



## John Greenwood: We're at mid-cycle, not late-cycle. Bull Market has plenty of room to run higher. May 23<sup>rd</sup> 2019

**Erik:** Joining me now is [John Greenwood](#), Chief Economist at [Invesco](#).

And, listeners, John put together a fantastic chart book for us with some really excellent graphs and charts. I strongly encourage you to download the chart book. You'll find the download link in your Research Roundup email. If you're not yet registered, just go to our home page at [macrovoices.com](#) and look for the red button that says [Looking for the Downloads](#) next to John's picture on our home page.

John, thanks so much for joining us. You know, we've had so many guests tell us that we are at the end of the business cycle, late cycle. And one of the reasons that Patrick, my producer, sought you out is because you are obviously a very credible voice – but one who does not think that we're necessarily at the end of the business cycle.

So please tell us, where are we in the business cycle? And what should we expect?

**John:** Well, my view is that, broadly, we are at mid-cycle, not late cycle. I know the cycle has been going on for ten years almost. In fact, in June will be the 10th anniversary of the trough of the last business cycle. So we've been expanding for 10 years. And in July this current business cycle expansion will become the longest in recorded US financial history.

But, nevertheless, I believe that it has several years to run. And, basically, I think there are three reasons for that.

First, money growth has been low and stable.

Second, private sector leverage in the US remains low, despite some concerns about the non-financial corporate sector.

And, thirdly, inflation is not a threat, nor do we face a major financial accident. Those are the two main causes why previous business cycles have come to a premature end.

In my view, if we take a historical analogy, we're at something like 1995 in the cycle that went from 1991 to 2001, which was the previous longest expansion cycle. So I think we have several years to go because the central bank, the Fed, doesn't have to take any drastic action at this point. And I don't believe that there are serious problems in the private sector that will cause a

premature end to the expansion.

**Erik:** Let's go ahead and dive into your slide deck and talk about the mechanics of what actually drives the cycle.

**John:** Well, if we look at this first graphic slide, it's a flow chart which really sets out the phases and stages of a business cycle expansion. Now, it's important to understand that the business cycle – although there are arguments about this in academia – in my view there's no doubt at all that the business cycle is fundamentally driven by money and credit. And, while I've put monetary conditions in the slide here, what I really mean is the rate of growth of money and credit.

If we take an example, if the money growth rate accelerates from, say, 5% to 10%, doubles from 5% to 10%, the first thing that will happen is that there will be an impact in the money markets and the assets prices. That's the second box in the flow chart.

Now, this is what we call the portfolio rebalancing effect, because with more money than people want to hold in their portfolios, they are going to reallocate that money to other areas. It could be to money market securities, it could be to the bond market, it could be to equity markets, it could be to the housing market, or even commodities and other collectibles.

But, in any case, the first impact is generally on the assets market. And once asset prices have risen and people start feeling wealthier, two things will happen.

First of all, businesses will start to hire more and invest more. And consumers will start to spend more. And both of those two things will drive up consumption and investment. So that will boost economic activity.

And along with that, by the way, employment will rise and unemployment will fall.

And then finally, the fourth in the flow chart, the money growth rate continues to expand at a rapid rate – the 10% that I mentioned just now. Then after a lag of about two years we will start to see that show up in consumer price inflation.

So the entire business cycle – the business cycle covers pretty much everything: assets, economic activity, to inflation.

And the effect is built up and spread out over time. It doesn't go immediately from excess money growth into economic activity. That process takes a while. And because it takes a while, a lot of people fail to grasp or understand where we are in the process.

Notice that I haven't talked about interest rates. They're not really a concern here. It's the quantity of money and the quantity of credit which is driving the process.

So how do we know that this is a reasonable description of how this process works? If we go to the next slide, number 3, this is a simple chart that shows the S&P 500, that's the black line. And the red line is the level of US real GDP. And I've also put in the recession bars.

What you'll notice straight away is the way in which pretty much – in fact, in this slide every single stock market peak precedes or comes very early at the start of a recession. So, in other words, asset prices in the previous flow chart are going to peak before the economy peaks. That's what you'd expect from that flow diagram. And this is validating that.

If you want to understand what's going to happen in the stock market, I always say you've got to understand the business cycle that is driving it.

If we go to the next slide [Slide 4], that's another illustration of this cycle. Only this time I've taken house prices instead of stock prices. I've put the house prices this time in terms of rates of change because the US doesn't have any significant downturns in house prices until this recent major downturn. But you can just as well look at cycles in terms of levels or rates of change.

If we look at this in terms of rates of change, we've got the rate of change of real GDP in black and the rate of change of house prices in red. And, again, you see that pretty much all the house price peaks precede recessions. So, again, asset prices peak before we hit recession.

And then the third in this series, Slide 5, shows in the blue line capital values or the commercial real estate market. And, once again, relative peaks in the commercial property market broadly precede any recession.

So I think I've made the case fairly strongly there that asset prices are driven by the same sort of forces that drive the business cycle, which normally ends in a recession.

On Slide 6, we have consumer prices. (I've skipped one element. That is the GDP. The GDP is the black line which is shown in this chart and the recessions are shown by the vertical bands.)

We now move to Slide 6 and inflation. Now, here you'll notice something different. Inflation tends to peak after the economy turns down and during or well into a recession.

Another thing you will notice – and this is particularly clear in the 1980s and then in 1991 – that there is a very wide gap between the inflation number and the GDP. In other words, the GDP turns down first but inflation continues to rise for quite a while.

That gives rise to the phenomenon we know as stagflation. Inflation tends to persist some considerable time after the economy has turned down.

And this is a period, historically, when politicians and central bankers get very impatient with the economy being weak they tend to put their foot on the gas. The danger is that in doing that

they will exacerbate the inflation even more.

So, to sum up, we go to Slide 7. We have the same flow chart at the top, but I've filled in the details in some of those boxes lower down:

Broad money accelerating in the first box and maintaining a faster rate for a sustained period. And then asset prices rising due to the portfolio rebalancing effect. And then economic activity turning up, reflected in stronger investment, stronger consumption, retail sales, employment, and, of course, unemployment falling. And then, finally, the outcome of this faster sustained rate of rapid money growth would be higher inflation.

As a digression, I may say at this point that many people put their trust in the Phillips curve. And I'd like to point out what is wrong with the Phillips curve.

Many people know that the Phillips curve relates the level of unemployment on the horizontal axis to the rate of change of wages or prices on the vertical axis. Because we've had very low unemployment recently – 3.7% – many economists at central banks, in academia, and indeed on Wall Street are saying that at some point we must get inflation.

But straight away you can see what's wrong with that analysis. Essentially what it's doing is ignoring those first two boxes and saying forget about money. What it's doing is relating unemployment in the third box to prices in the fourth box.

Now, it is true that in the past strong money growth did produce strong employment and low unemployment, which did produce rising inflation. But that is not what we've had this time.

So I've called this – if you look at the title more carefully, I've called this a Type 1 business cycle, one that is generated by rapid money growth.

If we go to the next slide, here's Type 2. And this is what we've had this time. Because the private sector is so overleveraged in 2008-2009, the demand for credit was very weak and banks were risk averse. Consequently, instead of having rapid money growth, we've had very low money growth.

As a byproduct of that, interest rates have remained low. And, in addition, asset prices have risen, yes, but mainly because interest rates have been low. That's what I call a capital markets effect rather than an effect of excess money.

And then, gradually, the economy (in the third box) has improved, investment has increased, consumption has picked up, retail sales, employment, and of course we've got the lowest level of unemployment for 50 years.

But, because money growth has not been rapid, we have not had inflation. Inflation is broadly unchanged. It's somewhere between 1.5% and 2%.

So you have to understand how strong the monetary forces are in driving the business cycle. And in this cycle, they've been quite modest. We'll get into the details of that a little later on. That's kind of an initial, preliminary statement of the mechanics of the business cycle.

**Erik:** Let me just ask a couple of questions about that. If I play devil's advocate here, the people who think that we're late cycle would look at what you've described and say, John, you know, you're exactly right. What happens is you tend to see asset prices peak well before we enter recession. We haven't entered recession officially yet, but that's coming.

Look at the fact that Eurodollar futures, or Eurodollar future spreads, are basically discounting that most of the market thinks the Fed's next move will be to cut rather than to hike rates further. So the Fed seems to be done hiking, getting ready to cut.

Doesn't that mean that we're approaching that point of the cycle ending?

And it seems to me like the one very clear sign we've seen through these slides is we don't have inflation moving up dramatically, even as GDP is falling off. We don't have that signal. But it seems like the other signs of end of cycle are there, even as you've described this.

What am I missing?

**John:** Well, the end of the business cycle is by no means automatic. It's going to be generated by a slowdown or a sharp slowdown in money and credit growth. And that's something we really haven't seen. We've had – as I shall show – low and stable money growth.

And, in addition, as I said in the beginning, the private sector is not leveraged up in any serious way such as to threaten the business cycle. So the central bank doesn't have a reason to squeeze from this point on.

In fact, I would again make the analogy or parallel with the 1990s, or indeed with the early 2000s. After the Fed had initially normalized rates in 1995, it then cut and raised and cut and raised. So interest rates were varied quite a bit between 1995 and 2001.

So, just because the Fed has largely completed normalization, it doesn't mean that the rates will not change. And nor does it mean that the rates are bound to fall because the economy goes into recession.

GDP behaves in a fairly erratic way. At the moment it's been – at least on the official numbers – it's been quite strong. And I doubt whether it will weaken very sharply. Certainly not enough to be classified as a recession.

So short-term variations in interest rates, a kind of fine-tuning of interest rates, is perfectly normal in the late stage, mid to late stages of the business cycle.

**Erik:** John, why don't we move on then? Because I know, starting on Slide 9, you've got a series of slides that talk about the role that debt plays in the business cycle. So let's bring that dimension in next, starting on Slide 9.

**John:** I'd like to spend a few minutes on this because, in talking to our clients and investors around the world, I find there's a huge degree of misunderstanding. Many people are very worried about the high level of government debt – or about debt in general.

If you look at Slide 9, this is a kind of abbreviated monetary history of the United States since 1970. And what it shows is broad money – I've used M3 and an up-to-date proxy for M3 because the Fed stopped publishing it in 2005 or 2006 – and that's the dark blue line. I've also got on this chart the ratio of government debt to GDP.

I like to ask this question: Which was responsible for inflation? Clearly the '70s and early '80s were a period of high inflation, high and rising inflation in the US. And you can see from the chart, debt was low and fairly stable. Government debt was low and stable relative to GDP. But money growth was very rapid.

Clearly, it was money growth behind the inflation.

And then, conversely, if we look at the recent period, you have very high government debt to GDP, nearly 100% – this is federal, state, and local government debt together as a percentage of GDP – but money growth, in contrast to the '70s and '80s money growth is very low.

And what do we have? We have low inflation. So I think it's clear from this that it is money that matters, not the level of debt.

But another thing that people get hung up about is QE. For some reason, people think that money on the books of the central bank is somehow more important than money in the hands of the public, in the hands of households and firms.

If you go to Slide 10, what I've done here is indexed the balance sheet of the Federal Reserve System. That's the dark blue line which I've labelled QE. And then I've indexed broad money and nominal GDP, also to the same date. In this case, they're all indexed to January 2008 as 100.

And I asked the question: So which is the driver of nominal GDP? Is it QE or is it broad money? And from the chart, it's obvious which is the driver. And you can apply this to other countries.

If we go to Slide 11, this is the same data for the UK. And, again, it's clear that it's not QE which is important for nominal GDP. It's broad money.

If we go to Slide 12, Japan, it's clear that it's broad money that's important for nominal GDP.

And that's total spending, not QE.

And, finally, for the Eurozone, it's exactly the same. It is broad money – in the Eurozone's case, M3 – which has been the important driver of nominal GDP, not QE.

So, by way of setting the scene, it is simpler to say broad money is really what you need to monitor in getting that flow diagram for the business cycle correct going forward.

**Erik:** John, moving on to Slide 14, why don't you tell me about money growth in various different countries and relate that to the concept that you just described to us.

**John:** Well, nominal GDP of course, as everybody knows, is total nominal spending, current spending in dollars or yen or euros or renminbi or you name it, whatever currency. It combines both real economic activity and goods and services price inflation – not asset prices.

And what is very interesting is that broad money growth, in effect, acts as kind of a ceiling to nominal spending growth or nominal GDP.

If we look at Slide 14, and particularly the recent period since 2011 or 2012, you can see that nominal GDP, which is the red line, has broadly remained below money growth – whether it's M2 or M3 – until just recently when we've had a little bit of an uptick, which I think is the short-term reaction to the fiscal stimulus administered by President Trump.

I personally don't believe that will last. But as long as money growth continues at this sort of 4% to 5% growth rate, then I don't think the US economy will come to any great harm.

This is something which is applicable right across the board.

If we go now to Slide 15, we can see exactly the same sort of relationship for the Eurozone – M3, in effect, creating a kind of ceiling for nominal GDP. There are occasions when nominal GDP spikes up above money, but those episodes are relatively brief.

And, for the most part, for those of you who know the quantity theory of money and the fact that velocity is a declining number – those of you who understand that will know why that is. It's because money growth less a falling velocity gives you nominal GDP.

Look also at the UK. Again, we have pretty much the same picture. Recent rates of growth of money are low and fairly stable. And, although many people fear that the sterling may fall sharply in the event of a hard or medium-hard Brexit – in fact, the money growth rates have been so low as to call that into question.

If we go to Slide 17, you can see why Japan has had such a low inflation rate and a low nominal GDP growth rate ever since its bubble burst in 1991. Money, which during the bubble was growing at double-digit rates, slumped.

And since 1992 it's averaged only 2.6% per annum, which is much too low for Japan. As a result, nominal GDP has averaged only 0.5% per annum, with numerous episodes of deflation.

So if Japan wants to end deflation, or get the CPI up to 2%, it's going to need faster money growth. I calculate that Japan needs roughly 6% money growth. But you can see that it's never been near that in the past 25, nearly 30 years.

And, by the way, we can extend that (in Slide 18) to China, where we've recently had very slow money growth – money growth slowing from the mid-teens down to the high single digits, a rate of growth of money that we have not seen since China started its liberalization program in 1978.

Then if you go to Slide 19, the same applies in India. So right across the board, kind of like the law of gravity, it applies in every country. Rates of broad money growth act as some kind of a ceiling for nominal spending growth in all these countries.

And, given that they are all experiencing rather low rates of money growth at the moment, to me it seems inconceivable that the inflation rate is going to spike up anywhere. And therefore there is no need for any of the central banks to suddenly slam their foot on the brake and raise interest rates and terminate the business cycle expansion.

**Erik:** John, as I look through these last several slides, you're talking about money supply as measured by M2 or M3. Those are measures of money supply in the banking system.

What about the money in the shadow banking system? How does that play into this equation?

**John:** That's very important and I'm glad you raised that. If we go to Slide 20, this is the measure of the shadow banking system in the US that I use.

In fact, you can measure shadow banking in two ways.

One way is to add up the funding or the liability side of the balance sheet of the institutions involved in shadow banking. And that's what I've done here. I'll elaborate on that in just a moment.

And the other way you can do it is to look at the instruments that are used in the shadow banking market: things like repos, commercial paper, asset-backed securities, securitized debt, and so on, CLOs, CDOs, etc.

Now, when people make payments, when firms and households and individuals make payments, they typically either write a check against a bank account or they make a payment digitally nowadays over the internet or however, drawn on accounts of commercial banks.



So most of the GDP is reflected in those official money numbers from the banking system. But the shadow banks have become very important in the asset markets.

In this particular chart, we have money market funds, which are essentially banks without capital.

And then primary dealers, which were not banks. These were the investment banks before the crisis, companies like Goldman Sachs, Morgan Stanley, Lehman Brothers, Bear Stearns, and others. Clearly, since the crisis Morgan Stanley and Goldman Sachs have applied to become banks and they are part of the Federal Reserve System now. But they were creating credit prior to the 2008 crisis.

And then we have the next group, the finance companies – mortgage finance companies and auto finance companies, companies like that – issuers of asset-backed securities. Then the notorious sieves and conduits of funding corporations. That's the blue line.

If you add those three – money market funds, primary dealer balance sheets, and the finance company line – you get the total of shadow banks.

And what I want to draw to your attention is that, at the peak, the size of shadow banks – you know, the peak in 2008 – shadow banks were \$16 trillion. At the time, M2 – money in the banking system – was only \$8 trillion. In other words, the shadow banks were twice the size of the banks.

Now, the Fed protected the banks, injected liquidity, and the Treasury did the top to recapitalize the banks. So the banks were, if you like, protected, recapitalized, and made healthy again.

Whereas the shadow banks, as you can see, contracted very sharply. What happened was when Lehman Brothers went bankrupt, there was the universal realization that lending in these shadow banking markets, or buying the debt – whether it was the commercial paper issued by investment banks or by mortgage finance companies – this kind of paper was very unreliable. And the funding of these corporations, these shadow banks evaporated.

As a result, as you can see, there was a very rapid shrinkage, initially, of these shadow banks. They continued to shrink until about a year or so ago. And there's only been a very, very modest upturn since then.

So, in broad terms, shadow banks were very important, but they were important for the asset markets rather than for the regular goods and services.

If we go to the next slide [Slide 21], here what I've done is to show broad money growth again for the US. That's the light blue line. It's M2. But I've added in shadow banks.

During the 1990s – that is, during the tech bubble – you can see that credit was growing at 15% to 20% per annum. And similarly, during the housing bubble of the early 2000s – those are the two areas with the solid oval and circle.

But since the Lehman bankruptcy in 2008, shadow banks contracted abruptly and have been shrinking at a very gradual rate since then. And only recently has it just turned up a little bit.

What I've also done is to combine banks and shadow banks with that green line. I took the total of the balance sheets of the banks – the M2 – and the shadow bank liabilities, and that generates that green line.

So, whether you look at money in the banking system or the shadow banking system, the total has been growing at a very modest rate – under 4% to 5%.

Now, people sometimes say to me, surely there is very rapid growth in areas like leveraged loans. That is true. But leveraged loans are only at about \$1.3 to \$1.4 trillion today. The banking system, as we just saw in the preceding slide, is close to \$15 trillion. And the shadow banking system altogether is about \$10 trillion on this definition.

So we're comparing very different sizes of entity here. The banks and shadow banks together are about \$25 trillion.

If you take just one area of the shadow banking business, namely leveraged loans, that's only \$1.5 trillion. It's not going to make a big difference to the overall US economy or the asset markets.

**Erik:** John, moving on to Slide 22, why don't we pull all of this together using the concepts that you've defined so far and just talk through where we stand in the business cycle and what comes next.

**John:** Slide 22 is a kind of simple outline of the business cycle in developed economies. As you can see, I have allocated assets through the business cycle.

And, essentially, the business cycle is expanding through Stages 1, 2, and 3. And then when monetary policy really tightens in Phase 3, then obviously you need to shift towards cash. And as the economy heads towards recession and rates start coming down, you can shift to bonds.

So this is a kind of asset allocation view of the same business cycle that we've been talking about.

To be specific, if we go to Slide 23, there we have the US, which has largely normalized rates now, in the middle of Phase 2. I guess you could argue with that and say possibly the US is closer to the end of Phase 2 because the normalization is kind of at an end.

But the important point is that the US has not moved to Phase 3. That is where the Fed or the central bank is tightening deliberately in order to squeeze money and credit and to terminate the expansion in order to deal with inflation. That is definitively not today's problem.

And then the UK is somewhat behind the US. It's only just started on the rate normalization process.

And the EU (the Eurozone) and Japan are even further behind. They haven't even started to normalize.

So that's a kind of very brief overview of the business cycle and where we stand, where the major countries stand.

[Slide 24] If you want to apply that to emerging economies, you can do so. Without going into too much detail here, the red line represents the business cycle of developed economies. The blue line represents the cycle of emerging market economies. And all I would say here is the emerging economies tend to have a shorter, sharper cycle.

So, for example, China coming out of the 2008 downturn put its foot hard on the accelerator. We had a very strong boom. But then they had to put their foot on the brake and things have slowed down.

During the 1990s, Asia, many of the smaller economies in Asia, had no less than three boom-bust episodes of that kind in the space of a single US business cycle expansion. So these short, sharp cycles are nothing new in the emerging markets. And they are still occurring.

**Erik:** John, you spoke earlier about leverage being an important aspect of this cycle. Please elaborate. I see on Slide 25 it looks like we're illustrating this concept.

**John:** Slide 25 shows what I call two overlapping bell curves.

The first curve, the red curve, shows what happens in a credit bubble to the private sector. This is a debt-to-income ratio, so it's a leverage ratio.

And if monetary policy becomes excessively easy in the sense of rapid credit growth – rapid money growth – and low-ish rates low relative to nominal GDP, then we tend to get the private sector leveraging up. Which is exactly what happened in the '90s and then again in the early 2000s.

But when that leverage gets very high, one of two things can happen: either the central bank can tighten, popping the bubble, or you can have a major financial accident.

That first black vertical line is essentially what has become known as the Minsky moment.

And after the Minsky moment, a radical change in behavior, all people want to deleverage because asset prices have fallen and they are overleveraged. So they hunker down, cut spending, cut investments. And if they are companies they are going to cut spending and hiring until they have deleveraged.

Meantime, governments, which abhor recessions, typically will come in with fiscal stimulus policies. But because their tax revenues have declined, they have to borrow to finance that. And so we typically see the public sector debt ratio rising.

Now, things will go on like this until the private sector has deleveraged back to a level where households and companies feel that they can start to grow again. And only once that has happened can the public sector, the government sector, start to deleverage.

Unfortunately, in Europe they are doing it the other way around. They are emphasizing the need for public-sector deleveraging. As a result, the private sector is not getting any help in its deleveraging.

So that's the theoretical concept. And I would say that no country has yet moved into Phase 3. Every major country is still in Phase 2.

If you go to Slide 26, very quickly, here we see the data for the United States, the long buildup in private sector leverage from about 205% to 296% of GDP and then the deleveraging which has occurred since then.

Meantime, the public sector has leveraged up, the government sector has leveraged up. And, as I mentioned earlier, government debt-to-GDP ratio is around 100%. So the US is close to the end of Phase 2.

I haven't yet drawn that second vertical line because interest rates are still very, very low. And it may be that, as interest rates are raised further, if they are raised further, then there may be more deleveraging to come from the private sector.

So that's where the US stands.

The UK [Slide 27] is a little bit behind the US. It has deleveraged, but not as much. And these numbers are much higher for the UK because London is such a relative to the size of the UK economy.

But contrast those two countries with Japan, on Slide 28, where the bubble bursts as far back as the end of 1989, the beginning of 1990. And look how little deleveraging there has been in Japan over all these past 25, nearly 30 years. On the other hand, the public sector has continued to ramp up the debt ratio. But of course the inflation rate has remained very, very low.

So, with this high level of indebtedness, Japan has still found it very difficult to grow and banks have been, of course, reluctant to lend.

And then, finally, on Slide 29 – and I show you this after Japan because, in many ways, having leveraged up during the period to 2008, the private sector, the red line, Europe basically failed to deleverage from 2009 to 2014-15.

And their attitude was: Sub-prime? Meh. That's an American problem.

They really did very little. But, as I say, they are deleveraging, or trying to get debt in the public sector down, which I believe is the wrong way around to do it.

I show you this because it seems to me to point to the risk that Europe is very likely to repeat this long period of very slow growth with near-deflationary conditions that Japan has been through for the past 20 years or more.

So in relation to debt generally, it's imperative after a credit crisis that balance sheets are repaired.

The US and the UK, by and large, have done a good job in that. Japan was much slower. And the Eurozone is proving also very slow to do that. And as long as we have those very high debt ratios in Japan and the Eurozone, I think growth will tend to be sub-par.

**Erik:** John, we're just about out of time, but please talk us through Slide 30 before I let you go.

**John:** This is a kind of a summary slide. What it shows you is broad money growth in all of the OECD countries. That's the black line and inflation averaged across all those countries – these are weighted averages.

What you see is a simple explanation for why inflation has been so low in so many countries. Basically we've had since the crisis much lower rates of growth of money and, incidentally, bank credit on the other side of bank balance sheets.

Naturally, along with that we've had very low rates of inflation.

So, until or unless we get faster rates of money and credit growth, to me it's inconceivable that the inflation rate will pick up sharply. And therefore there is no basis for the central banks to squeeze and terminate the cycle.

Similarly, as I showed earlier, since leverage has come down – particularly in the US and the UK – there's no reason to expect a major financial accident.

For those reasons, I firmly believe that we are much closer to mid cycle than late cycle.

**Erik:** Well, John, I can't thank you enough for a fantastic interview. Listeners: John, once again, is the Chief Economist for Invesco. So be sure to check out their [website](#) if you want to check out more of John's work.

Patrick Ceresna and I will be back as MacroVoices continues, right here at [macrovoices.com](http://macrovoices.com).