Economic Analysis

U.S. Recession Probability Rises to 25%

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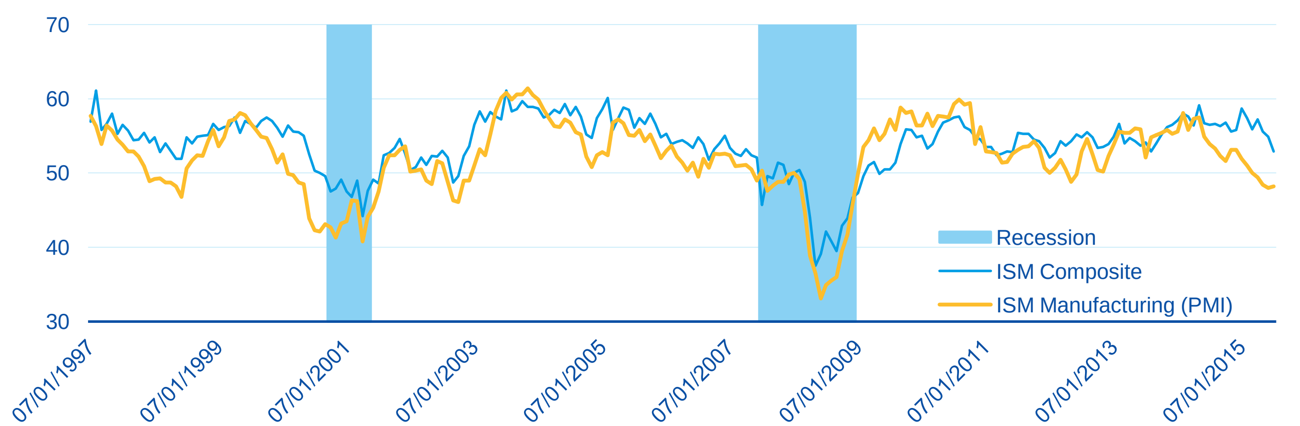
- **U.S. has a 25% probability of going into a recession in the next 12 months, based on our estimate**
- **Our model balances factors from financial markets and the manufacturing sector**
- **Deteriorating profits of S&P 500 companies may reflect a weakening global economy**

It has been more than nine years since the beginning of the Great Recession. Despite the bold moves by global policymakers, the recovery has been discouragingly slow, and some economists even argue that the Federal Reserve should not have raised the interest rate last December. As a January survey in the Wall Street Journal reveals, on average there is a 17% probability that the U.S. economy will enter recession in the next 12 months. The concern of a possible recession became even more serious as the January ISM index was disappointingly low, and the PMI index was in the recession territory for 4 months in a row.

Chart 1
ISM Indices, SA, 50+=Expansionary



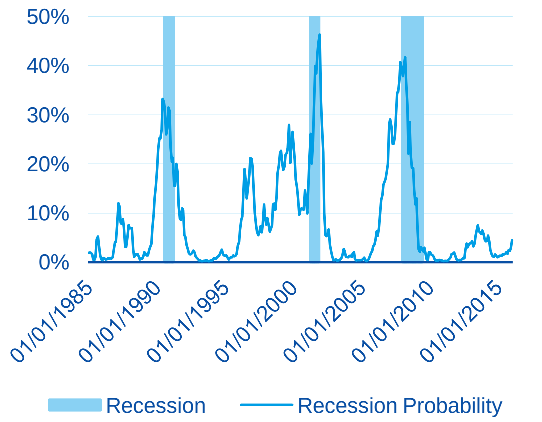
Source: ISM, NBER and BBVA Research

Leading Indicators for U.S. Recession

The traditional leading indicator for economic recession is the treasury spread, which is the difference of the rates between 10-year treasury notes and 3-month treasury bills. The forecast of recession in 12 months is published by the New York Fed every month; according to this official forecast, the risk of an economic recession in the next 12 months is negligible (Chart 2).

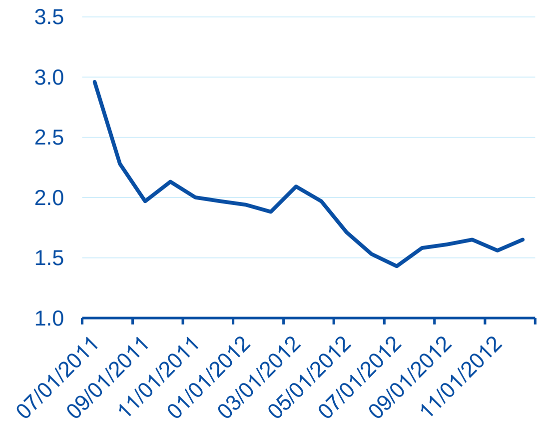
Yet some economists argue that the treasury spread is no longer an effective indicator because three QEs and the Operation Twist have significantly altered the debt maturity structure; therefore, today's treasury spread is not the same as the spread before the Great Recession (Chart 3).

Chart 2
Recession Probability Forecasts by the NY Fed
%



Source: New York Fed

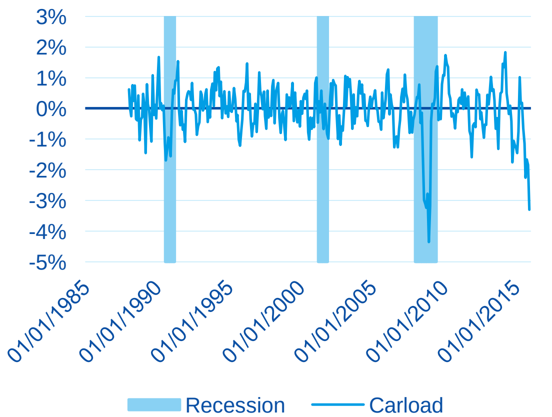
Chart 3
Treasury Spread Pre and Post-Operation Twist
%



Source: Haver and BBVA Research

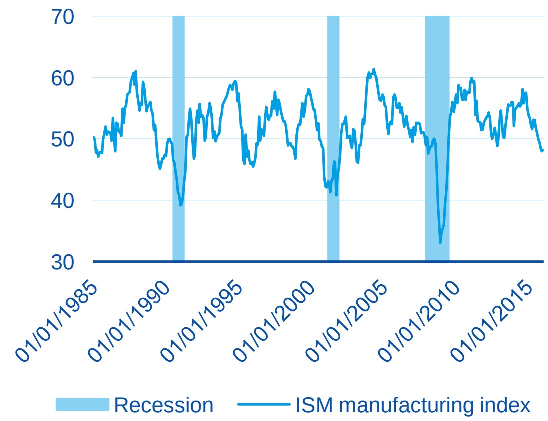
Other indicators are also used by economists to gauge the condition of the economy. For example, analysts from Bank of America found that the decline of rail traffic may signal an economic recession in the future.[1] In addition, the ISM Manufacturing Index itself is always used as an unofficial indicator for the recession risk (Charts 4 & 5).

Chart 4
Rail Carload
MoM % Change



Source: AAR, NBER, Haver and BBVA Research

Chart 5
ISM Manufacturing Index (PMI)
Index, SA, 50+=Expansionary



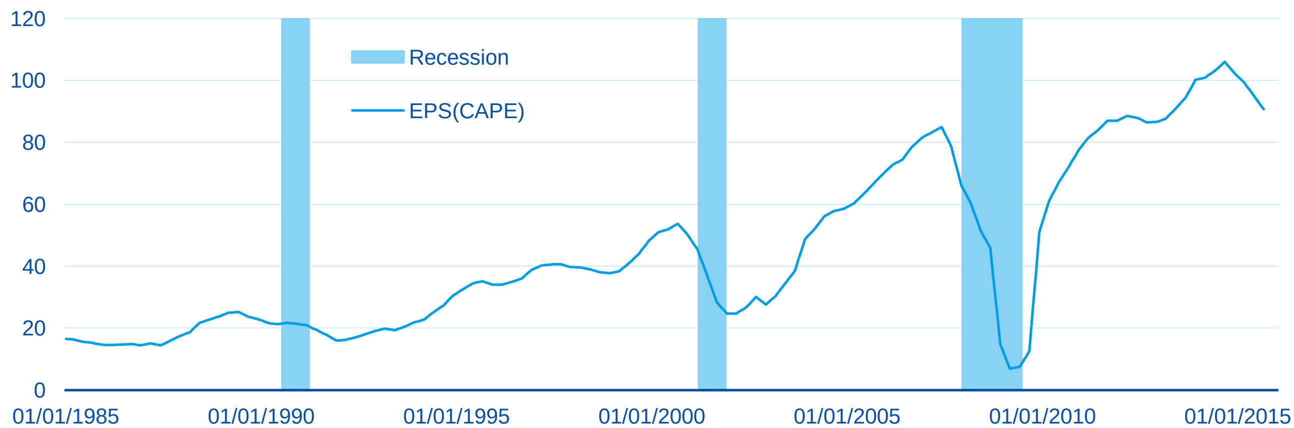
Source: Haver and BBVA Research

However, there are caveats of the above indicators. Both rail traffic and the manufacturing index may over-emphasize the importance of the manufacturing sector. For example, the railroad is mainly used to transfer raw materials and intermediate goods, and therefore may not accurately represent the whole economy. Also, Chart 5 shows that a recessionary manufacturing sector does not necessarily indicate an economic recession.

1 http://www.bloomberg.com/news/articles/2016-01-11/bank-of-america-rail-traffic-is-saying-something-worrying-about-the-u-s-economy. Also, China is known for using cargo volume to gauge economic conditions. The Economist has created a “Keqiang index” to provide an alternative measure for the Chinese economy, and cargo traffic contributes to 1/3 of this index.

The cyclically adjusted price-to-earnings (CAPE) ratio developed by Nobel Prize winner Robert Shiller provides further insights on the asset markets and economic recession. Although the CAPE ratio was not intended to be used as an indicator of a future market crash, a high CAPE ratio has been found to be highly related to the likelihood of such risks. Moreover, plunging earnings-per-share has also been associated with previous recessions (Chart 6).

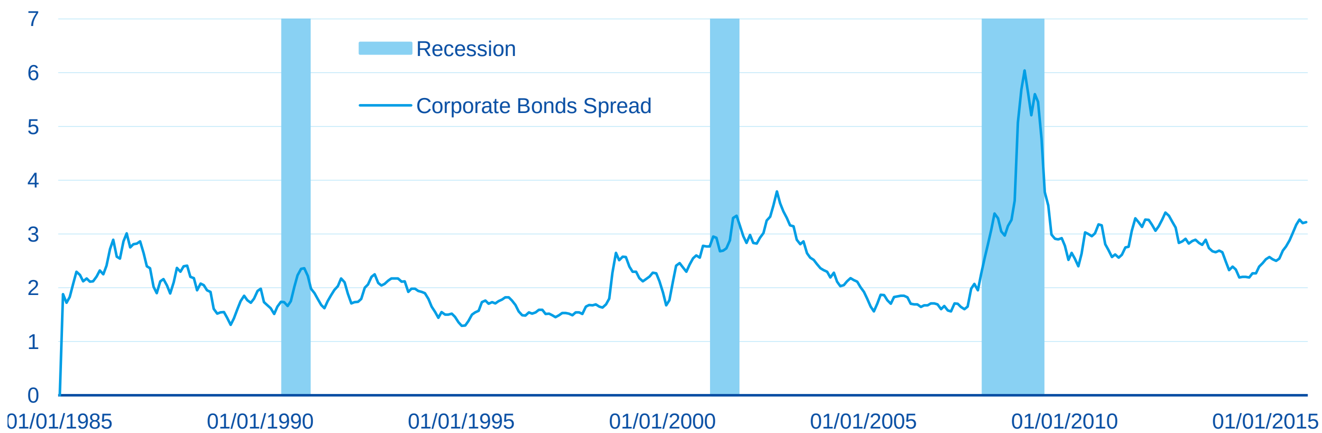
Chart 6
S&P 500 4-Quarter Total Diluted Earnings per Share
$/Share



Source: Robert Shiller, Haver and BBVA Research

Financial indicators from other financial markets also provide similar insights. For example, the increasing spread of rates between corporate bonds and 10-year treasury notes can also indicate rising corporate risks and a greater likelihood of an economic recession in the future.

Chart 7
Spread of Rates between BAA Corporate Bonds and 10-Year Treasury Notes
%

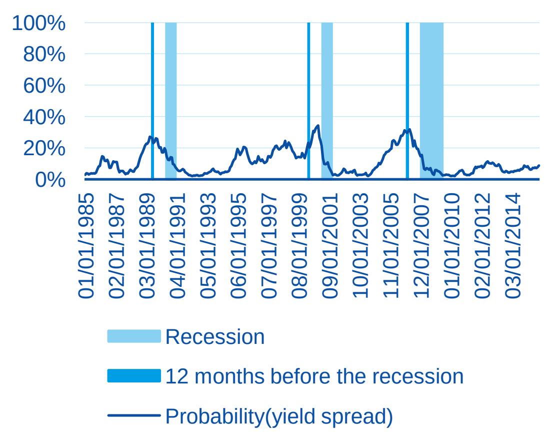


Source: Robert Shiller, Haver and BBVA Research

Forecasts Based on the Leading Indicators

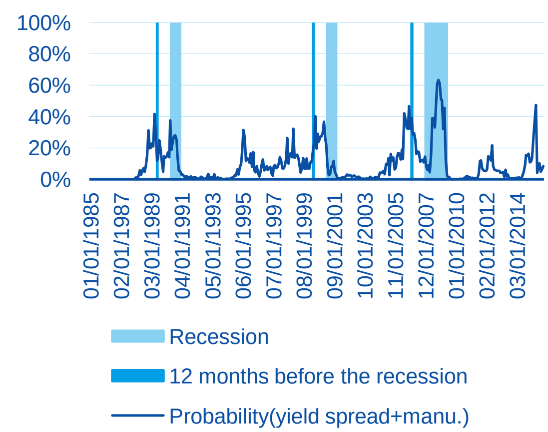
The forecast of recession significantly varies based on the choice of indicators. The estimate derived from the traditional indicator of interest spread gives us a flat recession probability. This result is consistent with the forecast from the New York Fed; however, since the Fed's operations have significantly twisted the spread, this forecast based solely on interest spread should be viewed as the lower bound of the recession probability (Chart 8). On the other hand, the forecast based on the interest rate spread and manufacturing indicators gives a result of 47% likelihood of recession in the next 12 months (Chart 9). However, incorporating the indicators of the manufacturing sector may over-emphasize the risks in the whole economy, as the manufacturing sector is in a *de facto* recession; therefore, this 47% should be viewed as an upper bound of the probability of recession in the next 12 months.

Chart 8
Probability of Recession in 12 Months (Interest Rate Spread Model), %



Source: BBVA Research

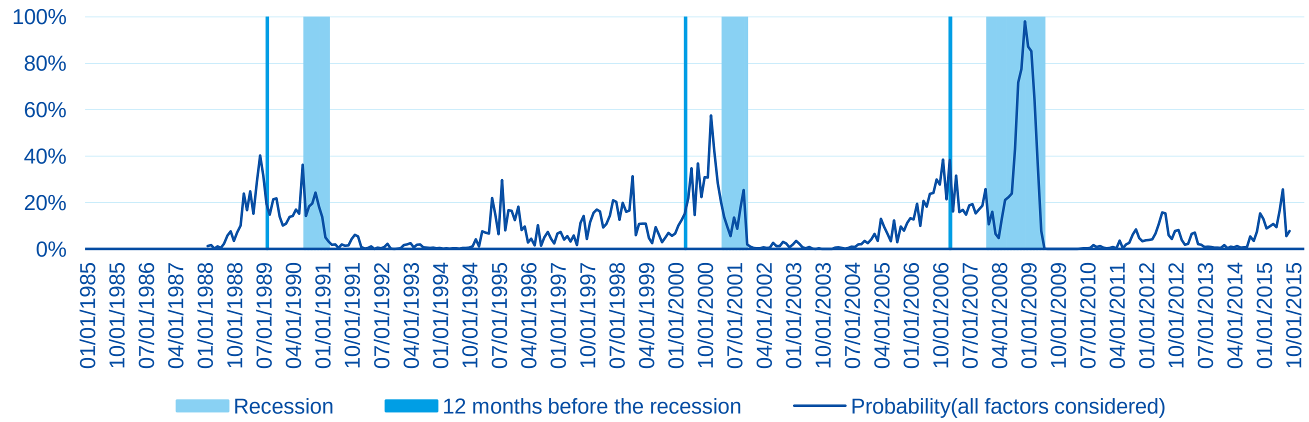
Chart 9
Probability of Recession in 12 Months (Interest Rate Spread & Manufacturing), %



Source: BBVA Research

Considering all factors, including Shiller's CAPE, we have developed a model that is able to generate a balanced forecast (Chart 10). First, our model could correctly forecast the recession in 1990. Second, there are three hikes above 30% before the collapse of the dot-com bubble, so even the "false alarms" are quantitatively consistent with the data. Third, the model could correctly forecast the Great Recession. Fourth, the probability of recession in the next 12 months is about 25%, based on the rate hike near the end of 2015. Although worrying, this does not guarantee a recession unless there are more signs going forward.

Chart 10
Probability of Recession in 12 Months (All Factors)
%



Source: BBVA Research

Bottom Line

Current economic indicators are sending alarming signals pointing to a future economic recession. Based on our model, the probability of an economic recession in the next 12 months is 25%. The decline of earnings-per-share reflects weakening on the corporate side. In addition to deteriorating profits faced by many companies, sharply declines in rail traffic may also reflect weakening demand in the global economy. World leaders must negotiate a strategy to escape from the looming possibility of a global economic recession.