

## **Economic Research:**

# **U.S. Business Cycle Barometer**

### February 19, 2019

(Editor's Note: In each quarterly issue of "U.S. Business Cycle Barometer," we highlight and comment on key economic activity data, and we evaluate their potential relevance for risks to the expansion. Note: Several releases were not available at the time of publication because of the shutdown.)

## **Key Takeaways**

- Since our last report in early November, two out of 10 leading indicators of near-term economic growth turned neutral from positive, while another two turned negative from neutral--the first negative signals since the launch of our dashboard in mid-2017. Six indicators remained unchanged, with five positive and one neutral.
- Our quantitative assessment of a recession in the next year is now 21%, up from 16% three months ago. Our qualitative assessment combined with calculated odds puts the risk of a recession at 20%-25%, one notch above the 15%-20% prediction in early November.
- The ongoing flattening of the yield curve in particular has been a major driver of higher recession odds. Financial conditions have eased in recent weeks, stemming from a significantly more dovish communication by the Fed. If the easing persists, the quantitative assessment will likely decline in the coming months.

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## **Summary: Mixed Signals**

Since S&P Global Economics' last Business Cycle Barometer (BCB) report, the 10 leading economic indicators in our dashboard are now showing crosscurrents in the U.S. While economic indicators continue to point to a sustained economic expansion, heightened investor concerns over global economic developments led to market volatility and disruptions late last year, leaving a mixed picture for the second oldest expansion in U.S. history. We now see a 20%-25% risk of recession over the next 12 months--up from 15%-20% in our last publication.

Four out of 10 leading indicators of near-term economic growth momentum in our dashboard weakened since our November BCB report. Two turned neutral from positive, while the other two turned negative from neutral--which are the first negative signals for our dashboard in the history of our report dating back to May 2017 (see table 1). The remaining six indicators remained unchanged in status, with five positive and one neutral.

Of the deteriorating group, three were indicators that reflect capital market expectations for near-term growth conditions. The term spread and credit spread both turned neutral from positive in November, while the stock market signal turned negative (from neutral) for near-term growth momentum. Market volatility has subsided somewhat since mid-January, helped by a more "patient" Fed, but not enough to move the needle back to positive territory for these indicators.

Outside of the capital markets, banks (according to the Federal Reserve's Senior Loan Officer Survey, which offers insight into the supply and demand for bank credit) expect tightening of lending standards and a decline in demand broadly across sectors, signaling weaker growth momentum (thus moving to negative now, from neutral in the last report). In contrast, the other indicator on financial stress, which incorporates a wide variety of financial variables, the Chicago Fed's Nonfinancial Corporate Index (NFCI) remains positive for growth momentum. Although the NFCI tightened a bit last quarter, it continues to signal that the U.S. financial system is operating at slightly below historical average levels of risk, credit, and leverage. Meanwhile, the leading indicators capturing activity in the real economy largely remain positive for near-term growth momentum.

In line with deterioration of conditions in the financial markets that lasted until mid-January, our econometric model suggests the odds of a recession in the coming 12 months are now 21%--a notch higher than 16% in November but well below the thresholds for the prior six recessions (see chart 7). Still, beyond our quantitative assessment, policy risks remain elevated, and, at the margin, add to our formally calculated chance of a recession. Thus, S&P Global Economics sees a 20%-25% risk of recession in the U.S. over the next 12 months--up from 15%-20% in our November publication.

Regardless of whether a recession arrives, in keeping with the cyclical view of markets, the growth pace of the world's largest economy will likely slow. We expect annual average real GDP growth to be 2.3% in 2019 and 1.8% in 2020, following an estimated 2.9% growth in 2018 (and compared with a 2.2% average for the current expansion).

Although the U.S. data have not been out of step with our expectations in any meaningful way, an easing of growth with increased downside risk is unfolding against an uncertain global backdrop and amid more sensitive financial market sentiments. The Fed will be more data-dependent--with an even higher burden of proof on the data--in order to become confident that downside risks emanating from the financial markets and global conditions are receding.

This supports our belief that a longer duration between Fed rate hikes as it shrinks monetary accommodation is more likely now. In the past, most notably in the mid-1990s and 1998, when the Fed back pedaled its rate hikes coinciding with temporary spikes in the probability of recession, it managed a gentle slowdown of the economy before the growth outlook picked up again, leading to resumption of rate hikes. (Of course, that led to the dot-com bubble, which finally ended the expansion, and that is the kind of short run/long run trade-off that policymakers often face at mature stages of a cycle.)

With that in mind, it is premature to claim that the current Fed tightening cycle is now over, as financial prices currently indicate. We expect one more rate hike of 25 basis points (bps) later this year, and two hikes is not completely out of the picture. (In December, we had penciled in two more rate hikes in the current interest-rate normalization cycle). This stance is consistent with our current forecast for the U.S. economy and the Fed's "data-dependent" mantra.

It's premature to claim the current Fed tightening cycle is over. We expect at least one rate hike in 2019, and two is not out of the picture.

## **Economic Momentum Indicators Suggest Some Challenges Ahead**

Near-term growth momentum has weakened since the November BCB report. In particular, four signals have worsened in the interim (see table 1). The S&P 500 and Fed's Loan Survey are both in negative territory--the first negative signals since we started publishing this report. The term and credit spread indicators both fell into neutral territory. Five indicators that capture the real economy still reflect positive economic momentum.

### **Near-Term Growth Momentum Mixed**

<b>Leading indicators</b>	Key element driving momentum	Growth signal	Cycle stage
Term spread		Neutral	late-cycle
Credit spread	Reflects expectations Negative	Neutral	late-cycle
S&P 500		Negative	late-cycle
Consumer sentiment		Positive	mid-cycle
Jobless claims	Responds rapidly to changing business conditions	Positive	late-cycle
Freight Transportation Index	Responds rapidly to changing business conditions	Positive	NA*
Building permits (single-family)**	Signals real production activity coming down the pipeline	Neutral	mid-cycle
ISM (MFG) new orders index	Signals real production activity coming down the pipeline	Positive	mid-cycle
Chicago Fed NFCI Index	Availability of credit and level of financial stress	Positive	NA***
Fed's loan survey	Availability of credit and level of inflaticial stress	Negative	NA****

<sup>\*</sup>Freight Transportation Index does not have long enough series to determine stage of cycle

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Treasury spreads, historically, are an excellent predictor of changes in the business cycle. The term spread, as measured by the 10-year minus the three-month curve (10Yr-3Mo) briefly steepened in the third quarter, but it reversed course through mid-February (see chart 1). The 10Yr-3Mo is now 25 bps, about 50 bps smaller than the November 2018 average. Optimism that the U.S. government would avert a shutdown and reach a tentative trade deal with China gave yields a boost recently, although not enough to offset the dramatic decline in Treasury yields across the curve, with the five-year minus two-year curve (5Yr-2Yr) still inverted.

Yields fell broadly across the curve--the 10-Year Treasury constant maturity, now at 2.7%, had fallen in January to the lowest level since the beginning of 2018 (after the announcement of tax cuts) on heightened market fears that policy mistakes could unravel the economic expansion. Concerns over the global slowdown in growth and inflation, together with geopolitical tensions, led investors to move into safe-haven Treasuries. With short-term yields lifted by the Fed's rate hikes and the long-term yield facing resistance, the curve continues to flirt with inversion. Indeed, the 5Yr-2Yr first inverted in December and has largely remained negative in February. The 5Yr-2Yr has correctly signaled all recessions going back to 1976, with only two false positives (not counting three short one-month inversions). The 5Yr-2Yr is also considered to be an early signal of recession, with a lead time from inversion to recession averaging 15.4 months.

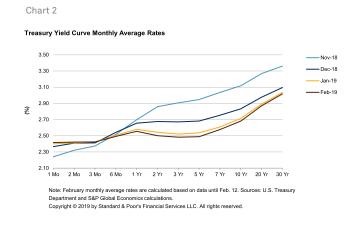
<sup>\*\*</sup>December Building permits release delayed due to governmet shutdown

<sup>\*\*\*</sup>NFCI is a normalized index to represent historical average at zero

<sup>\*\*\*\*</sup>Fed's Loan Survey responses address changes over each quarter

Source: S&P Global Ratings.

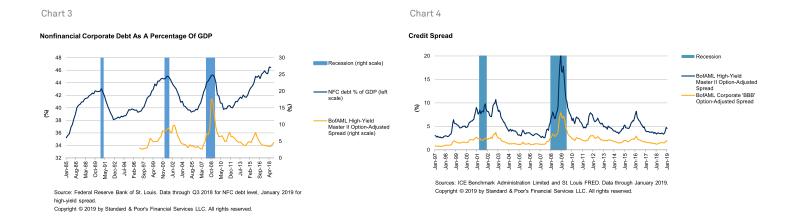




The 10-year minus one-year (10Yr-1Yr) flattened to 13 bps on Feb. 12, one-sixth where it stood at the beginning of last year. And though correlation is not causation, the 10Yr-1Yr inversion has correctly signaled every recession going back 65 years, and we caution markets to ignore it at their own risk.

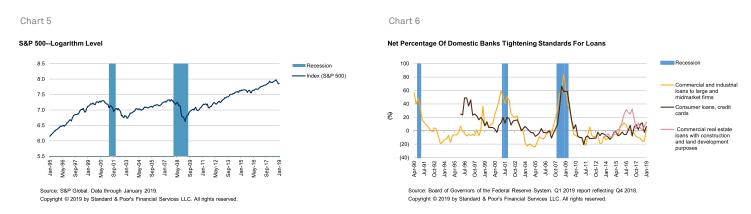
Perhaps the Fed is also superstitious about the curve's prophetic power, given, after its January policy meeting, the FOMC Committee decided to be patient when determining future policy-rate adjustments, indicating that the Fed will stay on hold a bit longer than we earlier thought. This will likely prevent the curve from flattening further or even inverting at the 10Y-3Mo or 10Y-1Yr segments for the time being.

Credit market sentiment has moved with stock market performance during the past three months, with both the investment-grade and high-yield spreads widening by almost one-third of their October level (see chart 4). The Bank of America Merrill Lynch High-Yield Spread widened more than 105 bps, while the investment-grade ('BBB') spread increased nearly 44 bps. In December specifically, the credit spreads approached the level last seen back in 2016 but still not quite near the peak of early 2016. Still, corporate debt in the nonfinancial sector has also been building up during the current expansion: As a share of GDP, it now sits at the historical peak of more than 46% as of third quarter 2018 (for the latest available data, see chart 3). As the slowdown risks rise and financial conditions potentially tighten, we see continued volatility ahead, with more re-pricing of riskier assets.



Still, it is hard to ignore that 'BBB' debt has been accounting for a larger proportion of the investment-grade index, thereby worsening the overall quality; the share of covenant-lite leveraged loans continues to hit record highs as nonbank financial firms, like private equities, are pushing debt multiples beyond the Fed's threshold of six. Deteriorating quality, loosening protection for investors, and the Fed's lack of tools to rein in nonbank credit combined will not end well if things start to go wrong under the increasingly restrictive financing conditions.

As the overall economic growth rate decelerates and labor costs start rising as this expansion continues to mature, cooling in expected profit margins and, by extension, the stock market, is inevitable. The stock market declined by close to 20% in the fourth quarter, possibly signaling that the nine-year rally in the stock market may be at a turning point as geopolitical risk, higher interest rates, and a strong dollar are increasing concerns over the rising valuation pressure and the slowdown in earnings growth (see chart 5). Even though the stock market saw a recovery in January and midway through February, it was not enough to reverse the statistically significant negative signal recorded in our leading indicators dashboard. We caution that while the dramatic collapse in stock prices does not bode well for future economic activity, the indicator has had many false positives throughout history, prompting the famous economist Paul Samuelson to quip that "Wall Street indexes predicted nine of the past five recessions."



The Fed's latest loan survey (January) for loans to businesses and households has also raised concerns about the availability of credit and level of financial stress. For the first time since 2017, we see a positive net percentage of banks tightening loan standards for all three categories: commercial and industrial loans (though still within Fed's range of "remained basically

unchanged," defined as greater than or equal to 0 and less than or equal to 5%), consumer loans (credit cards), and commercial real estate loans. Meanwhile, demand for loans to both business and all categories of household loans reportedly weakened. Special questions inquiring about expectations for 2019 also indicated that banks expect to "tighten standards for all categories of business loans as well as credit card loans and jumbo mortgages," They also anticipate that "loan performance will deteriorate for all surveyed categories." While the risks associated with household debt appear limited, caution on the supply side will likely lead to sluggish credit growth for the households, further restraining consumer spending when it is beginning to lose temporary momentum provided by last year's tax cuts.

The Chicago Fed National Financial Conditions Index tightened a bit in December, mainly as a result of its credit and risk components tightening. Nevertheless, the NFCI Index and the adjusted-NFCI (adjusted for business cycle) both remain below zero--in loose territory compared with history--and positive for growth over the near term.

And while overall risks have intensified within the capital markets, the majority of indicators of the real economy appear to be holding on rather well.

January's number for consumer sentiment reached the lowest point in the past two years, largely because of the longest government shutdown in history. Stock market volatility and unsettled U.S.-China trade talks also hurt consumer confidence. That said, readings for the past three months have still been around a cyclical high, supported by a strong job market and positive income prospects. Initial jobless claims, ticking up slightly during the shutdown months, remain at historical lows when adjusted by labor force.

The Freight Transportation Services Index, covering all domestic transport of commercial freight, reached its highest level in November and fell in December. Though the number in December was still similar to the level back in March 2018, it only increased by 1.4% compared with the same month in 2017, which was the first time the year-over-year monthly growth rate fell below 2% for the past two years. Since the index does not include in-house trucking, courier, or postal services, such an update only partially captured the holiday season effect at the end of last year. Most recent changes in the inventory-to-sales ratio (as of November 2018) remain minimal compared with the 2015-2016 inventory buildup. Additionally, regional Fed manufacturing surveys report that inventories declined in January. Looking ahead, we expect businesses to run fairly lean inventories through this year; thus, the inventory cycle is likely going to be neutral for industrial production for the time being.

The ISM Manufacturing New Orders Index, which is a forward-looking indicator for actual production, still sits above 50, suggesting further expansion for the U.S. manufacturing sector. Though the sharp drop in December has largely recovered in January, the sector has shown some softness. On a three-month-moving average basis, the New Orders Index is now trending down to the level at the end of 2016 before the current mini cycle picked up steam.

Single-family building permits is still slowly returning to its historical average based on November's reading (the latest available data, given the shutdown). Although the mortgage rate has been trending down since the fourth quarter of 2018, it is still above the average level during the current expansion. Existing home sales declined 6.4% in December after two consecutive months of increases. That said, affordability remains a major drag on the housing market revival for the coming spring.

To sum up, while indicators from the financial market have given us a pause, the products and labor markets still point to sustained growth for the U.S. economy, albeit at a slower pace. On a fourth quarter-over-fourth quarter basis, we forecast real GDP to grow close to 2%, meaningfully down from a 3.1% estimated growth for 2018.

While financial markets give us pause, real economic data have not been out of step with our expectation for a soft cyclical slowdown.

## Recession Risk Rising But Still Comfortably Below Critical Thresholds

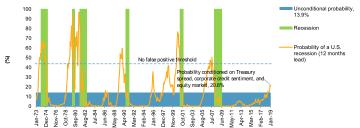
Not surprisingly, given global economic and financial stress in November to early January, the odds of a recession in the next 12 months have risen (since our last publication in early November). Our econometric model estimates that the probability of a recession in the next one year is now 21%, slightly up from 16% three months ago (see chart 7). The estimates are based on data up to the end of January, conditioned on changes in the Treasury market, corporate bond market, and equity market. The predicted probability of 21% is higher than the unconditional probability of a recession since 1973 (i.e. 13.9%) but remains significantly below the level of around 40% that was seen ahead of the six most recent recessions.

The rise in the probability since our last publication of this series is a reflection of general bruising of the financial markets during the interim period--term spreads flattened (even inverted in the belly of the curve), corporate bond spreads widened, and stock prices fell sharply. The ongoing flattening of the yield curve in particular has been a major source of higher recession odds. In recent weeks, however, financial conditions have eased, stemming from a significantly more dovish communication by the Fed. If the easing persists, the quantitative assessment will likely decline in coming months.

While the Fed's dovish tilt helped, policy risks surrounding the government and global trade and investments have increased sharply (see chart 8). Although some policy risks to the economy are receding for now with the government shutdown averted and U.S.-China trade negotiators making enough progress to likely avert a hike in tariffs on March 2, other trade (such as auto-related) and geopolitical (such as Brexit) policy risks remain elevated. Therefore, barring more evidence that the recent easing of financial conditions will indeed persist, our qualitative assessment combined with calculated odds puts the risk of a recession at 20%-25%, one notch above 15%-20% in early November.



## Odds Of A Recession In The Next 12 Months

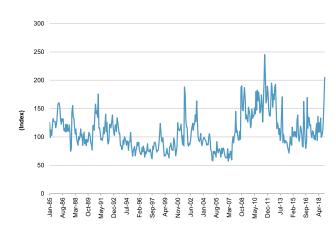


Sources: The Federal Reserve, St. Louis Fred, and S&P Global Economics calculations, \*Parameters estimated based on Probit model using monthly average data from January 1973 to December 2009, recession probabilities predicted using data through January 2019. Dependent variables used: term spread (10-year minus three-month), six-month lag of term spread, annual S&P 500 growth, and the Fed's estimate of excess bond premium from GZ spread, which is a measure of corporate credit market sentiment. The light blue shade denotes the unconditional probability of entering into a recession at any point over the subsequent 12 months. Shaded vertical bars represent the

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#### Chart 8

### Policy-Related Economic Uncertainty Index



Note: Policy-Related Uncertainty Index is a weighted combination of three underlying components: news coverage, temporary tax measures, and economic forecaster disagreement. Source: Baker, Bloom and Davis; www.policyuncertainty.com.

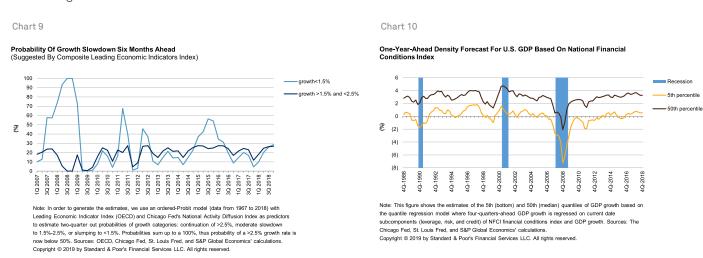
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Still, while odds of a recession remain low 12 months out, the chance of a slowdown in growth has increased. The composite leading indicator from the Organisation for Economic Co-operation and

Development (OECD), which provides early signals (six-month lead) of turning points in growth regimes, suggests (i) the probability of a continuation of the current solid pace of growth (>2.5%) in the near term has declined to below 50%, while (ii) (on the flip-side) the probability of a slowdown in the growth pace in the coming months has increased (see chart 9). While the probability of a slump (GDP growth below 1.5%, including recession) has risen from its trough, it is still well below levels in 2015 leading up to the lowest growth regime in the current cycle that spanned from the second half of 2015 to early 2016.

Together with results from our propriety binary outcome recession probability model and multiregime transition probability model discussed above, we also regularly evaluate how changes in national financial conditions have shifted 12-month-ahead GDP growth at the tails of the probability distribution (by using a quantile regression technique). Given the leverage, credit, and risk components of the Chicago Fed's National Financial Conditions Index, up to the fourth quarter, the near-worst possible outcome (the bottom fifth percentile of the distribution) for GDP growth in the next 12 months remained stable at around 0.5% (see chart 10). This is consistent with our observation that the tightening of financial conditions in the fourth quarter was not as severe as what the economy experienced in early 2016, and financial conditions remained looser than average versus conditions since 1971.

Our prediction of a 21% probability of recession is still below the 40% that preceded the last six recessions.



## Appendix 1: Where Do Coincident Indicators Stand?

Collectively, the coincident indicators from the Conference Board suggest the economy still has room to grow as it flirts with the late-cycle stage of expansion. Compared with the average of the prior six cycles, all four key indicators continue to depict smaller cumulative growth in the current cycle from the previous peak. As such, signs of overheating in the broader economy are scant. That said, a comparison of the performance of coincident indicators with previous expansions benchmarked at this stage of the business cycle using the output gap (i.e., an estimated output gap of 0.9%, as opposed to their peaks) yields a smaller gap compared with previous cycles.

## **Selected Key Coincident Indicators**



## Appendix 2: Methodology On The Dashboard

We use a mix of statistics and conventional "rules of thumb" to decide the growth momentum signal from the leading indicators. Determining the age of the cycle helps further clarify the strength of the signal.

## 1. Growth signal:

By growth signal, we are referring to the near-term growth perspectives suggested by the changes in a certain leading indicator during the past three months (since our previous publication). To determine whether the changes have been statistically significant (at a 5% significance level) to change the momentum of Positive/Neutral/Negative, we carry out a simple t-test against the historical sample. To capture the expansion and recession periods of business cycles without bias, we select the series between December 1982 and June 2009 as the historical representation, which includes three complete business cycles. For shorter series, we use the entire series until the end of 2017. Additionally, we use an F-test beforehand to check sample variance equality. Note that a negative growth signal is not equivalent to a recession in the near term.

## 2. Cycle stage:

To determine the cycle stage, we compare the latest updates of leading indicators with their performance during past business cycles, to interpret which stage of business cycle we are in right now as reflected in a certain indicator. Consistently, we select the series sample of the past three business cycles (December 1982 - June 2009) as a historical representation, based on which we are able to calculate the real time Z-score for each data point of the original series--i.e., how many standard deviations is the current data point away from the historical mean. We find that, for most cyclical indicators, when the original series is one standard deviation beyond the mean (the absolute value of the Z-score greater than one) into the direction that is negative for growth, this indicator signals a late-cycle stage for the sector it's representing.

## 3. Conventional interpretations:

Although we use the traditional statistical methods, we are still aware of the widely used standards for interpreting the leading indicators.

Table 2

## **Conventional Interpretations For Selected Leading Indicators**

Leading indicators	Negative signs for the economy  Inverted yield curve/term spread falls below zero		
Term spread			
S&P 500	Correction: a 10% or greater decline from its most recent peak; Bear market: at least 20% drop from its previous high		
Initial jobless claims	Initial claims standing above 400,000 for several weeks is symptomatic of an economy that's losing steam and in danger of slipping into recession		
Building permits (single-family)	Single-family building permits fall below 800,000		
ISM (MFG) New Orders Index	A PMI® reading above 50% indicates that the manufacturing economy is generally expanding; below 50% indicates that it is generally declining. A PMI® above 42.9 percent, over a period of time, indicates that the overall economy, or gross domestic product (GDP), is generally expanding; below 42.9%, it is generally declining. The distance from 50% or 42.9% is indicative of the extent of the expansion or decline.		
Chicago Fed NFCI Index	Positive values: financial conditions tighter than average; Negative values: financial conditions looser than average		

Sources: Federal Reserve, Institute for Supply Management, Bernard Baumohl: The Secrets of Economic Indicators (3rd edition).

## 4. Expanded summary for leading indicators:

Table 3

### Summary

### As of February 2019

Leading indicators	Growth signal	Past three-month change statistically significant	Cycle stage	Number of standard deviations	Latest data
Term spread	Neutral	No	late-cycle		Jan-19
Credit spread*	Neutral	No	late-cycle	1.96	Jan-19/Q3-18
S&P 500	Negative	Yes	late-cycle	(0.94)	Jan-19
Consumer sentiment	Positive	No	mid-cycle	0.11	Jan-19
Jobless claims-adjusted by labor force	Positive	No	late-cycle	(2.56)	Jan-19
Freight transportation index	Positive	No	NA	NA	Dec-18
Building permits (single-family)	Neutral	No	mid-cycle	(0.84)	Nov-18
ISM (MFG) new orders index	Positive	No	mid-cycle	0.32	Jan-19
Chicago Fed NFCI Index**	Positive	Yes	NA	NA	Jan-19
Fed's loan survey***	Negative	Yes	NA	NA	Q4-18

\*Cycle stage statistics (number of standard deviations from mean/Z-score) was calculated based on NFC debt/GDP %; latest update dates: Jan-19 for credit spreads, Q3-18 for NFC debt/GDP %. \*\*For NFCI index, F-test shows that the past three-month change sample does not have equal variance to the historical sample. Yet if carry out the t-test using equal variance assumption, the past three-month change is not statistically significant. Such problem did not appear in tests for other indicators. \*\*\*Statistics were calculated based on the series "Net  $percentage \ of \ domestic \ banks \ tightening \ standards \ for \ commercial \ and \ industrial \ loans \ to \ large \ and \ middle-market \ firms."$ 

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