

# Gauging U.S. Recession Risk

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We are frequently asked when the U.S. might enter into a recession. In fact, we spent a good bit of time recently considering how we could tell whether a recession might be imminent, something more than a gut feeling that it must be time for one. Though turning points are hard to know with any confidence, in this study we will walk through some of the concerns surrounding the timing of recessions, and what Equifax Credit Trends data might tell us about whether current conditions warrant worry.

## Up and Down Cycles

Recessions — or, more broadly, business cycles — seem to occur on a somewhat regular cycle. Except that they don't. The National Bureau of Economic Research (NBER) is responsible for determining the start and end dates of U.S. recessions. NBER<sup>1</sup> has recognized that since 1854 there have been 33 recessions, with an average length of 17.5 months of contraction. The average expansion (the period between the end of one recession and the start of the next) has been 38.7 months,

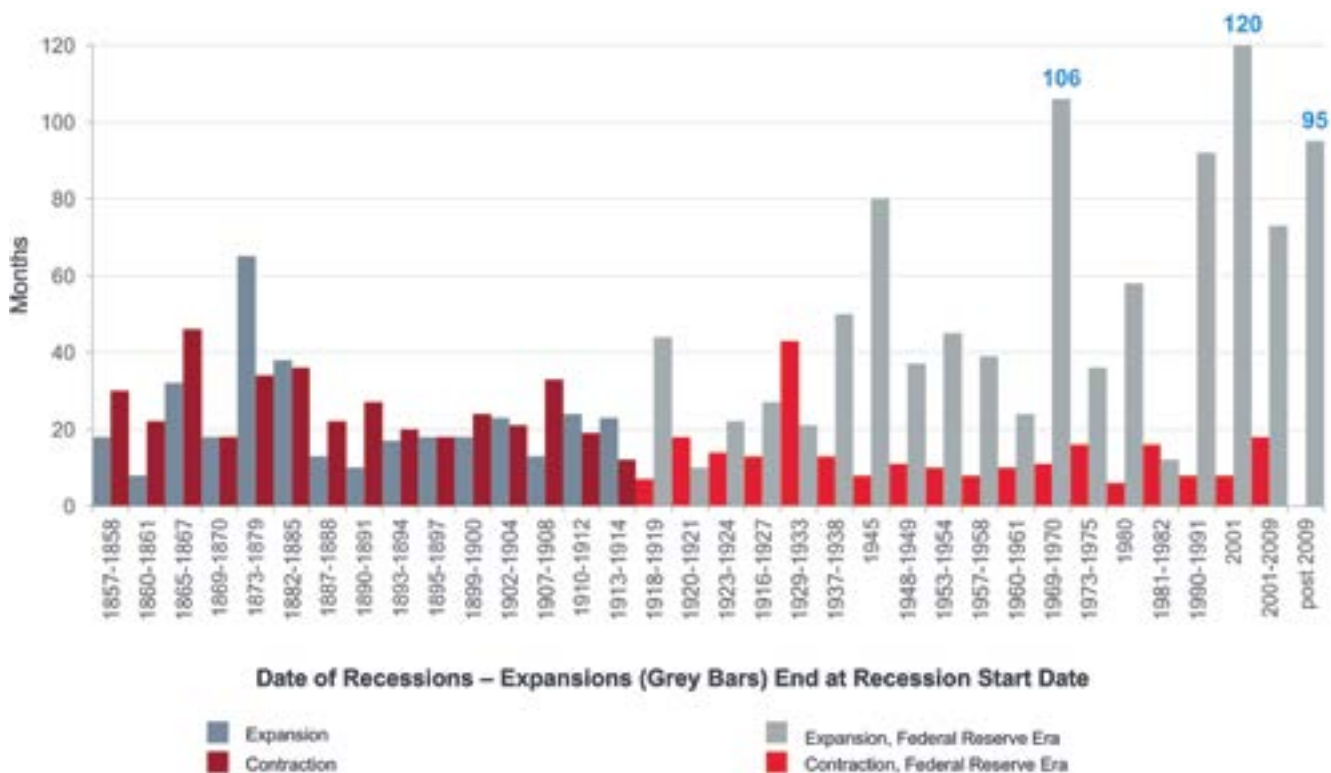
<sup>1</sup> This report has hyperlinks to cited data and studies for easy reference. The NBER recession data are available at <http://www.nber.org/cycles/cyclesmain.html> (accessed June 13, 2017)

or just over three years. More recently, in the post WWII era, recessions have shortened to an average 11.1 months and expansions have lengthened to an average of 58.4 months. And, since 1982, the three recessions have averaged 11.3 months, including the Great Recession, and the four expansions, inclusive of the current one, have averaged more than 96 months and counting.

Chart 1 shows the recessions and expansions recorded by the NBER. The era of the Federal Reserve System (the Fed) started in December 1913. The dual mandate of the Fed is to maximize employment and to stabilize prices (moderate inflation). The first mandate has resulted in much longer expansions prior to recessions and, with the exception of the Great Depression from 1929-1933, much shorter contractions.

## CHART 1

### Length of U.S. Business Cycle Expansions and Contractions Since 1854

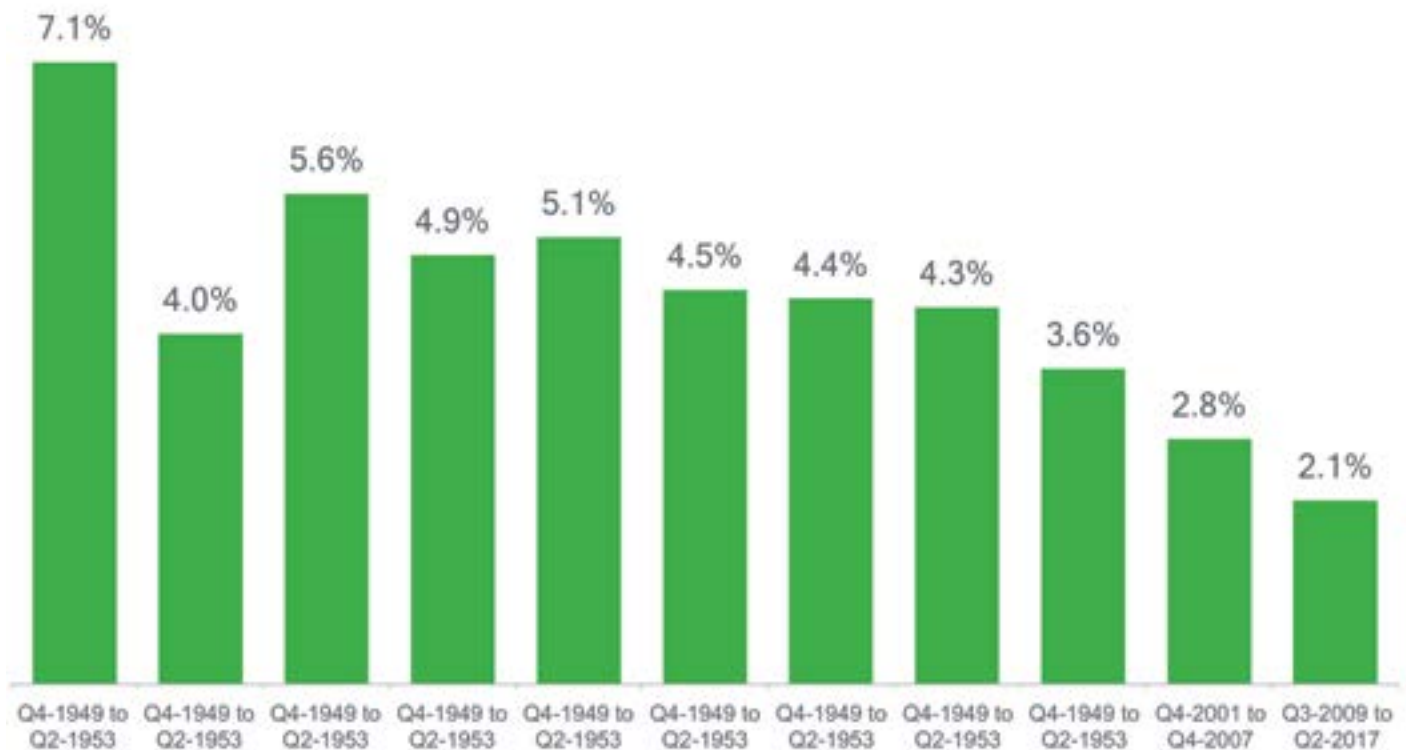


Source:  
 Equifax, National Bureau of Economic Research, Federal Reserve Board of Governors. The Federal Reserve System was created in December 1913.  
 Data reported as of July 2017.

The economic growth rate during expansions, however, is slowing. Chart 2 shows our calculations on the average annual growth in [real GDP](#) for the post WWII period<sup>2</sup>. Notably, the current expansion and the one that ended with the start of the Great Recession both had growth rates below 3.2 percent, the average annualized growth rate from the post war period, including recessions. We may be in the eighth year of the expansion, but it hasn't felt like the economy is on firm footing. Two-point-one percent growth is hardly worth getting excited about.

## CHART 2

### Real GDP Cumulative Annualized Growth Rate for Post-WWII U.S. Economic Expansions



Source:  
Equifax, Bureau of Economic Analysis, National Bureau of Economic Research; Data as of July 2017.

## Consumers Doing Their Part

Many people have stated, “We’re due for a recession,” based solely on the fact that we haven’t had one in a while. But that really isn’t how recessions work. Economic growth, as measured using gross domestic product, is the sum of:

$$Y = C + I + G + X - M$$

GDP = Consumption + Investment + Government Spending + Net Exports (exports minus imports)

<sup>2</sup> Data on real GDP and its component parts used in Charts 2 and 3 are from U.S. Bureau of Economic Analysis, “Table 1.1.6. Real Gross Domestic Product, Chained Dollars,” <https://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=3&isuri=1&903=3> (accessed July 17, 2017)

**C – Personal Consumption Expenditures** – What consumers spend on goods and services. Consumption currently makes up 69% of real GDP, so the consumer sector is the most important element. This is the blue segment in chart 3.

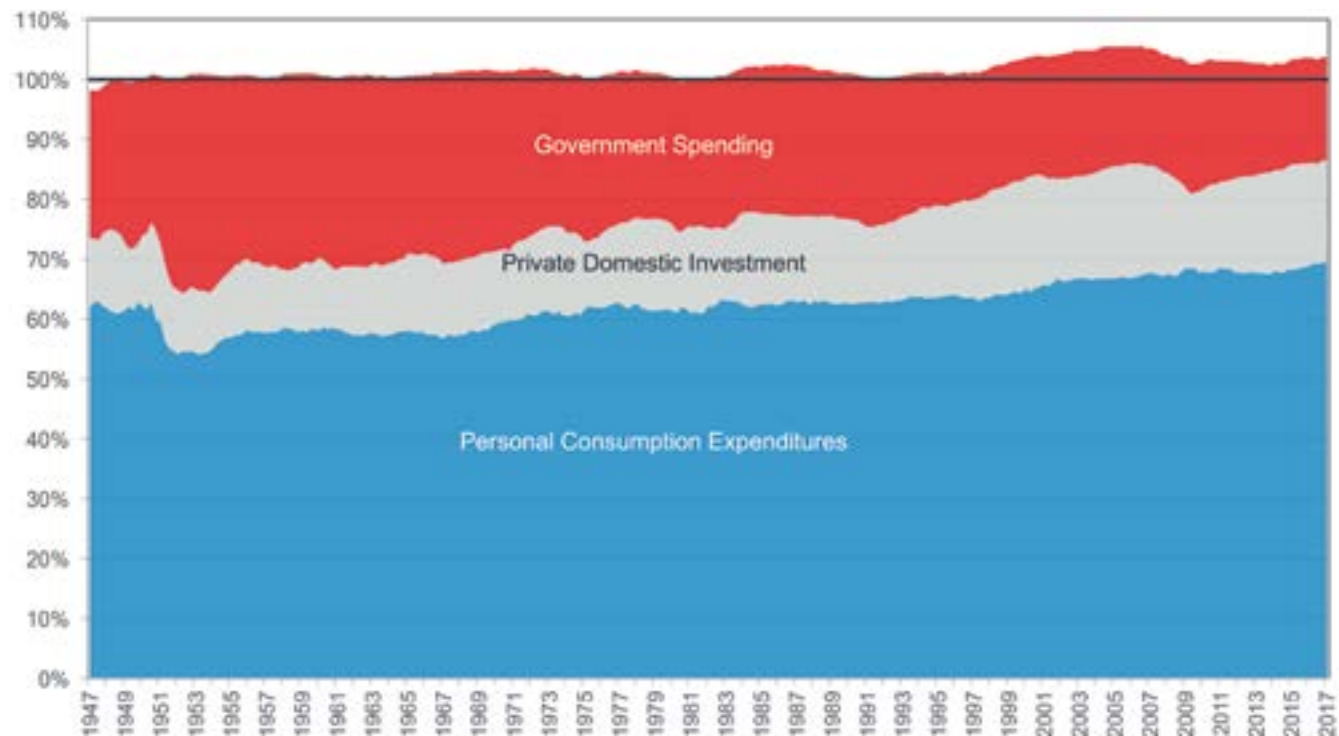
**I – Private Domestic Investment** – What consumers and businesses invest in new assets like factories, mines, homes, software, equipment, etc. It does not include the exchange of existing assets or investment in stocks and bonds. Private investment represents 17% of real GDP today, shown in gray in chart 3.

**G – Government Spending** – What federal, state and local governments spend on goods and services, not including transfer payments such as social security benefits or unemployment benefits. Government spending also represents roughly 17% of real GDP. Government spending is shown in red.

**X-M – Net Exports** – Goods and services produced in the U.S. and sold in other countries, less goods and services imported into the U.S. Currently the U.S. is importing more goods and services than it exports, with net exports representing a negative 3%. This is shown in chart 3 as the portion above the line at 100% when exports are less than imports.

### CHART 3

#### Major Segment Contributions to Real GDP



Source: Equifax, Bureau of Economic Analysis. Deviations around 100% represent the contributions of net exports. Data as of July 2017.

When economists speak of “real” GDP they mean the current dollar value of GDP — the so-called nominal GDP, divided by the GDP price deflator index — which removes the effects of aggregate price inflation from the picture.

Recessions occur when the aggregate real growth rate is negative for two or more consecutive quarters, taking into account other economic conditions used by the NBER Recession dating committee. That means either consumers must modestly cut back, or investment or government spending has to decline markedly.

The recent downturn in energy and metal commodities temporarily impacted investments in mining equipment, and dented private investment overall, but they both have since rebounded. Government spending is down relative to where it was during the end of the recession and the early part of the recovery, but as property values rise, so too does local government spending, and federal spending cuts have ceased for the moment. Unlike 2005-2008, there do not seem to be speculative bubbles forming in any large asset classes. So we can conclude from a data standpoint that there is little indication that the major contributors to real GDP might be at risk today.

## Okay, But Do Expansions Die of “Old Age?”

Researchers at the [Federal Reserve Bank of San Francisco \(FRBSF\)](#)<sup>3</sup> looked at this question and concluded that, no, recessions don’t have a higher likelihood of occurring simply because it has been “a while.” To put this in context, we might think of a repeated game, like a coin toss (a 50% chance per side) or a die being thrown (1/6 chance of any side being on the topside). With each toss, the probability that the coin comes up heads, H, is the same regardless of how many times the coin has been tossed in the past, and similarly the likelihood that a 6 appears on top of the die is the same with each toss.

But what about the chances of getting no tails on the coin in the next four tosses? That is H-H-H-H? That probability falls to just 6% from 50% on each individual toss, calculated as  $0.5 \times 0.5 \times 0.5 \times 0.5 = 0.0625$ . It works the same for the die. What if you roll the die four times and never get a 6? With the chance of a 6 coming up on top at 17% for each roll, the chance for any other side is 83%. So the likelihood of not seeing a 6 in four tosses is  $0.83 \times 0.83 \times 0.83 \times 0.83 = 0.48$ , a 48% probability.

What about recessions? Absent any particular event that might make a recession more imminent, the probability of a recession over the next 12 months was put at 23% by the FRBSF economists, meaning we have a 77% likelihood of continued expansion for the next year. Each year is like a new coin toss. The FRBSF researchers would place the chance of surviving two rounds of recession roulette at 59% ( $0.77 \times 0.77$ ), just 46% after three, falling to 36% after four spins.



3 Rudebusch, Glenn D. (2016) “Will the Economic Recovery Die of Old Age?” FRBSF Economic Letter (2016-03, February 4, 2016) <http://www.frbsf.org/economic-research/publications/economic-letter/2016/february/will-economic-recovery-die-of-old-age/> accessed July 14, 2017

Each month, the Wall Street Journal conducts a survey of leading corporate and academic economists, and in it asks respondents to predict the likelihood of the U.S. entering a recession in the next 12 months. In chart 4 we show how these forecasts have evolved over the past 16 months. In the [July 2017 survey](#)<sup>4</sup> average probability is 16%, down a bit from the probability estimated by the FRBNY researchers almost two years ago.

#### CHART 4

### The Wall Street Journal's Economic Survey Recession Probability Forecasts



Source:  
Equifax, Wall Street Journal.

## But What About Leading Indicators?

Leading indicators can give some warning that a turning point is coming. These are measures correlated with economic performance that react earlier than the overall economy to changing conditions. Corporate bond spreads and the slope of the Treasury yield curve (that is, the term spread) are two financial indicators that are especially informative about the likelihood of an economic downturn over a medium-term horizon. One reason for this purely statistical result is that those yield spreads — like all financial asset prices — are forward-looking variables, and thus they contain important information about the real economy. For example, the term spread is a useful summary of the current stance of monetary policy (relative to long-run expectations), which, of course, has an important effect on macroeconomic

4 Economic Forecasting Survey, Wall Street Journal , <http://projects.wsj.com/econforecast/#ind=gdp&r=20>, accessed July 17, 2017

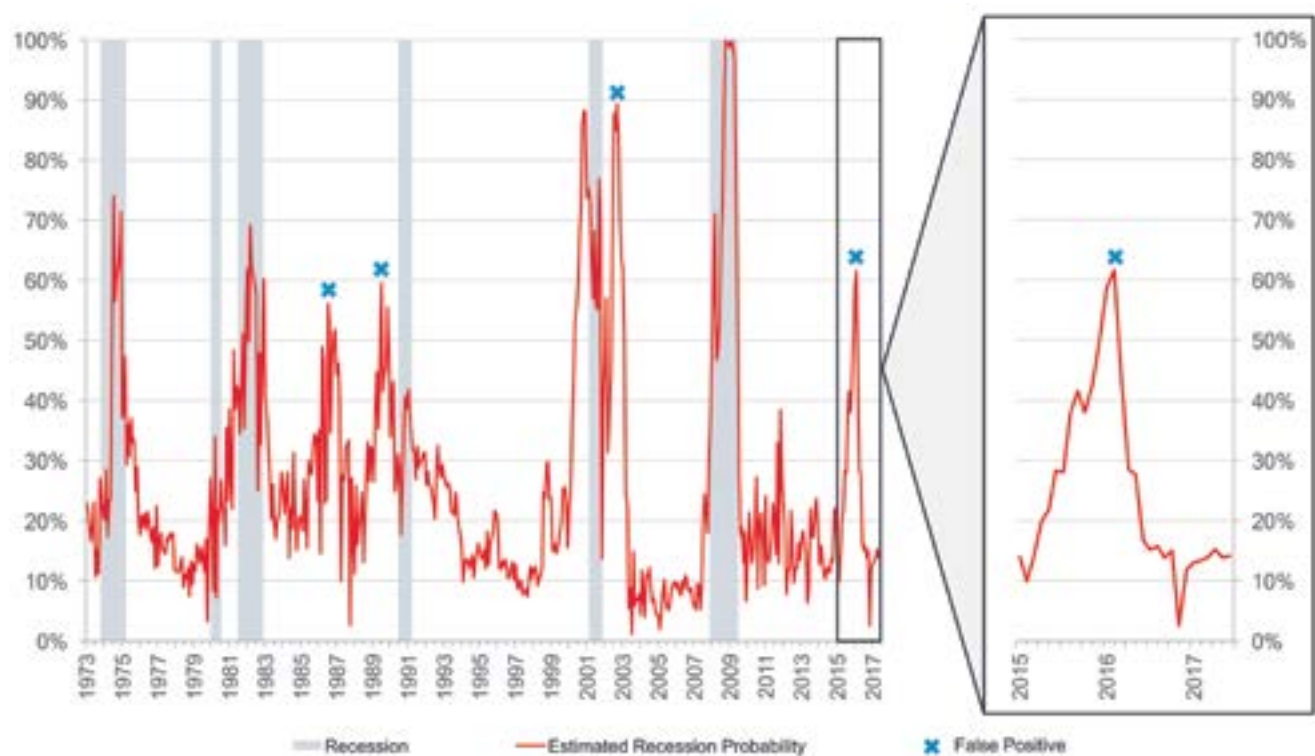


outcomes. Credit spreads, on the other hand, may anticipate future economic activity because they incorporate investors' expectations of future corporate defaults, which affect the business sector's profits, employment, and investment.

A recently introduced (in 2012) measure for predicting the likelihood of an NBER-dated recession occurring over the next 12 months is investor sentiment or risk appetite in the corporate bond market — the so-called excess bond premium (EBP). The measure is complicated to estimate, but is well described in this [Federal Reserve FEDS Note](#)<sup>5</sup> and this [FEDS Note Update](#)<sup>6</sup>. Luckily for us, the interpretation is rather straightforward as a straight-up probability. Chart 5 plots the EBP from 1973 through June 2017<sup>7</sup>.

## CHART 5

### Excess Bond Premium Method of Estimated Probability of Recession



Source:  
Equifax, Board of Governors of the Federal Reserve System; Data through June 2017.

In early 2016 the EBP probability of recession spiked to over 60% based on weak corporate profits reports in January and February. It has since fallen, landing at a fairly steady 12% since September of last year, indicating the model produced a false positive indicator of recession, as it has on three previous occasions. Importantly, the model does reflect the heightened market volatility since the end of the Great Recession.

5 Favara, Giovanni, Simon Gilchrist, Kurt F. Lewis, and Egon Zakrajsek (2016). "Recession Risk and the Excess Bond Premium," FEDS Notes. Washington: Board of Governors of the Federal Reserve System, April 8, 2016, <http://dx.doi.org/10.17016/2380-7172.1739> (accessed July 17, 2017)

6 Favara, Giovanni, Simon Gilchrist, Kurt F. Lewis, Egon Zakrajšek (2016). "Updating the Recession Risk and the Excess Bond Premium," FEDS Notes. Washington: Board of Governors of the Federal Reserve System, October 6, 2016, <https://doi.org/10.17016/2380-7172.1836> (accessed July 17, 2017)

7 Data for the EBP series are updated monthly and made available by Fed staff at [https://www.federalreserve.gov/econresdata/notes/feds-notes/2016/files/ebp\\_csv.csv](https://www.federalreserve.gov/econresdata/notes/feds-notes/2016/files/ebp_csv.csv) (accessed July 17, 2017)

Two interpretations of this measure are offered by the FEDS notes cited above. One possible mechanism linking investor sentiment and the real economy is related to the way investors update their beliefs in light of incoming data. In particular, investors may over-react to the most recent news and thus assign excessive weight to future outcomes that have become more likely in view of recent data. For example, after a few years of economic expansion, investors may become complacent about default risk, an attitude leading to a compression in credit spreads, a loosening of other credit terms and standards, and a surge of issuance of credit to very risky borrowers. In such an environment, the sudden arrival of a string of unfavorable economic news may lead investors to revise disproportionately their assessment of recession risk, thus amplifying the widening in credit spreads. This reasoning implies that investor psychology can itself be a cause of volatility in credit and investment, even in the absence of significant changes in economic fundamentals.

Another possible mechanism linking fluctuations in credit market sentiment to economic outcomes is related to changes in the supply of credit. Large unlevered institutions such as mutual funds, insurance companies, and pension funds have become in recent years the [main domestic investors](#) in the corporate bond market and account for 50 percent of outstanding issues. Foreign investors make up another 40 percent<sup>8</sup>. These institutions effectively act as a marginal investor in a wide range of financial markets. To the extent that real and financial disturbances affect their willingness or ability to fund the provision of new credit, the resulting tighter financial conditions may exert a significant drag on future economic growth, dynamics consistent with the standard financial accelerator mechanisms emphasized by former Fed Chairman Bernanke and others.

So, the EBP may respond to demand dynamics and investor over-reaction or to supply dynamics. For the moment, the measure is reassuring that recession risk has ebbed.

## What Does Equifax Credit Data Indicate About Recession Risk?

Because it is so hard to recognize turning points as they happen, looking at more types of data can be helpful in forming a conclusion. One indicator of possible weakness is lowering of credit standards, a sort of race to the bottom in the hopes of capturing greater market share. One metric to consider is the trend in credit scores of newly originated loans. With the recent overhaul of the [Credit Trends database](#)<sup>9</sup>, we can look at the [VantageScore® 3.0 credit score](#)<sup>10</sup> distributions for various tradelines. In charts 6A through 6H, we plotted the 10th and 25th percentile VantageScores for each major tradeline type covered by Credit Trends: Auto loans, credit cards, consumer finance, mortgage, home equity and student loans. The data span July 2005 through June 2017. We conclude that today there is no indication of a meaningful weakening of credit standards with respect to credit scores. Moreover, for some tradelines, credit standards are getting tougher.

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8 See Verma, Sid, "There's Basically No Alternative to U.S. Corporate Bonds Right Now," August 25, 2016, Exhibit 2 <https://www.bloomberg.com/news/articles/2016-08-25/there-s-basically-no-alternative-to-u-s-corporate-bonds-right-now> (accessed July 17, 2017)

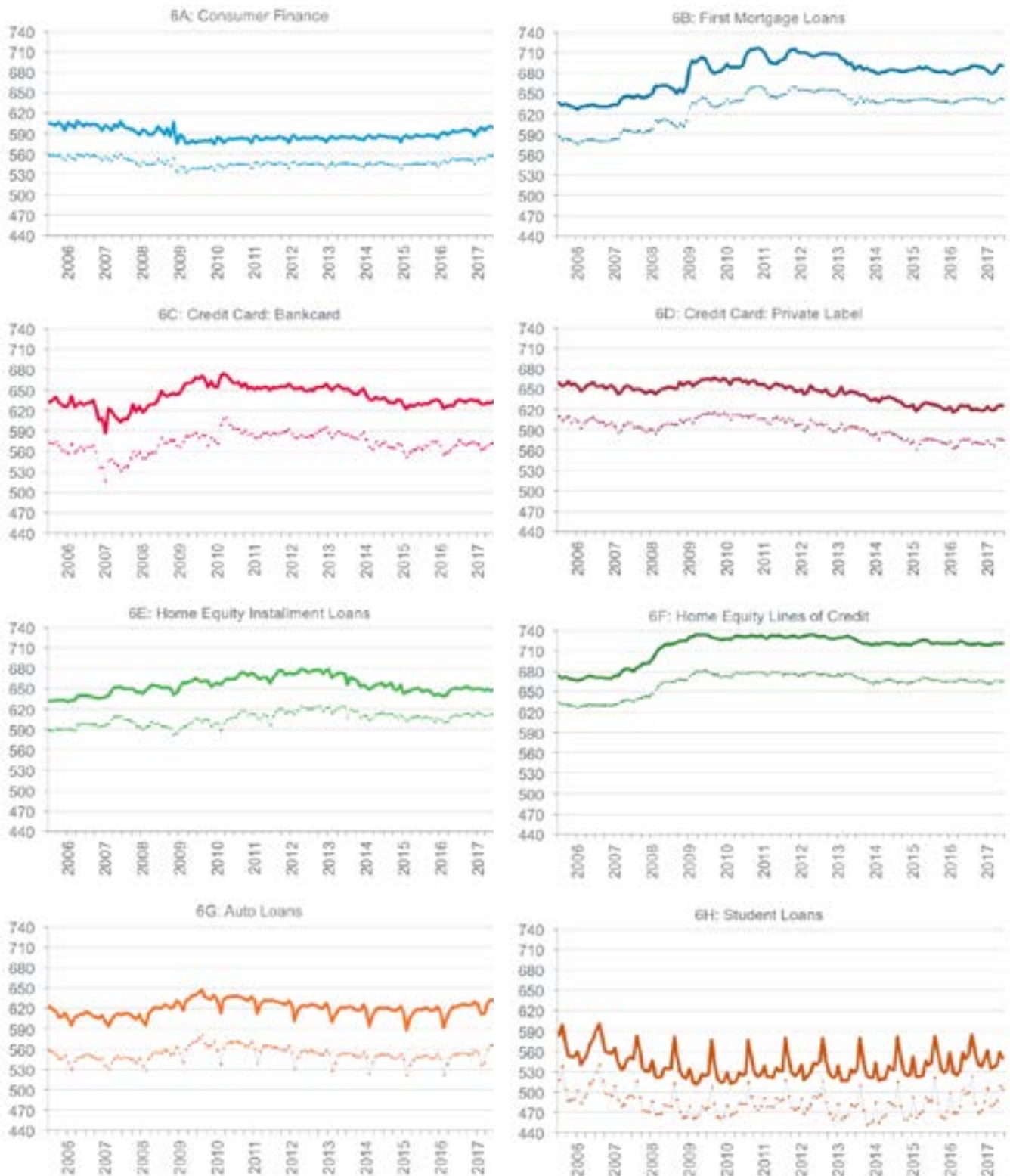
9 More information on the Credit Trends database can be found at [www.equifax.com/business/credit-trends](http://www.equifax.com/business/credit-trends)

10 VantageScore is a trademark of VantageScore Solutions, LLC. More information can be found at [www.vantagescore.com](http://www.vantagescore.com)



## CHART 6

### 10th and 25th Percentiles for Origination VantageScore® 3.0 Credit Scores by Tradeline Type

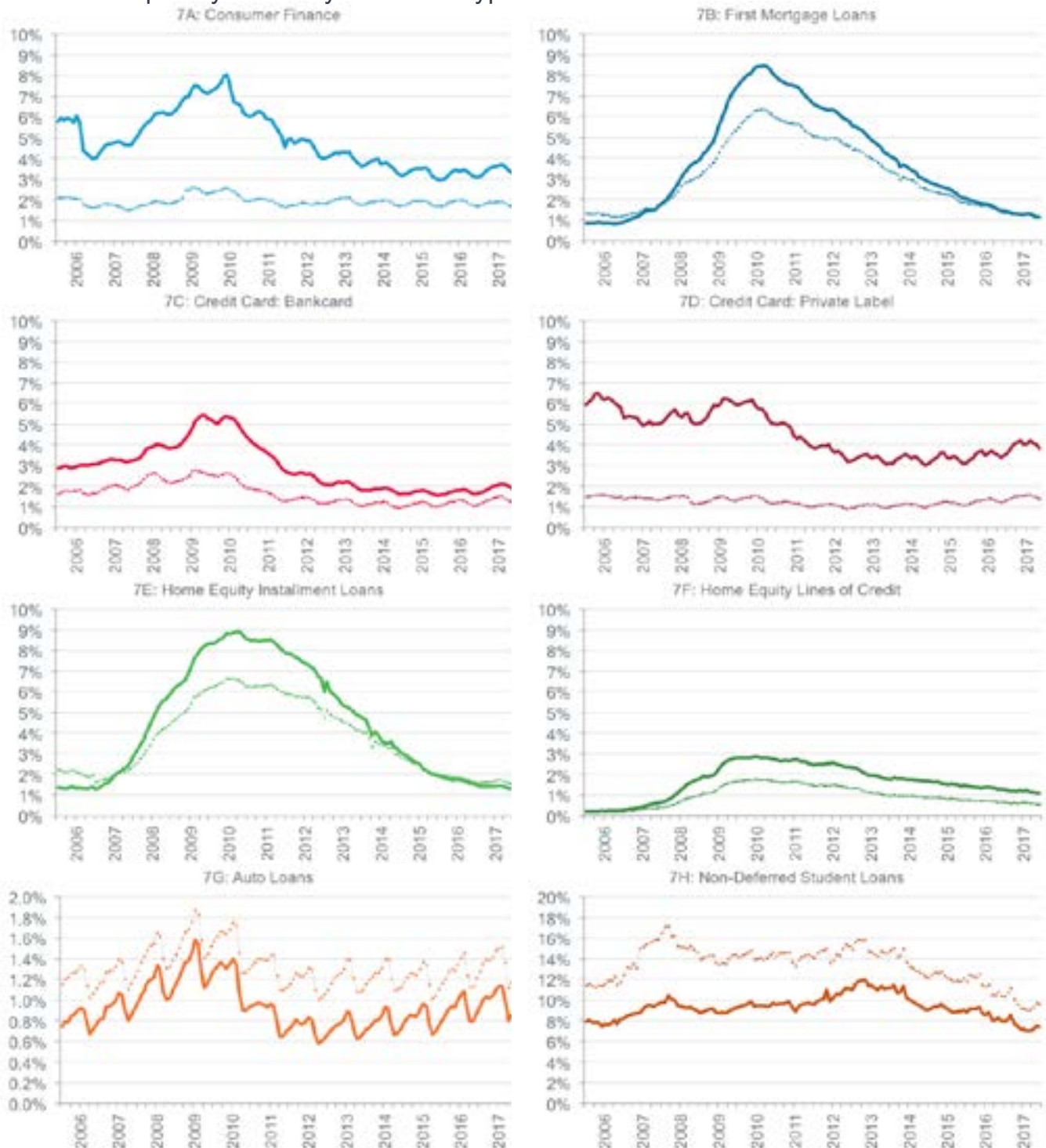


Source: Equifax Credit Trends. Data are not seasonally adjusted. Percentiles based on numbers of accounts. Data are through June 2017.

We then plotted severe delinquency rates for these tradeline types in charts 7A through 7H, based on the number of accounts outstanding and the dollar balances outstanding. Here, the results are mixed. Auto loans, bankcard and private label credit cards are clearly showing rising delinquency rates, but they remain relatively low. Mortgage, home equity installment loans, home equity lines of credit (HELOCs), and student loans are all showing declining incidence of delinquency. Consumer finance loan performance is essentially unchanged.

## CHART 7

### Severe Delinquency Rates by Tradeline Type



Source: Equifax Credit Trends. Not seasonally adjusted. Severe delinquency rate defined as accounts 60+ days past due for charts 7A-7D; defined as 90+ days past due, in bankruptcy or, for mortgage-related trades, in foreclosure. Data are through June 2017.

Deeper dives into auto lending in [other research](#) we've recently completed<sup>11</sup> indicate that most lenders (banks, credit unions and captive auto finance companies) have maintained very tight lending standards and have great performance to show for it, while independent, monoline and dealer finance companies<sup>12</sup> have been more aggressive and show worsening performance. The majority of auto loans are doing very well.

The weakening credit card performance may be indicative of turning tides, but the delinquency rates are still quite low. We will continue to watch their performance.

## Parting Thoughts

The focus of this study is recession risk from normal ebbs and flows of consumption and investment, and what we might learn from recent trends in credit markets. Policy risk, whether domestic or foreign, is impossible to gauge. Domestic fiscal stimulus, for example from comprehensive infrastructure spending, would be a boost to growth, but it isn't free. Depending on how the money is raised to pay for it, such spending could create greater recession risk on net rather than less. Foreign events could also create economic stress at home and are nearly always unexpected.

We occasionally get asked where to find timely originations data. We publish this information in the Quarterly U.S. Consumer Credit Trends on the Equifax website in the Investor Relations section: <https://investor.equifax.com/news-and-events/events-and-presentations> (past events section) on a quarterly basis after Equifax releases its earnings results. Additionally, more detailed monthly reports are available to Equifax Credit Trends and Moody's Analytics Credit Forecast 5.0 subscribers. If you are interested in these reports please contact your Equifax sales representative.

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<sup>11</sup> Equifax infographic, "What's Happening with Subprime Auto Loans?" <http://www.visualcapitalist.com/subprime-auto-loans/> (accessed July 17, 2017)

<sup>12</sup> Captive auto finance companies are associated with an auto manufacturer, independent finance companies offer auto and other loan types, while monoline finance companies focus on auto loans through multiple dealers and platforms. Dealer finance companies are associated with dealerships or dealer networks

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