

**"Raoul, hands down – you are the Macro King"**

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**"A Tour de Force of thinking"**

John A.

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**"Keeping it simple and clear in a complex world"**

R

**"Wow! Mr**

THE LITTLE BOOK OF

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# THE BUSINESS CYCLE

RAOUL PAL



# **The Little Book of the Business Cycle**

*Raoul Pal*



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The Little Book of the Business Cycle

# The Little Book of the Business Cycle

*Foreword by John Netto*

*One of the hardest things, even for the most seasoned economists, is to say with certainty where we are in the business cycle. It is for good reason so many obsess over this: Once you have confidently determined the present point in the business cycle, your ability to target the specific asset classes best positioned to maximize return per unit-of-risk increases dramatically.*

*The process to determine not only where we are, but also where we are heading, can entail a wide array of methodologies. Some include econometric models, consumer surveys, liquidity measures, or simple observations, such as how crowded a local restaurant is on a Friday night.*

*While it is not feasible for many of us to get a PhD in economics or statistics, this constraint does not prevent us from developing an understanding of why the business cycle is important and what we can do to determine the market's perception of it. It is often at inflection points in business cycles that tremendous asymmetrical investment opportunities present themselves. These inflection points determine what the next leg in market movements and market pricing will be. Consequently, market participants who were not properly positioned for the shift will need to adjust their exposure. These adjustments, taken as a whole, are explosive in redefining the new market regime.*

*These regime shifts can lead to tremendous repricing in the market. Inflection points are generally indifferent to old market sentiment and blind to trends, taking no mercy on strategies that may have been profitable in the prior regime but are rendered ineffective in the present.*

*The business cycle is a crucial element of any regime. While regime shifts can occur in response to a technical level's breaking, sentiment suddenly shifting or a key piece of economic data's being released, shifts do not always happen under these circumstances. An inflection in the business cycle, on the other hand, is almost certain to precipitate some sort of regime shift (in fact, the other elements—shifts in data and sentiment—can themselves serve as indicators of an inflection in the cycle).*

*This book is going to give you an overview on how Raoul Pal, Co-Founder of RealVision.com and*

*writer of The Global Macro Investor, assesses and identifies inflection points in the business cycle and accordingly advises his clients.*

*Raoul is an internationally renowned and highly successful global macroanalyst. He is followed by many of the world's largest and most successful hedge funds, pension funds, sovereign wealth funds, and family offices. Raoul Pal has demonstrated tremendous advisory acumen in his ability to help clients navigate their way through tumultuous markets.*

**—John Netto**

Facts tell, but stories sell. When it comes to understanding what shaped and influenced my perspective, events from my time running the hedge fund sales team in equities and equity derivatives at Goldman Sachs left an indelible imprint on how I would forever approach the markets.

The first occurred during the Asian crisis in the late '90s, as I was fortunate to follow an extremely famous macro manager as he implemented his trades for a global slowdown. I would sit in the office in the evening and try to piece together what his team was doing and why. They held short positions in currencies, short positions in equity indices, long positions in bond markets, short positions in economically sensitive sectors of the global equity markets, and short positions in copper and oil.

It was at that point I came to realize how all asset classes reflect the economic cycle and thus how understanding the economic or business cycle was the key to making money in the macro world.

## **The Business Cycle**

**Business cycles** are the direct result of cyclical economic fluctuations, which can occur over a span of several months to a number of years. The importance of the business cycle is that it tracks the changes in the rates of economic growth and determines the returns available in stock markets as a whole and the sectors within these markets.

It can therefore be used by investors to understand the progression of the investment environment between recession and economic boom, as well as the prospects of individual sectors relative to the broader market.

In order to recognize the different phases of a business cycle, there are three key indicators that underlie these fluctuations and inform investors of the state of play throughout the economic cycle.

These indicators are known as the **corporate profit cycle**, the **credit cycle**, and the **inventory cycle**.

Alongside changes in other important variables, such as levels of employment and monetary policy, these indicators can tell us where we are in the business cycle at any given time. During the life of the business cycle, the indicators will provide information on which stage the cycle has reached in a division of four typical stages: the early stage, the mid-stage, the late stage, and recession.

**The early stage** is typified by fast-growing profits, expanding credit and low inventories with high



sales. Emerging from the recession stage, this first part of the cycle benefits from a tailwind as monetary policy is relaxed in the form of low interest rates, allowing for access to credit and a positive environment for fast growth in order to boost the economy. Historically, this phase of the business cycle is the most robust, with growth figures for the broader stock market since 1962 indicating that this phase is responsible for returns exceeding 20 percent. During this phase, the economy is still being stimulated, increasing sales and ensuring that inventories are low as demand for these products rises sharply.

**The mid-stage** includes profit growth peaking, credit growing strongly, and inventories swelling to equal sales. This phase is usually the longest and is characterized by positive growth, albeit at a slower rate than experienced during the early stage. Economic performance is healthy and steadily growing, and the increase in credit is also strong during this stage. Inventories will have had time, by this point, to catch up to sales, as investment propel production to eventually reach equilibrium with sales. The monetary environment accommodates growth at this stage but becomes increasingly neutral and is no longer stimulating the economy as in the early stage.

**The late stage** finds a cooling of profit, credit tightening, and growing inventories as sales die out. This stage is commonly described as the economy “overheating,” with inflation preventing further growth as central banks tighten monetary policy and interest rates rise. This phase is typical of an economy that begins to experience profit warnings and a slowdown in sales growth. For the first time in the cycle, inventories become considerably larger than sales as access to credit tightens.

Finally, a **recession** sees credit dry up, profits fall, and both inventories and sales falling. This stage completes the business cycle, with economic growth contracting and access to credit becoming scarce for everyone. Corporate profits fall, and slow sales eventually whittle inventories back down. Monetary policy gradually becomes more relaxed during this stage in order to stimulate the economy and begin the cycle again. For investors, opportunities exist across the spectrum of the business cycle.

## Building the Framework

### *Defining the Time Frame*

I came from a hedge fund background. I've been involved with hedge funds for over 22 years. And one thing I've noticed from the early days of hedge funds is that investors didn't have monthly mark-to-market; they had trade horizons. And their trade horizons matched with their investment horizons. For example, in the early days, Soros may have held a trade for several months or even up to a year, but currently in the world of monthly NAV, people are being forced down to a two-week trade horizon. And that has left an enormous opportunity for people like me who look at the medium term, which I view as two months to eighteen months. That horizon has the least competition in it and is the easiest to predict. It is also the most trending. So I tend to do little trading under that two-week time horizon. Some people can do that well, but overall, the market has lowered its returns by focusing on shorter terms.

It's much easier to learn the medium-term time horizon or understand the probabilities involved in that and the investment opportunities. Traders in short-term horizons must generally deal with

smaller price movements and noisy market fluctuations obscuring the trend, so the emphasis shifts to how well one can get a fill-in order to maximize every basis point of profit. This is an increasingly difficult prospect, given the proliferation of high-speed trading algorithms specifically designed to take a small bite out of every market order placed. In the midterm, the noise of short-term swings tends to fall away and the emphasis shifts to whether the logic behind a trader was correct. So that's what I do in my monthly publication—I look at that time horizon, and that approach has generally given me much better returns than most other people in the industry achieve.

Versatility is critical as I follow general guidelines and pride myself on not being a slave to hard and fast rules. Again, you look at the texture—for example, if I am currently looking at what's happening within the China sphere, I will also be looking at Australia, Indonesia, Taiwan, South Korea, Japan, and the US. I will examine, among other things, their trade balance with China. I like to group data into three- or four-month blocks. This time frame provides the right balance between temporal and trend.

For example, if we start to see Asian exports to China pick up over a few months, that development may be the start of something meaningful. It may get us to positive territory so we can say, "Okay, something is happening. I need to look at this and figure out if this is a short-term move or the start of another expansionary phase."

### *Understanding the Big Picture*

My approach is different from that of many other people. The first thing I do is build my long-term macro framework. I ask questions. Are we in a secular bull market or a secular bear market? Is the economy in the inflationary/expansionary or contractionary/deflationary phase? "Contractionary" means lowering the trend of average GDP growth, and I get to the answers by looking at the really big macro drivers. These drivers include demographics and the maturity of population, along with where we are in the credit super cycle. Those kinds of factors make a very big difference. How high are debt-to-GDP ratios, household savings, the global balance sheets, or top-down balance sheets? What do economies look like? So what those findings do is to move probability in a particular direction among various possible outcomes.

I then look across all asset classes and try to understand where we are in the secular bull or bear market in those asset classes. Doing that is what piqued my interest in soft commodities back in 2006, because soft commodities were massively undervalued relative to their asset prices. Equities on the other hand were massively overvalued, even after the bear market of 2003, using various measures including market cap to GDP, P/E ratios, and debt-to-equity.

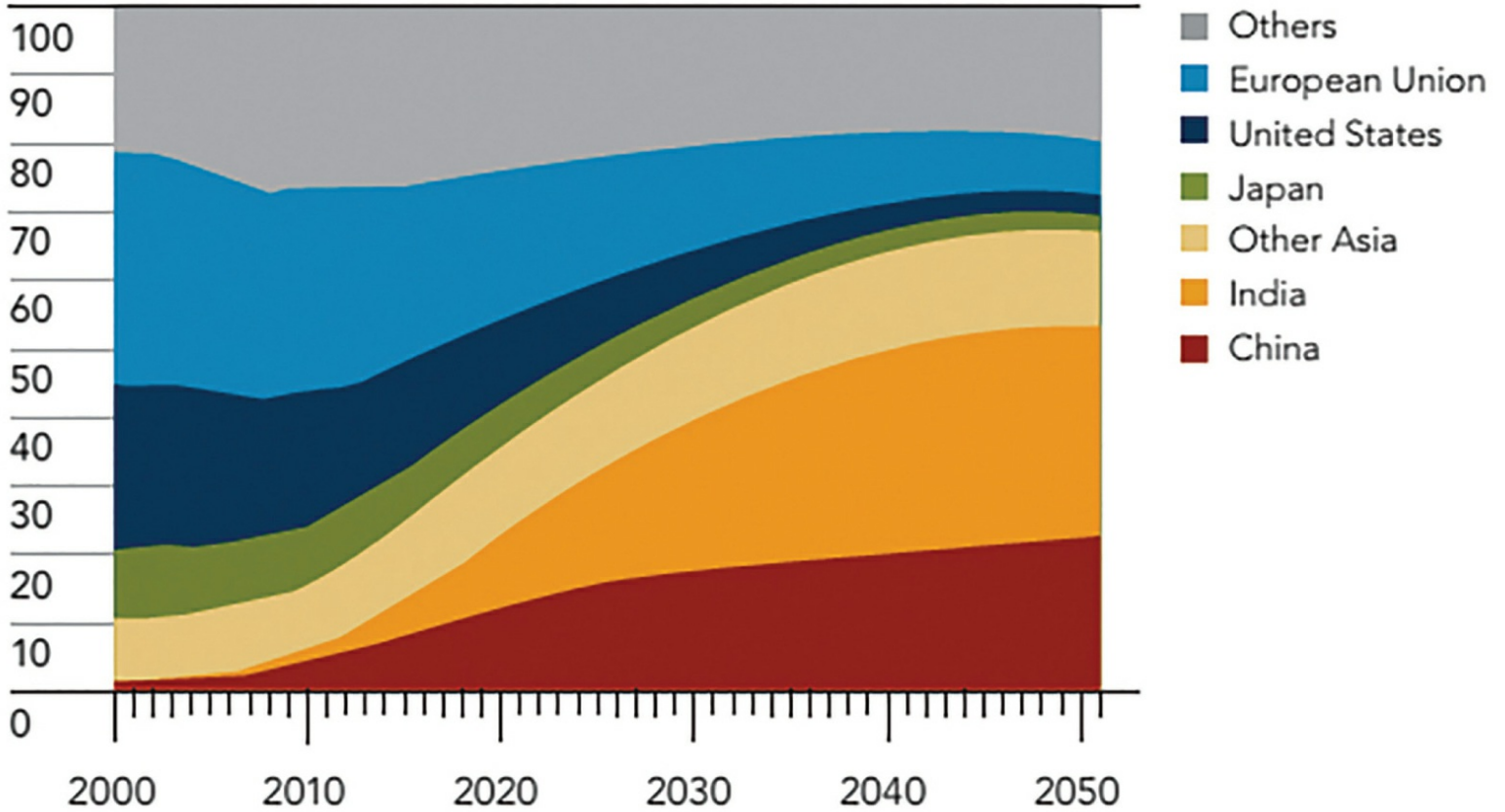
By extension, I look at global economies in the same way. Where are they in their cycle? Where do they fit in the global macro framework? Though we have an aging population and high indebtedness in the West, we see the inverse of that elsewhere—the young population with relatively high savings and no debt in the so-called "monsoon countries." Those are the countries around the Indian Ocean; they tend to be Islamic countries that took on the religion through a process of world trade (as the Arab traders brought Islam to the spice-exporting Indonesian islands, for example).

They are trading nations that have been long forgotten by most people because of various investment biases. They become more interesting to me because they have favorable winds filling their sails (key economic expansion like GDP, money supply, improving ISMs, increased tax revenues, etc. (See [Figures 1 and 2](#)), as opposed to the doldrums faced by the West.

Figure 1

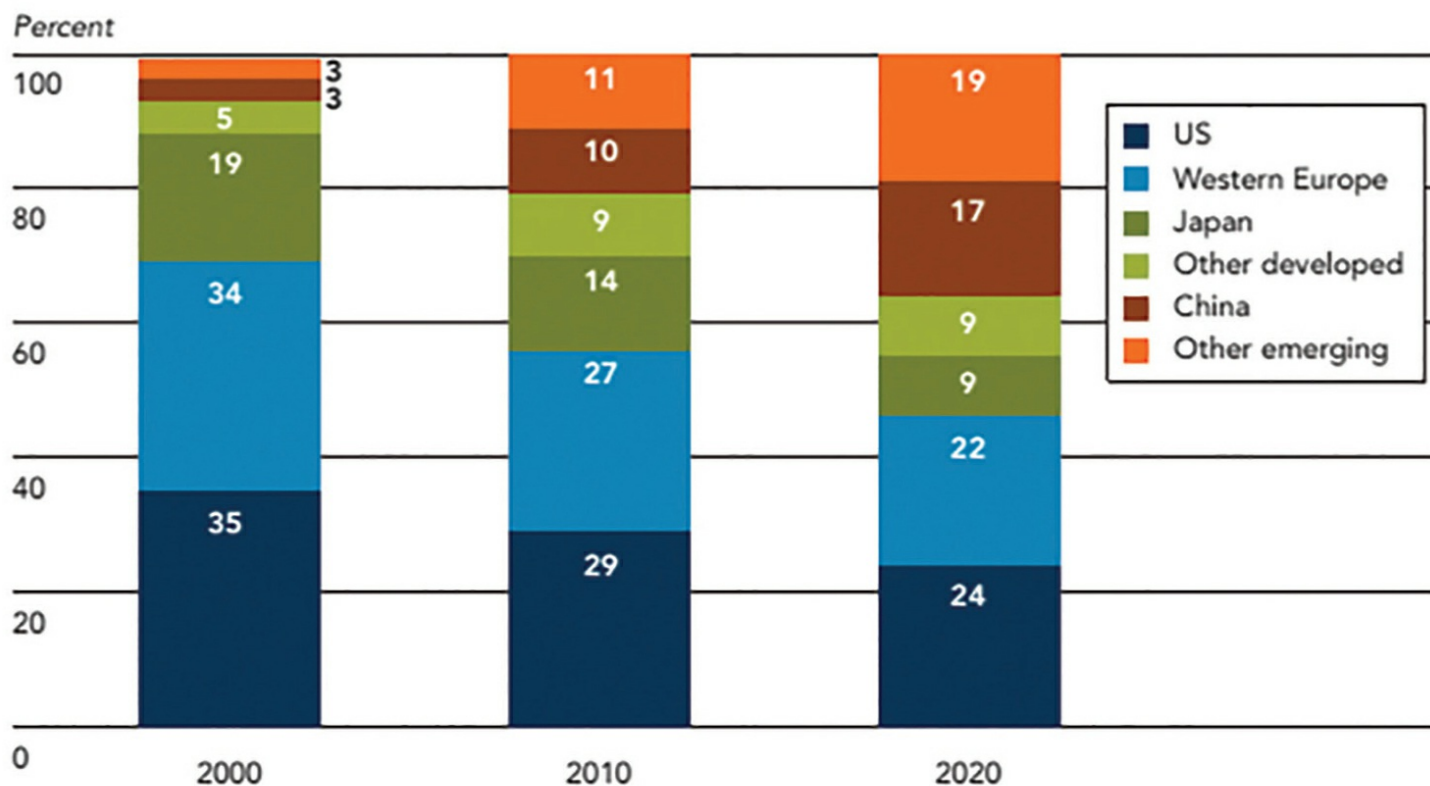
### SHARES OF GLOBAL MIDDLE-CLASS CONSUMPTION, 2000-2050

Percent



Source: OECD.

By 2020, emerging markets' share of financial assets is projected to almost double.<sup>a</sup>



<sup>a</sup> Assumes consensus GDP forecasts for individual countries and that emerging markets' currencies appreciate vis-à-vis the US dollar.

Source: McKinsey Global Institute, *The Emerging Equity Gap: Growth And Stability In The New Investor Landscape* (2011).

Figure 2

### *Understanding Cyclicity in the Markets*

The most important question to investors in understanding a business cycle is not where we are but where we are going. The market is a discounting mechanism, and we must understand the probabilistic outcomes that may be realized in the future and then extrapolate backward to present day.

This is how I start looking at the big picture. But once we've built a big picture, we have to understand where we are in that, and the most important investable thing is what I term the business cycle. I focus most of my time on understanding where we are in that cycle.

Now, my concept of the business cycle differs a little bit from what the Austrian economists and people like Schumpeter call the business cycle. I essentially look at the expansion and contraction of GDP, and I use the ISM because the data goes back to 1947. We can bolt on some further ISM numbers that we've done in-house so we can trace the data back to about the 1890s. And that arc of data gives us an idea of how long the business cycle lasts, how far it goes, when it goes, and what it does.

### The Secular Cycle

We first have to start with the secular cycle to give us the historical understanding regarding where we are and where we are going, from a very top-down perspective. In this analysis I am using the US secular cycle because it is the key influence on much of the developed world, as well as much of Southeast Asia, where demographics are similar.

## Demographics

Firstly, with regard to demographics, we need to understand at the simplest level what the population structure looks like. In the Western world, the population is aging rapidly and in some countries it is already shrinking. An aging population, with the demographic bulge close to retirement age, causes a drag on the economy as saving versus spending patterns shift. It will also create a shift from investment to divestment in due course, dragging on asset classes.

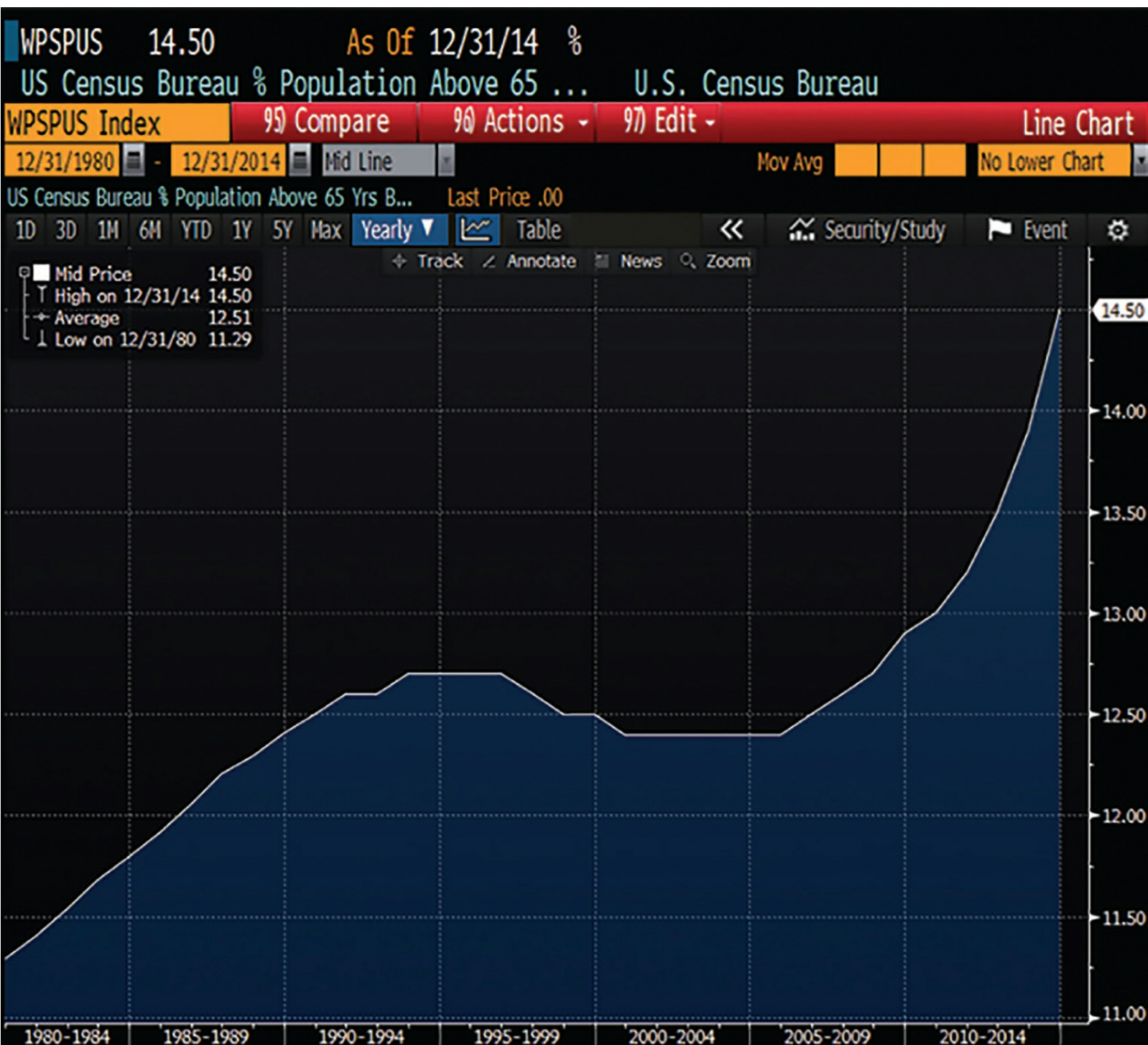
In Bloomberg, you can type in WPU <GO>, to get to the population demographics screen in [Figure 3](#).

Figure 3

WSPUS 14.50		As Of 12/31/14		%		US Census Bureau % Population Above 65 ...		U.S. Census Bureau	
Global Population & Unemployment									
	Population		Percent		Percent		Unemployment		
	Estimate		Over 65 Yrs		Under 15 Yrs		Rate		
1) World									
5) World	7256.490	12/15	8.700%		25.50%			n.a.	
2) Americas									
6) United States	321.369	12/15	14.500%		20.00%		5.00%	12/15	
7) Brazil	204.260	12/15	8.100%		22.80%		6.90%	12/15	
8) Mexico	121.737	12/15	6.900%		27.30%		3.96%	12/15	
9) Argentina	43.432	12/15	11.700%		24.60%		5.90%	09/15	
10) Canada	35.100	12/15	18.200%		15.40%		7.10%	12/15	
3) Europe/Africa/ME									
11) Eurozone	406.359	12/15	17.480%		15.76%		10.50%	11/15	
12) Germany	80.854	12/15	21.800%		12.80%		6.30%	12/15	
13) France	66.554	12/15	19.100%		18.60%		10.20%	09/15	
14) United Kingdom	64.088	12/15	17.500%		17.30%		5.10%	11/15	
15) Italy	61.855	12/15	21.400%		13.70%		11.67%	09/15	
4) Asia/Pacific									
16) China	1367.485	12/15	10.300%		17.10%		4.05%	09/15	
17) India	1251.696	12/15	6.100%		27.70%		4.90%	12/14	
18) Indonesia	255.994	12/15	6.800%		25.40%		6.18%	08/15	
19) Japan	126.920	12/15	27.300%		13.00%		3.30%	12/15	
20) Philippines	100.998	12/15	4.400%		33.70%		5.60%	10/15	

Choose the US and drag and drop it into another window. Then type GPU <GO> to see a graph of the US population over the age of 65.

Figure 4



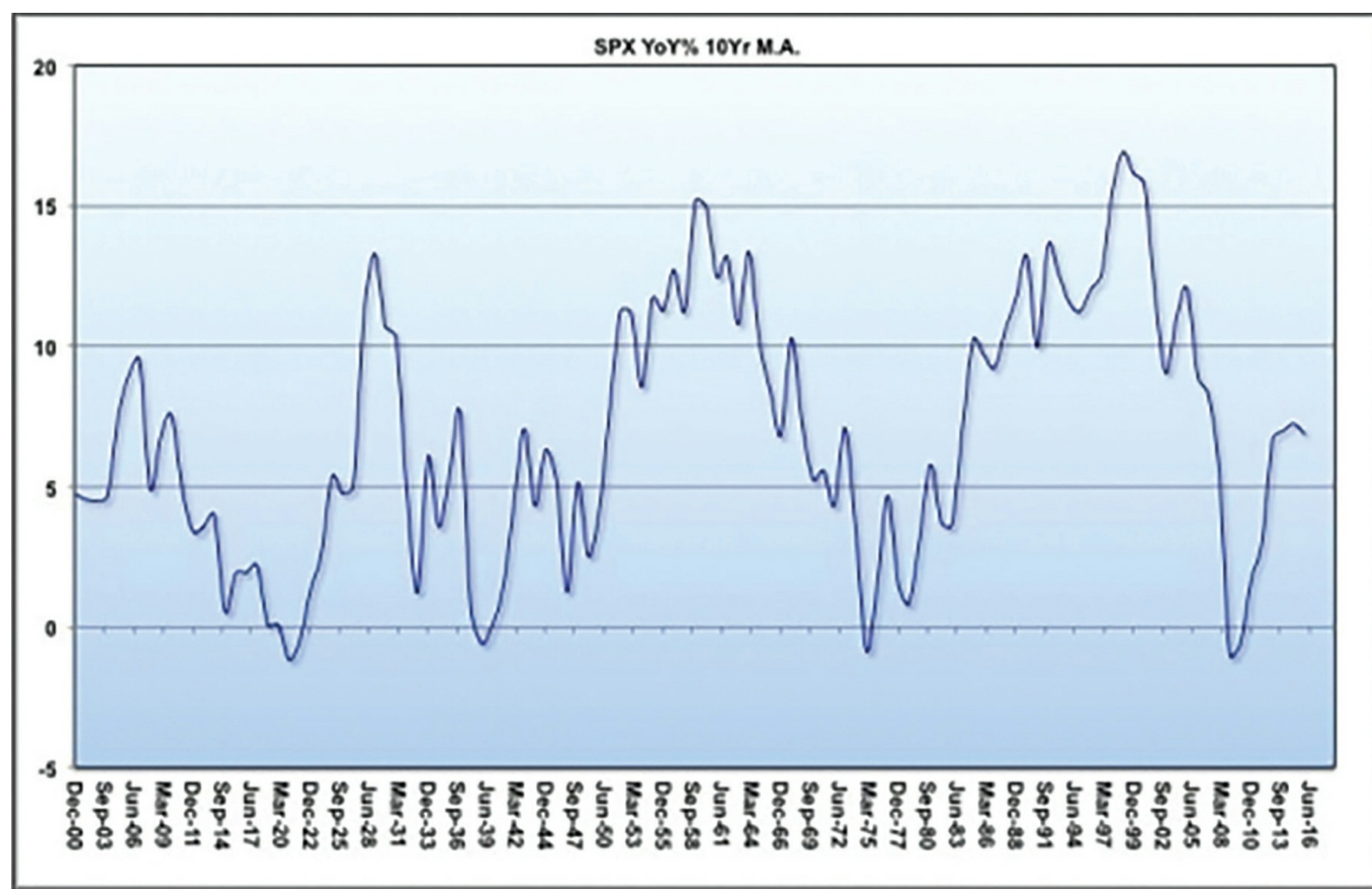
### *Long-Term Equity Market Cycles*

A ten-year moving average of the year-over-year percent rate of change of equities is highly cyclical. It is the manifestation of the secular cycle and illustrates it well. This average is calculated by taking the year-over-year percentage change for decades of equity market growth. For instance, if the S&P 500 ended one year at 1000 and ended the next at 1100, then the year-over-year percentage growth would be 10 percent  $[(1100 - 1000) / 1000 = 0.10 = 10 \text{ percent}]$ . After all this data is in hand, the ten-year moving average for any given year would be the average of the last ten years' percentage changes (for instance, the average in 2015 would be the average of the ten annual percentage changes from 2006 to 2015; the average in 2016 would be the average of the ten annual percentage changes

from 2007 to 2016). Taking this longer-term sample smooths out the noise from any given year (for instance, the massive drop in the S&P 500 in 2008 would have less of an effect) while still indicating whether the moving average is above trend (as it would be when the business cycle has been expanding in recent years) or below trend (as when the cycle is contracting).

Studying movement in the rate of change can be an important tool to help traders and market analysts gauge the momentum of a trend and identify levels where a market may be temporarily overbought or oversold.

Figure 5



You can see from the chart above that this measure of the secular cycle gives a good idea as to when the investment cycle and the US economy are not performing well. The drop below the 5 percent mark indicates when things are really bad.

The key point is that this pattern is cyclical; thus when the cycle rolls over, we can forecast the future within a framework. As an example, at the time this book was drafted, we noticed a higher probability risk for a 1933-1936 style event, where the cycle rolled over, giving a secondary fall and a reduced return on assets and low economic performance.

We can then add the commodity super cycle to the secular framework. Commodity prices are indicative of global investment levels and global growth. In boom periods, overinvestment accumulates, leading to overproduction and oversupply. In the bust periods, that overinvestment is cleaned out; the supply overhang persists; and underinvestment often takes place, sowing the seeds for the next boom when supply is squeezed and/or demand rises again.

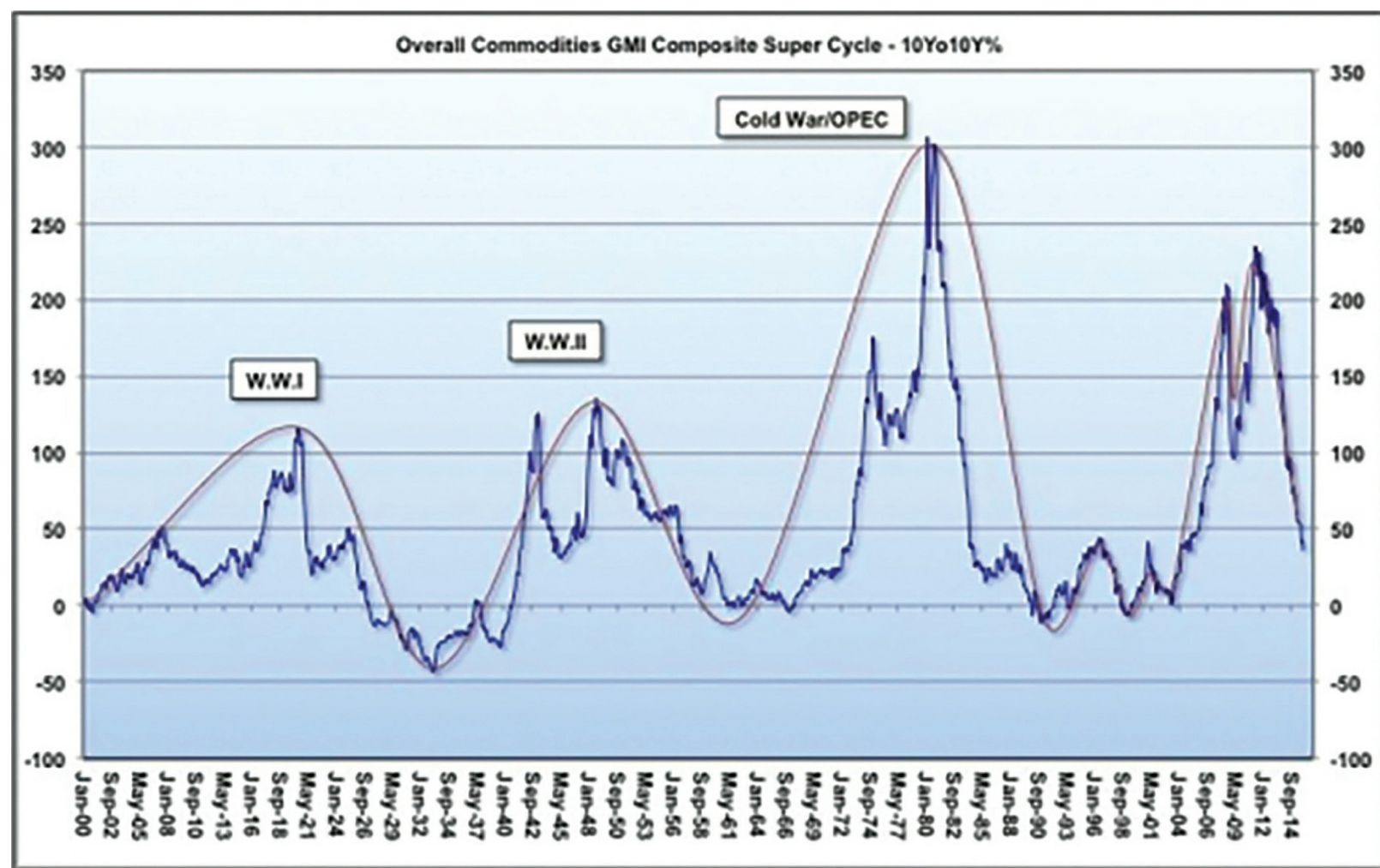


Figure 6

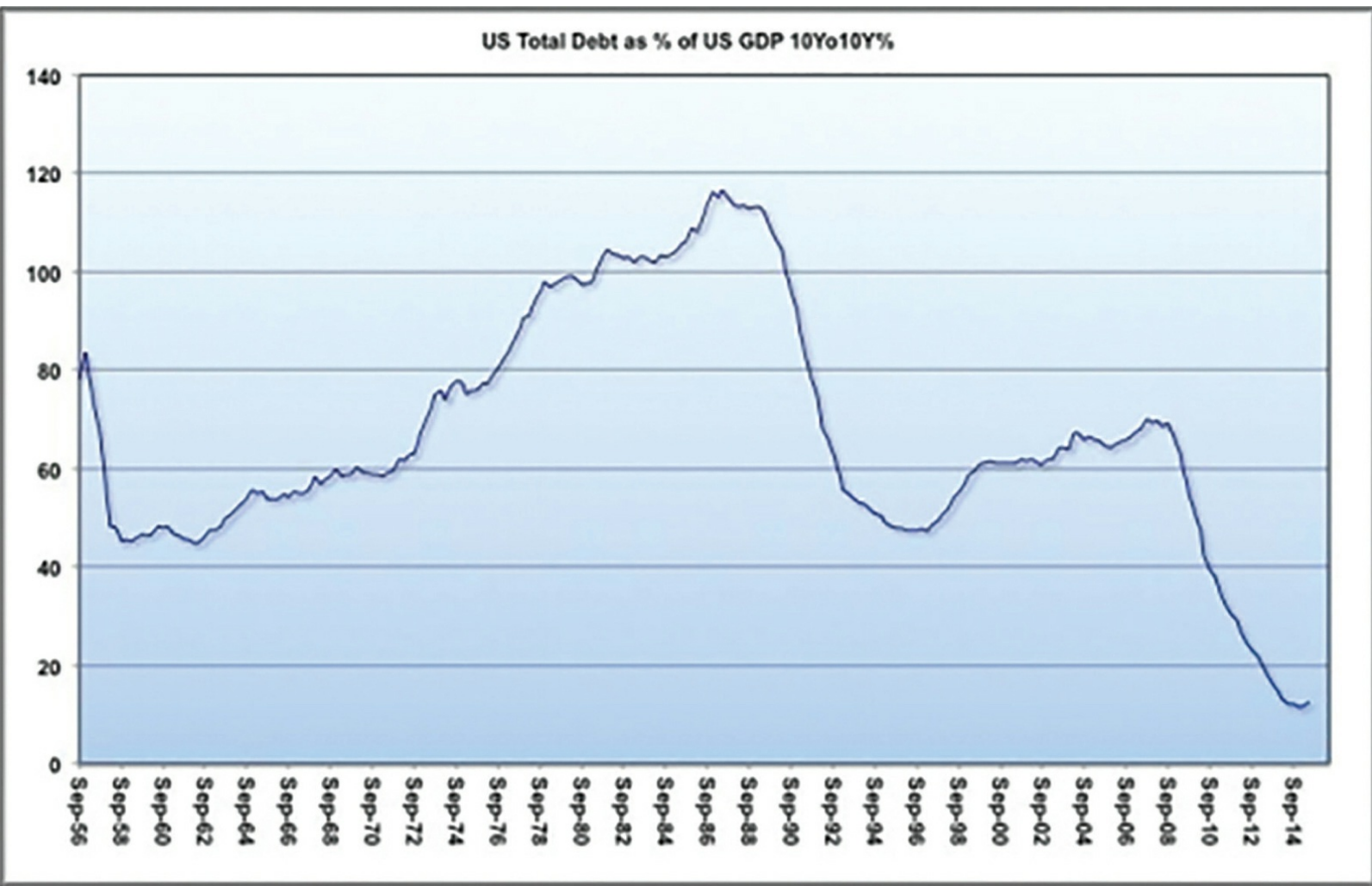
As you can see, the commodity super cycle is heading much lower and will eventually cross zero. This is a clear sign that the secular cycle is pointing lower.

### *The Debt Cycle*

Finally, we add in the long-term debt cycle. We need to understand whether the debt impetus is rising (which is expansionary) or falling (which is contractionary). As we all know, the peak in the debt cycle sows the seeds for the bust that eventually follows.



Figure 7



The debt cycle is clearly in the debt deflation zone, where total debt is extremely high but the rate of change of debt has reached the tipping point and can no longer expand at a fast rate due to the excessive debt burden. This burden is a big drag on the economy.

### *Secular Contraction*

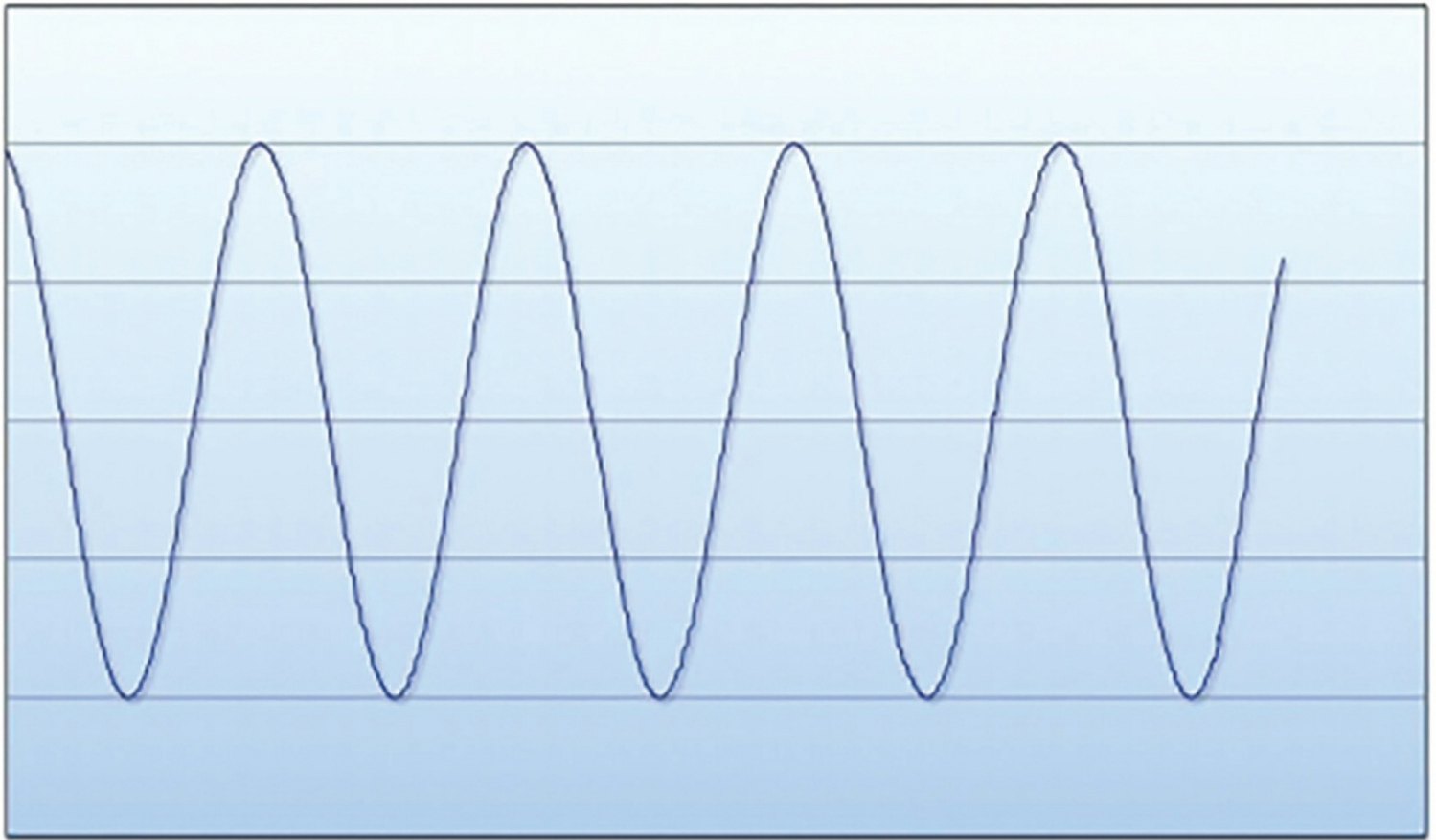
For the purpose of understanding my methods in this book, note that my key indicators are still firmly pointing to the contractionary phase of the secular cycle. Thus, the busts are generally worse than the booms; the overall pace of the economy is sluggish; and downside risks are prevalent.

### *Analyzing the Business Cycle Itself*

The next and single most important dynamic we need to understand is the business cycle itself, THE key driver of asset prices and the direction of the overall economy. The idealized version of a business cycle would see consistent ups and downs and would be perfectly measurable.

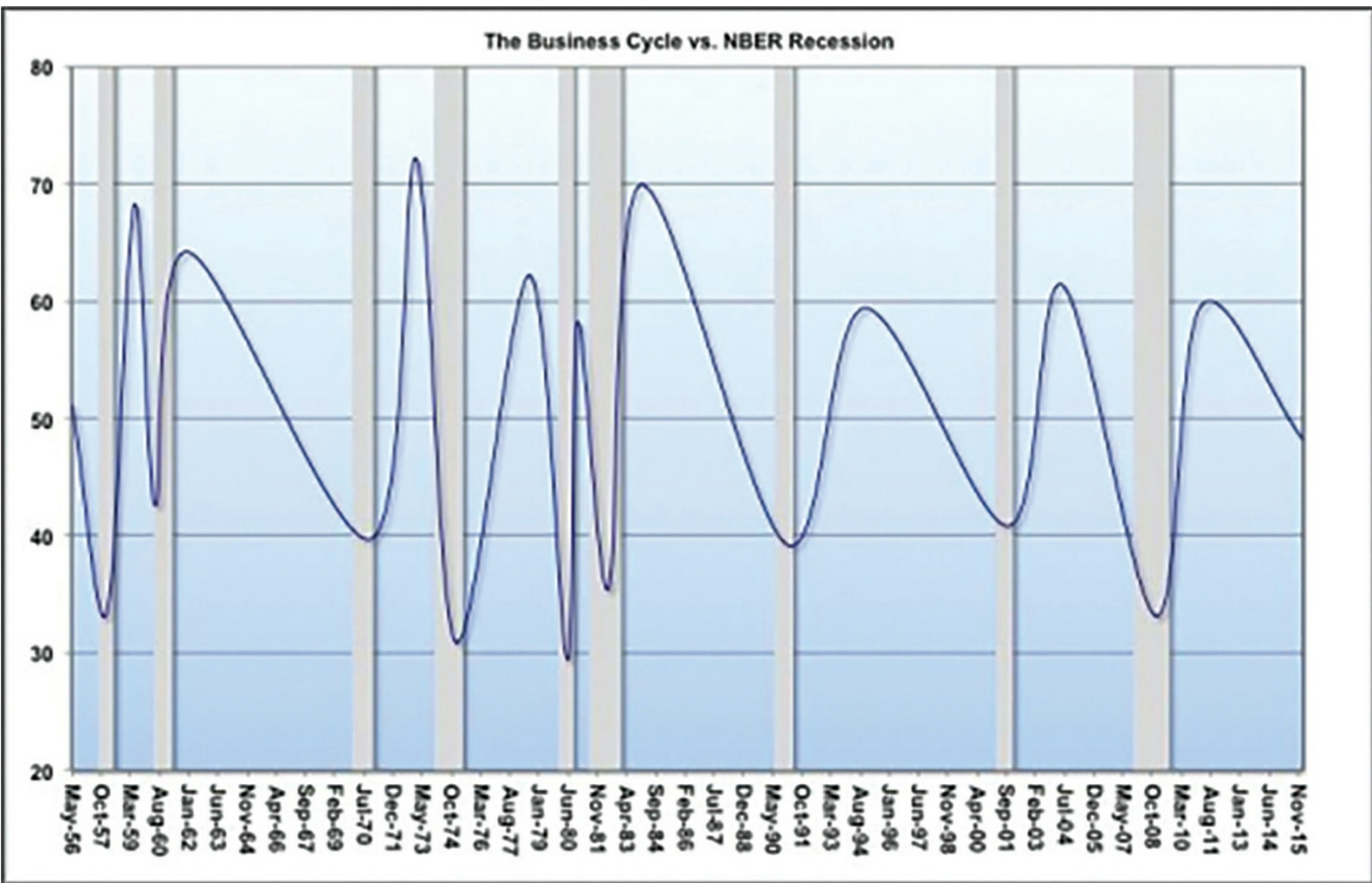
Figure 8

The Idealised Business Cycle



In reality, the business cycle differs from this idealized version as some cycles are shorter and some are longer, some are deeper and some are shallower. Normally people might suggest that the pattern of peaks and troughs is random and therefore useless, but it is far from that. The cycle is one of the most powerful tools for economic and asset price predictions that exists anywhere. All you need to do is understand that, when the cycle peaks, it will move toward a trough (arecession). You can then assess the probabilities of how long it will take to reach the trough, based on any and all factors you deem relevant, and that determination will stop you from overestimating the upside or downside.

Figure 9



### *Blending the Business Cycle with the Macro Narrative*

Two key factors in forecasting are the macro narrative and market positioning.

For example, assume we identify that we are in a negative phase of the cycle, a period of low growth. In those circumstances I'll to spend more time looking for tops in those markets or points where we see bond yields fall. I look for the negative turning points in the cycle because that's where the bulk of the returns lie.

The business cycle drives returns. You can overlay the year-over-year change in the S&P and it is a facsimile of the ISM PMI (adjusted so that 50 in the PMI corresponds with 0). Thus, if you can forecast the business cycle, you should do very well forecasting asset price returns. And that connection is of what most people miss in their analysis.

My experience has taught me that predicting the business cycle over the medium and longer terms is easier than it is over the short term. But I know when a shift is coming and, when it arrives, I know what's going to happen to asset prices because it's happened almost every time at that point in the cycle. So, again, the game for me is to look for probabilities based on the current phase of the business cycle and project what the likely trajectory does to asset prices.

These are the questions I always ask myself:

- Is current market sentiment in step with the business cycle or is it pricing in a different scenario? For instance, is data starting to weaken materially while the market is still positioned for growth, or are people too defensive even as things are starting to turn positive?
- Are there exogenous political or economic factors (monetary policy, government shutdown, technology, legislation, etc.) that can make this cycle path different?

Now let us assume that we know the cycle is turning over. Let's make the assumption that we know the big macro backdrop, and it's negative. Then we can understand that there are returns to be had by playing the negative side of the equation, by being long bond yields or short equities at this point in the cycle. So how I look at that is down to the next element.

If you can forecast the business cycle, you are then able to forecast asset price patterns. Utilizing the monthly guide of the business cycle, we can look at almost every asset. Note that agriculture is mostly independent of the business cycle, as demand for certain food crops is inelastic (people need to eat in good times and bad), and supply shocks are often due to weather. However, other assets such as copper, industrial metals, equities, oil, bonds, emerging market returns, and emerging market currencies are all related to the business cycle. A comparison to the ISM PMI will show you they are highly coordinated.

## Practically Trading the Cycle

### *ISM Is the Business Cycle*

Cyclical effects have to be understood in the context of the attributes of the economies that they affect. For example, some economies—and thus their currencies—have a bias toward manufacturing, while others are service-oriented and less susceptible to the fluctuations of an economic cycle. Correlations between economies are subject to change, as factors including industry, monetary policy, and domestic circumstances are in a constant state of flux.

Professional traders, managers, and investors have a few pieces of data that are key to their decision-making process. After GDP, one of the most important is PMI (Purchasing Managers' Index). A PMI is sometimes referred to as a "headline" factor, as it gives early warning of advances or declines in an individual country's economic health.

A PMI is the result of a survey of a broad swath of purchasing managers (those responsible for buying goods and services for a company) on whether they believe activity across business domains will expand or contract. The result is scaled to the number 50—if the majority of respondents feel business activity will expand, then the number is above 50; if the majority feel it will contract, then the number is below 50. A trend moving from 42 to 50 on the monthly chart shows that the economy's expansion is "normalizing" —the more optimistic the outlook, the higher the number. Sinking below 50 is a major warning sign and below 44 is recessionary.

The ISM PMI—the most commonly used PMI for the United States—was previously mentioned in this book and deserves to be explained further. Published by the Institute of Supply Management on a monthly basis, the ISM PMI is a key statistic in assessing economic health or lack

of it. It measures manufacturing output by surveying new orders, factory output, employment, suppliers' delivery time, and stocks of purchases. It is computed in five separate subcategories and weighted according to importance, with new orders receiving the greatest weight.

The comprehensive nature of the ISM survey produces data that can move the market with the interpretations and directional clues it offers. It comprises data on new orders, production, employment, supplier deliveries, and inventories. These are five components of the business report, which includes a total of 11 indices as follows:

- New orders
- Inventories
- Production
- Deliveries
- Employment (manufacturing)
- Customer inventories
- Exports
- Imports
- Price index
- Managers index
- Backlogs

Additionally, ISM publishes a semi-annual economic forecast. The data from the Institute has earned global respect from economists' dependent on their data-driven forecasting. Their forecasts are not mere conjecture.

A PMI has a number of interpretative uses, predicting contraction and expansion in the economic cycle with, as we have seen, a level of accuracy that can provide a basis for forecasting. The manufacturing sector is the place where a recession begins and the place where signs of recovery begin, even though the industry is not necessarily a major part of GDP anymore.

PMI results can also offer the first clues of advancing inflation by indicating which way purchasing managers have seen prices going. (Of course if your central bank is operating in a region not worried about controlling inflation but rather with increasing it—such as the Eurozone and Japan at the time this book was written—then the analysis changes quite a bit and the monthly graphs become critical.)

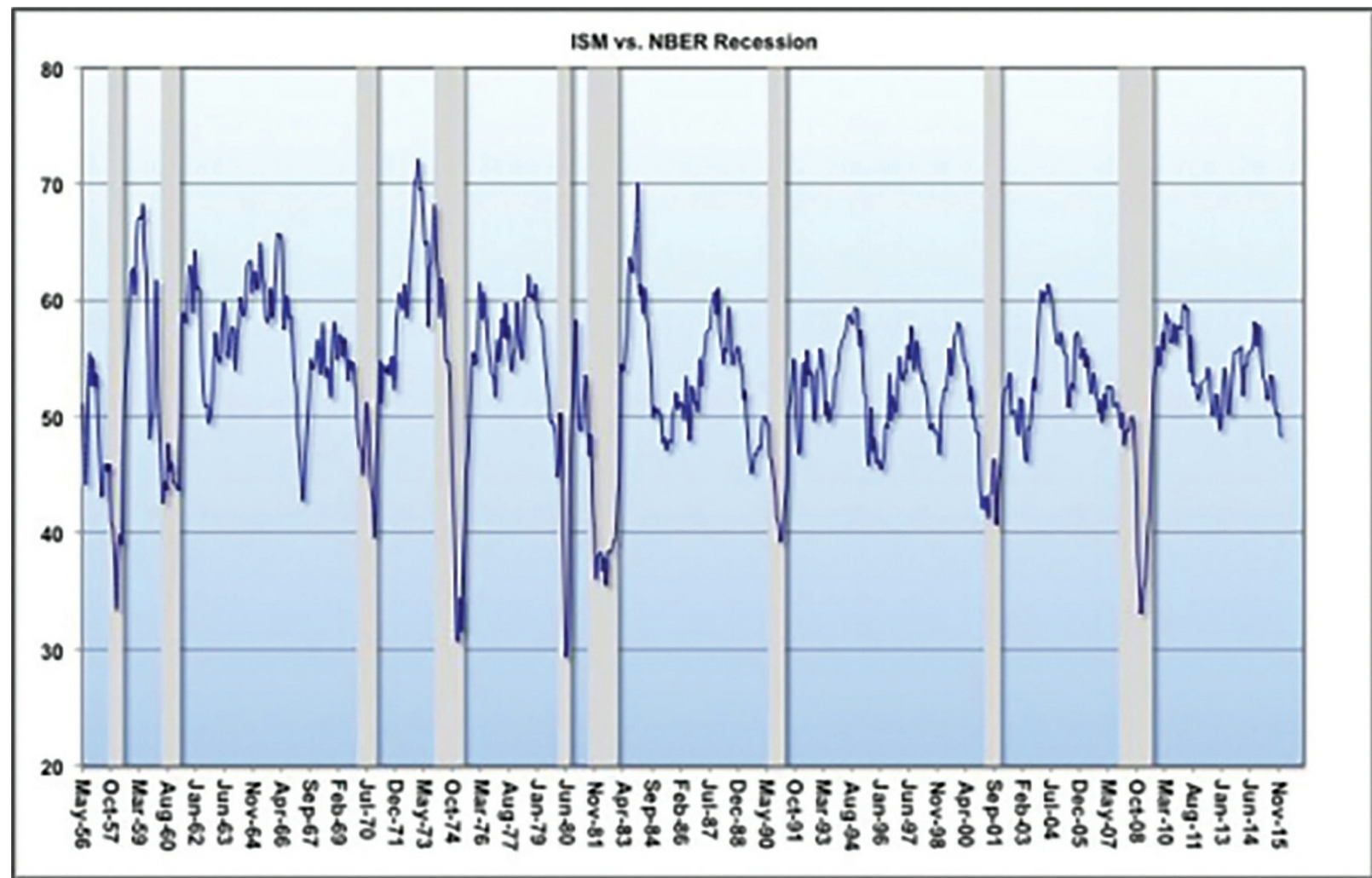
ISM started collating PMI data regularly in 1948, and its reliable release on the first business day of every month certainly added to its use as a predictive tool. That's just one of its strengths. So, too, is the fact that historical data goes back to just after World War II. Another benefit is that the information collated represents both the supply side (customer confidence) and the demand side as the amount of a manager's reported purchases expands or diminishes. With the index centered at 50, the critical extremes—as with all PMI indexes—are roughly 42 on the downside and 57 on the

positive. When extremes are close, and troughs can be detected, the “cycle” may be ready to retrace. One of the difficulties with this sort of analysis is that the cycle does not necessarily need an extreme to turn.

Once again, the monthly comparisons are important as they develop a trend or establish a low or high, and the signals they give can be advanced warnings. Thus a shrinking manufacturing number can be an indication that the contraction has begun long before it starts to show itself in other areas.

So, how I do create this voodoo business cycle I refer to? Simple. It’s the smoothed ISM PMI. The ISM PMI itself is the best indicator in existence of the business cycle. When it crosses 46 to the downside, a recession is almost certain; and when it slips below 50 (see [Figure 10](#)), there is a large probability for a recession.

Figure 10



Just to emphasize the point, here is the chart of the ISM PMI versus US GDP (see [Figure 11](#)).

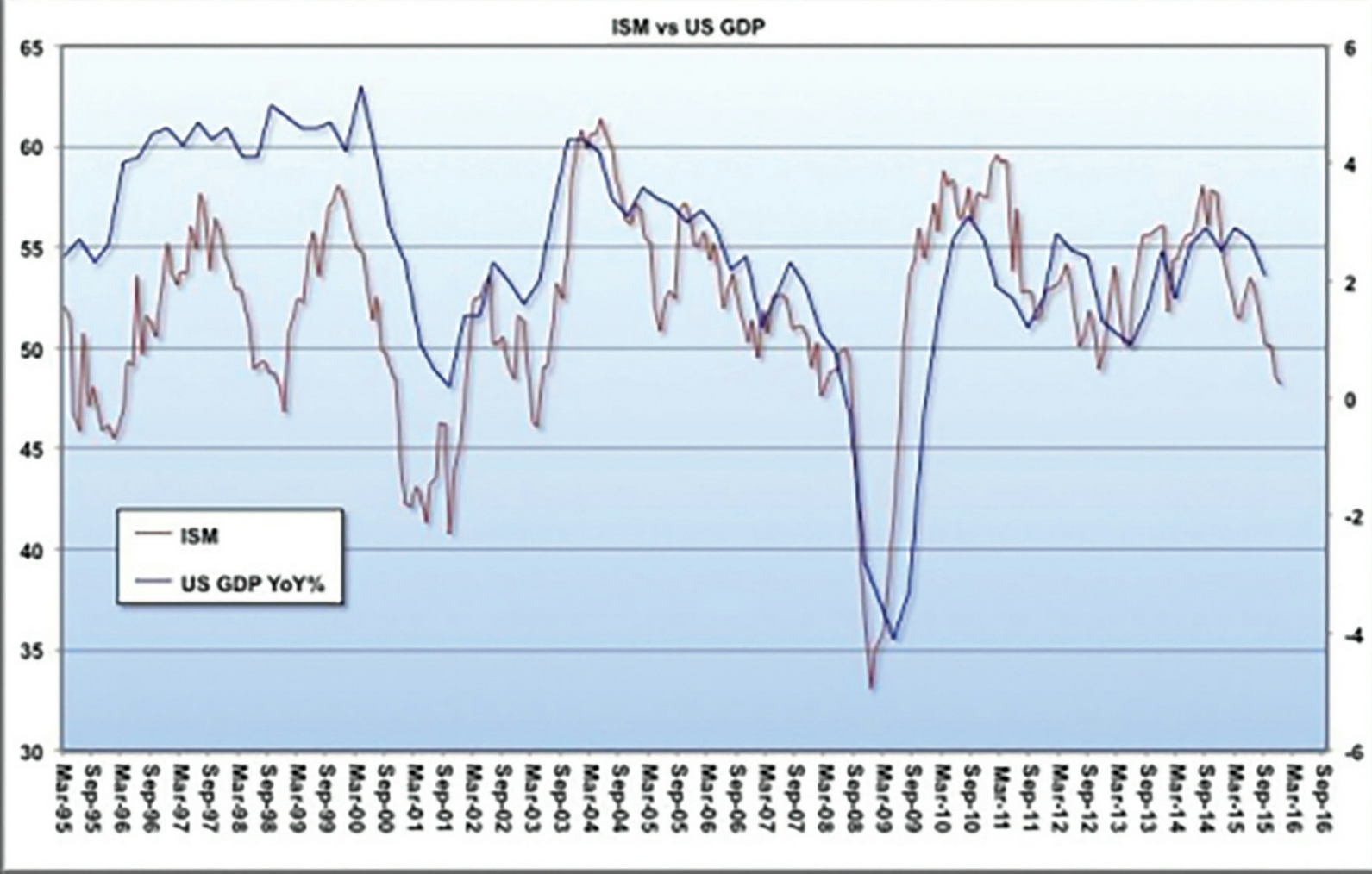


Figure 11

I don't use the ISM PMI just to predict US GDP; I use it as my guide to the global business cycle. To the extent that the US economy is highly correlated to the global economy, the ISM PMI does an even better job at forecasting world GDP (see [Figure 12](#)).

ISM vs World GDP

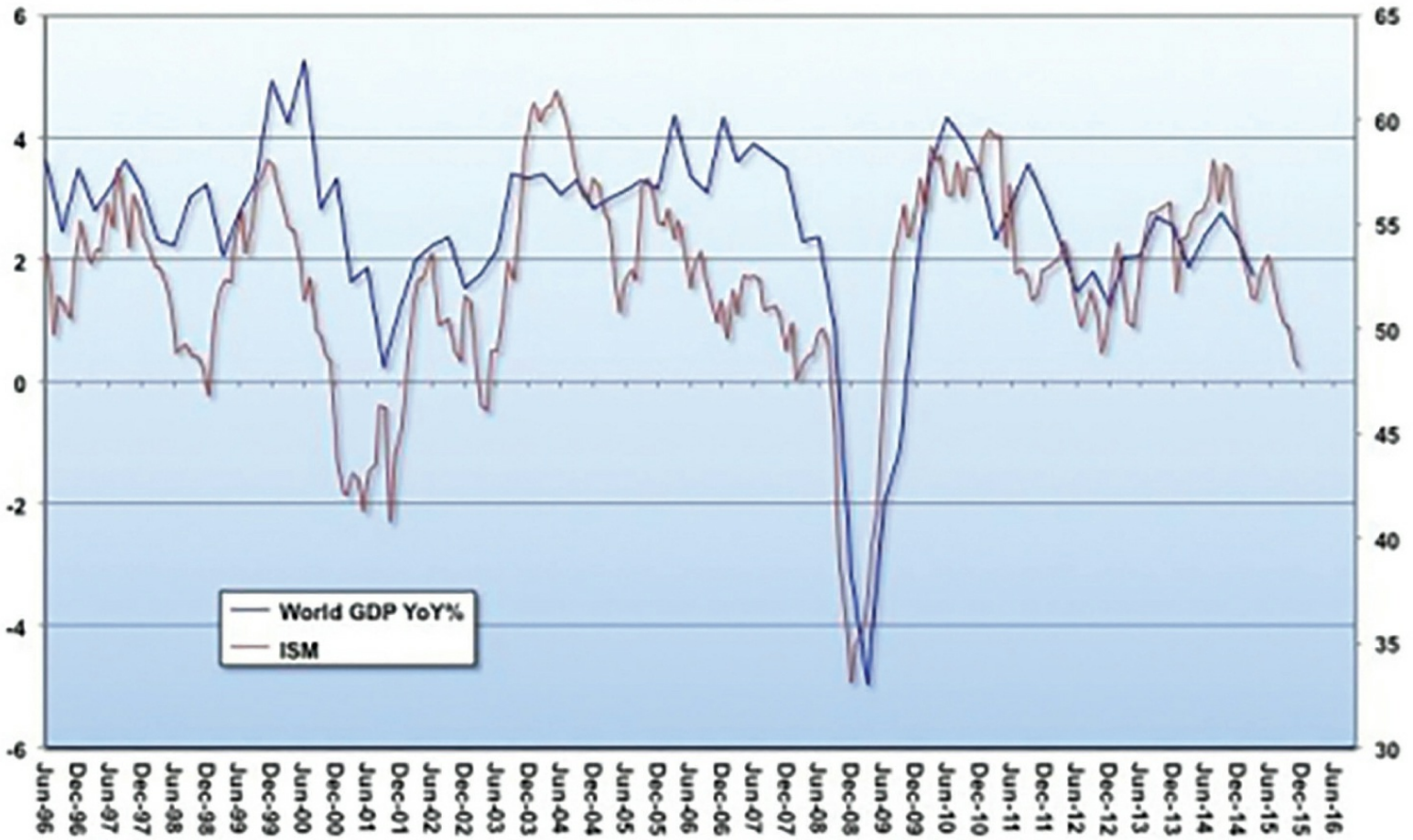


Figure 12

And just to prove that it's not just about the US's weighting in world GDP, here is the chart of ISM PMI versus South Korean GDP (Figure 13).



ISM vs South Korean GDP

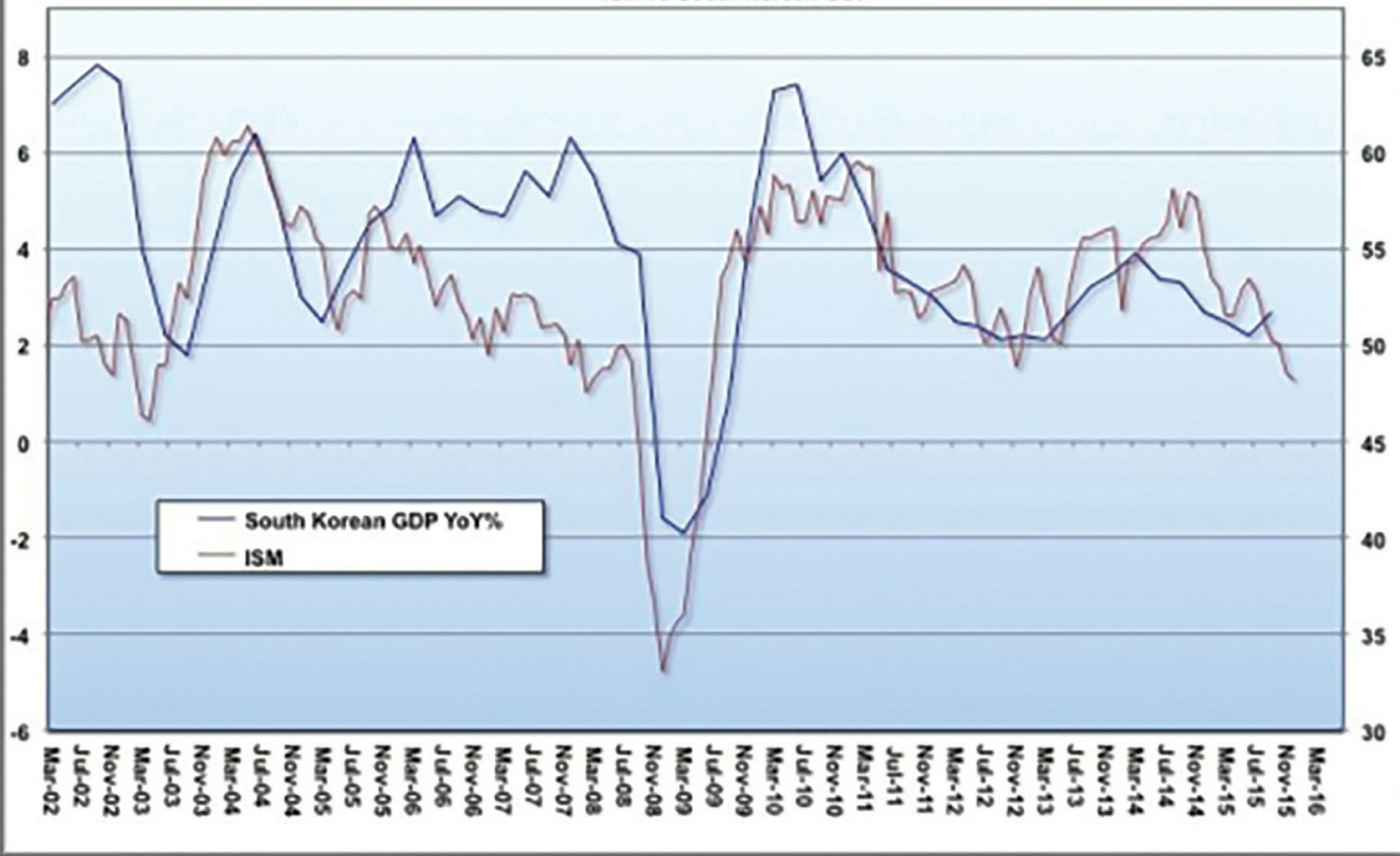
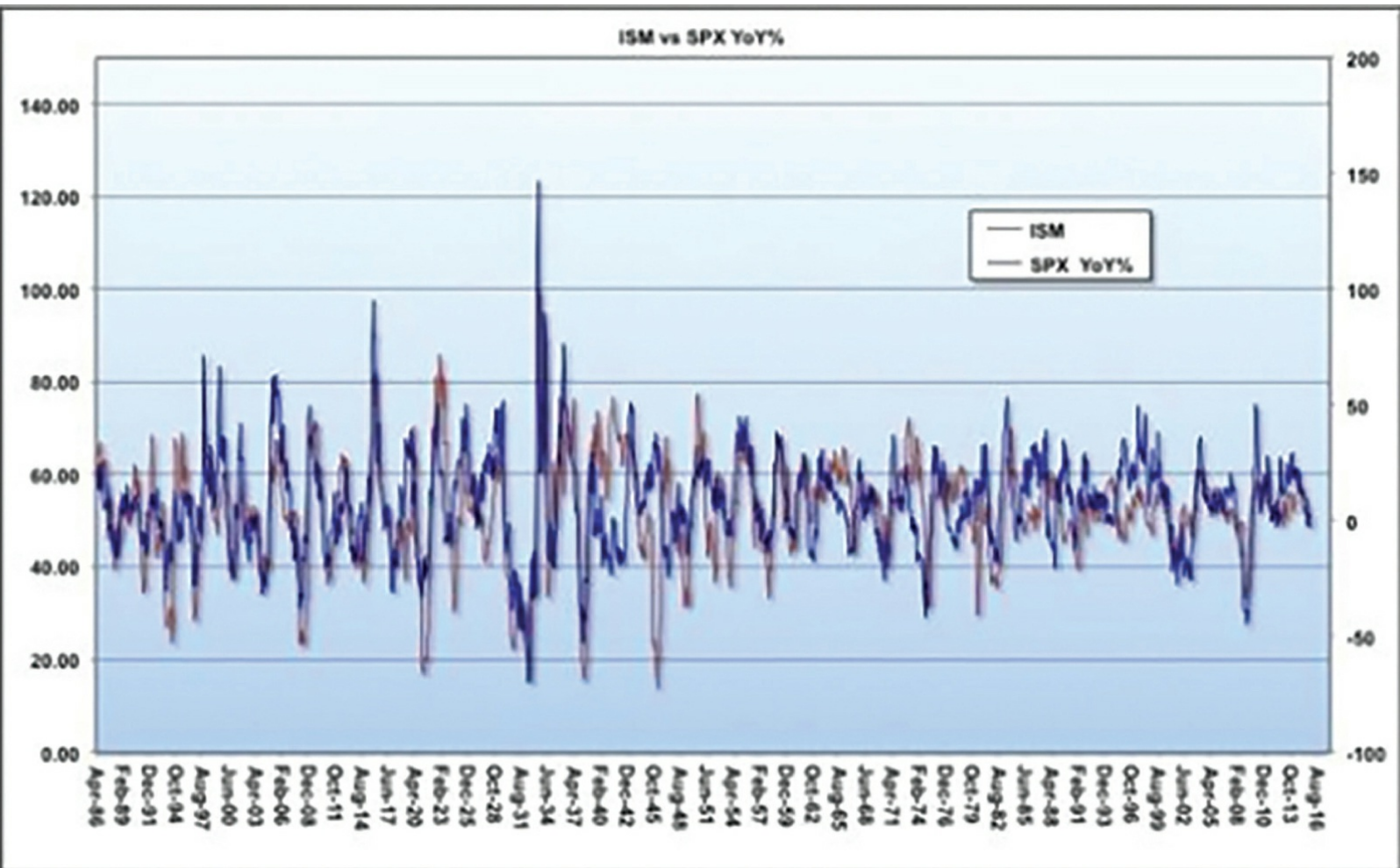


Figure 13

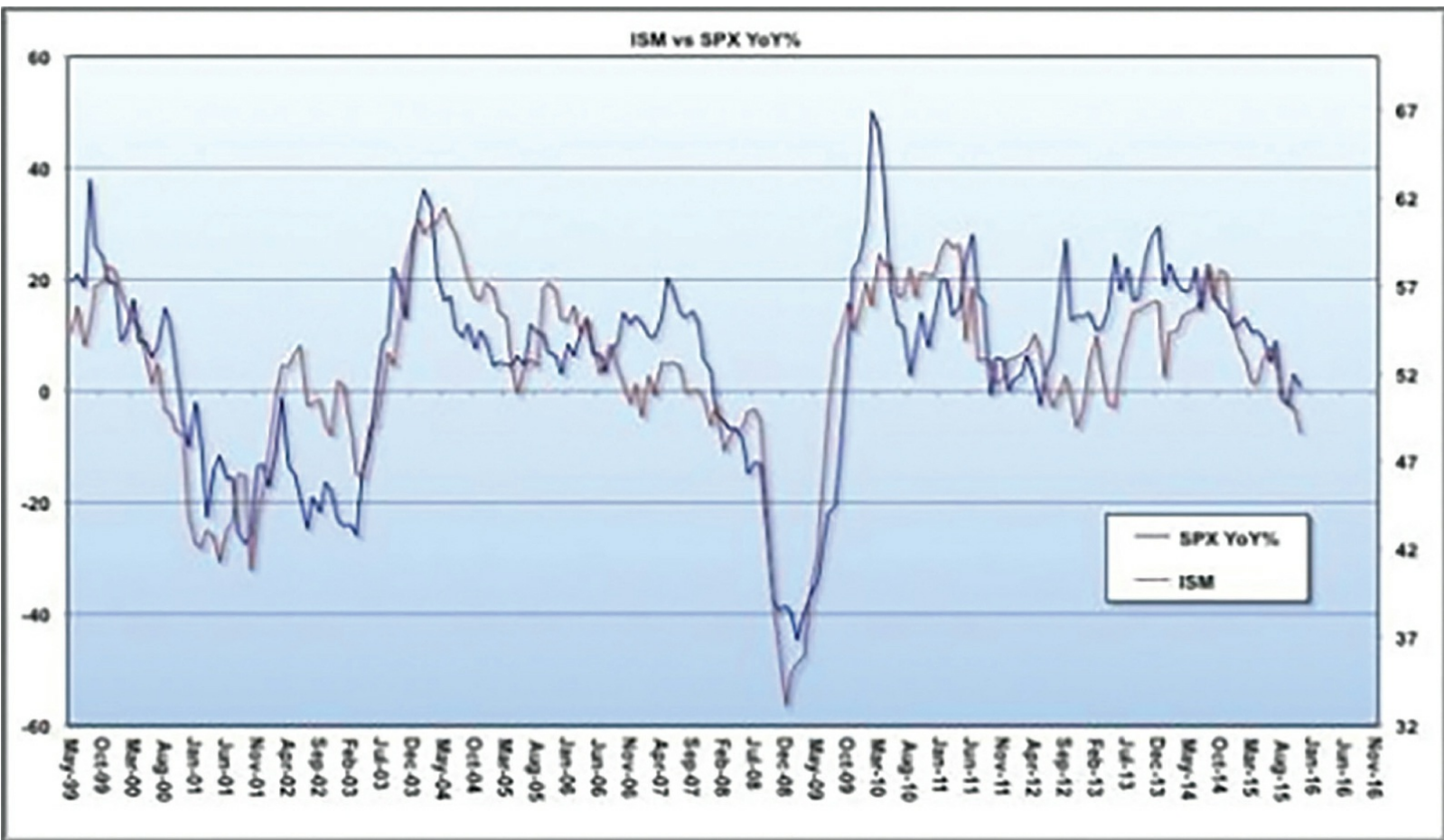
Now, nothing is perfect, and everything requires nuanced understanding and contextualization. The job of the ISM PMI as our proxy for the business cycle is to help us understand where the global economy is going and thus the return on assets that we can expect going forward. The year-over-year percentage rate of change of the S&P 500 is highly correlated to the ISM numbers. If the ISM PMI breaks below 50, we can expect the S&P 500 to show year-over-year negative returns; and if it breaks 50 to the upside, we can expect positive year-over-year returns. Easy. What follows is the chart of the ISM PMI (and the Treasury survey that preceded it) versus the year-over-year S&P 500 going back to 1886 (see [Figure 14](#)).

Figure 14



And here, the chart since 1999 shows exactly how good a fit this is.

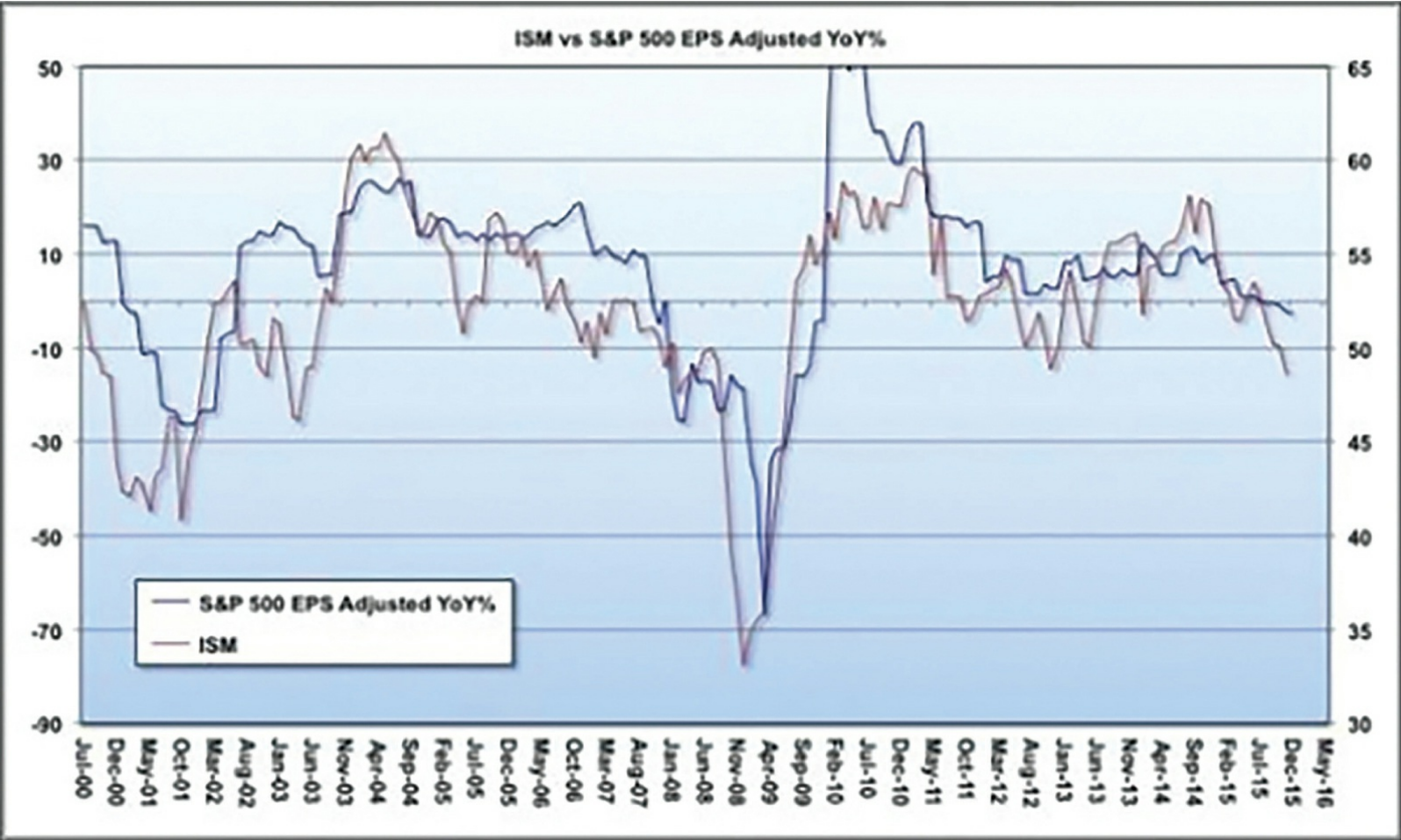
Figure 15



As we can see, the ISM PMI forecasts equity returns, too! We can even extrapolate (roughly) where the S&P 500 should be at any one time. Again, the tool it is not perfect, but it is the best guide that exists. For example, in 2015, noting that the ISM PMI was in its down phase and extrapolating the speed of the decline, I could forecast with a higher degree of certainty than most other analysts that the S&P 500 would not have a very positive year last year. The ISM helped me get that bet right.

The S&P 500 fits the ISM because corporate earnings are obviously correlated to the overall growth of the economy:

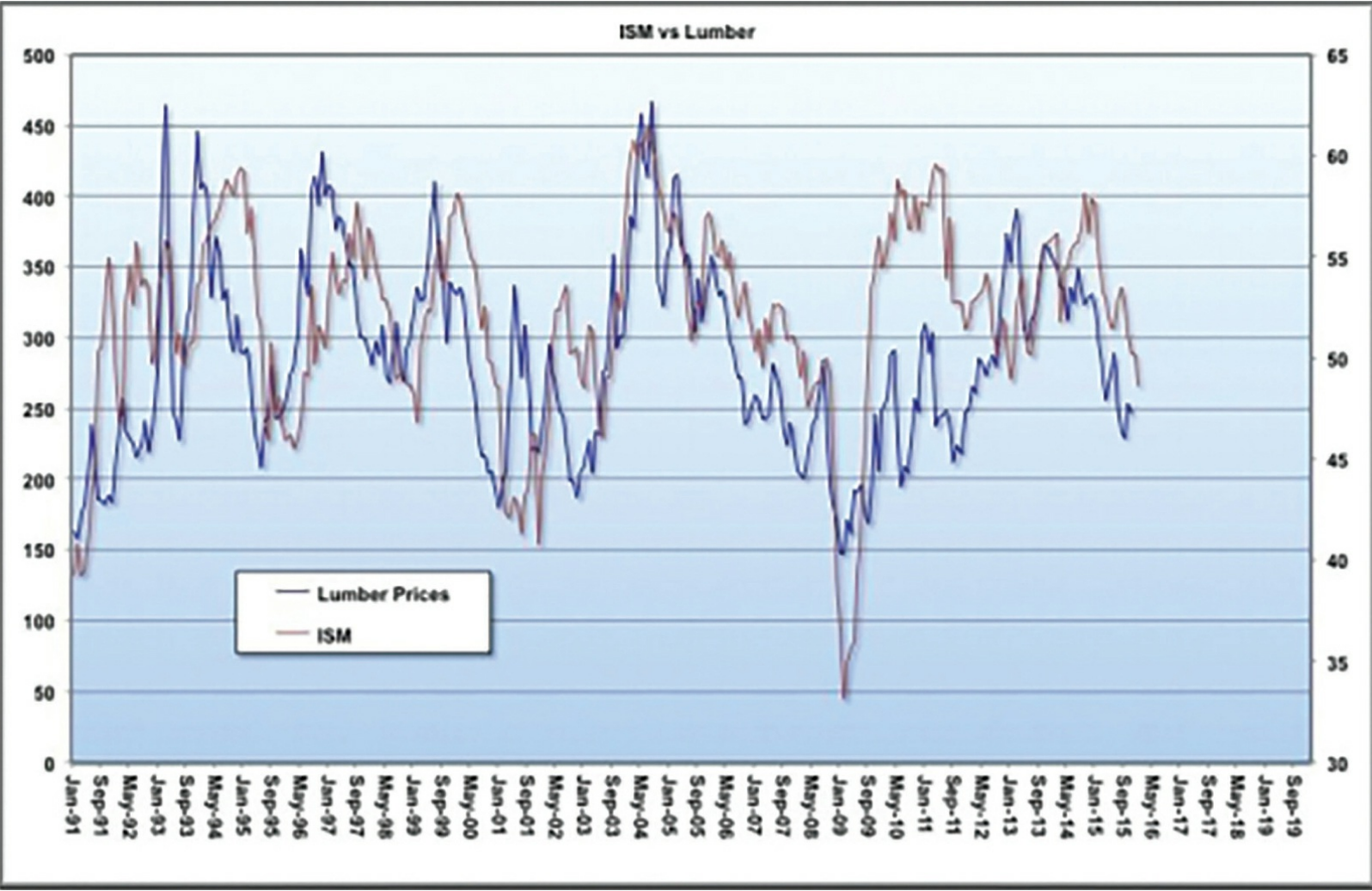
Figure 16



But the magic of the business cycle doesn't stop there—the ISM PMI is especially good at forecasting commodity prices.

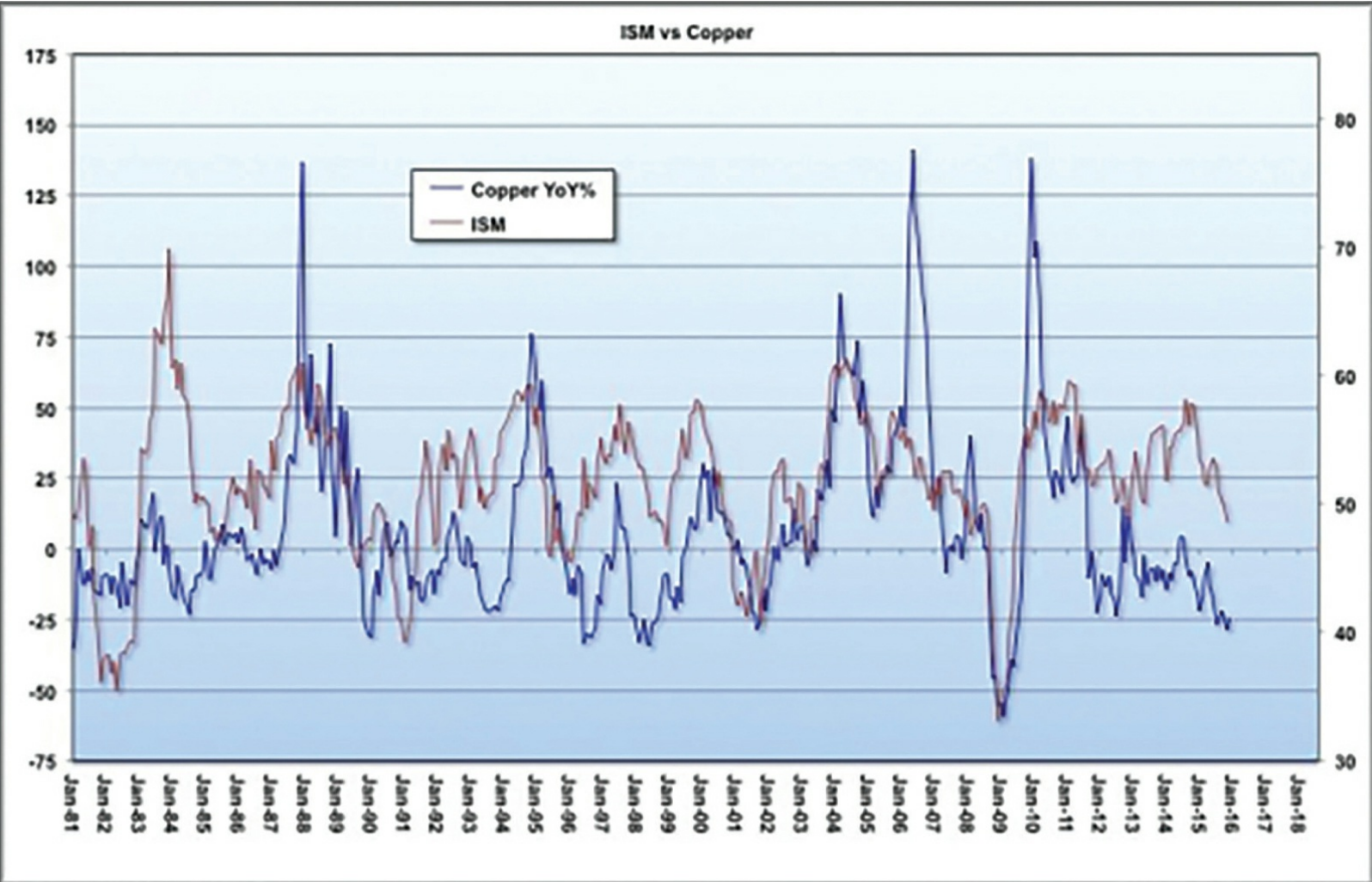
We can forecast lumber prices:

Figure 17



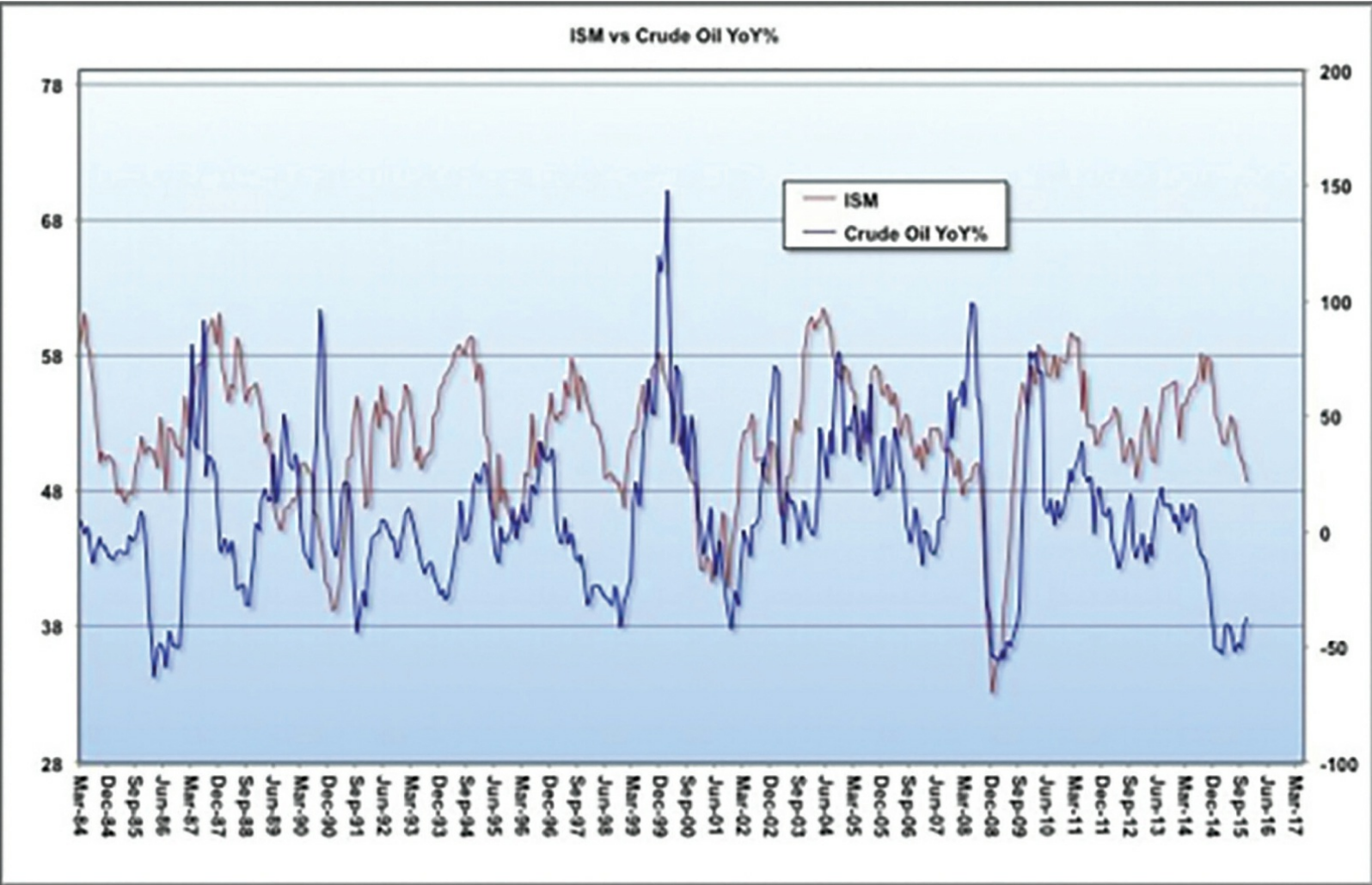
Copper prices:

Figure 18



And crude oil prices:

Figure 19



PMI is also the key factor for global equities, global bond yields, and even credit spreads:

Figure 20

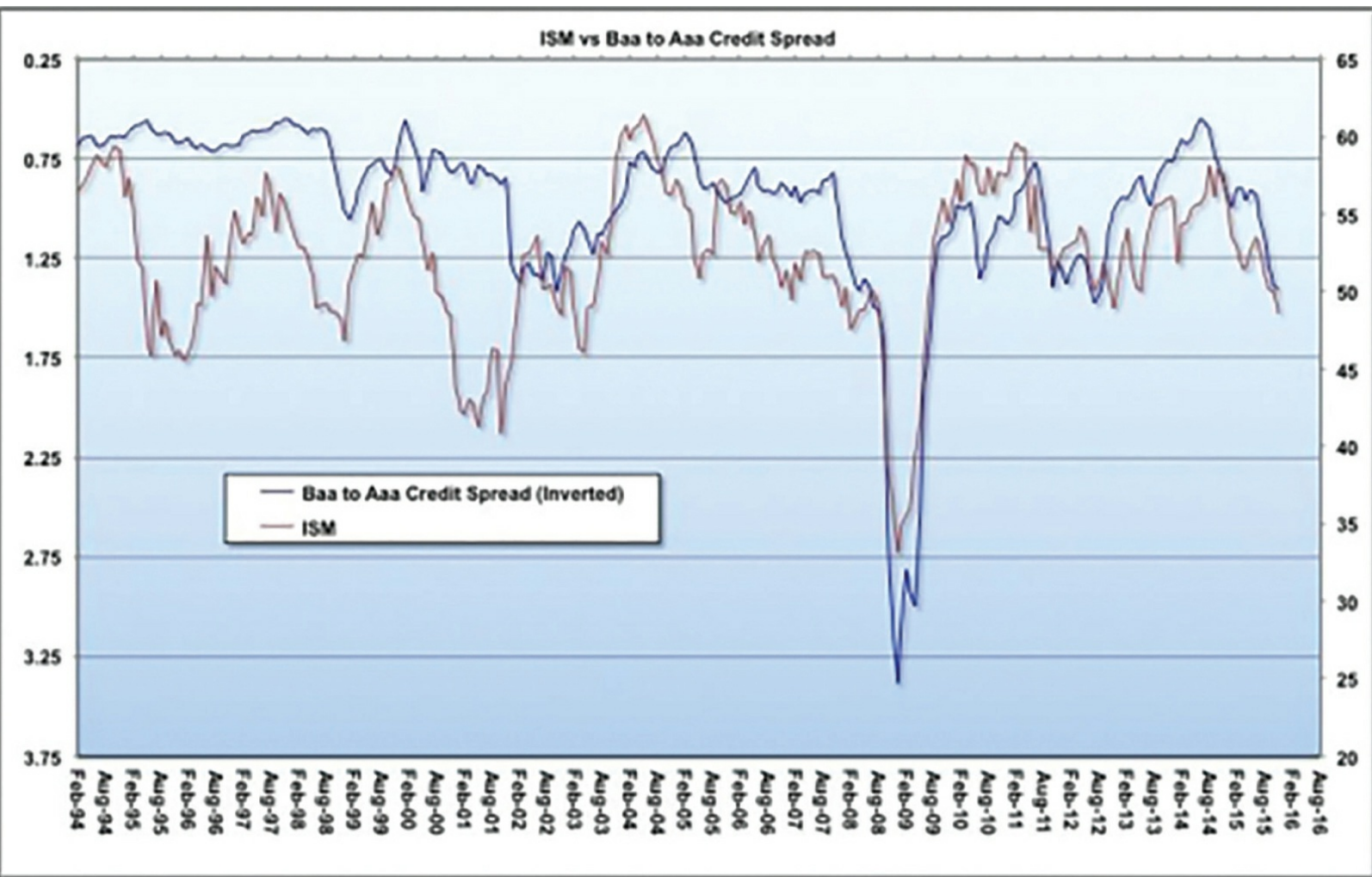


Figure out the direction of the ISM PMI, and you'll know the direction of all assets. If you can formulate a view on where the ISM is going, you have a better chance of predicting asset prices than pretty much anyone else on Wall Street, with their model-based assessments. Understanding the business cycle helps you get it right more consistently than anything else can. Add in a bit of technical analysis for entry and exit levels and a sprinkling of risk management, *et voila!* You will have the best asset-pricing model in the world.

## Overlay All Cycles

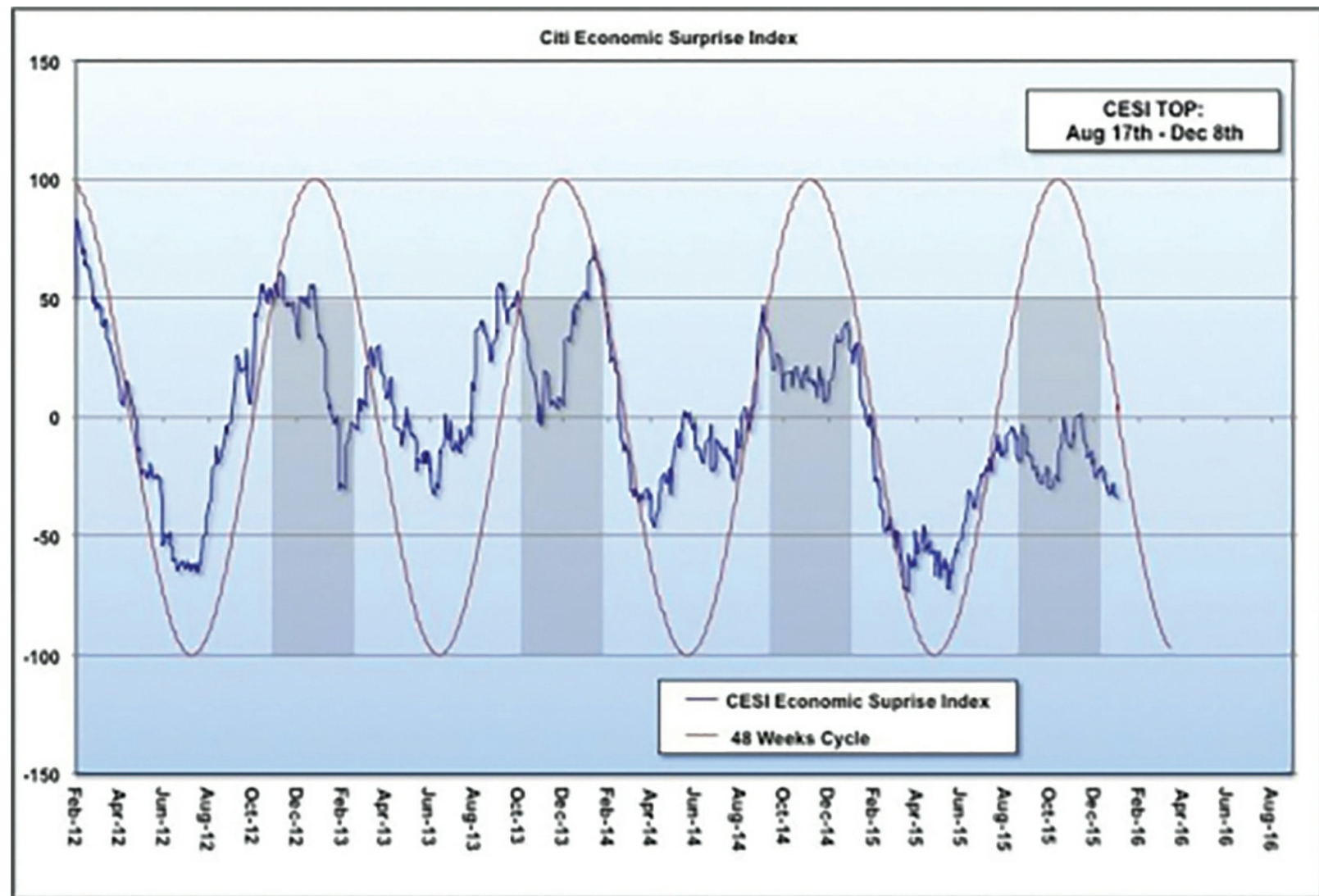
It should be stated again that nothing is perfect, even a match as predictive as the ISM PMI. There are always a few false signals, a few longer cycles or shorter cycles—and that is where the hard work lies. To gain a more fine-tuned understanding, we need to overlay the secular cycle. Knowing that the secular cycle was down helped me to forecast that economic growth in the US would be lower than most people forecast since 2009. Then noting the direction of the ISM PMI and plotting that against the average length of a business cycle gives me greater ability to predict when key risks or opportunities may occur in the future. Finally, we need to figure out the movements in the ISM as it winds its way from peak to trough to peak again. For that, I use the Citi Economic Surprise Index (CESI).



# The Short-Term Cycle

The CESI (Figure 21), like the ISM PMI, is highly cyclical and, unlike the ISM PMI, these cycles are very consistent within a time range. This helps us understand when the economic data is going to disappoint or when it is likely to exceed expectations.

Figure 21



The recent turn lower in the CESI cycle was forecastable two or three years ago (due to the relative predictability of the cycle lengths) and, when taken in context with the ISM structure and direction, afforded me the ability to predict some two and a half years ago that the US would likely be flirting with recession in Q4 2015. The chart above illustrates this analysis.

## Finding Qualitative Alpha

Identifying sources of qualitative alpha is the magic; It's the hardest thing to do. You have to understand what you are looking at, the context of it, and what that means for probabilities of events. Ultimately, all we care about are probabilities, since we trade and invest based on what is likely to happen. I have an implicit understanding of what the probabilities are of a trade's working or not working.

Another aspect of synthesizing all of this information involves understanding things such as market positioning. It is not the most important factor to me, but I like to understand if I see a great opportunity for a trade. For example, prior to publication, I've been seeing a great opportunity in being short the euro, but the euro has been rallying. I can see that the market had the position on and got overextended and it's been forced to close the position over time. I can see that the market is now looking for excuses as to why the euro hasn't gone down, with analysts' reports touting any number of reasons, which are then picked up by the financial press.

If I then put those considerations into my framework and my technical analysis and look at what's going on in the broader context of Europe, that bigger picture gives me the opportunity to enter my trade. If the market has gone up, positions have been closed, and people who shorted too early are getting blown out of the trade, then the opportunity will present itself.

That conclusion is certainly counterintuitive, and sussing out such opportunities is a very difficult thing to learn. The knack comes from experience and understanding of how markets function, how the various participants function, and how to filter news flow. Filtering the news flow is probably the single most important thing. Most people take too much news flow at its face value and don't do enough homework themselves. You need to build your own view and not listen to everybody else. And then read around to question your own view or to support your own view. Many people trade based on somebody else's research they've just read, and it more or less makes sense to them today. - However, by tomorrow they've forgotten about it and are doing something else.

To stack probabilities further in my favor, I like to look across all asset classes for confirmation. If I'm looking at a global macro picture, I look across all asset classes to see if there is any supporting evidence. If I'm looking for the cycle to roll over in the US, for example, I'd like to see the evidence of that in the currency markets, the commodities markets, in fixed-income markets, and in the equity markets. And I'd like to see that evidence not only in US equity markets but also in the other global equity markets. So I'd like to put the whole lot together, and that's a real art. It's very difficult to do because you have to have a very broad framework and an understanding of countless different readings. Still, it's not impossible to learn—it just takes time.

*And really learning how to filter is what gets you there!*

## Conclusion

Identification of the business cycle is critical in properly assessing the market regime and the potential profitability of certain investment strategies. This book has walked you through an overview of my process for extrapolating future asset price movement using the tools I favor for identifying where we are in the business cycle and where we are likely headed. That process is a key component in the pursuit of maximizing return per unit-of-risk.