drastically as the S&P 500 TR was topping. This was the result of various economic data points that feed into the AEI deteriorating simultaneously.
2. 2008 Financial Crisis: Starting in 2006, the AEI declined substantially for multiple quarters before the S&P 500 TR peaked in late 2007.

The AEI is a systematic tool that measures economic data and corresponding trends. By using the Astor Economic Index®, Astor believes we have a very valuable tool that allows us to provide the best risk-adjusted returns for our investors.

Source: Astor calculations. The AEI should not be used as the sole determining factor for your investment decision. There is no guarantee that the index will produce the same results in the future. An investment cannot be made in the index.



Data: Astor
Calculations: Astor
Illustration: Astor

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What's Happening Now - Current Reading of the Astor Economic Index®

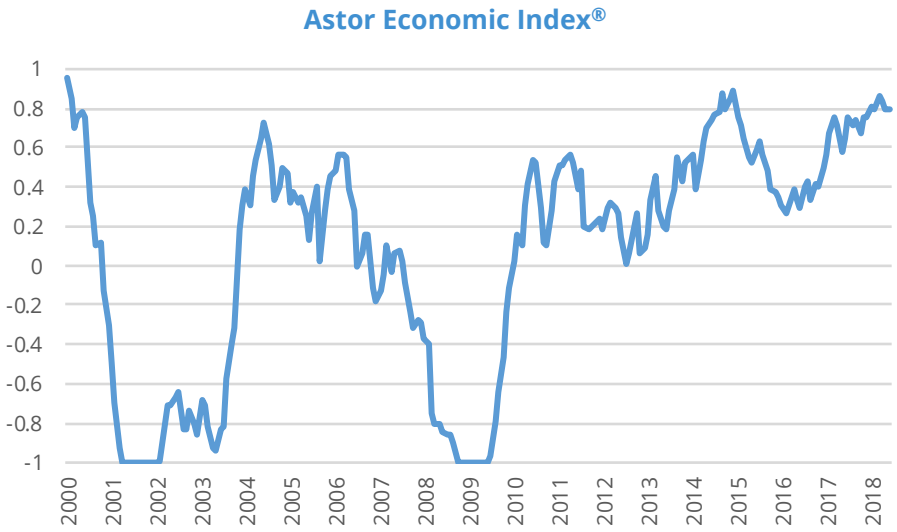
Through the lens of the Astor Economic Index®, the U.S economy is healthy. Following a manufacturing recession in 2015, the U.S. economy has been on an upward trend.

Reinforcing Economic Health:

- **Employment**: Labor market readings are at the highest levels post recession with improving wages.
- **Manufacturing**: ISM PMI has improved consistently since the manufacturing recession in 2015-16 and remains at elevated levels.
- **Tax Cuts**: This has been a tailwind for corporations.

Cause for Concern:

- **Trade:** Trade concerns are raising prices of certain goods and causing uncertainty (instability) in financial markets. Higher costs will detract from growth and the longer the trade talks/threats persist, the greater impact it will have on the near-term economic health.
- **Inflation/Rates:** A strong economy is creating increased inflation pressure. The Fed will continue increasing short term rates.



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Astor's Belief

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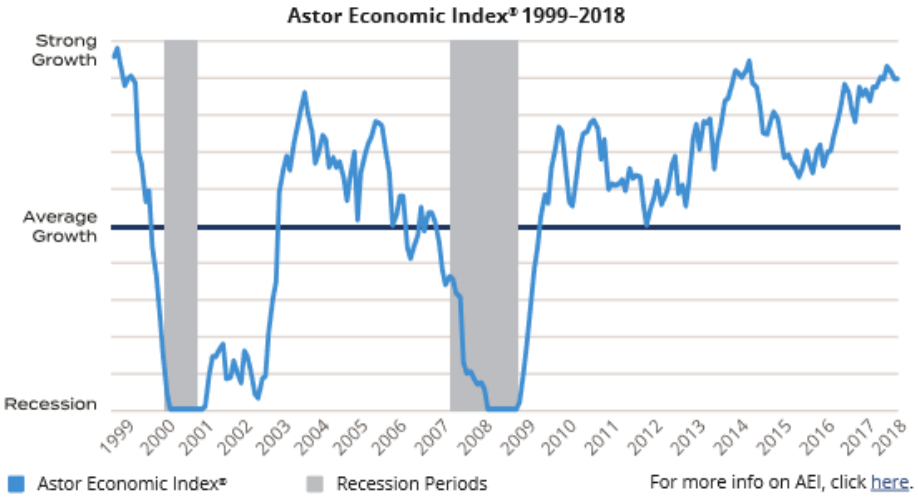
'Now-Casting' the U.S. Economy - Astor does not 'predict' or 'forecast' where the stock market is going. We collect relevant economic data (employment, output, Etc.) on a daily basis and we 'score' or 'temperature gauge' the U.S. economy. If the economic data is getting stronger/healthier, we want to take more equity risk in our strategies. If the economic data is starting to weaken, we want to reduce exposure to equity-like risk.

Astor's Belief:

- There is no person, machine or crystal ball that can accurately forecast the peak or trough of equity markets on a repeatable basis.
- The stock market can move 10% in any one direction for any reason. If the economy is healthy, the market bounces back from an 'event driven' loss relatively quickly. If the economy is weak/getting weaker, equity losses tend to stick.
- Strategies/Investors that attempt to time the peak of a market tend to get 'whip-sawed' by individual data points and geopolitical events.

Summary: At Astor, we don't try to predict what will happen next in the Economy. We look for signs the economy is getting healthy and, equally important, we look for 'cracks' in a healthy economy. As of 6/30/2018, there has not been any material weakening in what Astor would consider major economic data points.



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