NO SPIN FORECAST

A Primer on the Business Cycle

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March 2020

Chart 1
The Who, How, When, and Why of the Business Cycle

- This presentation contains charts and narrative that were published in the regular monthly reports we provide to our subscribers.

- The goal was to give them, and now you, some background on how the official process of determining which phase of the business cycle the economy is currently transiting is determined.

- We hope you find the information here of use as you try to make sense of the current and prospective economic situation.

THE PHASES OF THE BUSINESS CYCLE

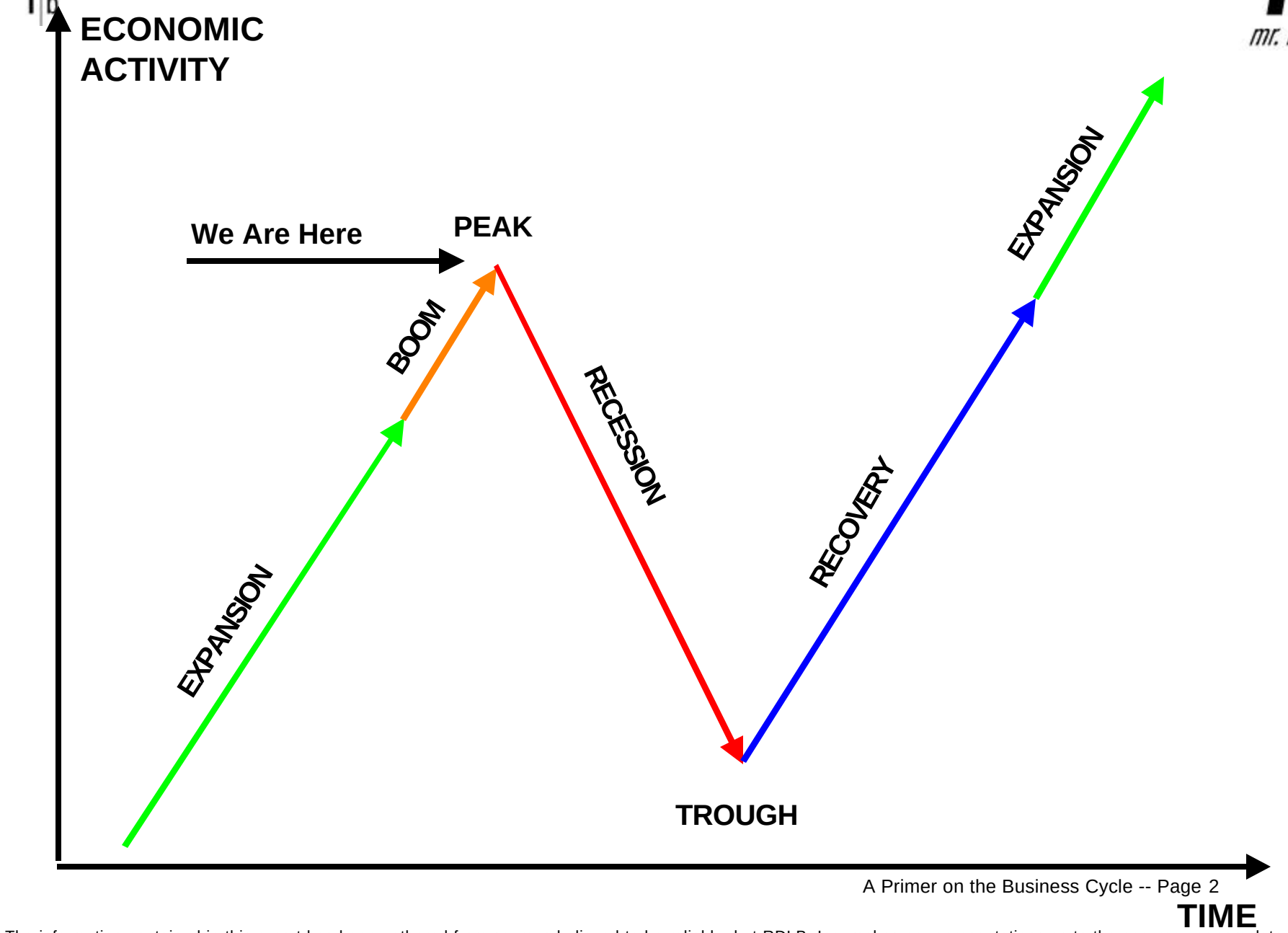


Chart 3
Some Introductions and Definitions -- Part 1

All of the following, which are in italics, are taken from various pages on the site of the National Bureau of Economic Research. I encourage you to visit their website. The link is:

www.nber.org

And the reason why it is not a live link is that the last time I put one of those in this report it led to a host of software issues that I don't want to have again. So, please copy and paste, or type (old school), that link into your browser address line. I put it on one line to facilitate the copy and paste operations.

> *Founded in 1920, the National Bureau of Economic Research [NBER] is a private, non-profit, non-partisan organization dedicated to conducting economic research and to disseminating research findings among academics, public policy makers, and business professionals. NBER-affiliated researchers study a wide range of topics and they employ many different methods in their work. Key focus areas include developing new statistical measurements, estimating quantitative models of economic behavior, and analyzing the effects of public policies.*

The actual task of determining the start and end of the business cycle is done by the (surprise) Business Cycle Dating Committee.

> *The NBER's Business Cycle Dating Committee maintains a chronology of the U.S. business cycle. The chronology comprises alternating dates of peaks and troughs in economic activity. A recession is a period between a peak and a trough, and an expansion is a period between a trough and a peak. During a recession, a significant decline in economic activity spreads across the economy and can last from a few months to more than a year. Similarly, during an expansion, economic activity rises substantially, spreads across the economy, and usually lasts for several years.*

Chart 4
Some Introductions and Definitions -- Part 2

Current Members of the NBER Business Cycle Dating Committee

Robert Hall, Stanford University, Chair, 1978-
Robert J. Gordon, Northwestern University, 1978-
James Poterba, MIT, 2008-
Valerie Ramey, University of California, San Diego, 2017-
Christina Romer, University of California, Berkeley, 2003-2008, 2010-
David Romer, University of California, Berkeley, 2003-2009, 2010-
James Stock, Harvard University, 2009-2012, 2016-
Mark W. Watson, Princeton University, 2009-

Past Members of the NBER Business Cycle Dating Committee

Ben Bernanke, Princeton University, 2000-2002
William Branson, Princeton Univesity, 1978-1991
Martin Feldstein, Harvard University, 1978-1982, 1984-2019
Jeffrey Frankel, Harvard University, 1993-1996, 1999-2019
Benjamin Friedman, Harvard University, 1978-1991
N. Gregory Mankiw, Harvard University, 1991-2000
Geoffrey Moore, Rutgers University, 1978-2000
Eli Shapiro, MIT, 1982-1984
Victor Zarnowitz, University of Chicago, 1978-2009

Chart 5
Some Introductions and Definitions -- Part 3

The current and past members of the committee include men and women who have served in both Republican and Democratic administrations as well as on the Federal Reserve Board. The late Geoffey Moore is considered to be the father of modern business cycle analysis. Now that we know who is going to make the decision about when the next cycle peak will have occurred, let's look at the criteria they will use. Again, quoting directly from the NBER site. The bold emphasis is mine.

The NBER's Business Cycle Dating Committee maintains a chronology of the U.S. business cycle. The chronology comprises alternating dates of peaks and troughs in economic activity. A recession is a period between a peak and a trough, and an expansion is a period between a trough and a peak. ***During a recession, a significant decline in economic activity spreads across the economy and can last from a few months to more than a year.*** *Similarly, during an expansion, economic activity rises substantially, spreads across the economy, and usually lasts for several years.*

The Committee does not have a fixed definition of economic activity. It examines and compares the behavior of various measures of broad activity: real GDP measured on the product and income sides, economy-wide employment, and real income. The Committee also may consider indicators that do not cover the entire economy, such as real sales and the Federal Reserve's index of industrial production (IP). *The Committee's use of these indicators in conjunction with the broad measures recognizes the issue of double-counting of sectors included in both those indicators and the broad measures. Still, a well-defined peak or trough in real sales or IP might help to determine the overall peak or trough dates, particularly if the economy-wide indicators are in conflict or do not have well-defined peaks or troughs.*

Chart 6
Some Introductions and Definitions -- Part 4

Before we delve into the measures the NBER uses to make its determination of cycle peaks and troughs, we need to take a quick look at how long it has taken them to make that decision in the last five cycle peaks and the last five cycle troughs.

The dates under "Date" in each table are the official peak and trough dates. The date in the "Announcement" column is the month in which they made the proclamation of the cycle event. The "Interval" is the number of months between the cycle date and the proclamation date.

As you can see, the smallest number on the chart is the 6 months between the actual peak in 1980 and the announcement of same. Notice the length of the intervals between the cycle troughs of 1990 and 2001 and the proclamation dates.

Which is why we say the NBER does autopsies. And they don't start until they are certain the patient is dead. Not catatonic. We will now turn to the evidence they use.

Cycle Peaks

Date	Announcement	Interval
Jan-80	Jun-80	6
Jul-81	Jan-82	7
Jul-90	Apr-91	9
Mar-01	Nov-01	8
Dec-07	Dec-08	12

Cycle Troughs

Date	Announcement	Interval
Jul-80	Jul-81	12
Nov-82	Jul-83	9
Mar-91	Dec-92	21
Nov-01	Jul-03	20
Jun-09	Sep-10	15

Chart 7
Some Introductions and Definitions -- Part 5

This table shows you the four major coincident indicators that the Cycle Dating Committee uses to make its determination of cycle peaks and troughs. If you want to follow this regularly, go to this site and look for the articles about each of the series that will appear as they are released over the course of the month. Yes, I use sites like this because they facilitate the monitoring of data sources as well doing analyses that I find helpful in my work. Again, not a live link. Same procedure as the previous link.

https://www.advisorperspectives.com/dshort

The next chart has the list of my leading and coincident indicators.

Coincident Indicators

Variable	Source	Release Date
Nonfarm Employment	Bureau of Labor Statistics [BLS]	First Week
Industrial Production	Federal Reserve	Mid Month
Real Retail Sales	Census Bureau, BLS	Mid Month
Real Personal Income (excluding Transfer Receipts)	Bureau of Economic Analysis	Last Day

Chart 8
Some Introductions and Definitions -- Part 5

Leading Indicators

Variable	Source	Release Date
Federal Funds Rate	Federal Reserve	First Week
10-Year Treasury	Federal Reserve	First Week
Short-Term Unemployment Rate	BLS	First Week
Consumer Price Index	BLS	Mid Month

Coincident Indicators

Variable	Source	Release Date
Nonfarm Employment	BLS	First Week
DeltaDelta	BLS, Newswire	First Week
Industrial Production	Federal Reserve	Mid Month

Chart 9
Some Introductions and Definitions -- Part Last

We are done with the introductions and definitions. These are the reasons we went through them.

The NBER is the official designator of business cycle peaks and troughs in the United States.

The Business Cycle Dating Committee is the source of the proclamations of the cycle peak and trough dates.

The methodology used to make those determinations does not include a specific set of conditions for the existence of a recession. Rather, several series are used in combination to make the determination of whether a cycle event has taken place.

The process used to make those determinations often results in lengthy intervals between the actual cycle event dates and the announcement dates. The Cycle Dating Committee does not make forecasts of cycle events and only reports their findings when they are satisfied their evidence is solid.

The variables used by Mr. Model were selected for the ability to call cycle events and for their availability early in the month. By the end of the first week of most months (there are times when the employment numbers are not available in the first week) we have three of the four leading indicators in hand as well as two of the three coincident indicators. This is enough to give us a very strong signal as to what the current and prospective conditions of the economy are. While we wait for all of the variables to be published before we update the model and report our findings, we can foreshadow those results with a fair degree of accuracy very early in the month.

Our cycle dating procedure follows a set of rules we publish in the reports, and is based on data we will share with anyone who asks for it.

Based on what we know today, and using the procedures that have been in place since 1987, we do not think that a cycle peak had yet been reached in February, but that one is close at hand as we write this report in late March. Remember, the first rule is what did they know and when did they know it? And, so far, February is all we know.

Chart 10
Recession Periods as Defined by the National Bureau of Economic Research

This is the list of recessions ranked by length and then by chronology within each length. In other words, the first one you will see in each group is the oldest one in each group.

We will be presenting other arrangements like this at a later date when we discuss the various types of recessions that exist. Yes, there are several ways to analyze recessions. Length. Severity as measured by employment. Severity as measured by GDP. Cause. Fiscal impact. Monetary policy before, during and after.

We will try to bring those analyses to you in the most relevant fashion we can based on the availability of data with which to conduct the analysis.

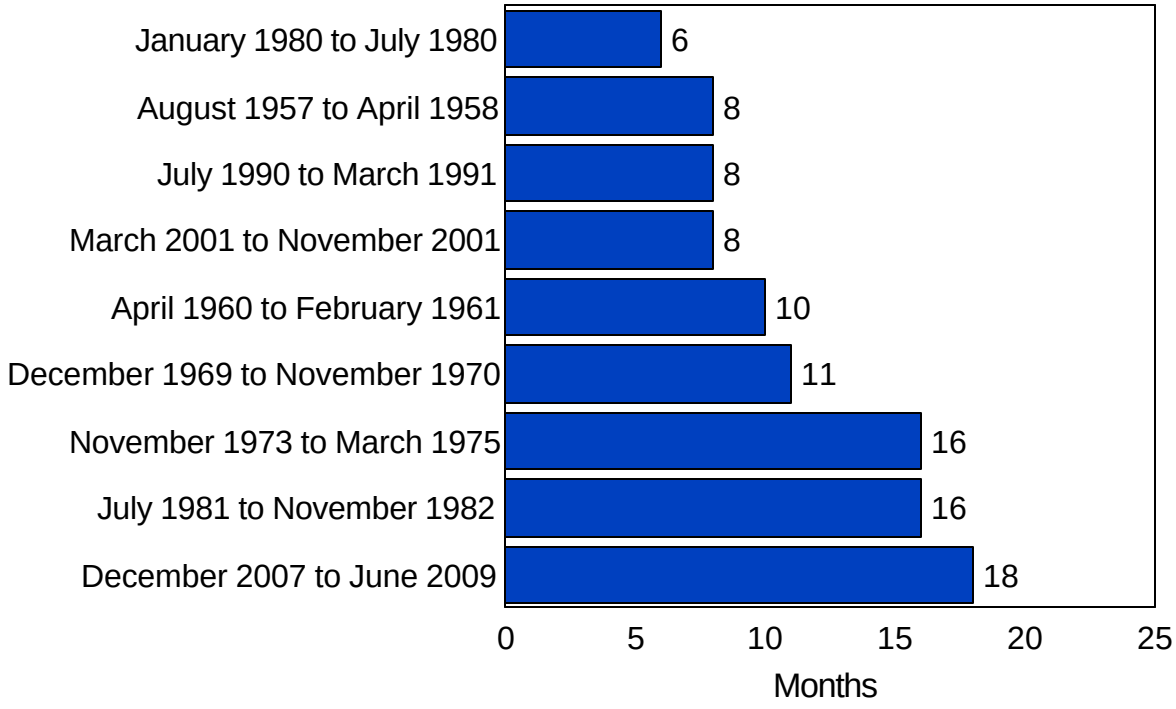


Chart 11
Business Cycles as Defined by the National Bureau of Economic Research

This chart is a little busy and I am only going to use it this one time.

The objective is to provide you with a visualization of the fact that there is no connection between the length of an expansion and the recession that follows it.

There is also no connection between the length of a recession and the expansion that follows it.

This chart should be used to refute any such arguments. You are going to be hearing a lot of forecasts that say the next recession will be long and deep because the expansion was long. Show them this chart. There you see that the two prior longest expansions were followed by short recessions. And then point out that the shortest expansion on record was followed by the second-longest and second-deepest downturn.

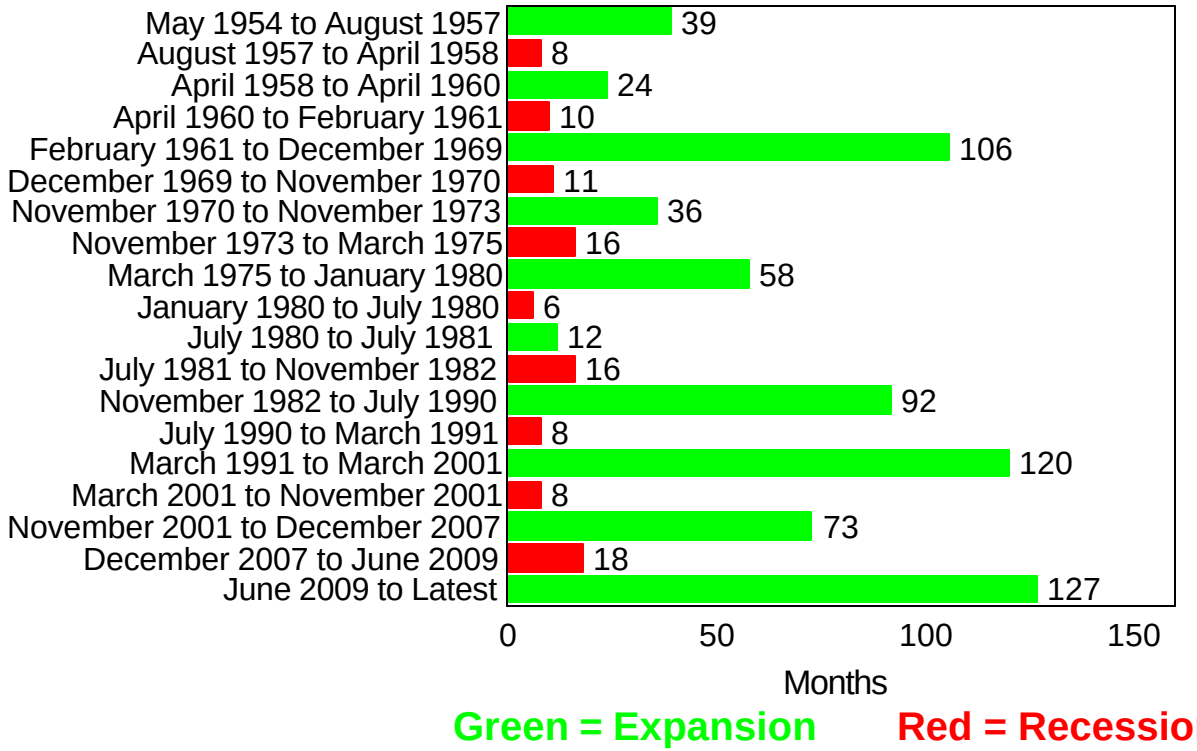
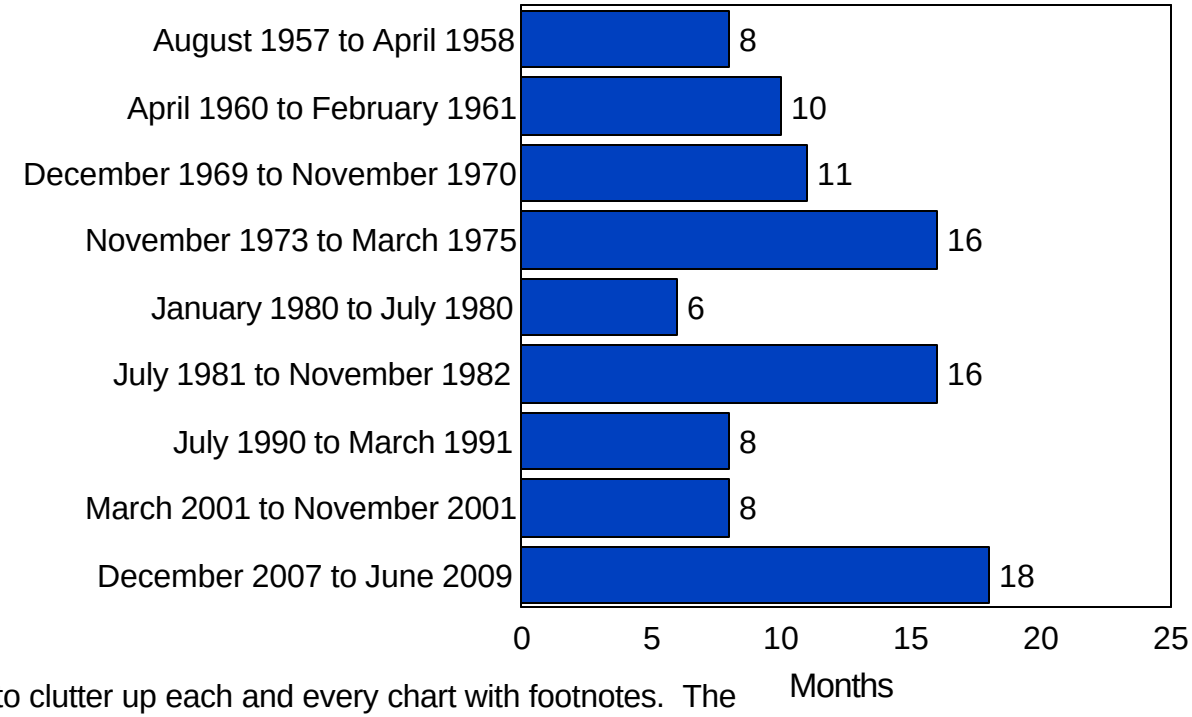


Chart 12
Recession Periods as Defined by the National Bureau of Economic Research

This is the list of recessions back in chronological order so that we can set up the last part of the discussion for this month.

Since there is widespread talk of a recession having started in the United States I thought you might like to see what the two coincident indicators that we have in hand early each month looked like at the onset of each and every recession listed on this chart.

We are going to look at total private payroll employment because that is what we are using now. And we will look at DeltaDelta. The last chart in this series will run here and in the Employment Situation Report for the next several months.



One last methodological note, so we don't have to clutter up each and every chart with footnotes. The top chart on each page that follows has the month-to-month change in total private payrolls. I am showing you this rather than the year-over-year percent change because it ties out to the headline in the Establishment survey.

The bottom chart has DeltaDelta which is equal to the year-over-year percent change of the month-end close of the SP500 minus the year-over-year percent change in the Official Unemployment rate.

On each chart we will see the six months prior to cycle peak and the six months following it. The red number you see there is the month of the cycle peak. On the next chart, that is August of 1957.

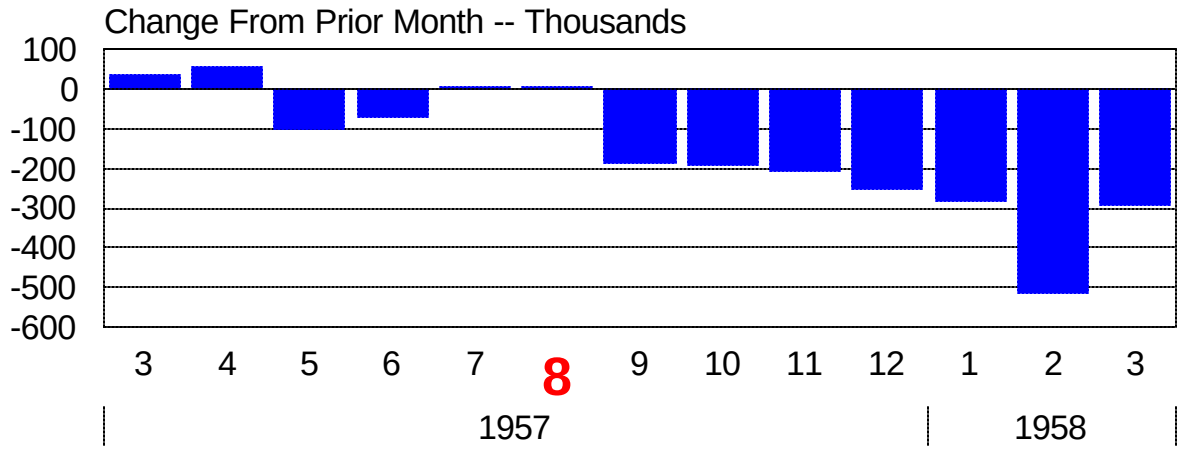
Chart 13
Coincident Indicators -- August 1957 Cycle Peak

I think I should tell you right now that it was only happenstance that the charts for 1957, which are the first we are looking at, have the appearance one would expect around a business cycle peak.

Both of the coincident indicators turn negative, as they should, right on cue, following a very orderly decline right to the cycle peak date.

This will be the last time we get to see something quite so nice. And it is another reminder of Saint Offset's nasty streak of letting you get one forecast perfectly right so that you think you actually know what you are doing.

Total Private Nonfarm Payrolls



DeltaDelta

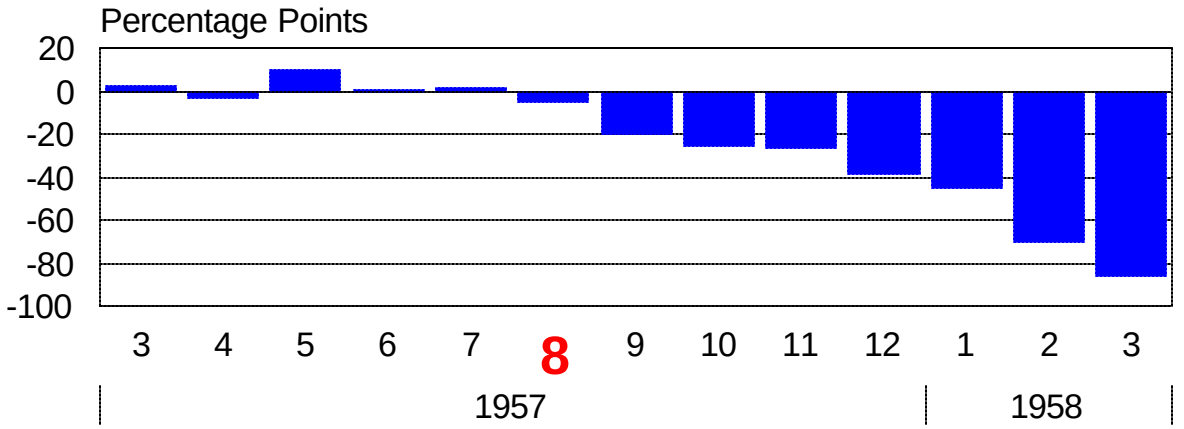
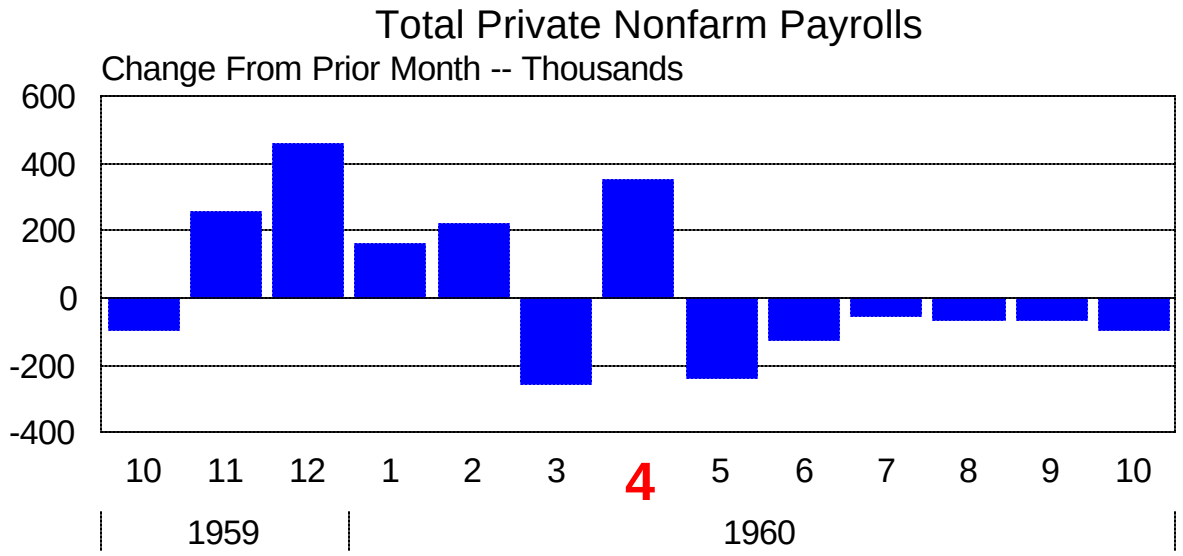


Chart 14
Coincident Indicators -- April 1960 Cycle Peak

While the 1960 peak also has a nice reversal in the shape and size of the two indicators, their movements right in front of the peak do not foreshadow the arrival of the peak the way they did in front of the 1957 event.

And this is among the several reasons why we tell you not to forecast the forecast. You will note that there are two months in the six prior to the cycle peak where the month-to-month change was negative. In both cases the next month was positive. And, one of those months turns out to be the cycle peak.

Are you beginning to see why the Cycle Dating Committee waits a while before they start trying to figure out where the cycle peak might be?



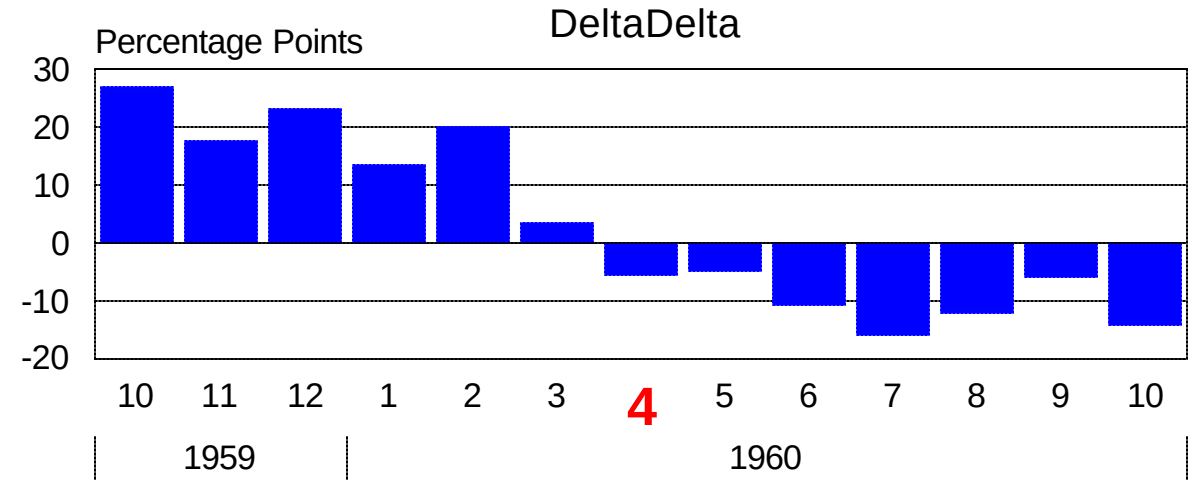


Chart 15
Coincident Indicators -- December 1969 Cycle Peak

You are now probably thinking that I am making all of this up.

How about the top chart. A month up followed by a month down, with the cycle peak month being an up.

Meanwhile, DeltaDelta is running below zero effectively six months before the cycle peak

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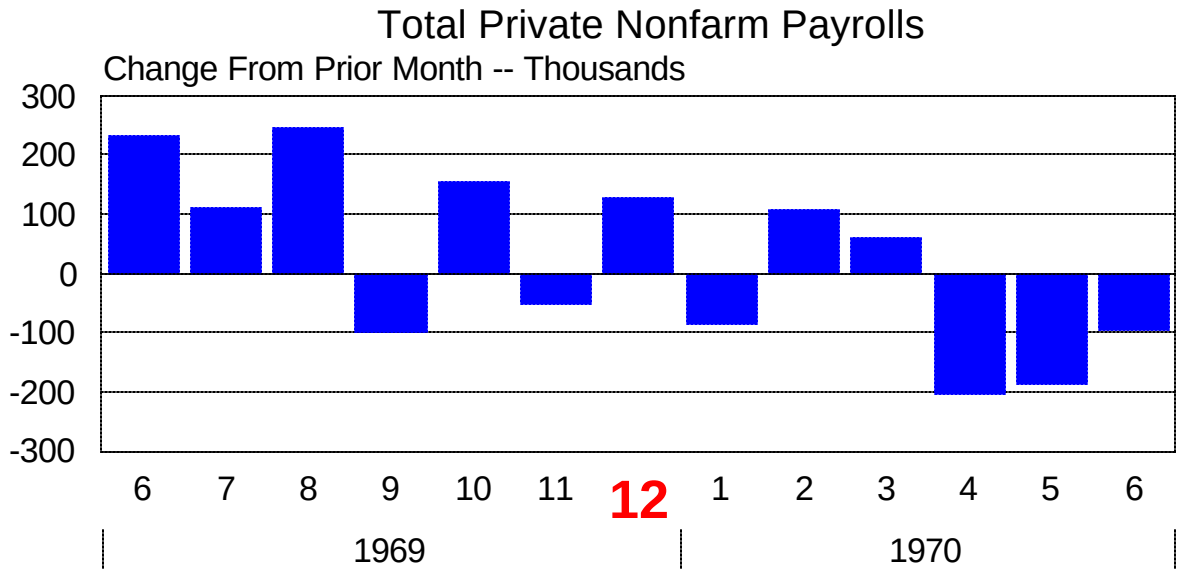
Are we having fun yet?



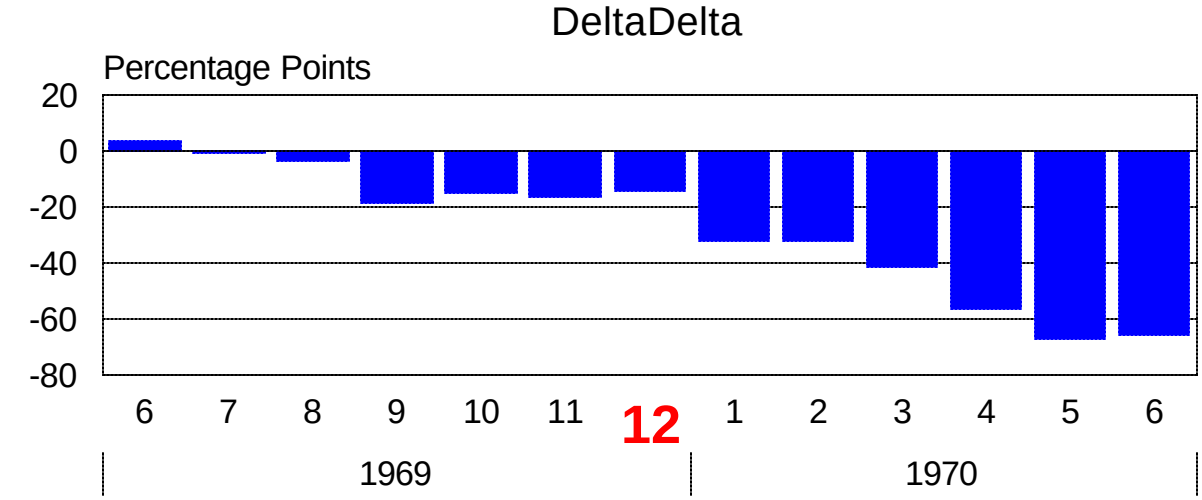


Chart 16
Coincident Indicators -- November 1973 Cycle Peak

No way!

Welcome to the recession that saw no drop in employment for the first six months of its existence! And the self-same recession that began shortly after the first Oil Embargo in 1973!

If I showed you this chart and did not tell you that it involved a cycle peak you would not tell me that there was a cycle peak right in the middle of it. Yes, payrolls were up by 250,000 persons in the month the recession started. Which is something that I am sure several of the folks who just called the start of a recession are going to cite this time.

DeltaDelta turned negative right on cue.

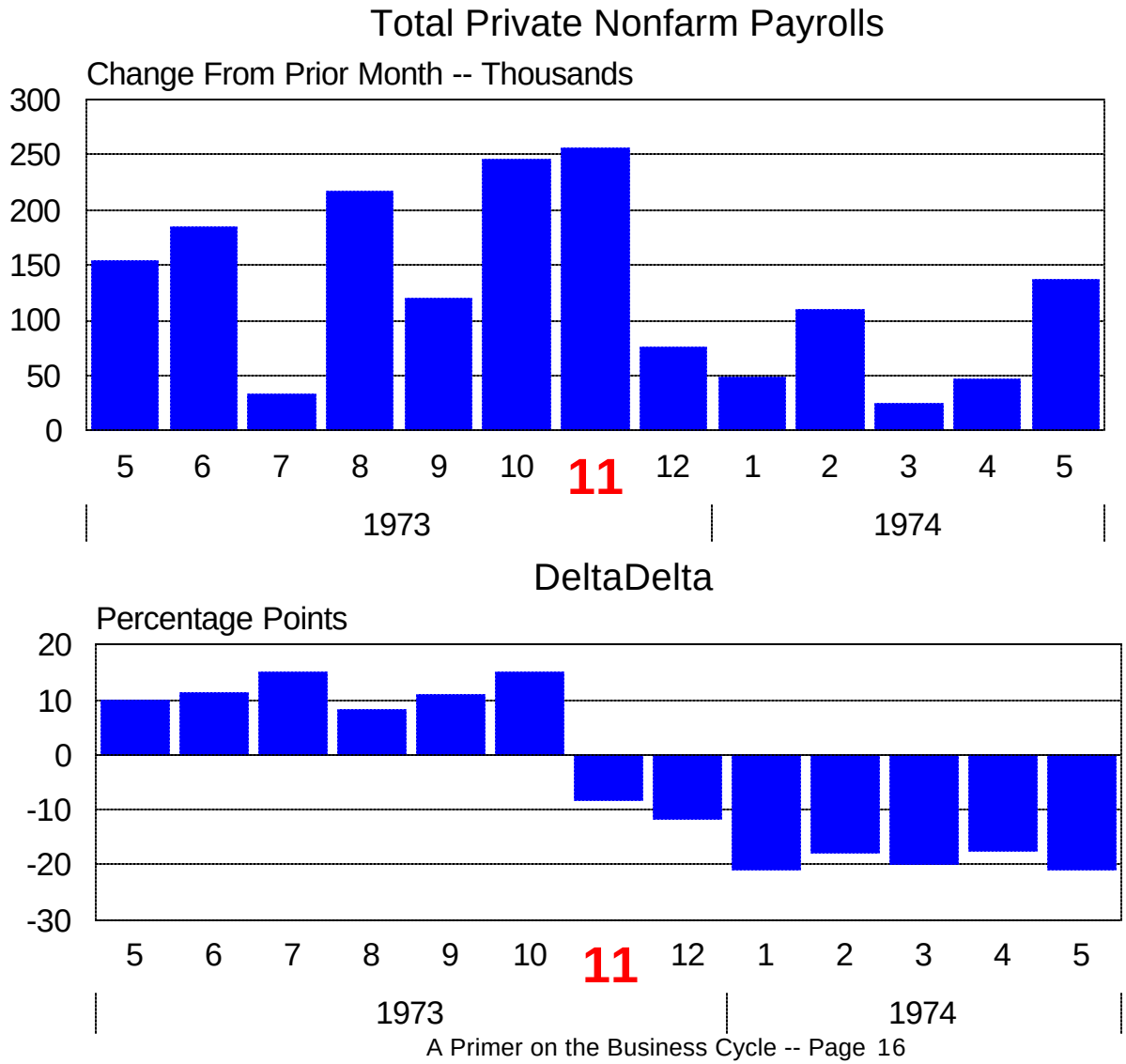


Chart 17
Coincident Indicators -- January 1980 Cycle Peak

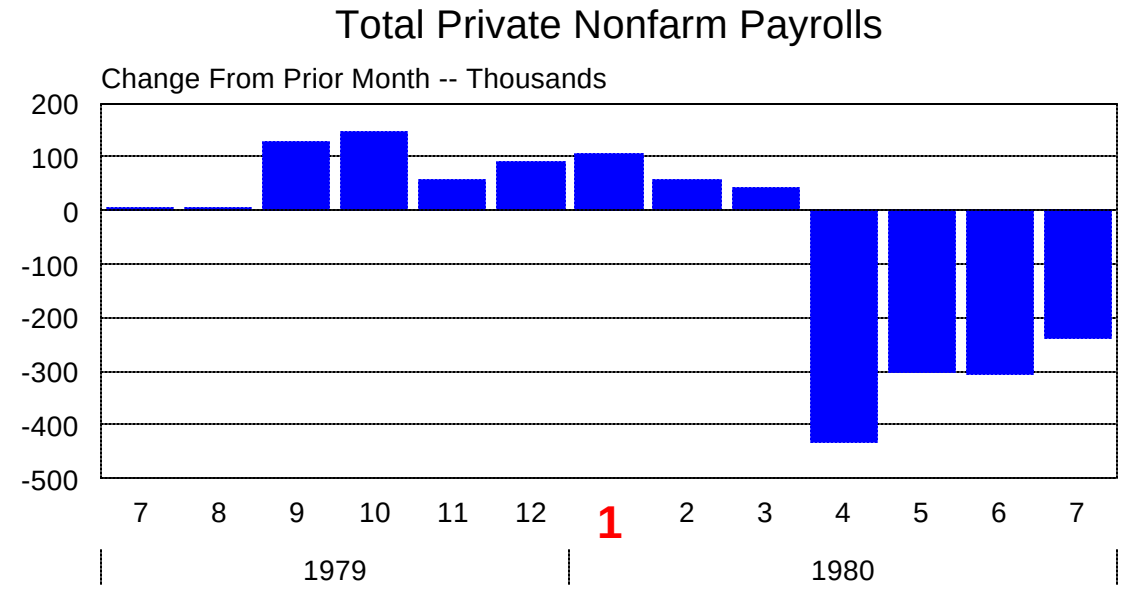
Here is the 1960 peak. And this time it is DeltaDelta's turn to stay positive past the cycle peak date. Is there no end to the amusement these performers can provide?

As you see, payroll employment had slowed, but it also had not turned down at the cycle peak.

Why is the cycle peak for this recession, and the one prior where it is? We will talk about that when we talk about recessions that are associated with supply shocks.

This is the recession that followed the second Oil Embargo in 1979.

What we are learning is that there has been a lag between the shock and the employment effects. We will look at that in more detail at a future date.



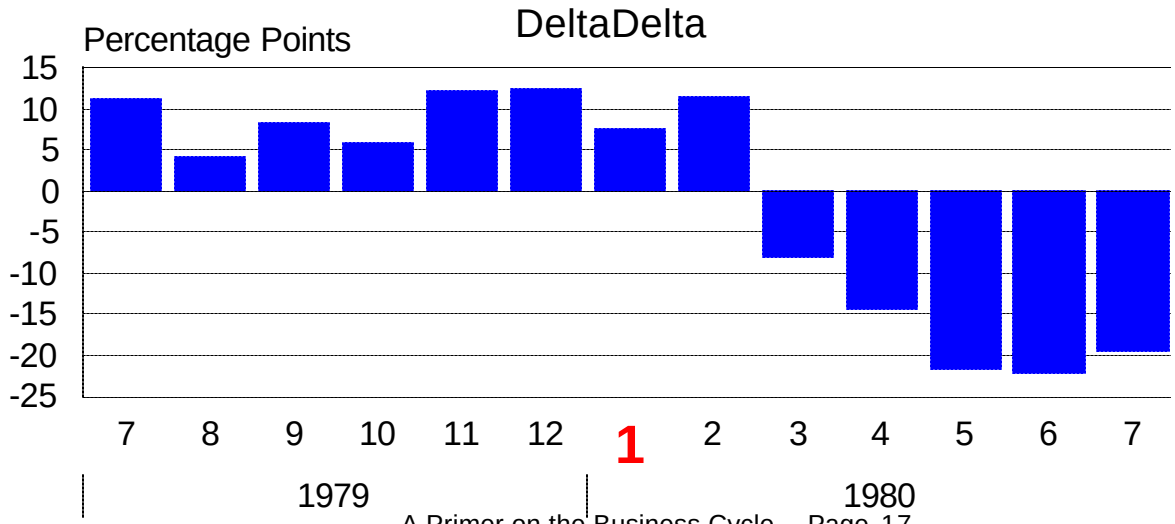


Chart 18
Coincident Indicators -- July 1981 Cycle Peak

The peak in July of 1981 looks more like what we expect to see around a cycle peak. Both variables moderate their pace of increase and then turn negative shortly after the cycle event.

Note that even here we still don't have a sharp break in either series at the peak.

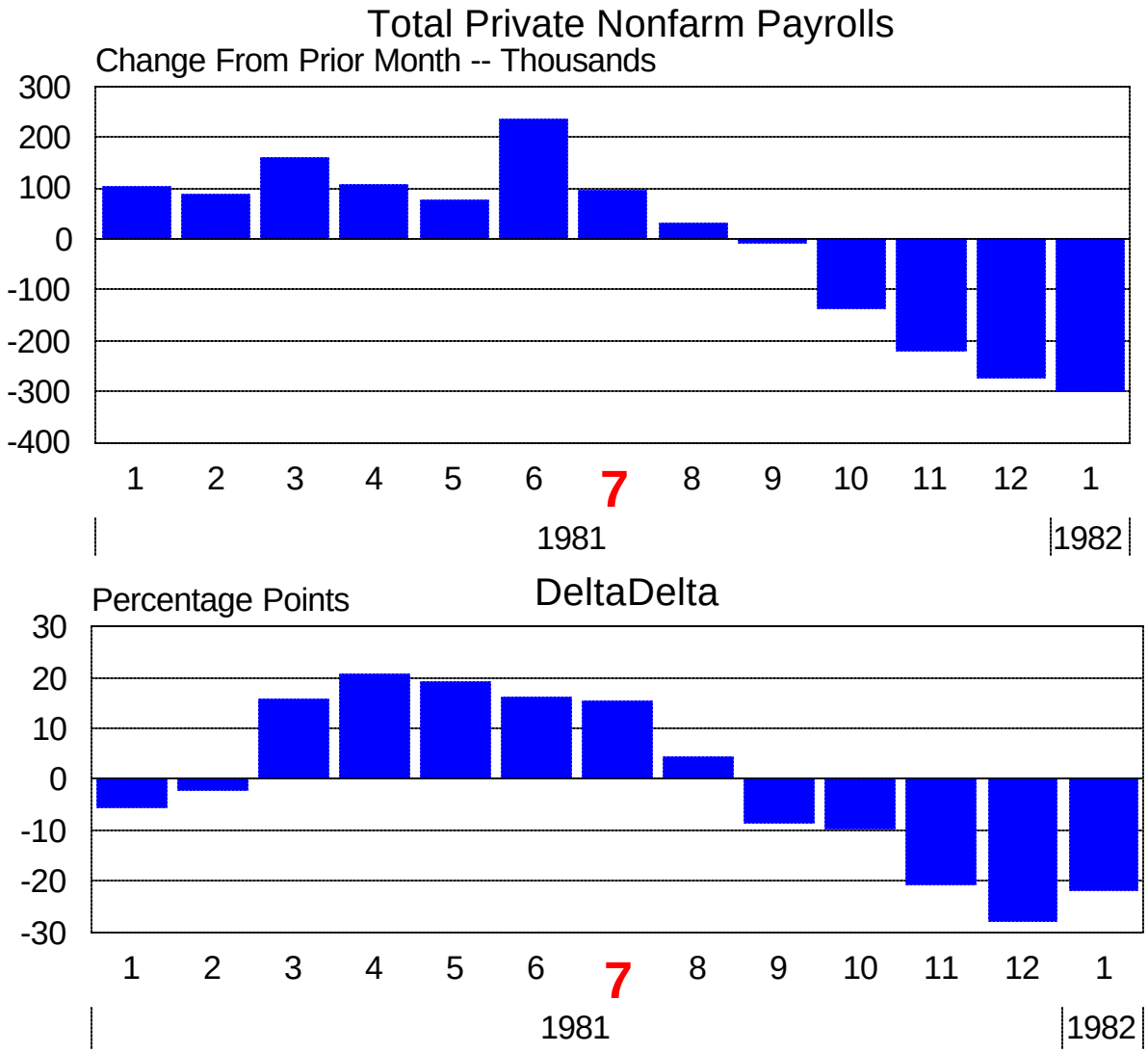


Chart 19
Coincident Indicators -- March 2001 Cycle Peak

The lead up to the peak in 2001 looks a lot like the lead up to the peak in 1969.

Employment gets the wobbles a few months before the peak, while DeltaDelta goes negative four months before the peak.

It is possible that this might have something to do with the fact the two recessions followed what were at the time the two longest expansions of the post-war period. The 1991-2001 event broke the record for longevity that had been held by the 1961-1969 episode. In both cases, the recessions followed periods where the Federal Reserve had been applying pressure to slow the pace of growth.

Neither recession was very deep nor very long.

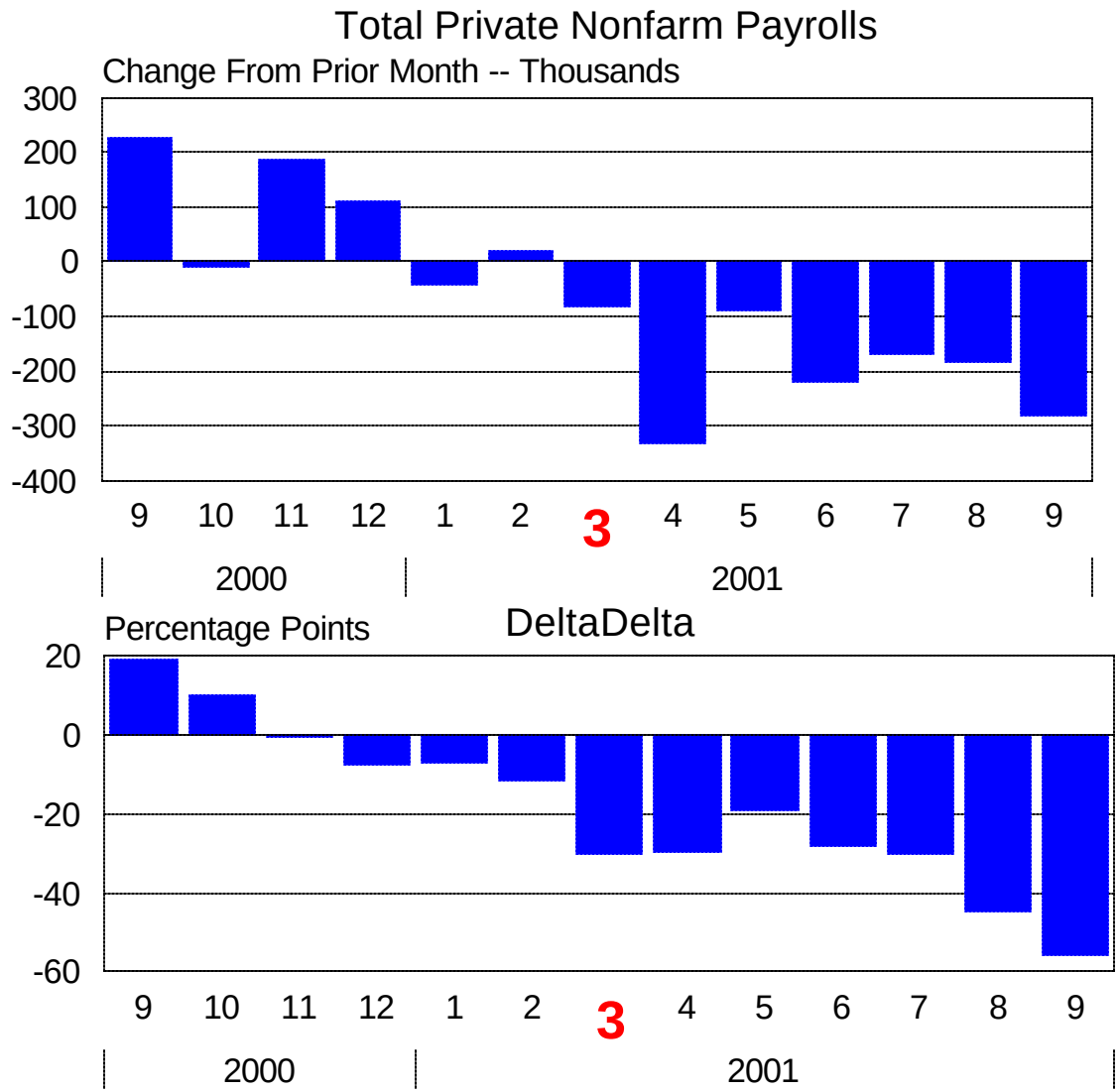
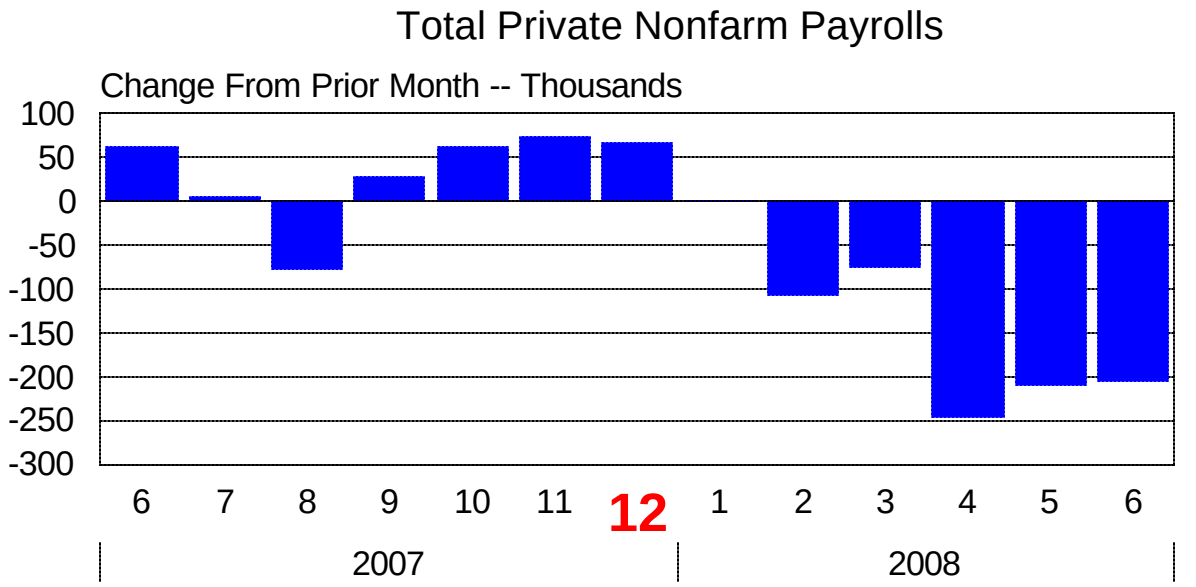


Chart 20
Coincident Indicators -- December 2007 Cycle Peak

The performance of our two indicators in front of the last cycle peak was more in keeping with what we expect to see happen around the end of an expansion. The pace of employment growth slowed, in part because the Federal Reserve had been pushing interest rates up. DeltaDelta, meanwhile, reflecting the fact that the SP500 made its high for the cycle in October of 2007, was positive almost to the cycle peak month.

As bad as the figures are for both series, the worst was yet to come, as the serious collapse began in September of 2008 when Lehman Brothers went down. Or was pushed. There is some debate on that point.



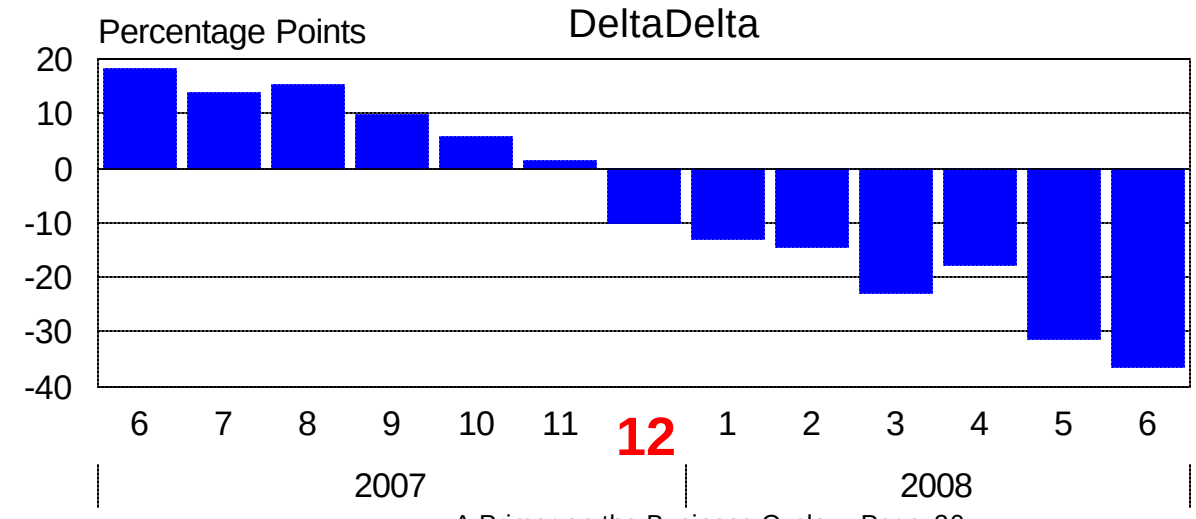


Chart 21
Coincident Indicators -- Last 13 Months
(February 2019 to February 2020)

I will be running this chart in both the Employment Report and this report every month for the foreseeable future. And, like Chart 2, every month we will take one observation off the left side and add one to the right.

One last thing before we go.

The objective of all of this analysis is to provide us with broad context against which to evaluate the data stream. I have mentioned that one of the most dangerous forecasting methods is two facts and a ruler. To that, I would add another malady that often appears at the same time: currentitis. Also known as casual empiricism.

The main reason why I showed you all the cycle peaks was to let you know that no two of them are the same. Some bear strong resemblances but none are duplicates.

The one we are approaching will have its own set of characteristics. We are best served to wait to see how those develop before we try to estimate what the contraction will look like and how long it will last.

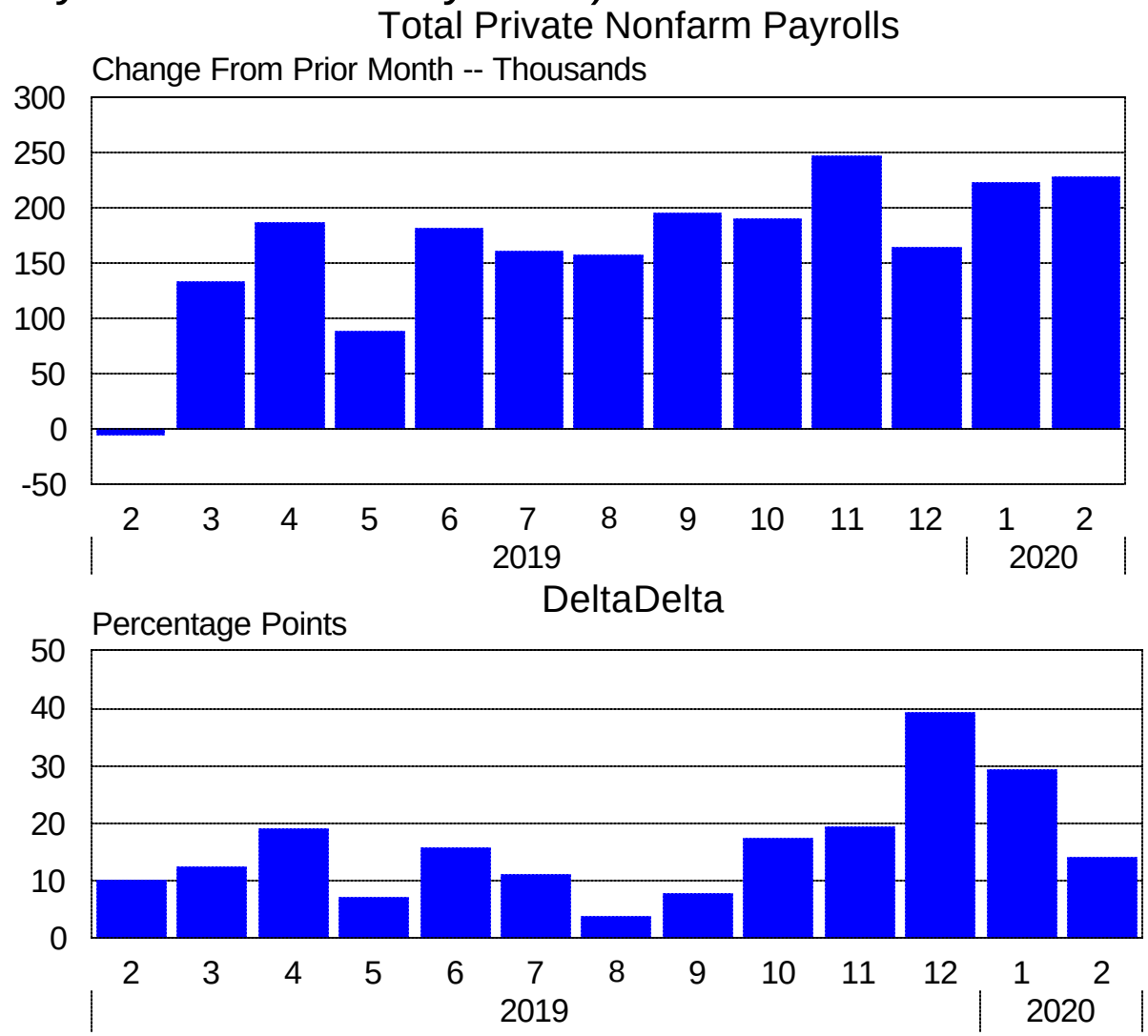


Chart 22
Summary and Conclusions

“You gotta dance with the one that brung ya”

Since we are making departures from form this month, I am going to close with a second quote. I usually repeat the epigraph here, but after a fair amount of thought, I decided to bring in this advice from Darrell Royal who was the head football coach at Texas when I started in grad school there in 1968. Yes, I am that old. By the way, my arrival on campus coincided with the beginning of a 30 game win streak and two national championships. You may draw your own conclusions on the causal links.

His point was that you would be putting yourself at a disadvantage if you tried to become a different football team **during** the contest. Coach Royal never referred to the Saturday afternoon events as games. They were much more than "games" in his view. The whole point of practice and preparation was to be able to execute during the contest and to prevail at the end. If it turned out you were getting your ass kicked (a technical term), you first had to see whether you were outmatched, and then you had to see whether you were outcoached. The remedy for the first was better conditioning. The remedy for the latter was better scouting, better analysis and better preparation.

The model is what the model is. And the method is what the method is. The EAS provides advance notice of the economic environment. The coincident indicators provide evidence of what the actual economic conditions are. The EAS told us to be ready to expect a change in the direction of economic activity. The coincident indicators will tell us the size and duration of that change. They will also tell us whether the size and duration of the change measure up to the standards that have been applied to other recessions.

You have not seen me forecast GDP, and you won't. You have not seen me forecast the level of employment and you won't. You have not seen me forecast the level and trend of the stock and bond markets, and you won't. That's not what we do here.

What you will see is the continued application of a methodology that has stood us in good stead for several decades, at the same time as we continue to look for any and all indications that we need to refine, or even redesign, our metrics and our methods. We will not change the way we approach the problem: Lots of facts and no spin.

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