ARBOR DATA SCIENCE

Weekly Roundup / East Coast Presentation

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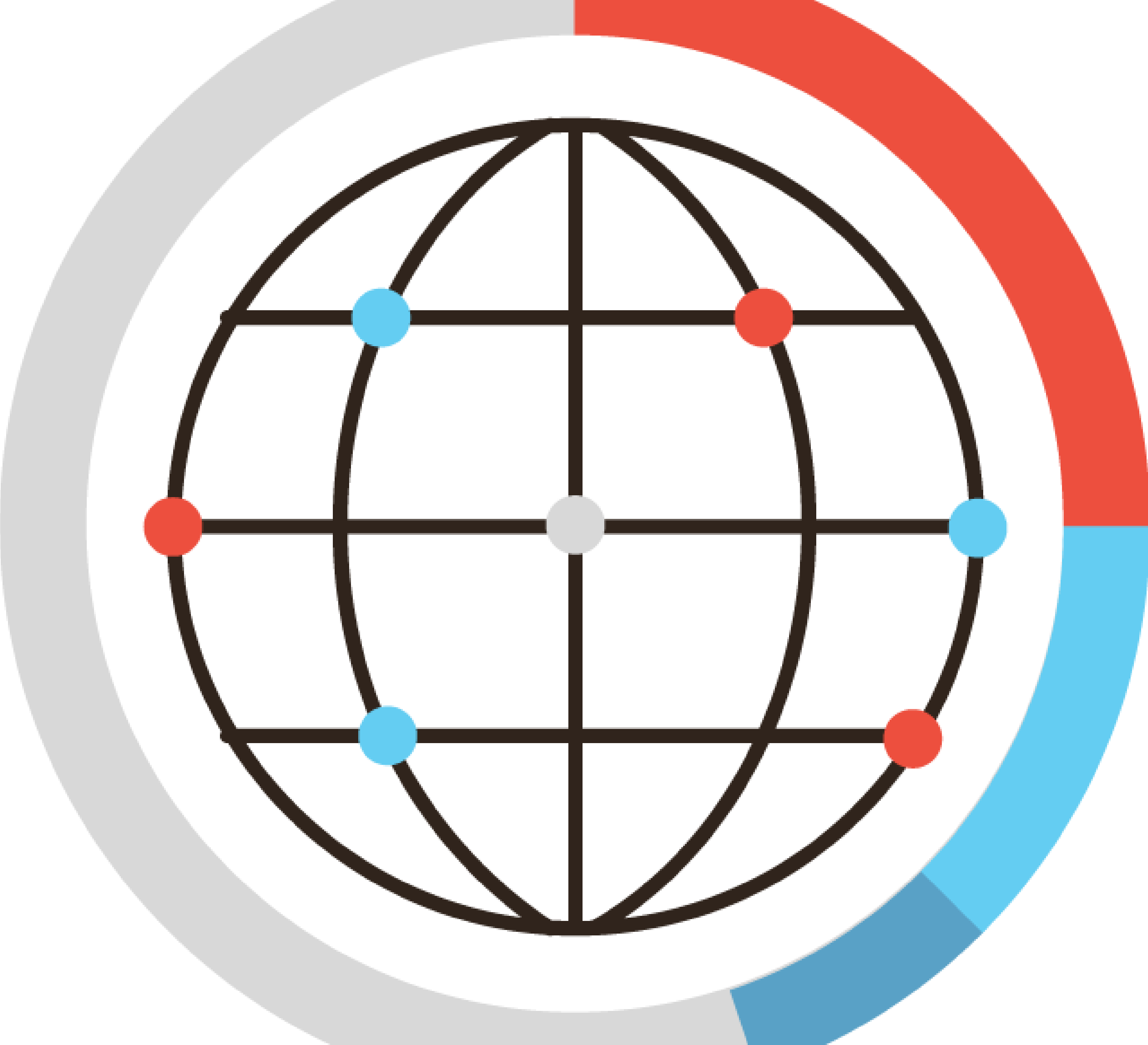
A Division of Arbor Research & Trading, LLC

Let Us Connect the Dots

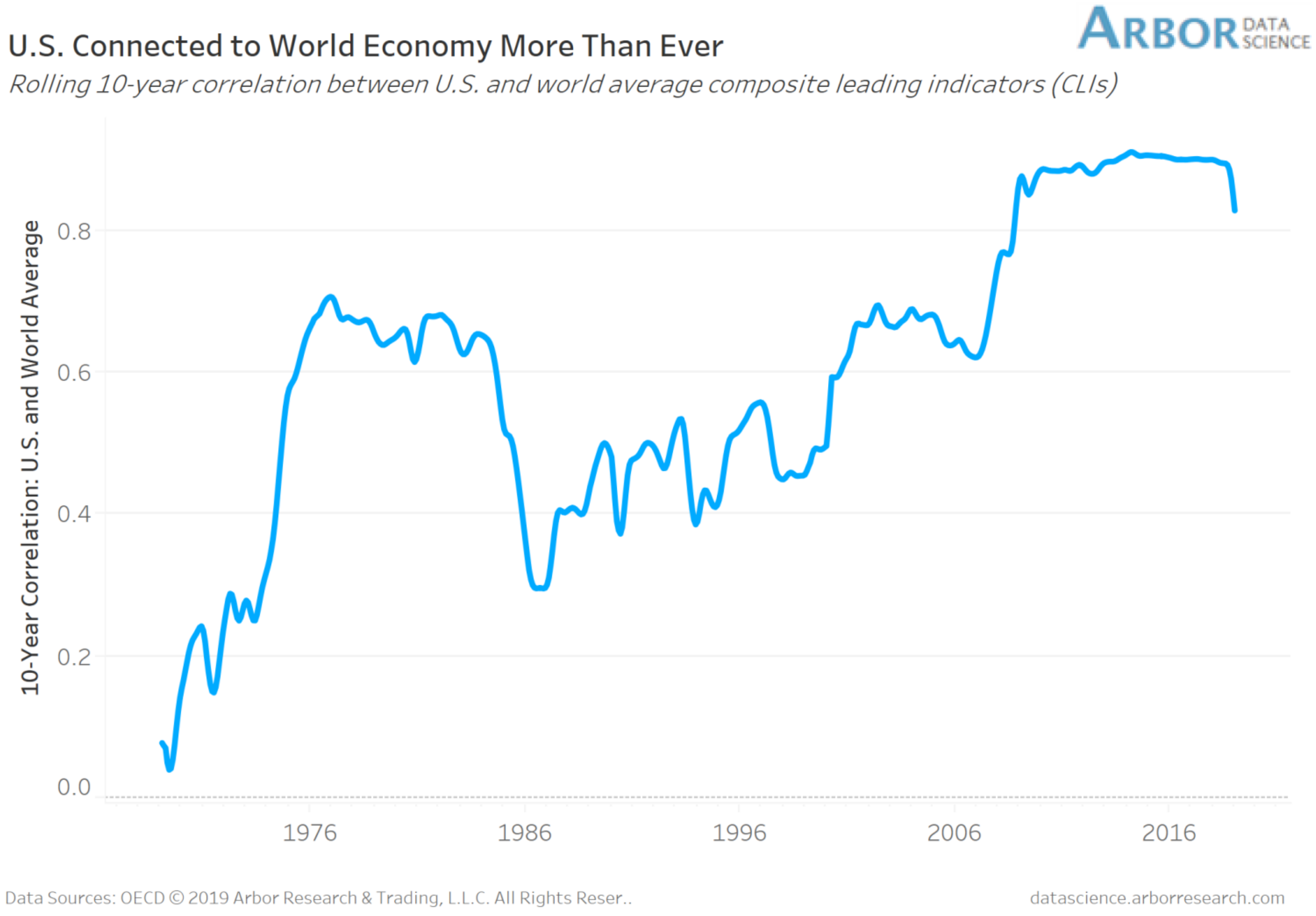
- Global Economic Growth, Not a Fed Policy Mistake, the Biggest Concern
- Federal Reserve and Investors Finally on Same Page for Rate Hikes
- Search Trends Paint Brighter Picture Than Recent Economic Data Releases
- Consumer Borrowing Continues, but Signs of Stress Apparent

Global Economic Growth, **Not** a Fed Policy Mistake, Is the Biggest Concern



The chart below shows the 10-year rolling correlation between three-month changes in OECD composite leading indicators (CLIs) for the U.S. and global average. CLIs are detrended measures of hard/soft economic data and financial market performance.

The correlation between U.S. and global average leading indicators has never been higher since piercing 0.8 in September 2008.



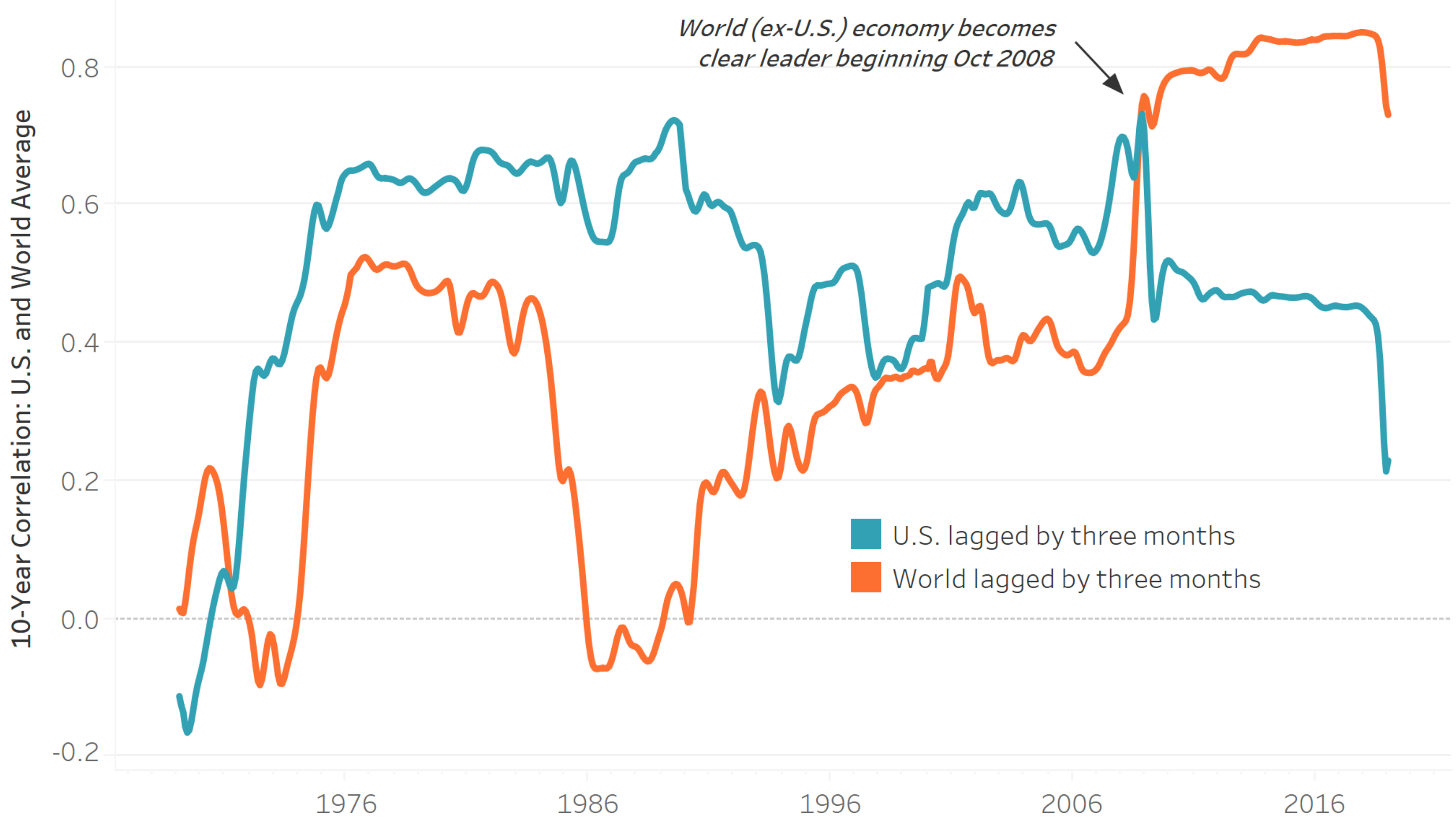
The next chart shows the same correlations but with the U.S. lagged by three months and then the global average lagged by three months.

The U.S. economy has been the leader from the early 1970s through the financial crisis. But, the global average (ex-U.S.) took command in October 2008 with a significantly higher correlation to the U.S. economy three months forward.

In other words, the global economy is in the driver's seat, not the U.S.

Major Switcheroo: U.S. Now Follows the World Economy

Rolling 10-year correlation of composite leading indicators (CLIs)



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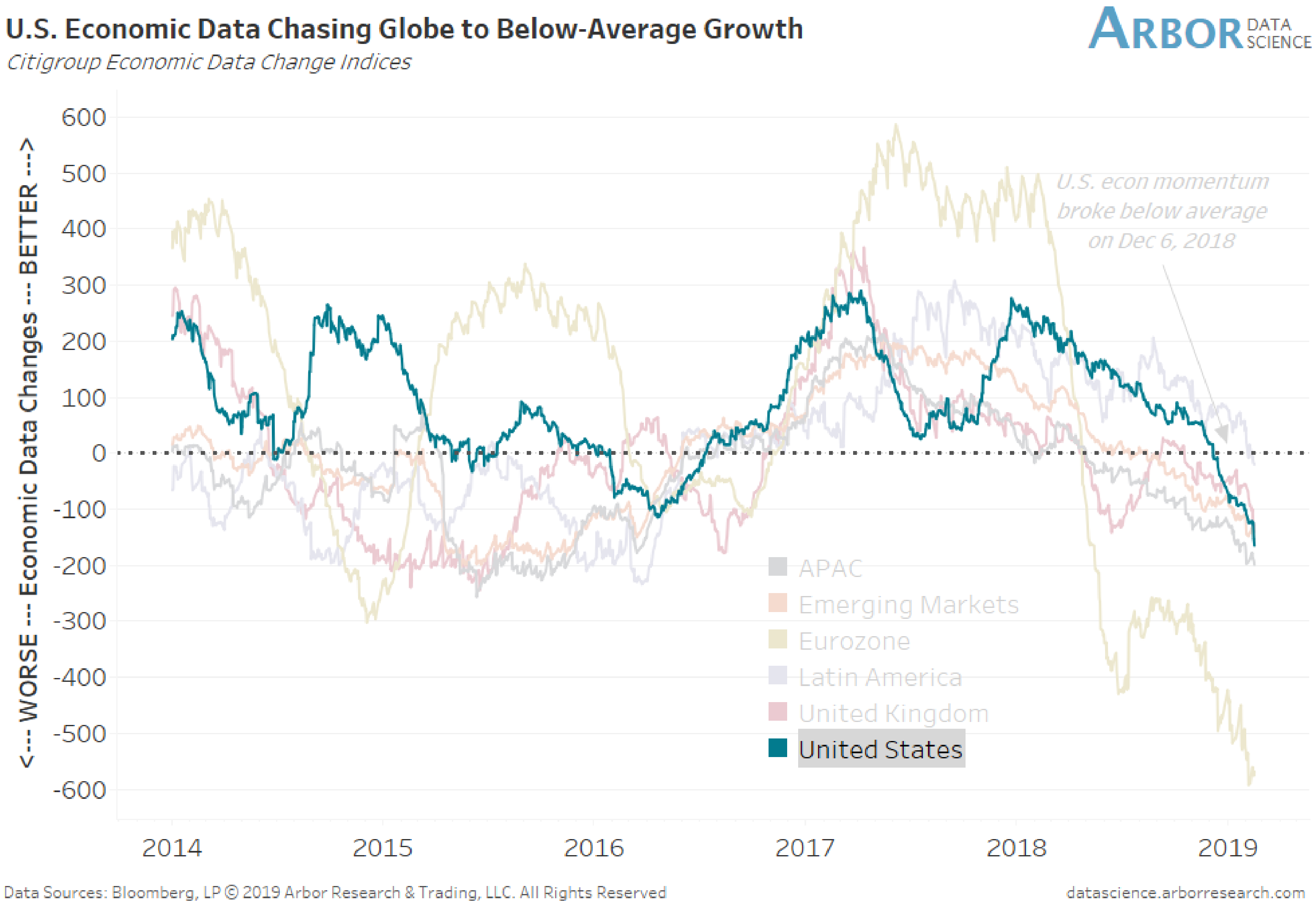
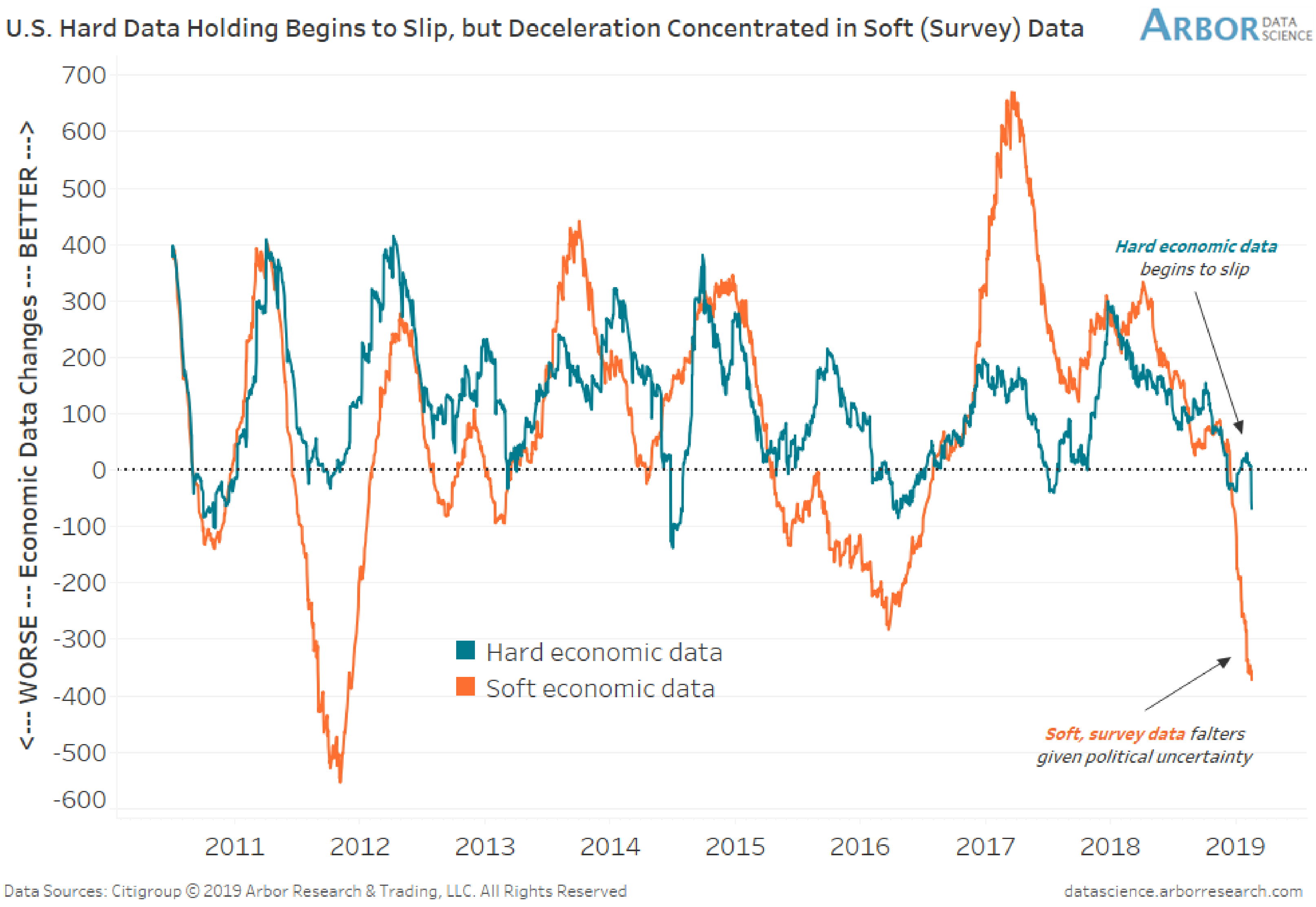
Economic data changes across the globe are slowing in unison with 11% of major economies (35 in total) below one-year average growth rates. Citigroup Economic Data Change Indices measure incoming releases relative to one-year average growth rates.

U.S. economic data changes fell below-average on December 6th, 2018,the very date equity volatility burst and the rate hike timing collapsed.



Be aware the deceleration in U.S. economic data has been heavily concentrated in soft, survey data (**orange line**).

Hard economic data releases (**blue line**) are plumbing similar troughs made post-crisis.

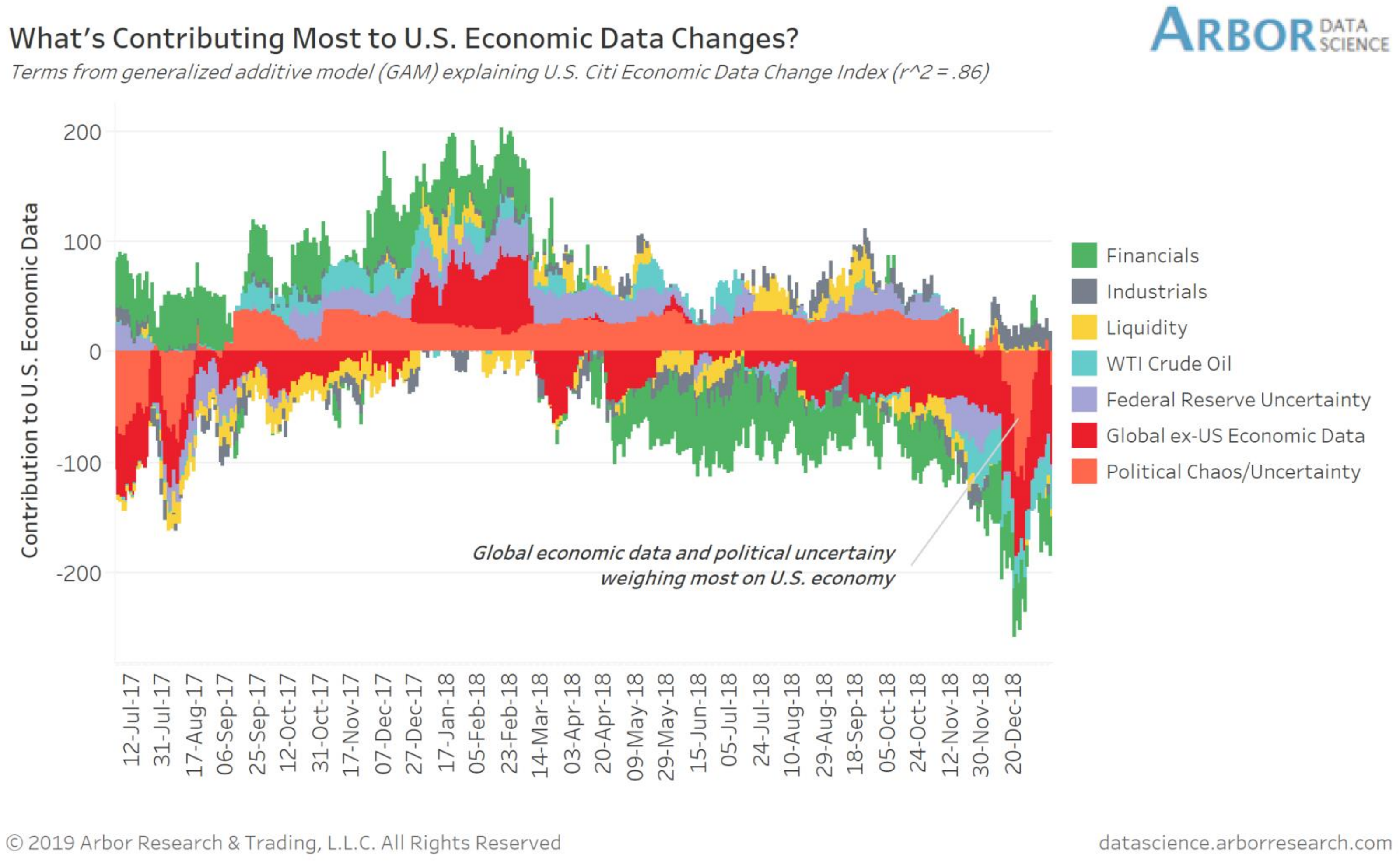


Decomposing U.S. economic data changes

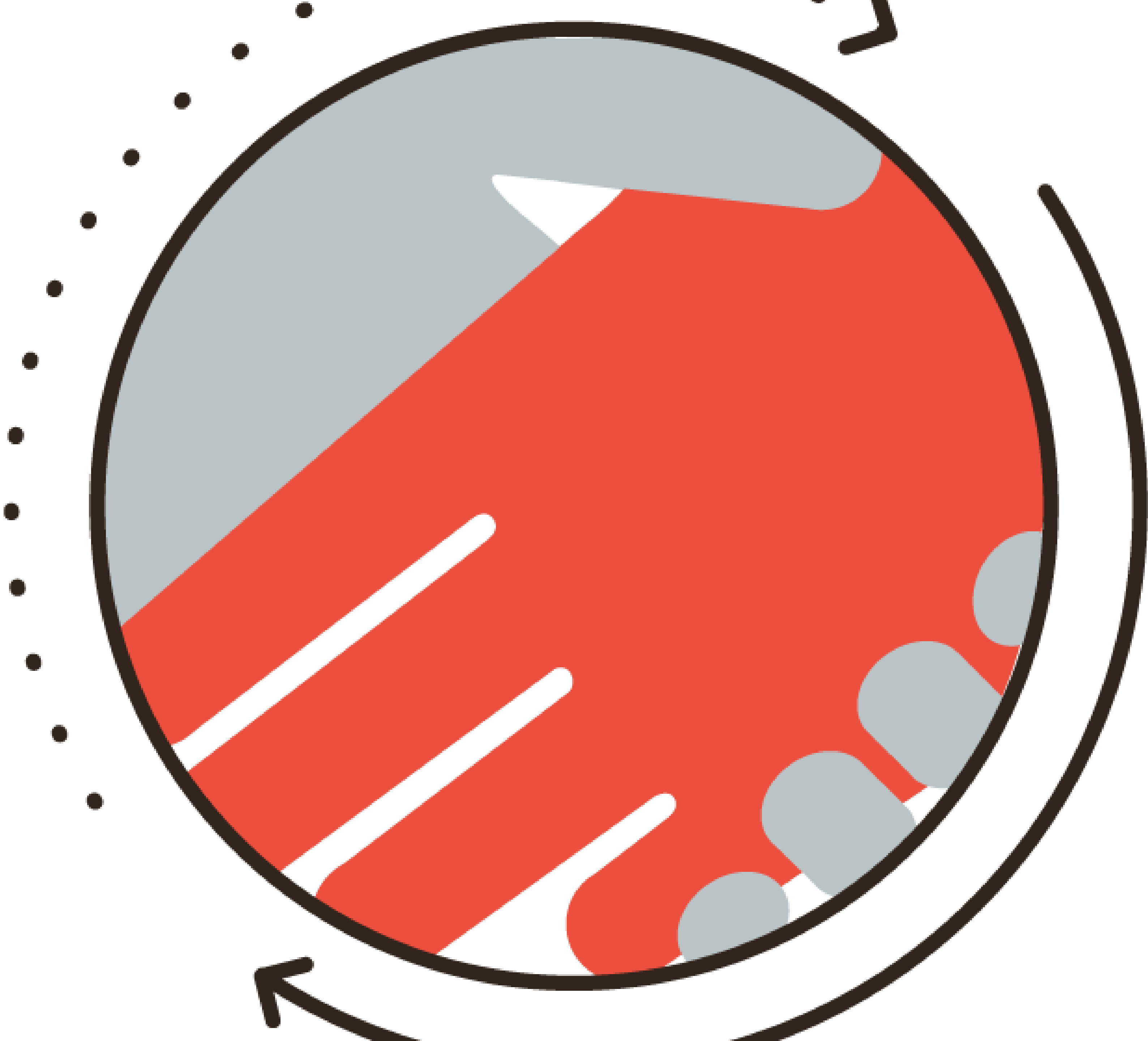
The generalized additive model is trained from 2010 to current, producing a healthy r^2 of 0.86. Global ex-U.S. economic data changes and political chaos/uncertainty have been the largest negative contributors to U.S. economic data since mid-December 2018.

The Federal Reserve, WTI crude oil, and liquidity risks barely make the list.

All in all, we should be focusing more intently on the connection of U.S. and global economic growth rather than a Fed mistake or constrained liquidity.

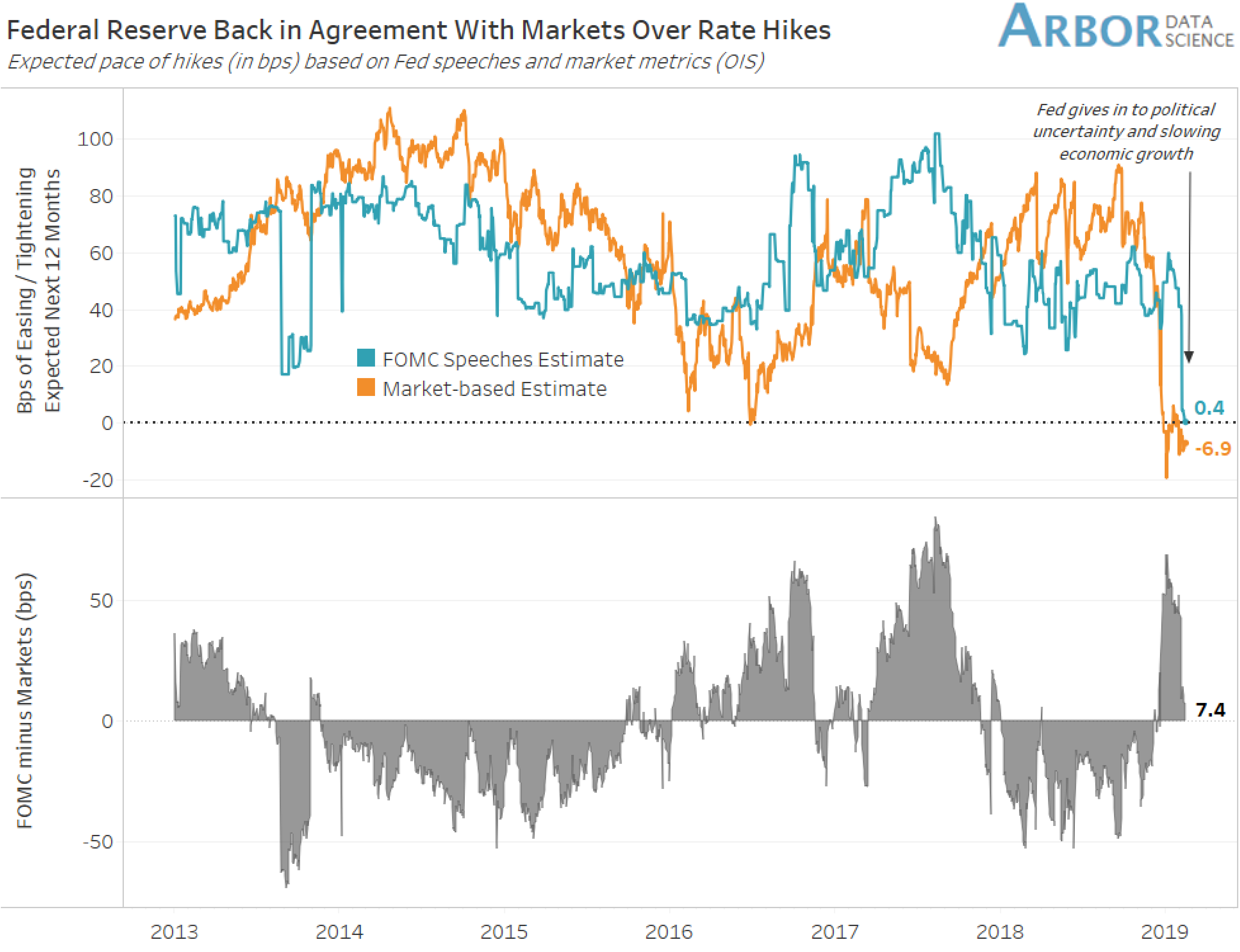


Federal Reserve and Investors Finally on Same Page for Rate Hikes



The Fed's recent dovish shift has caused this estimate of rate hikes over the next 12 months (blue line) to plummet from a pace of 50+ bps of hiking to zero bps. Powell et al chased market expectations (orange line) dented by slowing global growth and political chaos.

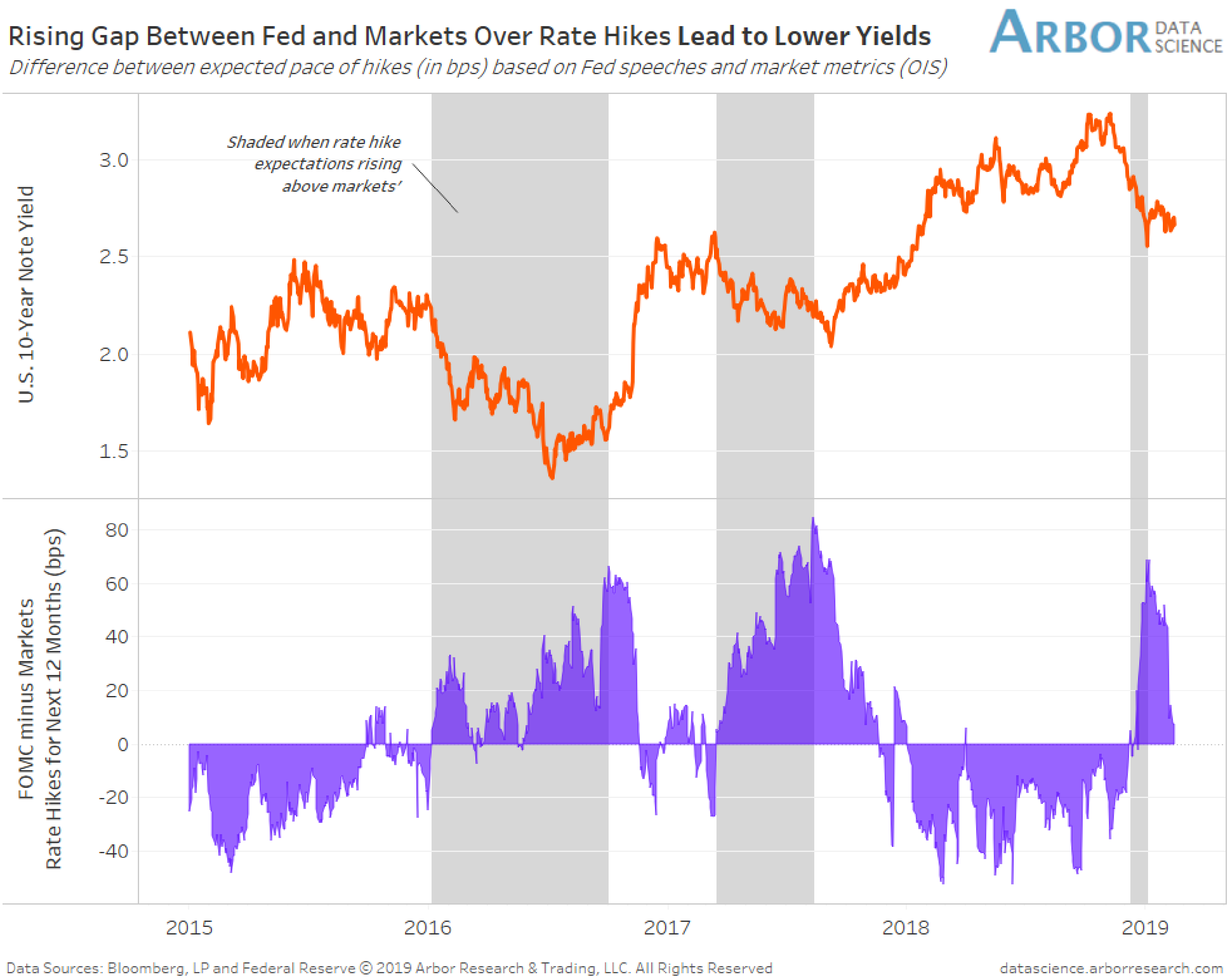
All in all, the Federal Reserve and investors are finally on the same page, believing a pause is likely through at least year-end.



Data Sources: Federal Reserve and Morgan Stanley datascience.arborresearch.com

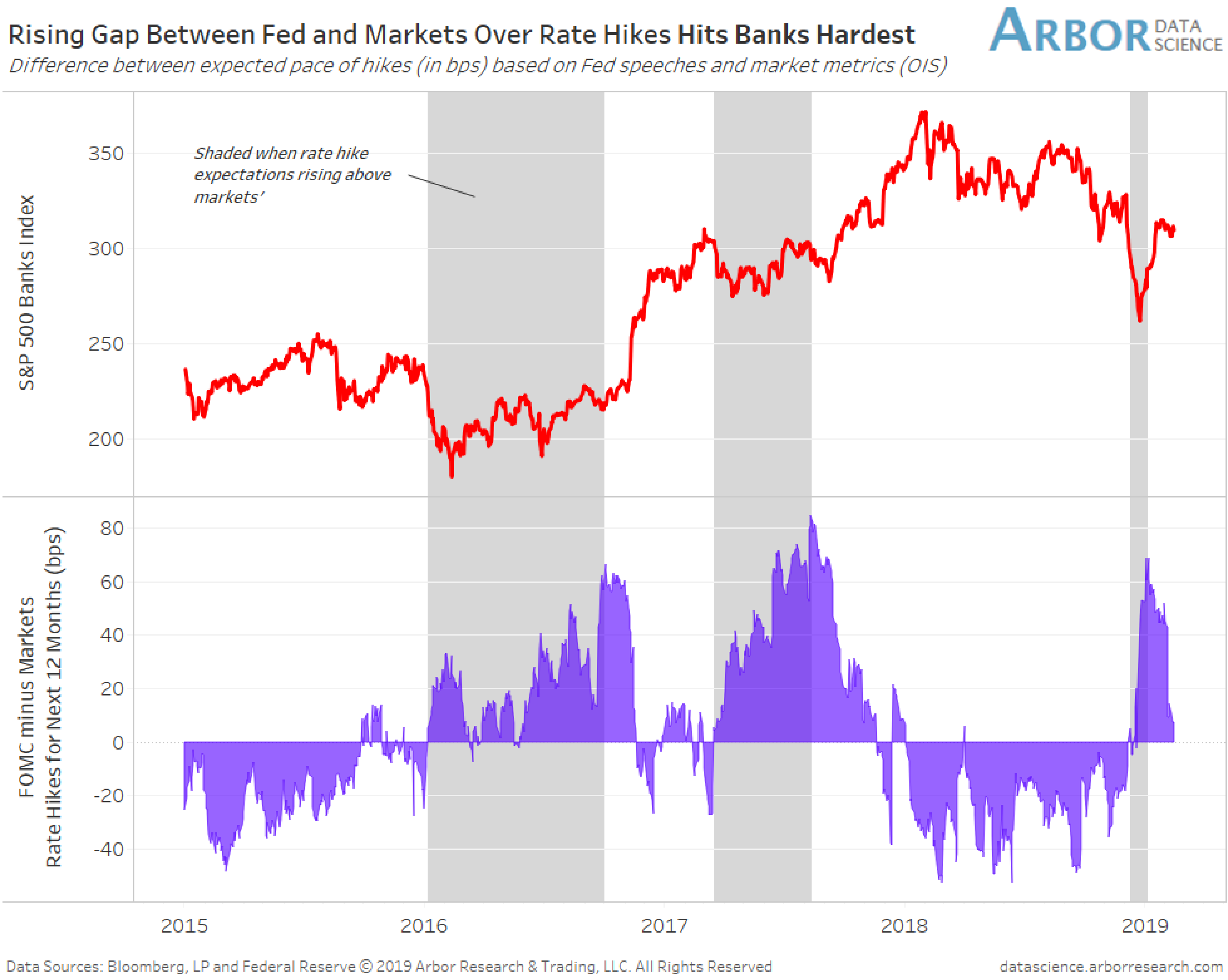
The next chart shows how the U.S. 10-year note yield declines whenever the Fed's expectations for hike are rising well-above investors' (spread in bottom panel).

The recent agreement between the Fed and markets suggest the drop in yields may be over, barring significant deterioration in economic data.



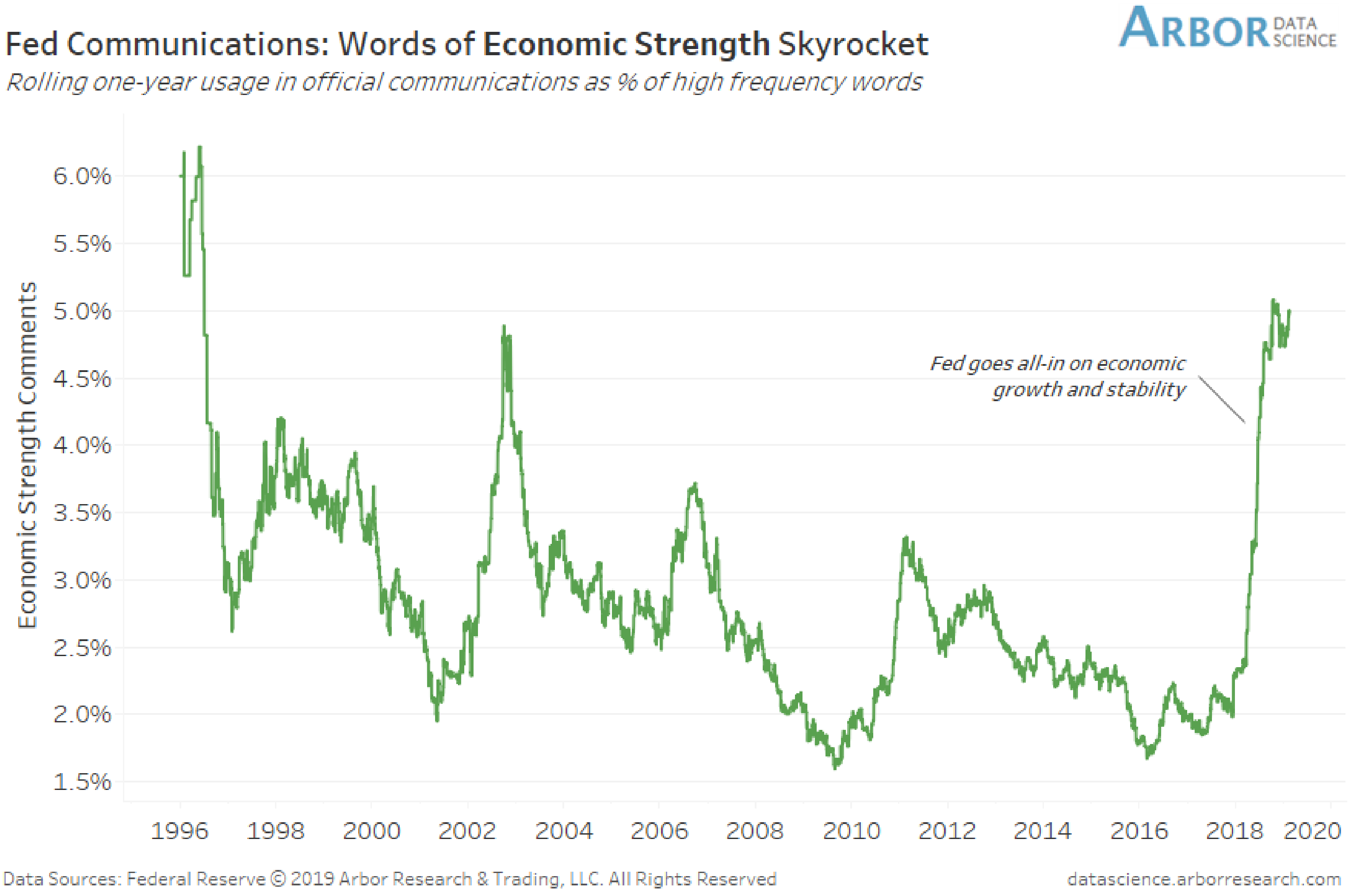
The S&P 500 Bank index is recovering as we would expect given the road block of the Fed having been removed.

Banks have shown their strongest performance during the Fed's tightening campaign after gaps in rate hike expectations between the Fed and markets close.



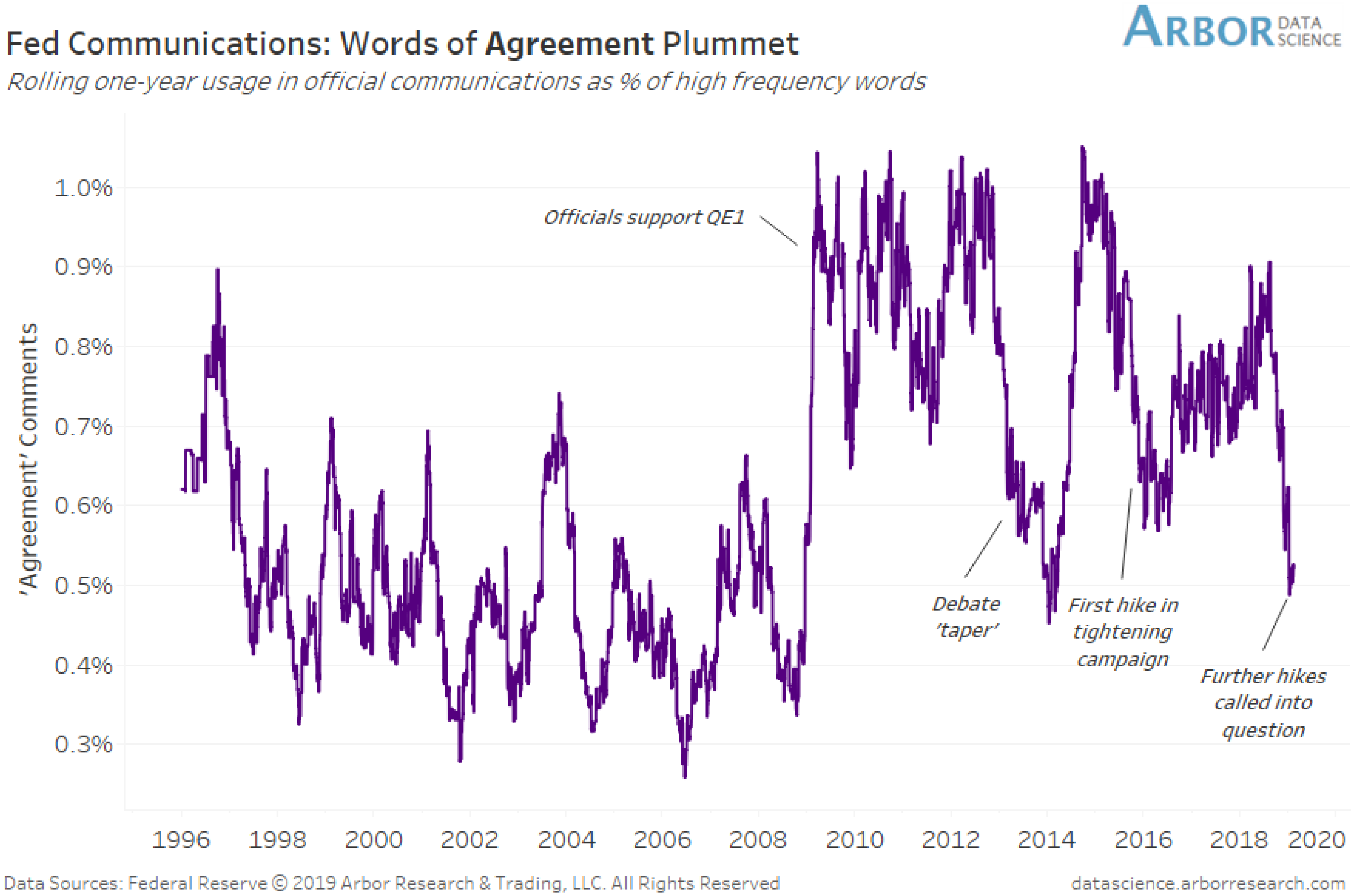
Our natural language processing (NLP) of Fed communications results in useful indices shown below. All indices provide the share (%) of comments relative to all high frequency words.

The first reveals the Fed's dramatic shift to shouting about 'economic strength.' These rosy comments on the job market and consumer have yet to abate, even in the face of mounting pressures from overseas.

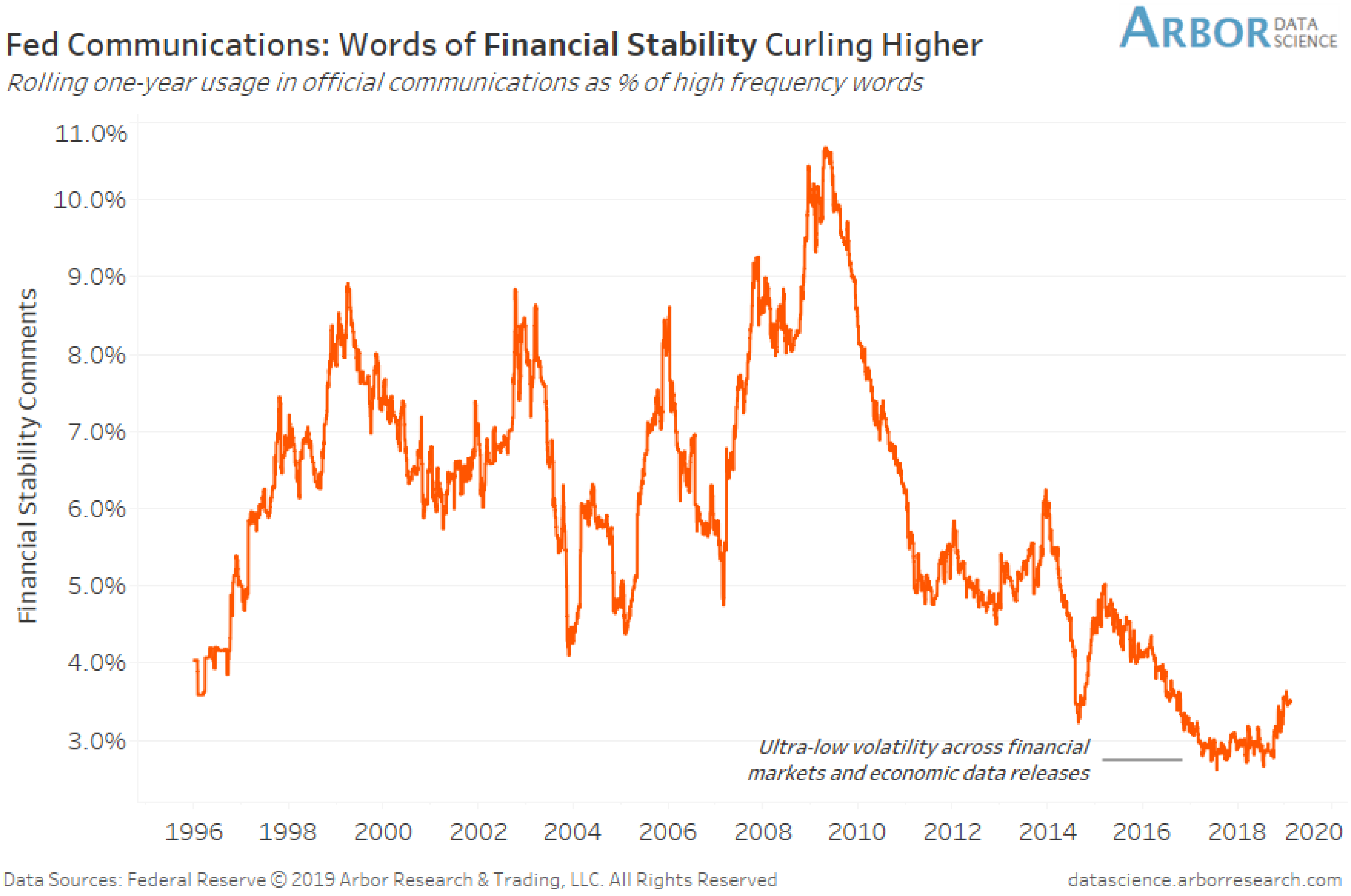


Most notably, the Fed's uttering of words of 'agreement' have plummeted to nearly the lowest levels post-crisis.

The Fed may feel comforted by economic data releases that have already come to pass, but are fervently disagreeing on the outlook.

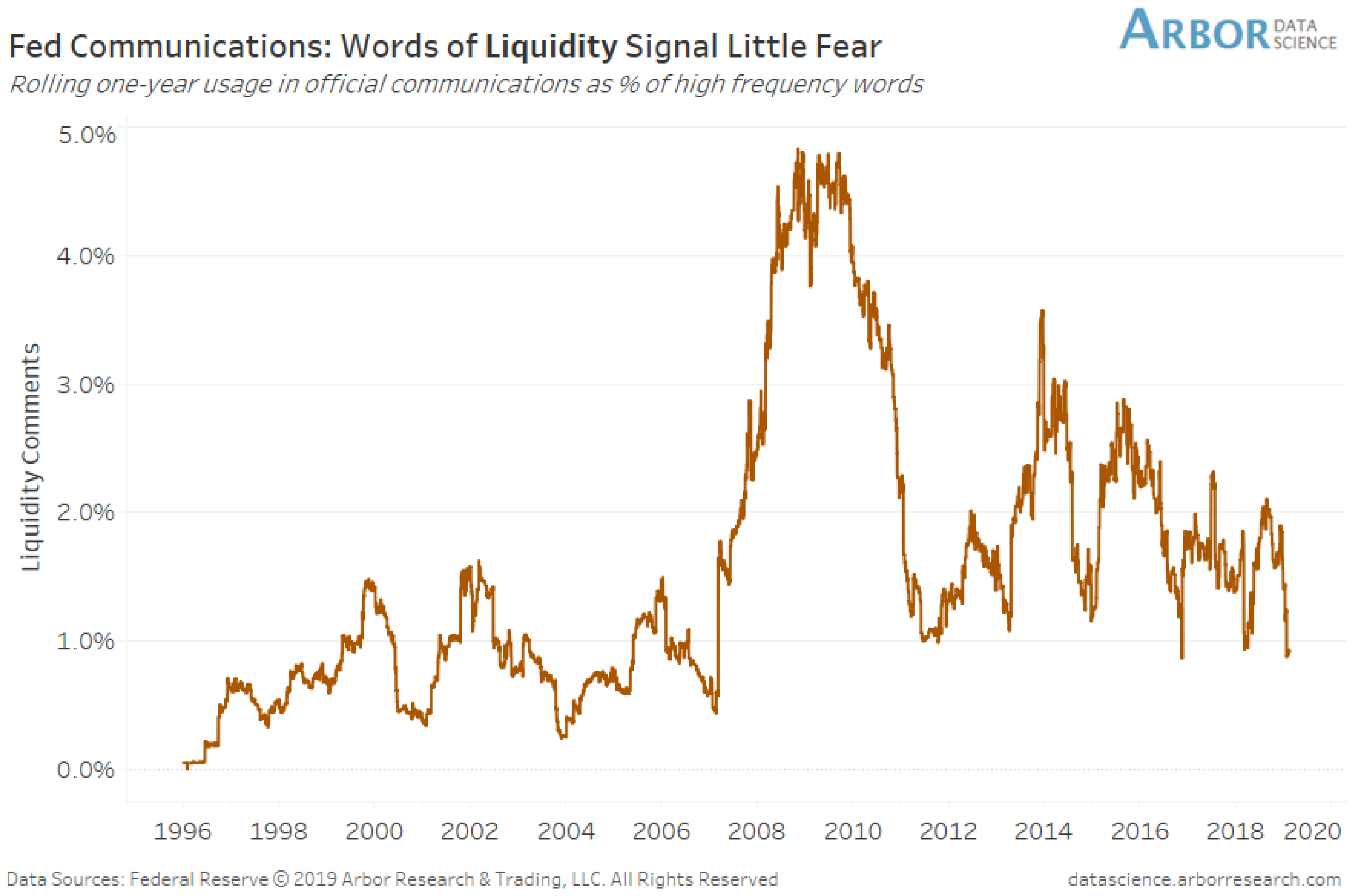


Financial stability concerns reached the lowest in history in late 2017 when many exclaimed the 'Fed put' was no more. However comments about derivatives, equities, volatility, and more are finally on the rebound into 2019.

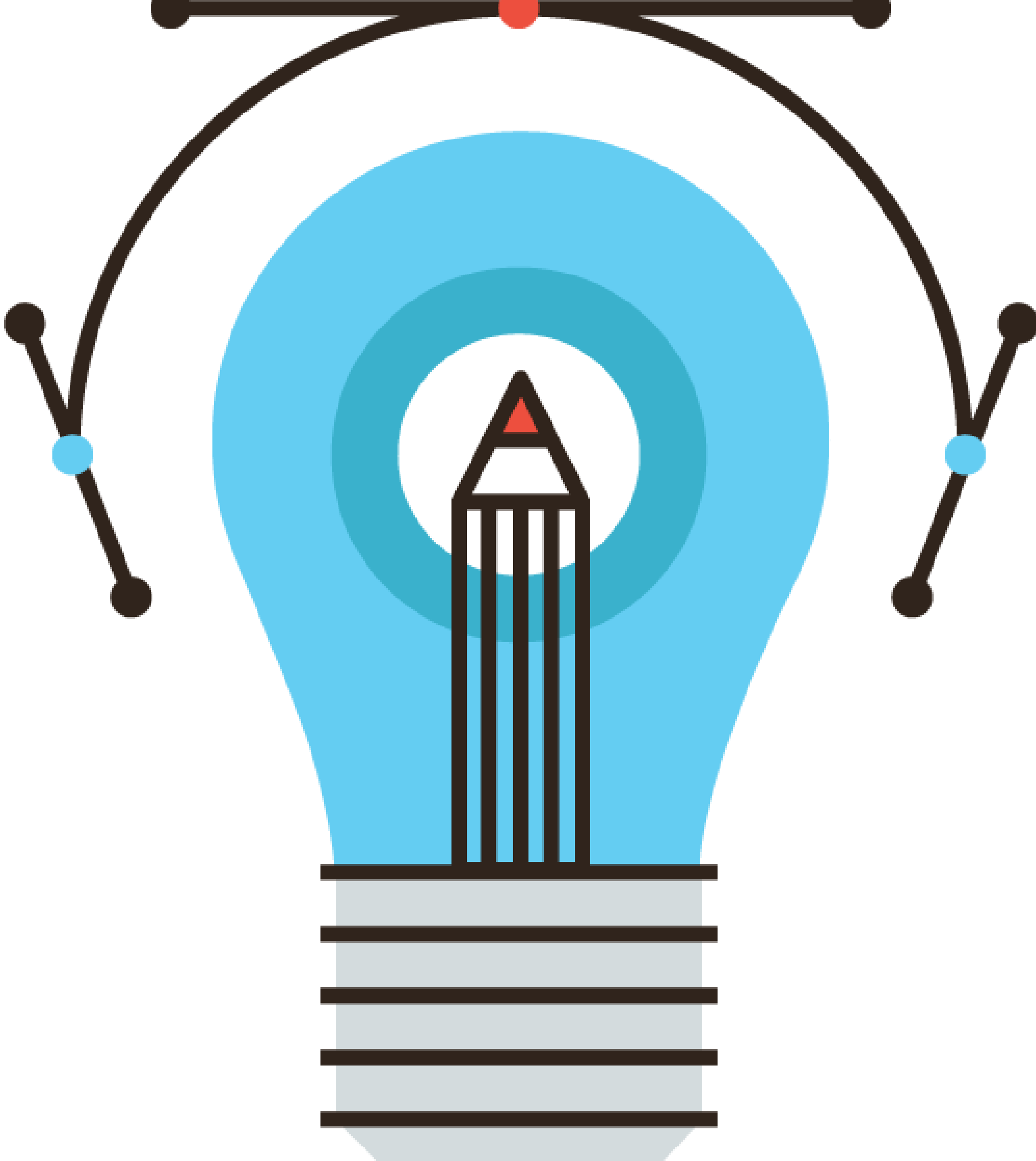


The Fed's view on liquidity is of great importance within our model estimating rate hike timing. Liquidity concerns have again tumbled to the lowest levels post-crisis along with realized measures like BofA's Global Liquidity index.

Not many topics cause such hot-button reactions than 'liquidity.' A burst in this fear would be needed to really get the Fed combative (potentially ease).

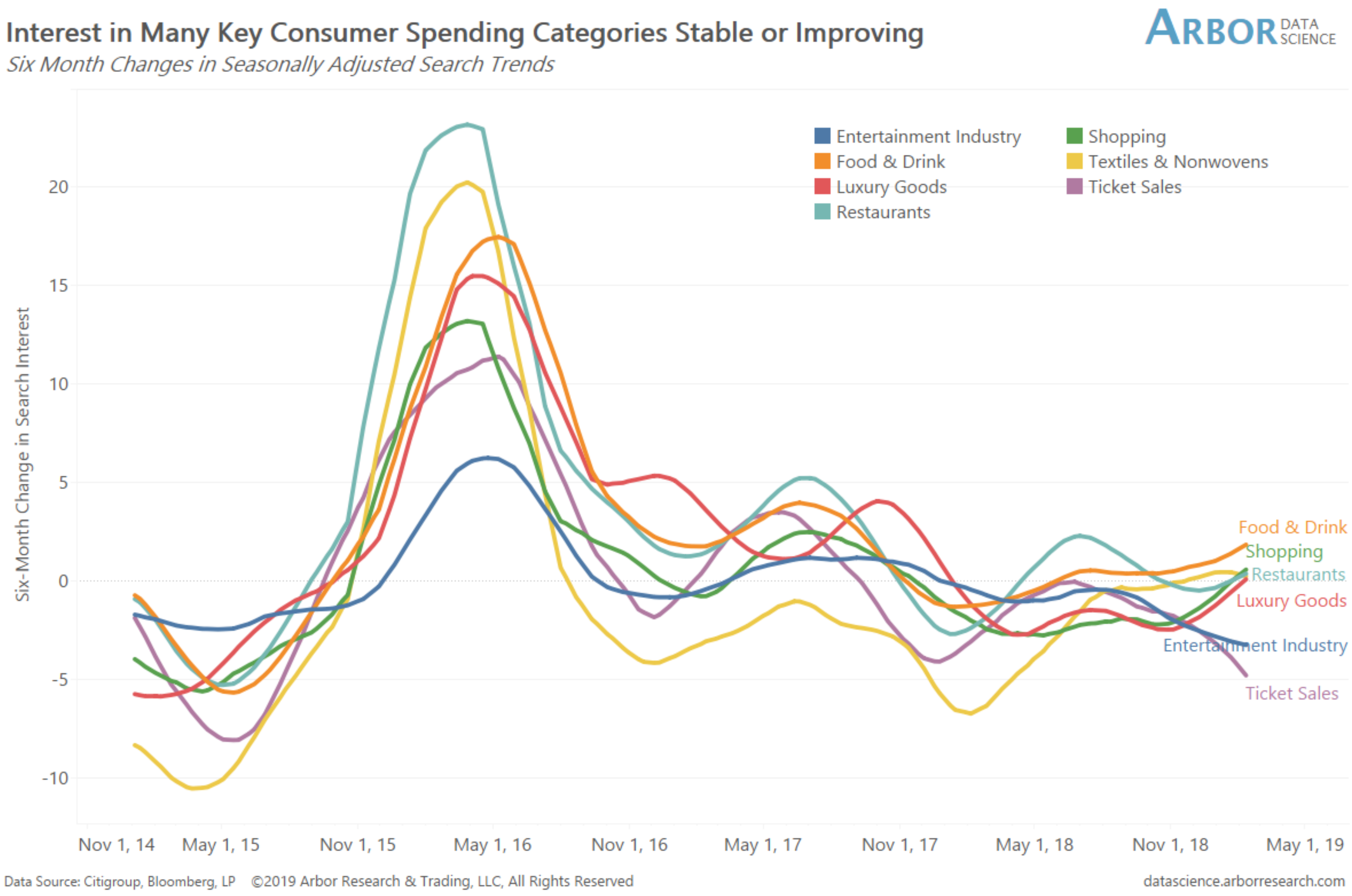


Consumer Search Trends Paint Brighter Picture Than Recent Economic Data Releases



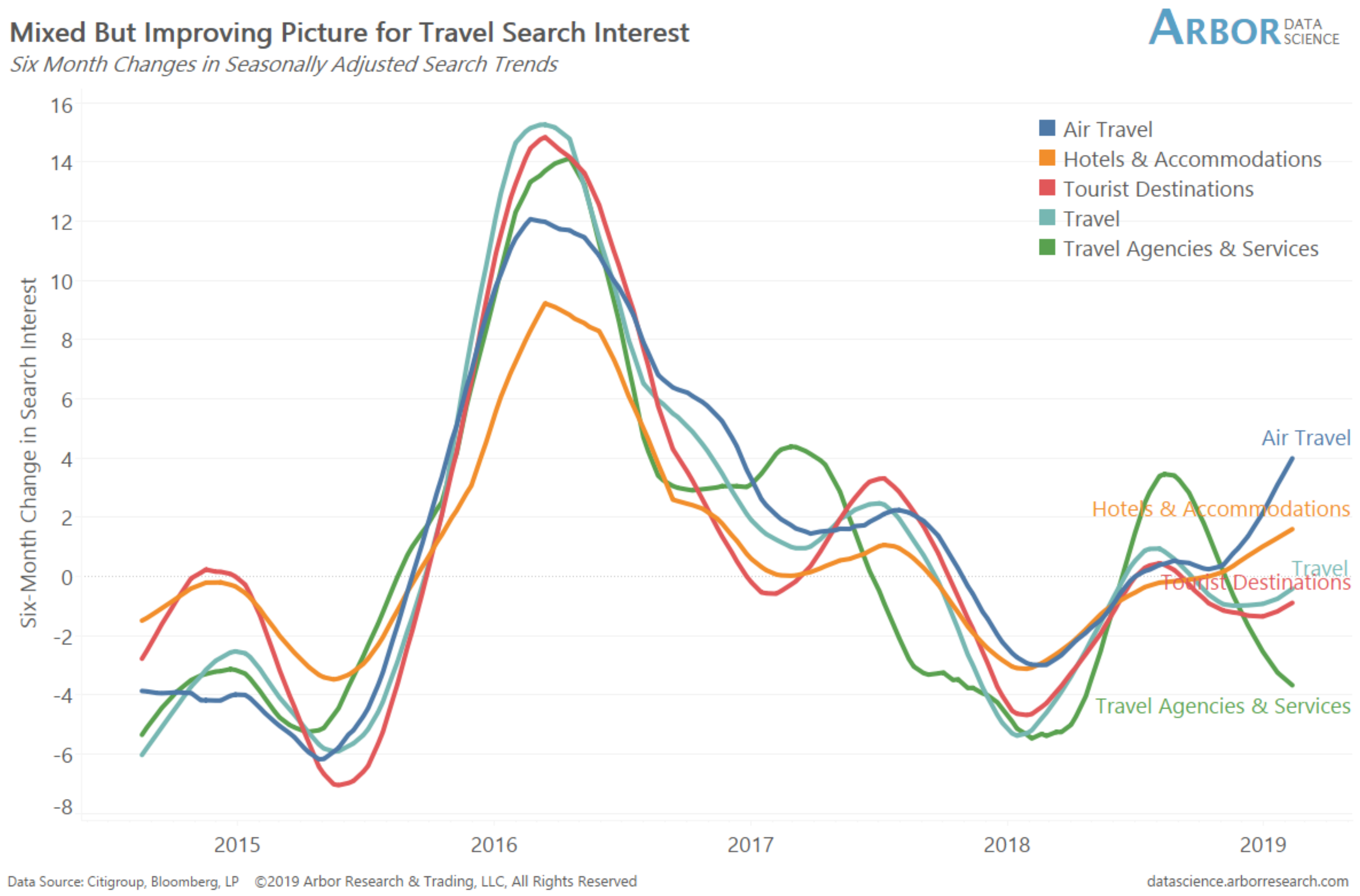
The first chart shows six-month changes in search trends for major consumer spending categories. Entertainment and ticket sales trends are deteriorating and restaurants appear to have dipped in December.

However, search trends for shopping, food & drink, luxury and clothing have improved since then.



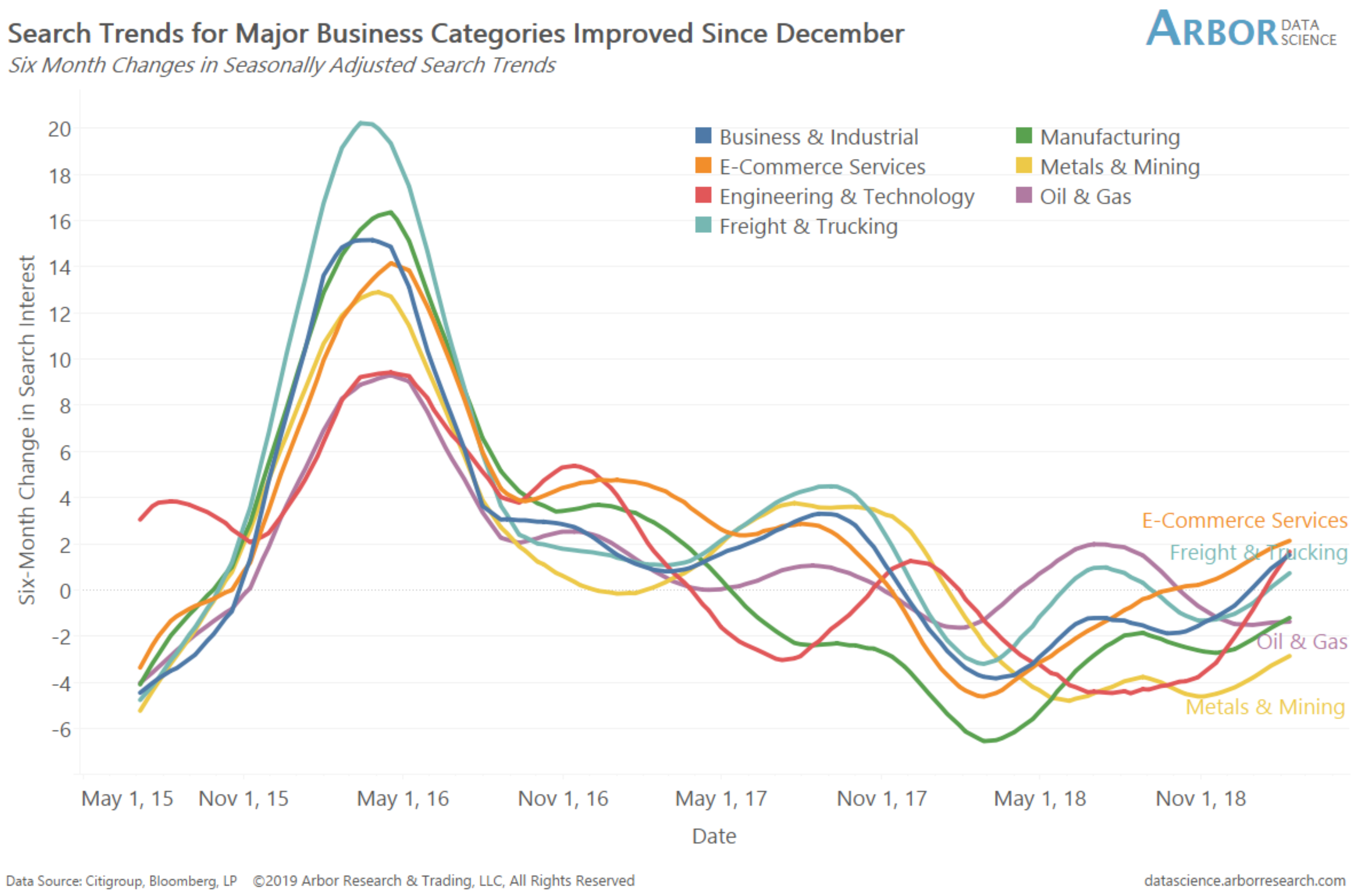
Travel search trends are also worth a closer look. Here again, the picture is mostly looking brighter now than it did in December.

Air travel and hotels are seeing search interest accelerate and tourist destinations are seeing a slower pace of decline.



While we're looking, search trends for U.S. business categories are mixed but certainly not pointing to an imminent recession. Yes, economic growth has slowed and search trends reflect that in metals & mining, oil & gas and manufacturing. Other key industrial categories look stronger. Most importantly, all have improved since December.

December retail sales were a huge miss but that was then. We know there will be more weakness in the official data. Search trends offer a more real-time look at the economy and paint a brighter picture.



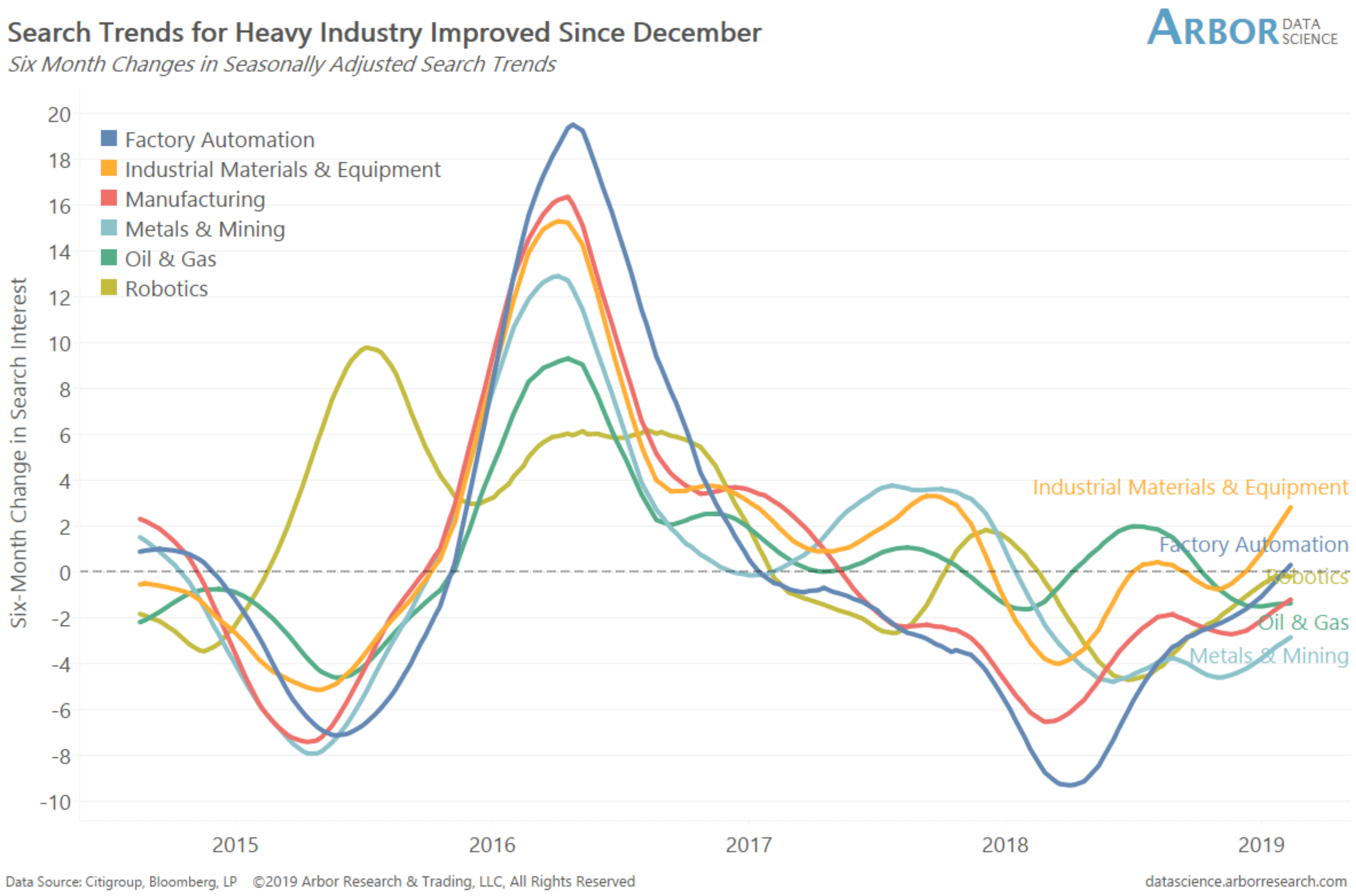
Retail sales for December were weak. That was then, this is now.

Our [Daily Data Points on Friday]pointed to improving search trends as reason to look past December retail sales. A closer look at industrial search trends reveals a mixed outlook, but one that has seen broad improvements since December.

The chart shows six month changes in search interest for categories where weakness in industrial searches appears concentrated.

Search interest in heavy industries (oil & gas, metals & mining and manufacturing) are weaker than six months ago.

Interest in industrial materials is stronger though and all six categories have improved since December.



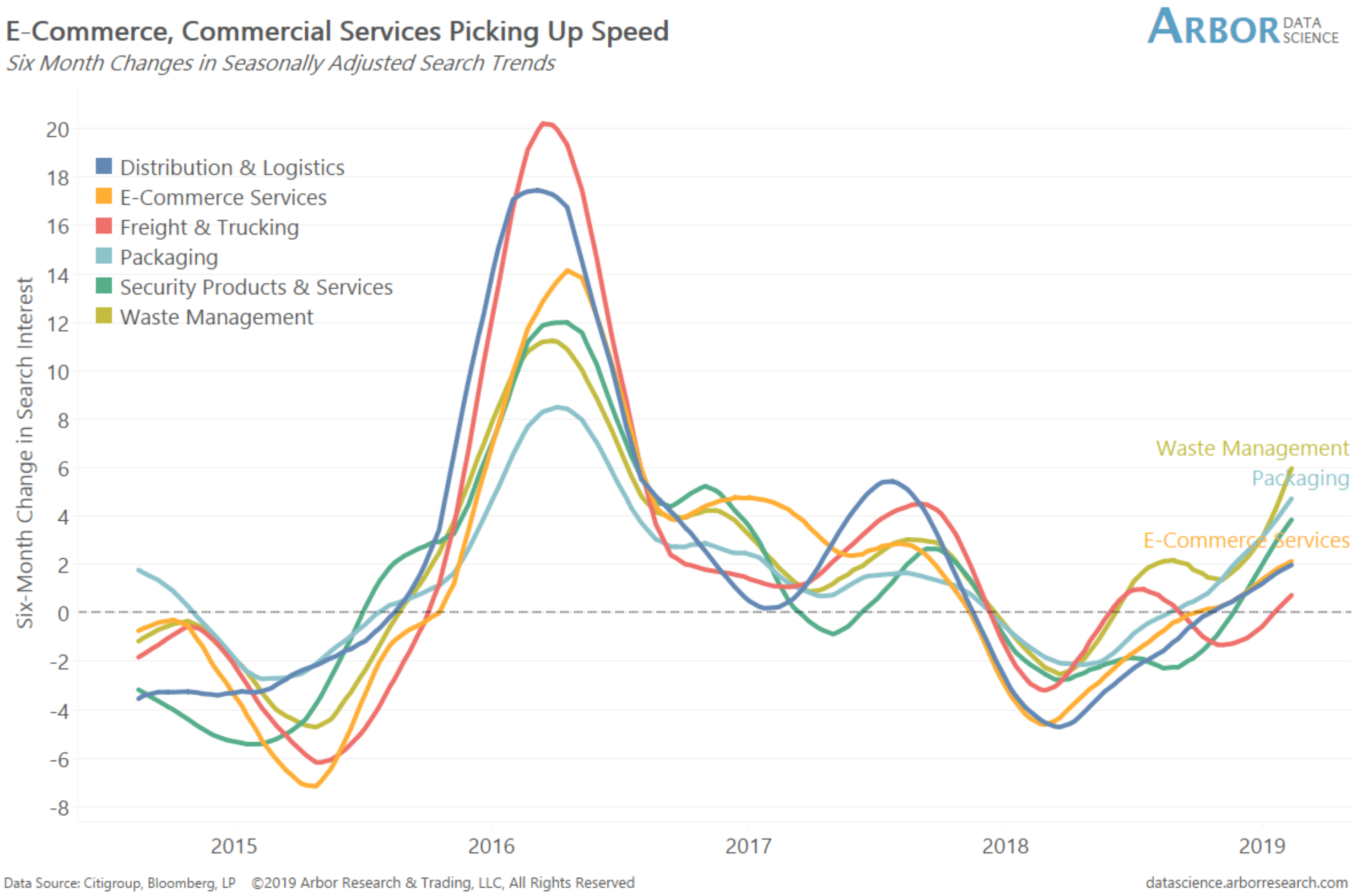
E-Commerce and commercial services seeing search interest surge.

Lighter industries are faring better than their manufacturing peers. Here again we're showing six month changes in seasonally adjusted search interest.

Search trends for key commercial services (waste management, packaging, security products & services) are accelerating higher.

E-commerce and distribution & logistics are seeing steady improvements.

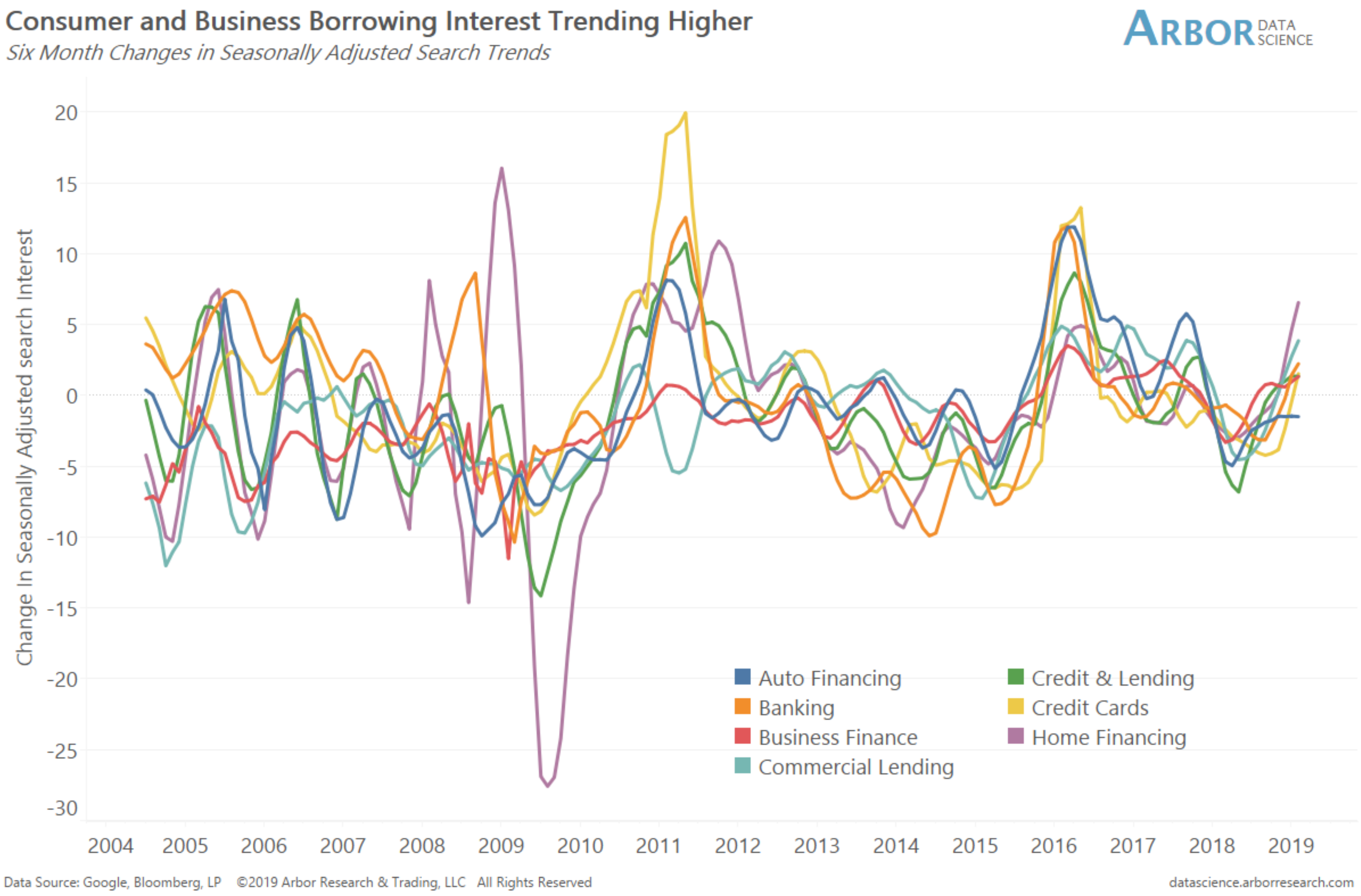
All six categories have seen improvement since December.



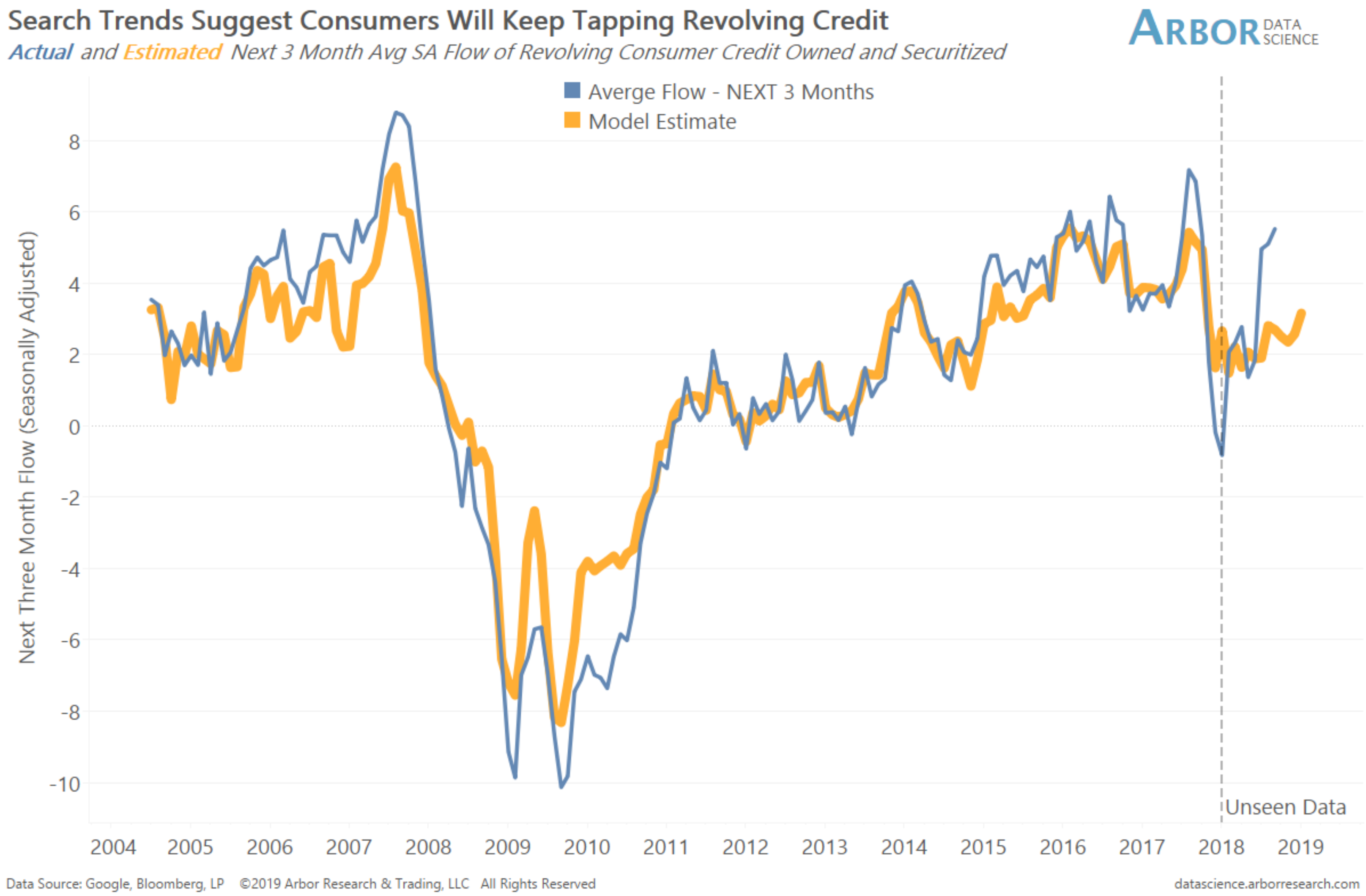
Consumer Borrowing Continues, but Signs of Stress Apparent

The chart shows six-month changes in seasonally adjusted search trends for consumer and business credit and lending categories.

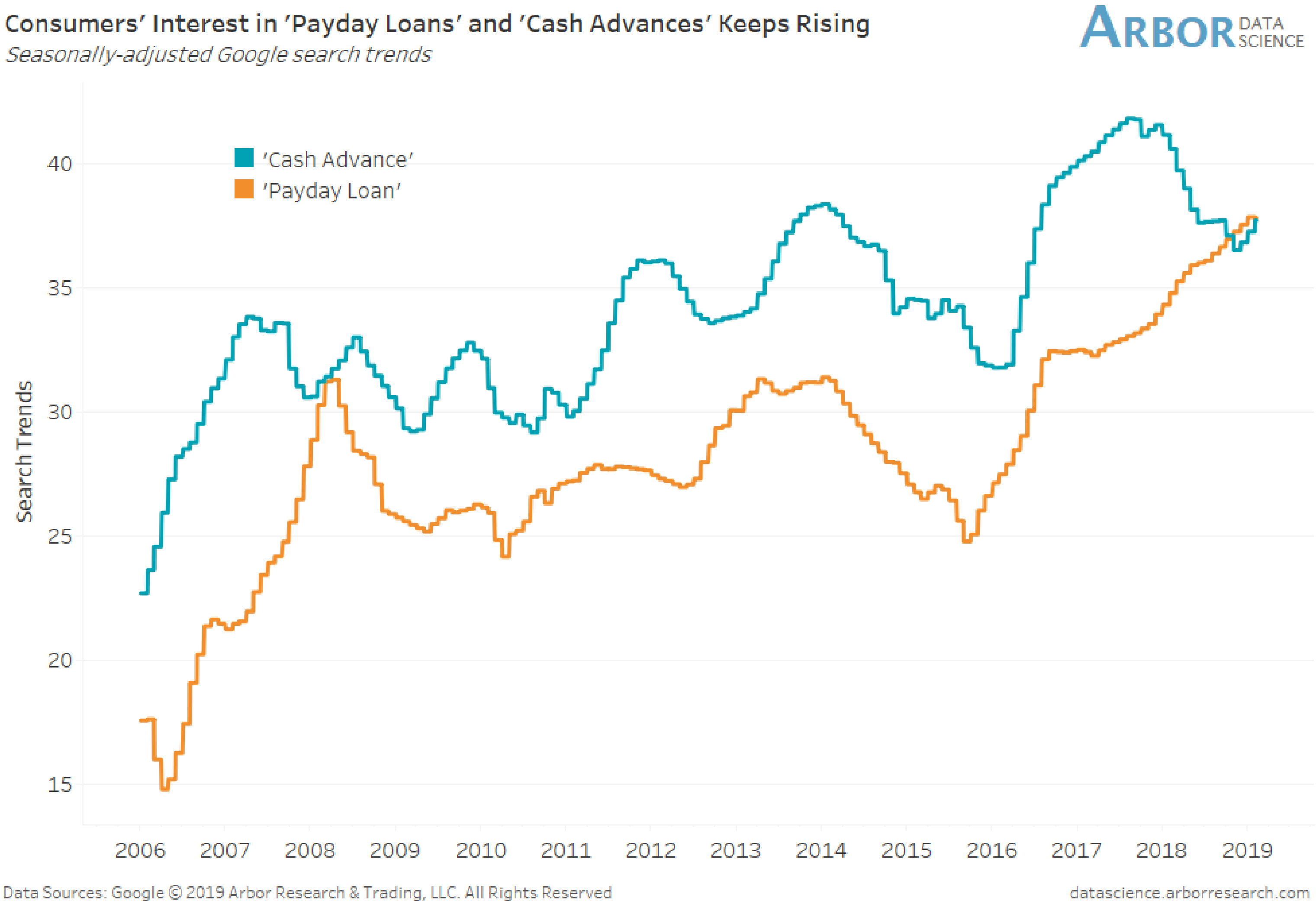
Rising interest in home financing since fall led improvement in nearly all categories. Auto financing is the only category still seeing weaker interest versus six months ago.



Google search trends for consumer and business borrowing categories suggest consumers will continue to tap revolving sources of credit over the next several months. The pace of credit growth is likely to decline after rising faster than anticipated over the past few months. However, overall consumer use of revolving credit should continue to rise.

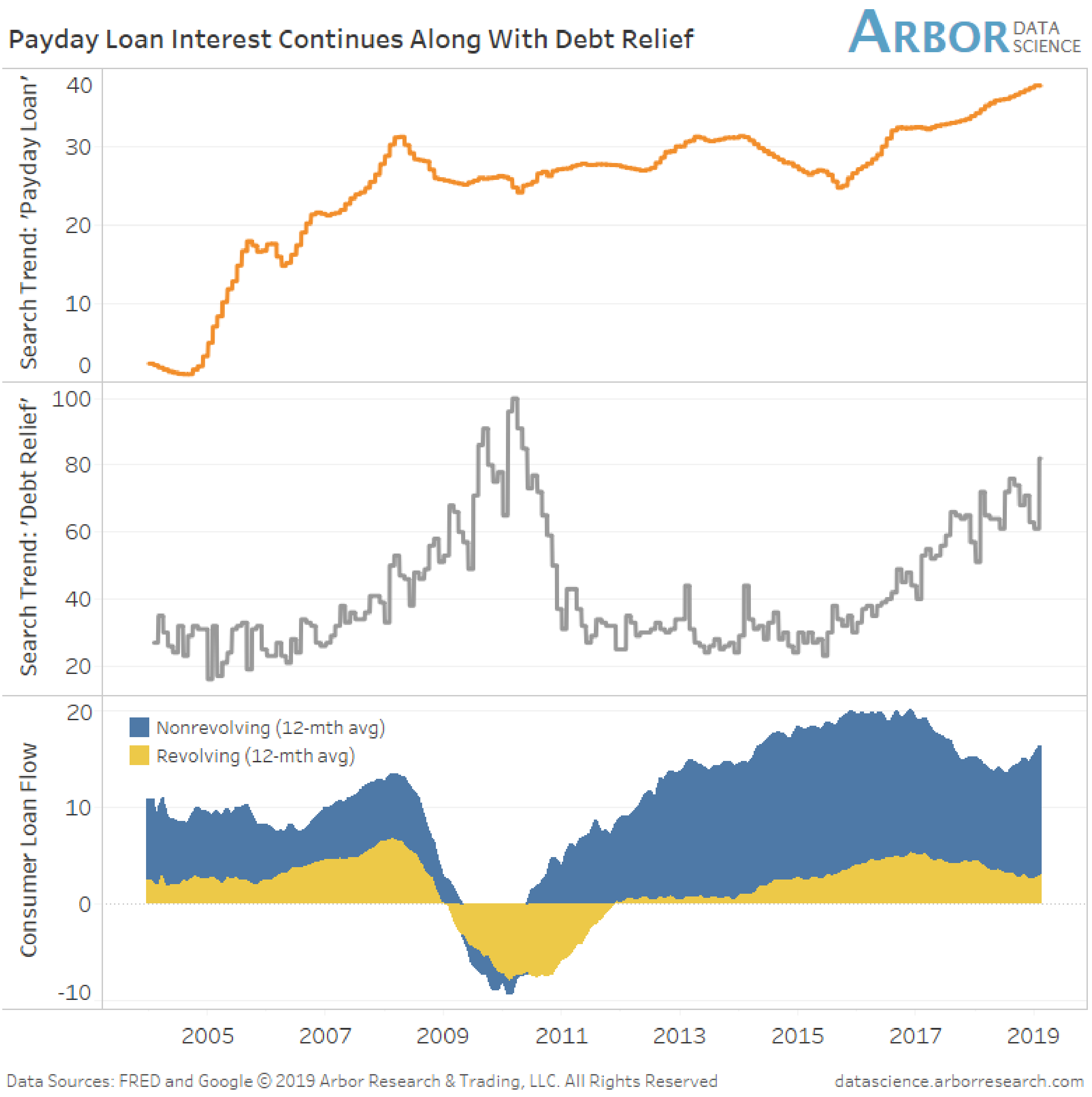


The chart below shows seasonally-adjusted Google search trends for 'cash advance' and 'payday loan.' Consumers' appetite for these high interest rate, short-term injections of cash have again been growing since early 2016. Note annualized interest rates can and do exceed 400%.



Oddly, consumer interest in payday loans (first panel) continues along with debt relief (second panel). Heavy flow of nonrevolving and revolving consumer debt into 2008 and 2014 through 2016 have been followed by 'debt relief' searches as expected. But, typically interest in payday loans abates between peaks in debt flows and subsequent rises in debt relief. This time is different as payday loans remain popular.

Are consumers more strapped than we believe? Or is this simply another tale of two economies in the United States? Meaning tech-heavy metros versus the good producing and manufacturing metros.



The map indicates those metros with rising interest in payday loans over the past 12 months (larger, red circles).

The largest metros by population have the highest interest in these high risk, short-term cash infusions across the West and Northeast. However the Southeast and portions of the Midwest, like Michigan, are finding interest significantly on the rise.

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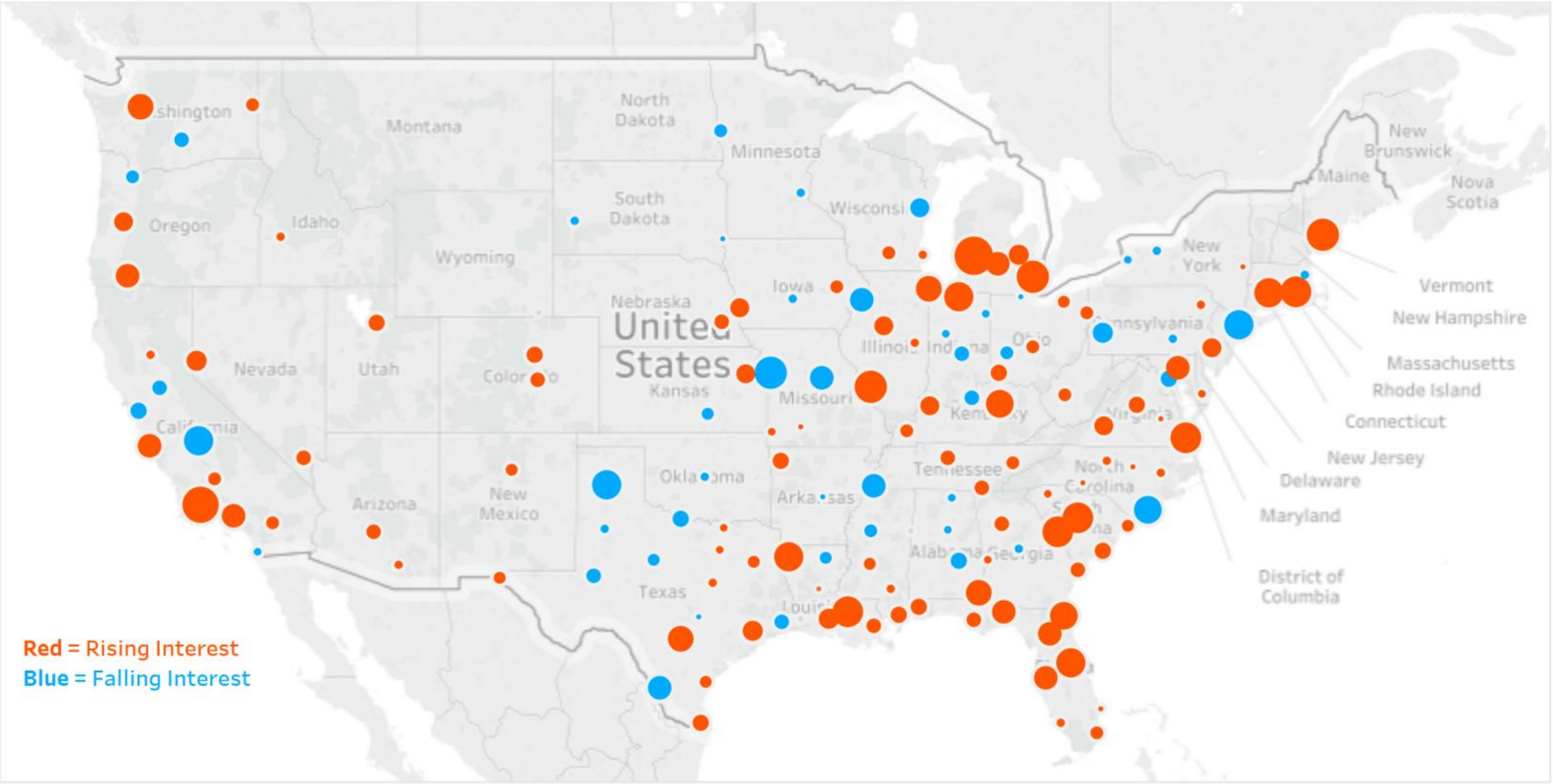
Where are Payday Loans Gaining Interest?

12-month change in Google search trends (seasonally-adjusted) by U.S. metro



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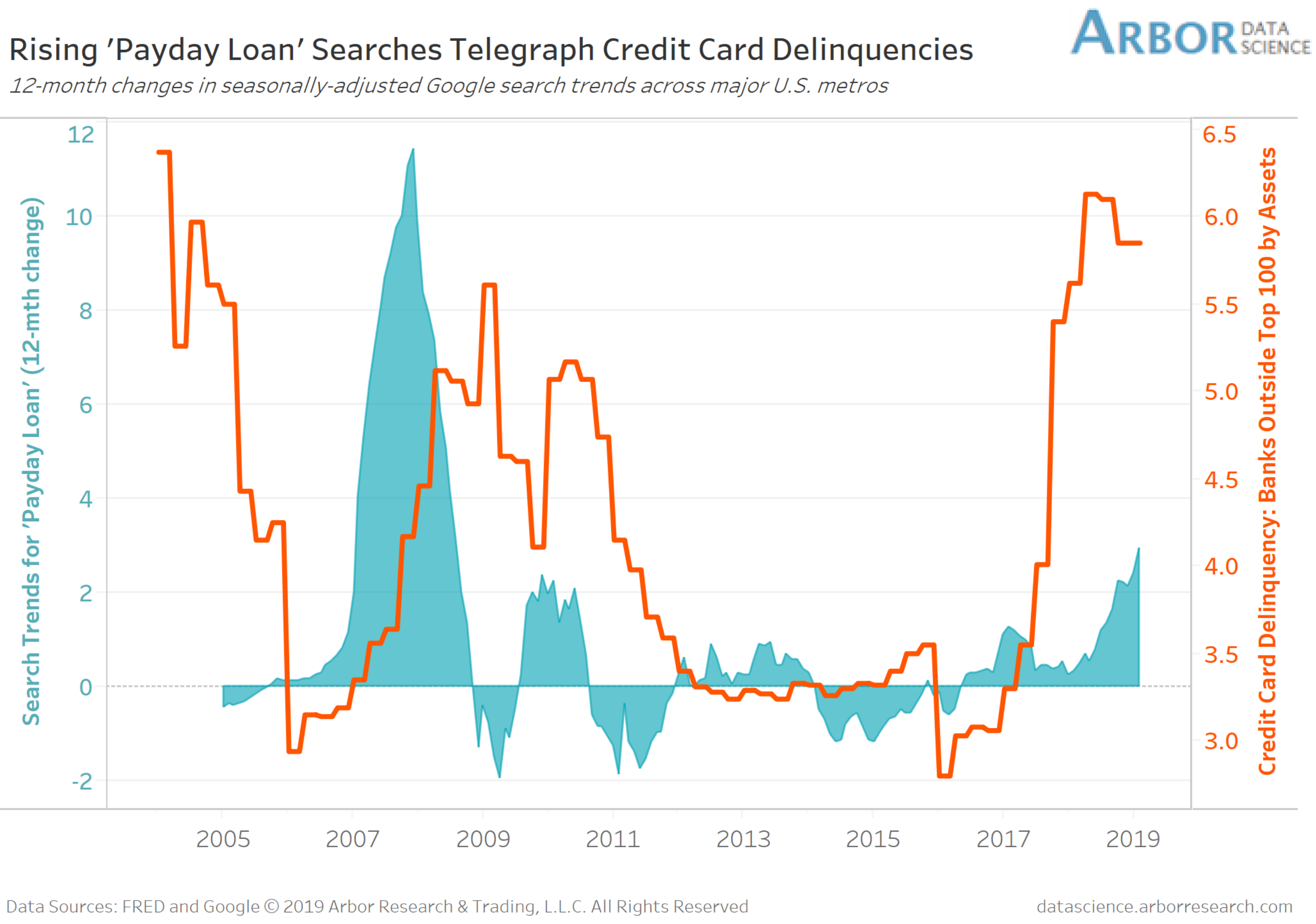
The median 12-month change in search trends for payday loans is a leading indicator of credit card delinquencies across banks outside the top 100 by assets. These banks are most likely to lower credit standards to compete with large banks offering incentives. A continued rise in search popularity would suggest these delinquencies will remain elevated in the year to come.



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