IAS EXECUTIVE SUMMARY

# WHAT TO EXPECT WHEN EXPECTING A RECESSION

## A CIO's guide to interpreting the probability of recession


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Recessions are a regularity of the economic landscape. While each recession has its own unique set of characteristics, recessions share common attributes with implications for portfolio construction and asset allocation decisions.

However, we often do not realize we are in a recession until long after it has started. To provide a more up-to-date assessment of recession risk, it is common to turn to models that use current conditions to evaluate the probability of a current or future recession.

For CIOs, evaluating the risk of a recession is not just a curiosity. The probability of being in a recession today – or of a recession occurring soon – may shed light on likely forward market performance and to help better position a multi-asset portfolio.

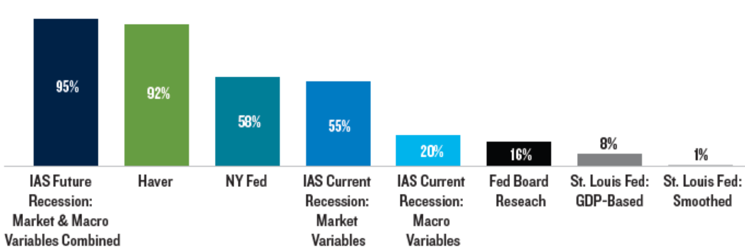
But interpreting recession probabilities can be difficult. Probability estimates can vary widely across recession indicators, and seemingly similar indicators can generate vastly different probabilities.

As a case in point, in March 2023, recession probabilities from a variety of recession predictor models ranged from 1% to over 90%. How can a CIO make sense of this? Which signals are more reliable and what, if anything, do these signals foretell about asset class performance?

We explore several issues that CIOs should consider when presented with a recession probability reading:

- What underlying inputs drive a model's recession probability?
- Is the model assessing current or future recession risk?
- How strong is the resulting recession signal?
- How are markets likely to respond to such signals?

**Estimated Probability of US Recession (as of March 2023)**




*Note: Model details can be found in the full research paper. NY Fed recession probability estimates are not official forecasts of the Federal Reserve Bank of New York, its president, the Federal Reserve System, or the Federal Open Market Committee. Source: Bureau of Labor Statistics, Federal Reserve Bank of New York, Federal Reserve Bank of St. Louis, Federal Reserve Board, Haver Analytics, NBER, Standard & Poor's and PGIM IAS. For illustrative purposes only.*

Our research suggests five key takeaways:

(1) Financial market inputs and macroeconomic inputs contribute to the estimated probability of recession. Recession signals that combine market and macro inputs are more dependable than signals that rely on only one set of inputs.

(2) Elevated recession probability readings are a reliable signal of both current and future US recessions. As a rule of thumb, probability readings above 60% tend to be associated with recessions, but false signals – positive and negative – do occur.

(3) Signals based on either market or macro inputs alone are often not aligned. Even so, recession warning signals that arise in periods when market and macro models disagree are still of high quality.

(4) Unfortunately, by the time recession probabilities are elevated, the stock market has generally already declined and, perhaps after a pause, is more likely to rally than sell off further.

(5) A better indicator for forward stock returns is the *change* in recession probability, not the level. Specifically, expected excess stock returns are weakest when the probability of a recession is high & rising and are strongest when the probability of a recession is high & falling.

**Forward Stock and Bond Total Excess Returns by Recession Probability Environment**

| Asset | Forward Return Window | Annualized Average Excess Total Returns When the... Probability of Current Recession Is... High (≥ 60%) | Low (<60%) | Rising | Falling | High & Rising | High & Falling | Low & Rising | Low & Falling |
|---|---|---|---|---|---|---|---|---|---|
| S&P 500 | +1m | -3.0% | 3.4% | -2.8% | 8.8% | -27.7% | 30.6% | 0.3% | 6.7% |
| | +3m | 3.8% | 2.9% | 0.1% | 6.0% | -11.7% | 22.3% | 1.5% | 4.4% |
| | +6m | 7.9% | 2.5% | 1.3% | 4.8% | -2.7% | 19.7% | 1.8% | 3.3% |
| | +12m | 9.5% | 2.4% | 1.7% | 4.4% | 5.2% | 14.3% | 1.3% | 3.4% |
| 10y Treasury | +1m | 4.6% | 0.5% | 2.1% | -0.5% | 12.2% | -3.6% | 1.1% | -0.1% |
| | +3m | 3.1% | 0.6% | 1.1% | 0.6% | 3.1% | 3.1% | 0.9% | 0.4% |
| | +6m | 2.0% | 0.8% | 0.5% | 1.3% | -0.1% | 4.3% | 0.6% | 1.0% |
| | +12m | 1.7% | 0.9% | 0.8% | 1.1% | 0.1% | 3.4% | 0.9% | 0.9% |

*Note: Asset class returns are calculated based on a total return price index. Excess returns are relative to 3m LIBOR. Estimated probability of a current (future) recession is based on logit regression; dependent variable equals 1 when the current month(anytime within the next 1-12m) is in recession (NBER defined) and 0 otherwise; regressors are contemporaneous values of SP500, YC, IP and PAY; models are estimated using monthly data from 1954-2019. Source: Bureau of Labor Statistics, Federal Reserve Board, Haver Analytics, NBER, Standard & Poor's and PGIM IAS. For illustrative purposes only.*

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IAS 0606-200