Capital-market cycles

Can good times last much longer? Insights from our capital-market-cycle model.

Global equity prices have been rising without a major pullback since March 9, 2009, i.e. for nine and a half years. Such phases are called "bull markets." The current bull market has already set so many records that the natural fear is that the party will inevitably have to end soon. Such fears are not new: In the summer of 2014, for example, a major German newspaper ran the headline: "The stock market could drop 70%."[1] In this article we investigate whether past stock-market cycles can provide insights for the current investment landscape.

The definition of a capital-market cycle

If we are to successfully analyze historical cycles, we must first define our terms. What exactly are we analyzing? Capital-market cycles, correct? But what is a capital-market cycle? Where does it begin, and where does it end? Unlike for economic cycles, there is no public institution that 'officially' determines the beginning and end of a capital-market cycle.

Arriving at a theoretical definition for capital-market cycles is relatively easy: A cycle begins with the low after a broad-based decline in prices of at least 20%, in other words a bear market, and ends at the low that follows the subsequent bear market. So far, so good. But capital-market indicators such as equity indices are very volatile and do not abide by theoretical definitions. That will prove somewhat problematic going forward.

Surveying the evidence since the early 1980s, we inevitably encounter an event in October 1987: the stock-market crash. In less than three weeks, U.S. equity market indices plummeted more than 38%, easily satisfying the definition of a bear market. Did this bear market therefore end the capital-market cycle that began in August 1982? Consideration of the environment outside the equity market raises doubts about this. There was no recession, the National Association of Purchasing Managers (NAPM) Index remained solidly above the 50 mark and in October – the month of the crash – even rose from 53.9 to 56.4. The steepness of the U.S. yield curve, measured by the spread between the yield on 10-year and 2-year Treasuries, was roughly 100 basis points and, therefore, far away from an inversion.[2] Other risk segments, such as high-yield bonds, pulled back briefly but recovered again quickly.[3] The bulk of the data did not, therefore, point to a bear market triggered by the fundamentals.[4] For the purpose of our analysis, we therefore

Christian Hille
Head of Multi Asset

Johannes Müller
Head of Macro Research

In a nutshell

- Capital markets have followed a cyclical pattern in the past, but the consistency of the results declines as the cycle matures
- Patterns from past capital-market cycles can also be observed in the current cycle
- Our analysis shows that we are not yet in the late-cycle phase

Additional sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research

[1] See Die Welt, June 4, 2014, http://www.welt.de/128719776

[2] Inversion refers in this context to the inversion of the yield curve. A yield curve inversion is characterized by long-term debt instruments having a lower yield than short-term debt instruments with the same credit quality.

[3] As measured by the ICE BofAML US High Yield 100 Index, high-yield bonds closed out 1987 with a gain of 8.1%

[4] There are numerous studies and books dealing with the 1987 crash. For the most part they conclude that a correction after the preceding strong upward move was amplified by technical factors, such as computer program trading, which tested the stock market's limits above all on Tuesday, October 20, 1987, the day after the crash. The interesting question in this context is of course whether the economy would have slid into a

don't define October 1987 as the end of the capital-market cycle that began in 1982.

That of course leaves unanswered the question as to when the capital-market cycle of the 1980s did in fact end. Next in line is the summer of 1990, when the whole environment reeked substantially more of a bear market: The yield curve inverted at the beginning of 1989, and the economy cooled. In spring 1989, the NAPM Index fell below 50 and remained below this magical level for the entire year 1990. The final blow to the economy and the equity market came in summer 1990 when Iraq invaded Kuwait and oil prices spiked. But there is one small blemish: In terms of the S&P 500, the pullback in prices was "only" 19.9%, thus failing to fully meet the definition of a bear market. But given the environment, we would nevertheless consider this the end of the capital-market cycle that began in 1982. This clearly highlights the limitations of a purely theoretical definition of a capital-market cycle.

We therefore consider the following capital-market cycles since the early 1980s:

	Start	End
1980s	August 1982	October 1990
1990s	October 1990	October 2002
2000s	October 2002	March 2009
Current cycle	March 2009	?

It would of course for many asset classes, be better if we could analyze the last five or – even better – the last ten cycles. The problem here is that usable performance data has only been available for a few decades. High-yield bonds, for example, have only been analyzed systematically since the 1980s, while inflation-indexed bonds have only been available since the late 1990s.

The next question is whether individual asset classes display a consistent pattern within capital-market cycles. To analyze this, we divided each of the three completed capital-market cycles into ten equally-long periods and examined the individual asset classes to discern a cyclical pattern. We then checked the results for consistency against the leading academic literature and books on the topic, but also against stock-market maxims.

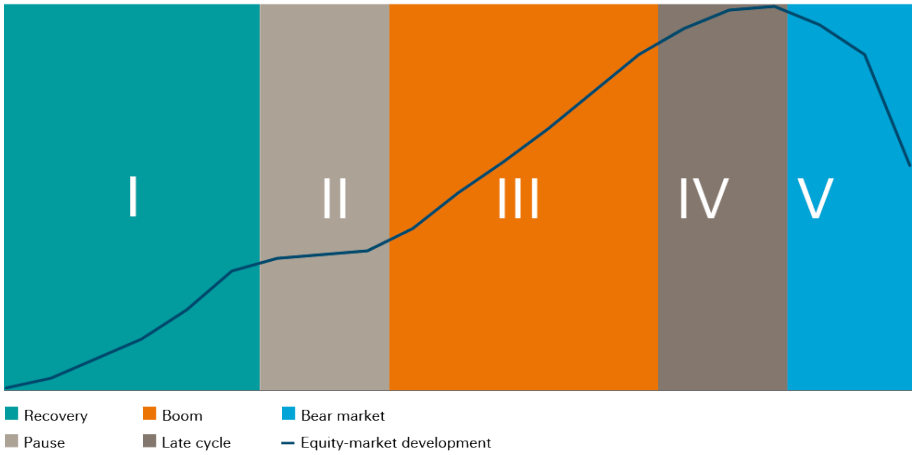
The good news is that in many cases a cyclical pattern can indeed be identified. The bad news, however, is that history rarely repeats itself in identical patterns, and there are always exceptions to the rule. The consistency of the observations declines with the length of the cycle. For that reason, a cyclical capital-market model can never replace a sound analysis of the respective current parameters, especially towards the end of the cycle. But let's now take a closer look at the cyclical pattern. We should also mention that our analysis focuses primarily on the U.S. market. Since this is by far the world's most important capital market, the insights gleaned from it should also be applicable to other markets.

Additional sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research

recession had it not been for the intervention by the Federal Reserve. This decisive intervention under the aegis of the Fed Chairman at the time is now referred to as the "Greenspan-Put".

The DWS capital-market-cycle model

Figure 1: The last five capital-market cycles produce a five-phase model.



Sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research, DWS Investment GmbH

We now take a closer look at the five phases, with particular emphasis on Phases IV and V.

Phase I – the recovery. After the painful period of a bear market, risk assets recover. Courageous investors who return to the market at such times, despite the still prevalent panic, are often rewarded. Sovereign bonds turn in a positive performance but clearly underperform corporate bonds, with high-yield bonds outperforming investment-grade bonds. Equities rise like the phoenix from the ashes and bless investors on average with double-digit returns, with conservative strategies outperforming growth strategies. In contrast, classical low-risk investments such as gold do not typically fare well in this phase. The dollar ordinarily appreciates against many other currencies.

Phase II – the mid-cycle breather. A phase with strong price gains is, as a rule, followed by a sideways move. The perception is that the markets are taking a breather to regain their strength. At times when prices stagnate, carry strategies maximizing current income by focusing on high-coupon and dividend-bearing securities make sense. In this phase, high-yield bonds typically perform particularly well.

Phase III – the boom phase. In recent cycles, the boom phase begins roughly after the start of the Fed tightening cycle. After the breather, which normally can also be observed in economic indicators, the economy and therefore the markets typically take off. In this phase, growth stocks now take the lead. Treasuries come under pressure because of the rate hikes, and the yield curve tends to flatten. Corporate bonds, high-yield bonds included, clearly outperform Treasuries. The strength of the dollar slowly peters out.

Phase IV – the late cycle. The yield curve is now flat or even inverse. The transition from the boom phase to a late-cycle phase is characterized by two developments above all: First, volatility begins to increase. The market transitions from a "low-volatility

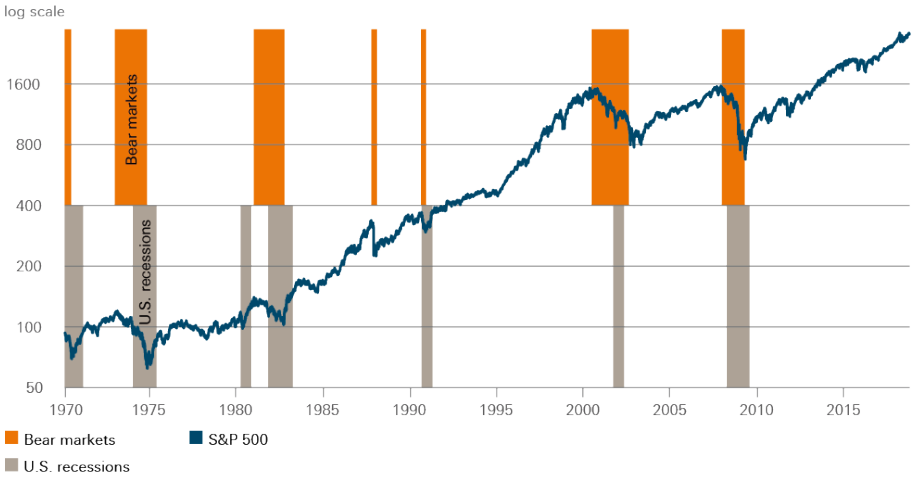
Additional sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research

regime" to a "mid-volatility regime." The environment for corporate bonds also becomes more demanding. They come under pressure from the frequent erosion of the bond covenants designed to protect creditors, and from increasing merger & acquisition activity. Equities, in contrast, continue to perform well, and it is often the case that an equity-market rally only ends after a "finale furioso." Global equities tend to outperform U.S. equities.

The prevailing view, also in the relevant literature[5], is that commodities perform better in the late cycle. But here too there were exceptions in past cycles. The situation is exactly the same for the dollar: The widely held view is that the greenback tends to depreciate in the late-cycle phase. While that appears perfectly plausible since the Fed is after all nearing the end of its tightening cycle while other central banks keep tightening, this pattern is not observed in every cycle. Unfortunately, as already mentioned, consistency declines as the late cycle matures. A weaker dollar and rising commodity prices suggest that emerging-market equities and bonds probably perform well in this phase.

Phase V – the bear market. This is the phase in the cycle that leaves a particularly bitter taste in the mouths of many investors for a long time. As already mentioned, a "bear market" is defined as a phase with across-the-board price declines averaging at least 20%. To ensure profitable long-term investments, mitigating the impact of bear markets is therefore the prime directive of capital allocation. Every bear market of the past 50 years occurred in the context of a recession with only one notable exception: the 1987 market crash, as outlined previously, deviated from the norm.

Figure 2: Performance of the S&P 500, bear markets and U.S. recessions



Sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research, DWS Investment GmbH as of 9/12/18

At this point it should be noted that in reality the causality is not merely in one direction: A pullback in security prices triggers a deterioration in the financial parameters, which in turn makes economic actors more cautious and can therefore cause financial market distortions to spill over to the real economy.

Additional sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research

[5]See for example Pring, Martin J.: The All-Season Investor: Successful Strategies for Every Stage in the Business Cycle, John Wiley & Sons, 1992

An analysis of the behavior of the U.S. markets since 1950 confirms the comments made thus far. As can be seen from Figure 3, historically, equity markets peak on average between twelve and six months before the recession and only pull back strongly in the six months before the start of a recession. This implies that the transition from Phase IV (late cycle) to Phase V (bear market) will probably happen roughly six to twelve months before the start of a recession. Figure 4 shows the development of yields on long-dated bonds: These rise before the recession and peak at the beginning of the recession.

Figure 3 and Figure 4: Average performance before and after the start of a recession

Fig. 3: S&P 500; Fig. 4: U.S. 10-year Treasury yields
Sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research, DWS Investment GmbH as of 8/31/18

Market performance in a bear market can be summarized relatively briefly, at least with respect to risk assets such as equities: There is an across-the-board selloff. Defensive sectors are by their nature impacted less strongly by pullbacks compared to cyclical stocks. High-yield bonds also take a beating and typically turn in a negative performance. In contrast perceived safe-haven investments, such as U.S. Treasuries, profit from the demand for safe havens and from central bank rate cuts. The yield curve steepens. The gold price can also profit from heightened risk aversion. It has also been repeatedly observed that the U.S. dollar appreciates in such a phase. We should, however, point out once again that the consistency of the observations declines later in the cycle. Since there are various triggers of a recession and a bear market, the pattern also varies. To this extent, conclusions about how individual asset classes perform relative to the overall market, especially towards the end of the cycle, should be treated with a great deal of caution.

The current phase of the capital-market cycle

The fact that nine and a half years have now elapsed since March 2009 suggests that we are no longer in the early phases of the cycle. Phase I (recovery) is definitively over. The Fed has been in a tightening cycle since December 2015, albeit in slow motion. The sideways move between 2015 and mid-2016, which we define as Phase II (mid-cycle breather) in the current cycle, is entirely consistent with experiences from earlier cycles.

Additional sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research

Consequently, Phase III, (boom phase), began at mid-2016. Since we are apparently not yet in Phase V (bear market), the only question remaining is whether we are still in Phase III (boom) or already in Phase IV (late cycle).

One indicator for timing the transition to Phase IV (late cycle) is the steepness of the yield curve. Here, however, the spread between 10-year U.S. Treasuries and the federal funds rate has proved more suitable than the more commonly used 10Y-2Y spread. In recent decades, the late-cycle phase began when the federal funds rate surpassed the 10-year Treasury yield and the yield curve was therefore inverse. At the moment the curve is still 100 basis points steep, which does not argue for Phase IV (late cycle). Another indicator is the real Federal Funds Rate. In earlier cycles, this rose to 4% before the late-cycle phase dawned. At the moment, the real federal funds rate is still negative, i.e. far removed from the 4% mark.

One macroeconomic indicator that can be used to determine the transition to the late cycle is the difference between the current unemployment rate and the NAIRU . In past cycles, measured unemployment on entry into the late cycle was roughly half a percentage point below the NAIRU. Given the current situation on the U.S. labor market, this criterion can already be considered met.

In summary, we conclude that at this point in time we are probably still in Phase III (boom), but already relatively far advanced within this phase. From this perspective, there should therefore still be enough time before Phase V (bear market) looms on the horizon.

It should, however, be borne in mind that the current business cycle is characterized by a couple of special features. The first is the reduction of consumer and – in part – corporate debt. Furthermore, since 2008 the central banks have in many cases been using unconventional instruments with no historical data on their impact or possibly undesired side-effects. Independent of this, it has also occurred that a cycle came to an abrupt end in the past, such as on the outbreak of a war or a sharp rise in the price of oil. In this regard, the trade conflict would be one recent example that spontaneously comes to mind.

Conclusion

We see capital-market-cycle analysis as a tool that can supplement other market-analysis instruments. This tool suggests that the capital-market cycle is not yet over but has in fact still some years to run. The fact that the end of the bull market is already a topic of such frequent discussion also argues against it ending any time soon. There's life in the old dog yet. But this should not be taken as gospel.

Additional sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research

Glossary

Basis point

One **basis point** equals 1/100 of a percentage point.

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Bear market

Technically, a **bear market** refers to a situation where the index's value falls at least 20% from a recent high.

Bull market

A **bull market** is a financial market where prices are rising - usually used in the context of equities markets.

Carry (strategy)

Carry is a strategy in which an investor sells a certain currency with a relatively low interest rate and then buys another, higher-yielding currency.

Coupon

Coupons are interest rate payments made on a bond.

Covenants

Covenants designate contractual obligations or restrictions intended to protect the financial interests of creditors.

Emerging markets (EM)

Emerging markets (EM) are economies not yet fully developed in terms of, amongst others, market efficiency and liquidity.

Federal funds rate

The **federal funds rate** is the interest rate, set by the Fed, at which banks lend money to each other, usually on an overnight basis.

Greenback

Greenback is a commonly used expression for the U.S. dollar.

High Yield (HY)

High-yield bonds are issued by below-investment-grade-rated issuers and usually offer a relatively high yield.

Inflation-indexed Bond

An inflation-indexed bond is a bond where the principal and / or coupon is indexed to the consumer price index.

Additional sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research

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Investment grade (IG)

Investment grade (IG) refers to a credit rating from a rating agency that indicates that a bond has a relatively low risk of default.

ISM Purchasing Managers Index

The ISM Purchasing Manager Index, published by the Institute for Supply Management, measures economic activity by assessing the sentiment among purchasing managers. It is an important indicator of the economic health.

Mergers and acquisitions (M&A)

Mergers and acquisitions (M&A) are the two key methods of corporate consolidation. A merger is a combination of two companies to form a new company, while an acquisition is the purchase of one company by another in which no new company is formed.

Non-Accelerating Inflation Rate of Unemployment (NAIRU)

The **Non-Accelerating Inflation Rate of Unemployment (NAIRU)** describes rate of unemployment refers to a level of unemployment below which inflation accelerates.

Recession

A **recession** is, technically, when an economy contracts for two successive quarters but is often used in a looser way to indicate declining output.

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Risk aversion

Risk aversion is a characteristic of investors to prefer the asset with lower risk and thus accept a lower potential yield.

S&P 500

The **S&P 500** is an index that includes 500 leading U.S. companies capturing approximately 80% coverage of available U.S. market capitalization.

Spread

The **spread** is the difference between the quoted rates of return on two different investments, usually of different credit quality.

Treasuries

Treasuries are fixed-interest U.S. government debt securities with different maturities: Treasury bills (1 year maximum), Treasury notes (2 to 10 years), Treasury bonds (20 to 30 years) and Treasury Inflation Protected Securities (TIPS) (5, 10 and 30 years).

Additional sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research

U.S. Federal Reserve Board (the Fed)

The **U.S. Federal Reserve Board**, often referred to as "**the Fed**", is the central bank of the United States.

Volatility

Volatility is the degree of variation of a trading-price series over time. It can be used as a measure of an asset's risk.

Yield curve

A **yield curve** shows the annualized yields of fixed-income securities across different contract periods as a curve. When it is inverted, bonds with longer maturities have lower yields than those with shorter maturities.

Additional sources: Bloomberg Finance L.P., Federal Reserve Bank of St. Louis FRED, National Bureau of Economic Research

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