Core Matters

How do assets perform in a maturing business cycle?

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Authors: Luca Colussa, Michele Morganti, Vladimir Oleinikov, Federica Tartara, Martin Wolburg, Paolo Zanghieri

- Following an unusually prolonged economic upswing, we may be approaching a late stage of the US cycle, characterized by slower growth and shrinking profit margins.
- While we are not there yet, investors may ask how to best position for a maturing cycle.
- Looking back at late-cycle periods from the early 1980s, we find that US equities tend to outperform long-term sovereign bonds while corporate spreads widen, in both the US and euro area.
- As a complementary analysis, we review the impact of monetary policy and long-term yields on the relative performance of equities vs bonds. Our evidence suggests that, while the best has passed, equities can still outperform.
- In conclusion, while we have moved away from the goldilocks environment, the outlook for equities is still overall benign. But with the cycle maturing, we are moving towards a more challenging zone.

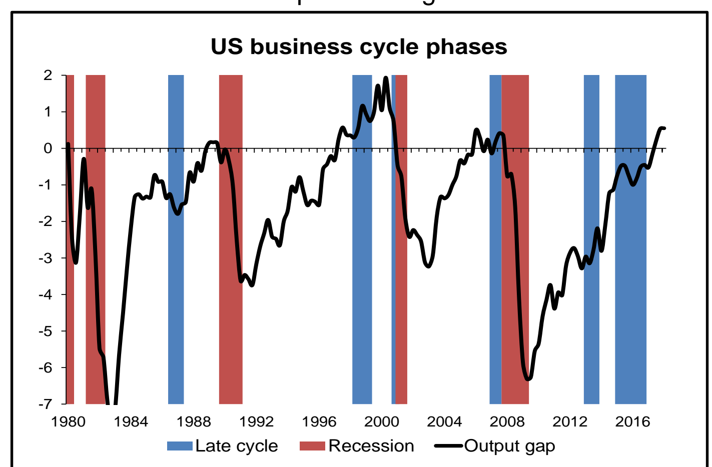
The record long expansion in US real GDP (37 quarters so far) and the gradual pickup in inflation have started raising concerns about the beginning of the end of the current cyclical upswing. While the tax reform implemented in late 2017 and the subsequent increase in government spending will stretch the length of the current cycle, things may change going into next year, although we currently expect only a mild deceleration in 2019. The petering out of the fiscal stimulus and the expected ongoing monetary tightening by the Fed should result in a softening in growth. As the cycle matures, a revision of the asset allocation would become more pressing.

In this paper, we assess which phase of the business cycle the US economy is currently experiencing, by using two different approaches: one based on the behavior of key macroeconomic variables (employment, labor cost and inflation) and a second one relying on the dynamics of the corporate profit-to-GDP ratio. We then investigate the relative performance of asset classes during the cycles. Finally, we review the impact of central banks' policy rates and long-term yields

Late cycle: A macroeconomic view

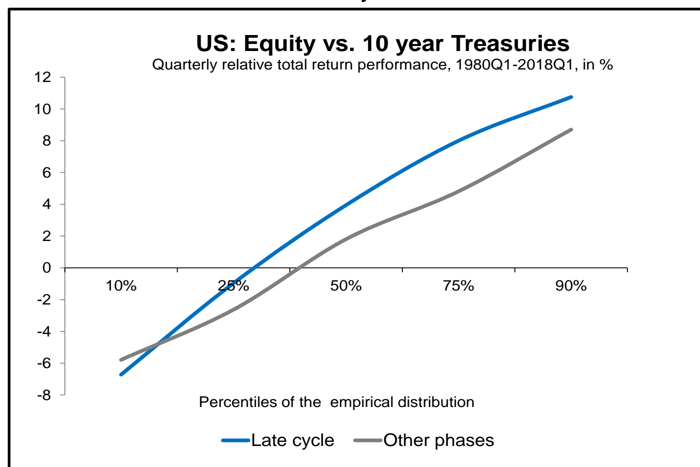
While there is an established methodology to assess *ex-post* when the economy is in a recession or expansion, our aim here is to find a measure of the late-stage of the cycle based on a limited set of readily available economic variables. We first define a late-cycle phase as one in which employment expands, but at a slowing pace, and the increase in input costs starts putting pressure on margins. We then operationalize this definition and define a late-cycle quarter as one in which: annual employment growth is positive but lower than a year before and the 3-quarter moving average of unit labor costs exceeds inflation. Based on this definition, a late cycle period may not necessarily be followed by a recession (when economic activity contracts). A renewed acceleration may indeed materialize, thus resulting in an extension of the cycle.

We find that this late cycle indicator, applied to the US, precedes the last two recessions (2001 and 2008/09) and is associated with other periods of growth deceleration.

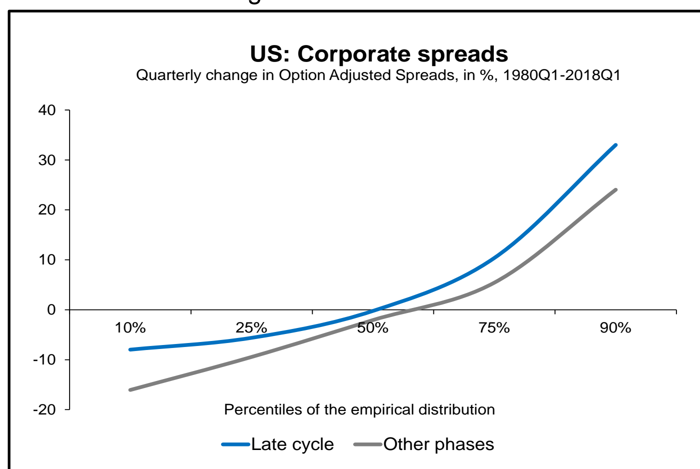


In terms of asset performances, we find that in the late cycle phases, the total return of the S&P 500 index exceeds that of a 10-year Treasury bond constant-maturity by nearly 200 bps on a quarterly basis. More precisely, this refers to the median outcome (50% percentile) of our sample

(1980 Q1 to 2018 Q1) and corresponds to the distance between the two lines in the chart below. Looking at tail risks, however, we found out that the worst quarterly relative losses (measured as the 10th percentile of the distribution) are rather similar across the cycle.



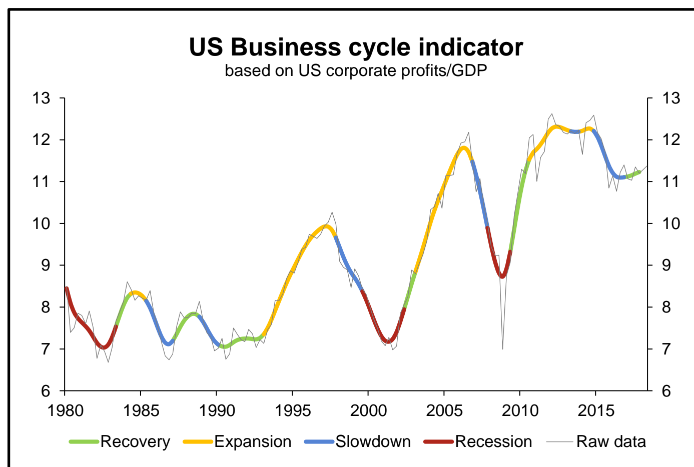
Focusing on the credit market, we find that **corporate bond spreads tend to widen more during the late cycle phase than in other phases on the cycle on average**. Also tail risks are larger.



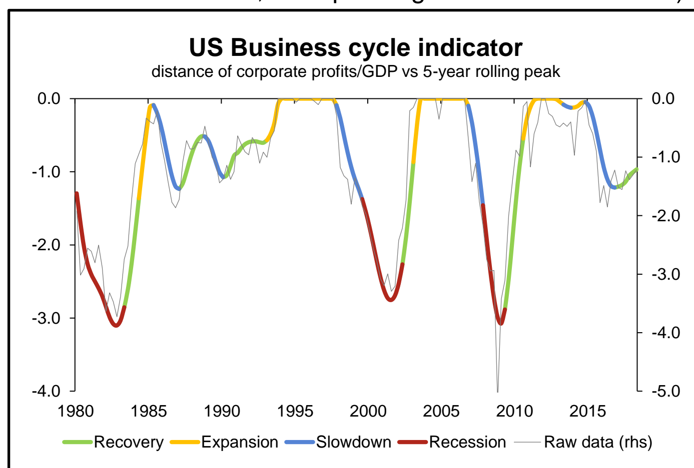
Turning to the euro area (EA), our analysis suggests that the US cycle is a dominating factor in explaining the relative performance between the different asset classes. Regarding European equities (MSCI EMU index), the US market is of high significance and from a statistical point of view (Granger causality) drives the European market. Likewise, when investigating the change in the total return of government bonds, it turns out that the performance of US bonds as well as the US late cycle indicator help to explain the EA market performance whereas the euro area late cycle indicator is not helpful in this respect. Even more pronounced was the importance of the US cycle in case of EUR-denominated Investment Grade corporate bonds. The change in their total return is largely explained by the US market and the US late cycle indicator.

The profit-cycle indicator

We also build an indicator based on US corporate profit-to-GDP ratio, and identify the four phases that characterize a business cycle: **Recovery**, **Expansion**, **Slowdown** and **Recession**. We take the trend in the US NIPA profit-to-GDP ratio and calculate the distance from the 5-year rolling peak. The cycle indicator combines the level and the changes in this variable. During the slowdown phase – the period that resembles the late-cycle indicator presented above – corporate profits as a share of GDP decline from the peak. After surpassing a given level (we assume a decline of 1.5 pp in the profit ratio from the peak to be the key threshold), the slowdown phase turns into an outright recession.



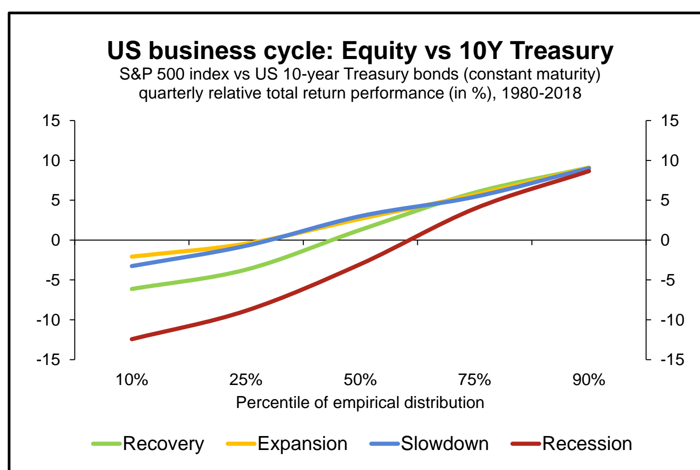
We find that **the US is not in a late-cycle phase yet**: indeed, accordingly to the profit cycle indicator we are still in a recovery phase, i.e. a phase characterized by a rise in the share of profits on GDP, but still distant from the 5-year rolling peak in the ratio (the ratio rose to 11.3% in Q1 2018 vs 10.8% in Q2 2016, after peaking at 12.6% in Q4 2014).



Relative asset performance in the profit cycle

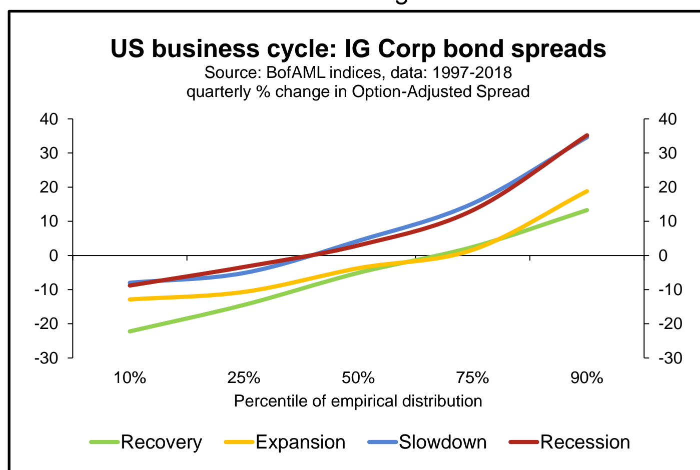
We then investigate how the performance of the asset classes (equities and bonds) behaves in each phase of the profit cycle. In particular, we consider the quarterly relative performance (total return differential, from 1980) of the S&P 500 index versus the 10-year Treasury bond constant-maturity index. We also analyze the quarterly dynamics of corporate bond spreads. We look at the distribution of the outcomes for each phase of the cycle (recovery: 37 quarters/observations; expansion: 53; slowdown: 34; recession: 30) in order to have insights also on the dispersion around the median return.

The median excess return of equities over Treasuries does not deteriorate significantly moving from the expansion towards the slowdown phase and it is negative only in the recession phase.



The highest bracket (90° percentile) of excess total return of equities is very similar across all the phases of the business cycle. On the contrary, the lowest decile varies among the different phases, with the worst result in recession and the best in expansion. Conclusions are twofold: firstly, **outside recession periods equities are to be favored over bonds**, even in slowdown periods; secondly, it seems that **only in recession investors' risk aversion surges appreciably and comes as the main driver of lower equity performance and, more importantly, of deep equity potential losses versus bonds**.

Another interesting finding of our analysis is the dynamics of corporate spreads during the cycle. Differently from equities (which tend to underperform only in the recessionary phases), **corporate bond spreads start to widen substantially already in the slowdown phase** and they continue to do so in recession. On the contrary, they tighten during recovery and expansion phases. Our findings apply to both Investment Grade and High Yield bonds.



Sub-phases analysis

We then further divide each phase of the profit cycle (Recovery, Expansion, Slowdown, and Recession) into three sub-phases (the beginning, the central and the last one). We consider business cycle phases which lasted more than six quarters in order to increase the reliability of the analysis, even if we have to take into account that the division in sub-periods reduces the numbers of observations available. For each of these sub-phases we calculate the average quarterly outperformance of the total return of equity (S&P 500) over US Treasuries and the worst relative loss over a quarter. If we look at the maximum quarterly loss (table below), we can notice that each sub-period of the recession had the worst results. In recession the central phase has been particularly worrisome, and this holds true both in terms of median relative returns and in terms of tail risks (large equity drawdowns vs bonds).

US equity vs bond Maximum quarterly loss			Avg length (quarters)	Full phase (maximum)
Recovery			6	-11.2%
I	II	III		
1.1%	-11.2%	-1.9%		
Expansion			10	-4.6%
I	II	III		
-4.6%	-2.5%	-0.3%		
Slowdown			6	-7.9%
I	II	III		
-3.4%	-7.9%	-0.7%		
Recession			10	-34.9%
I	II	III		
-14.8%	-34.9%	-15.1%		

* I is is the first sub-period of each phase, II the central, III the last one
S&P 500 index vs US 10-year Treasury bonds (constant maturity)
Data from 1980 to 2018

As we noted above, our profit-cycle indicator suggests that the US is not yet in a slowdown / late cycle phase. Indeed, it currently points to a recovery phase (rising profit-to-GDP ratio, but still lower than the 5-year rolling peak). Usually this phase is characterized by an outperformance of equities vs bonds, although market corrections can be larger than in the expansion period (when corporate profits mark new highs quarter after quarter). The current recovery phase will likely be followed by a renewed slowdown, as we deem unlikely that corporate profits reach new highs in terms of GDP. On a historical perspective, the current dynamics are more similar to the ones seen in late 1980s / early 1990s rather than those preceding the recessions and market crashes of 2001 and 2008/09.

Sector analysis

Using the US profit-cycle indicator as a signal factor, we perform an analysis of the relative quarterly performance (total returns) of sectors and styles in Europe in each of the four phases of the business cycle. We take 1991 as a starting point, since the economy was entering into a new economic cycle (more similar to the actual one), not characterized anymore by very high levels of inflation and nominal yields (see table below).

Assuming that the current phase of the US cycle, Recovery, will be followed by a Slowdown in 2019, we can make the following observations based on our analysis of the major shifts (positive and negative) in the relative performance of European sectors. As can be noticed in the table next page, while the IT and the Telecoms sectors in the Recovery phase were the worst performers, they turned out to be the best ones in the Slowdown phase. On the contrary, while the Banking sector was the best one in Recovery, it was among the worst ones, together with Pharma and Oil, during Slowdown periods. Over the whole period the IT sector stood out as the one with the largest outperformance, while the Banks and the Telecoms sectors had the lowest performance.

If we consider Defensives and Cyclicals, we can observe that Defensives outperformed, by a significant amount, in Recession and also performed better than Cyclicals in Slowdown. On the contrary, Defensives underperformed Cyclicals in Expansion and they also did slightly worse in Recovery.

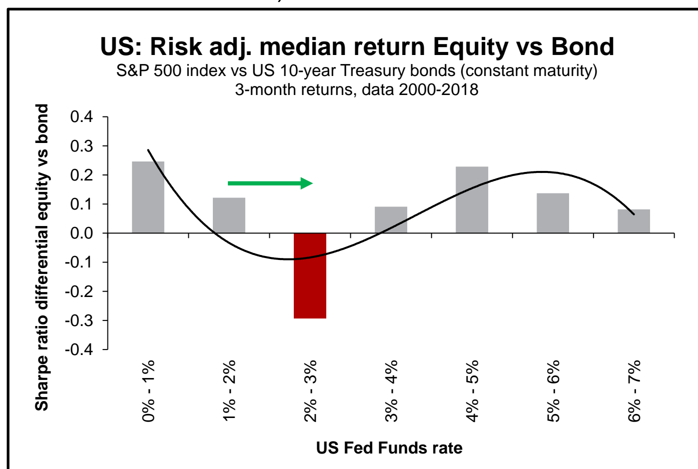
Looking at Growth and Value styles, the relative performance of Value sectors vs Growth ones deteriorated moving from Recovery to Slowdown, as expected, but was undoubtedly the one to be preferred during the entire period.

Sectors	average relative quarterly performance				average
	Recovery	Expansion	Slowdown	Recession	across cycles
EUROPE_sector_Oil	-0.92	0.67	-1.88	2.52	0.19
EUROPE_sector_Banks	2.35	0.15	-1.57	-1.57	-0.10
EUROPE_sector_Food&Bev	1.25	-0.73	0.07	2.73	0.33
EUROPE_sector_Insurance	-0.65	0.45	0.33	-0.53	0.08
EUROPE_sector_CapGoods	0.40	0.42	0.56	0.12	0.40
EUROPE_sector_Materials	1.32	0.05	0.02	1.20	0.45
EUROPE_sector_Utilities	0.49	-0.23	0.03	0.41	0.05
EUROPE_sector_Pharma	0.05	0.62	-1.81	2.98	0.42
EUROPE_sector_Tlc	-1.04	-1.12	3.68	-0.15	0.01
EUROPE_sector_IT	-1.41	1.42	3.60	1.76	1.43
EUROPE_Value_vs_Growth	1.15	0.62	-0.05	0.26	0.45
EUROPE_sector_Cyclicals	0.02	0.26	-0.17	-0.43	0.21
EUROPE_sector_Defensives	-0.03	-0.53	0.34	0.88	-0.43
Avg market performance	**3.04**	**4.83**	**3.30**	**-4.69**	**2.68**

Note: Sector performance since 1991 is measured relative to the broad market (proxied by the Datastream total market Europe index). Returns are in %. Maximum values across sectors are marked in blue, the minima are in red.

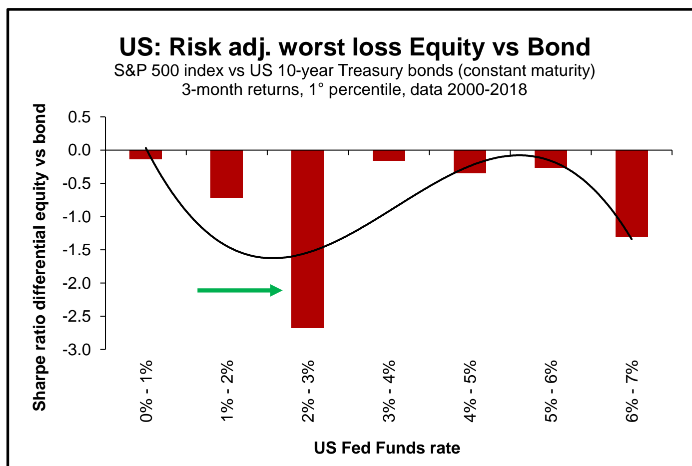
Impact of short and long-term yields in the US

We then run a complementary analysis by evaluating the impact of policy and market rates (both real and nominal) on the relative total return performance of equities and bonds; cycle phases are not considered in this exercise. To do so, we also consider the risk-adjusted relative performance (i.e. we compute the Sharpe ratios). To complete the analysis, we take into account not only the median, but also the maximum quarterly loss (the worst 1% in the empirical distribution): Investors also make their decisions looking at what can be the worst loss they may incur (relative risk considerations).

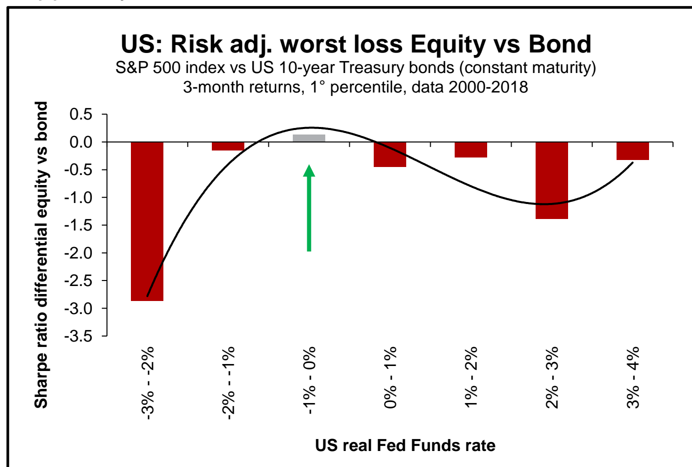


To start with, given the importance of the monetary policy phase, we consider different brackets of the Fed Funds rate (when the level was between 0% and 1%, from 1% and 2% and so forth) and calculate the relative performance of equities over bonds in the 50° percentile (median) and in the 1° percentile (worst loss). We consider monthly data between 2000 and 2018.

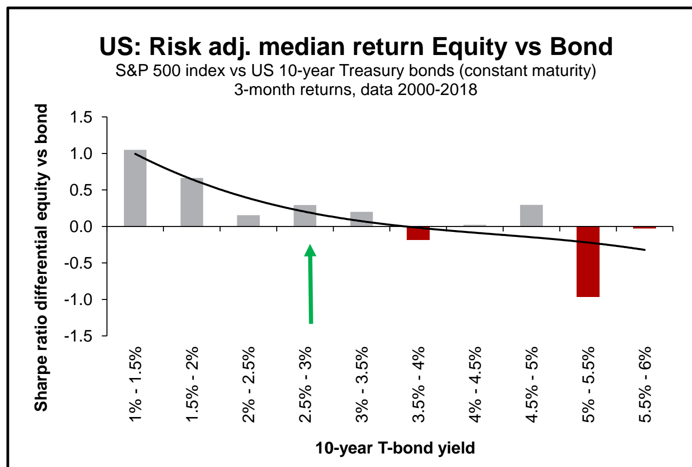
If we start with the Fed Funds rate (FFR), we see that at present we are not yet in danger zone but getting there (Fed Funds rate corridor is currently at 1.75% to 2%). The 2-3% threshold of the Fed funds rate is key (hurdle area) both in terms of median returns and of maximum quarterly losses.



For what concerns the real FFR – calculated by subtracting the headline inflation rate from the upper band of the nominal FFR corridor, results do not change appreciably if the core rate is used – we have just entered into the -1% to 0% bracket. Relative drawdowns are not unfavorable for equity until the Fed hikes 3 more times. We expect this to happen by Q2 2019.



Let us consider the long end of the curve. As nominal 10-year Treasury yields move towards the 3.5%-4% yield bracket, the quarterly relative performance of equity vs bonds deteriorates.



The relative maximum quarterly loss of equity vs bonds (chart below) becomes negative in the 3-3.5% bracket and

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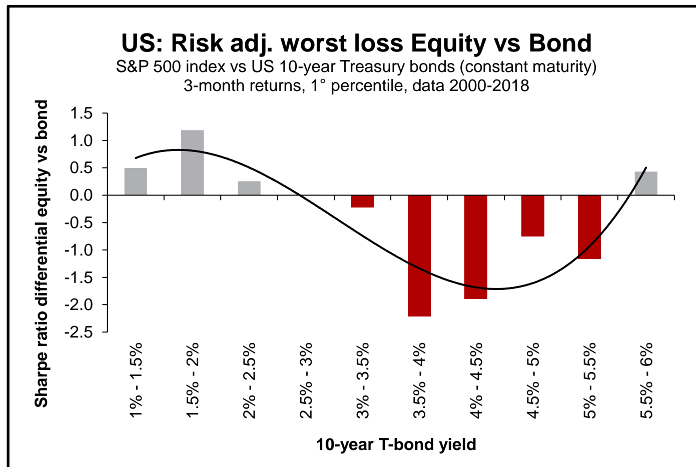
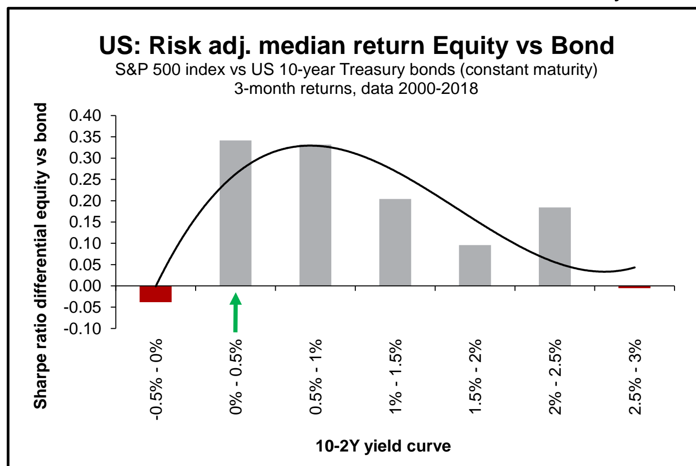
beyond. It is worth noting that 3.5% for US Treasury yields is a level that we may struggle to reach in the coming quarters despite the expected tightening by the Fed.



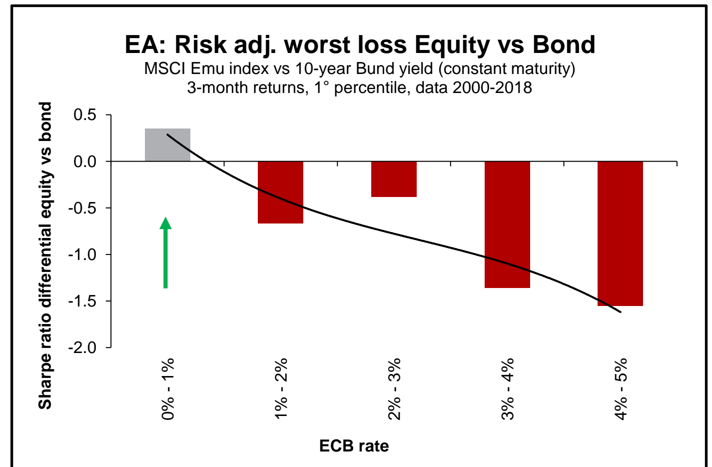
As long as the 10-year real Treasury bond yield – defined as 10-year nominal yield less headline inflation – lies in the 0-1% bracket, the median total return of equities adjusted for risk remains solidly above that of bonds. When real yield increases it deteriorates, also in terms of downside risks (maximum quarterly loss). Looking at real yields results may be more difficult to interpret because sometime they seems to be more influenced more strongly by expected growth and in other circumstances they tend to reflect more financial conditions or inflation uncertainty.



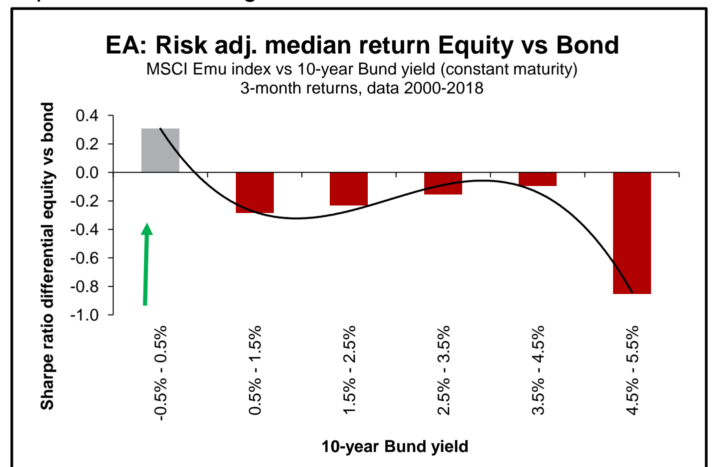
Let us also consider the steepness of the US yield curve, as it tends to anticipate business as well as monetary policy cycles. The 10-2Y yield curve does not give strong insight in explaining relative equity-bond performance at this stage. Equities tend to strongly outperform when the curve is between 0% and 1%. However beyond 2.5% or below zero (inverted yield curve) equities are more likely to struggle. Indeed, a yield curve moving in negative territory is usually associated with an increasing probability of the economy approaching a recession, and equities tend to underperform when there is an economic contraction. The recent acceleration in the flattening trend of the US yield curve suggests that best momentum for equities is likely approaching an end. That said, we do not anticipate an inversion of the yield curve this year nor in 2019.

Yield levels and equity vs bond returns in the EA

In the cycle analysis above, we find evidence that the US cycle does a better job than the EA's at explaining the relative performance among asset classes. That said, we also test the impact of ECB's policies as this is not directly included in the previous analysis. Interestingly, we notice that as long as the ECB main refi rate remains in the 0%-1% bracket, the equity return tend to outperform (even if slightly so) the bond one in most of the cases.



For the same threshold of the ECB rate (0%-1%), the downside risks for equities (measured as maximum quarterly loss in relative terms) are less severe compared to bond ones. This is explained by the fact that very low yield buffers do not protect bond investors from a rise in yields: when they are low, the risk of a large increase in yields is significant and the small carry is not able to completely offset negative price movements. On the contrary, when the ECB main refi rate moves above 1%, the drawdowns for equities become larger.



Focusing on longer-dated Bund yields, we find out similar results. The key message is that the current level of the 10-year Bund yield (at less than 0.5% at the moment) is still benign for equities, which should then be preferred to bonds.

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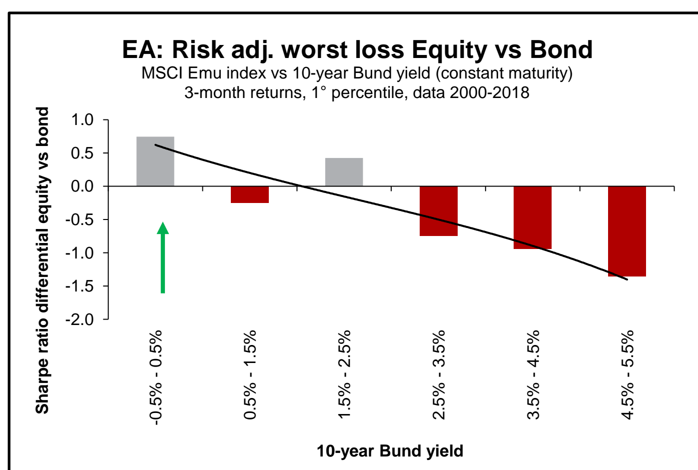
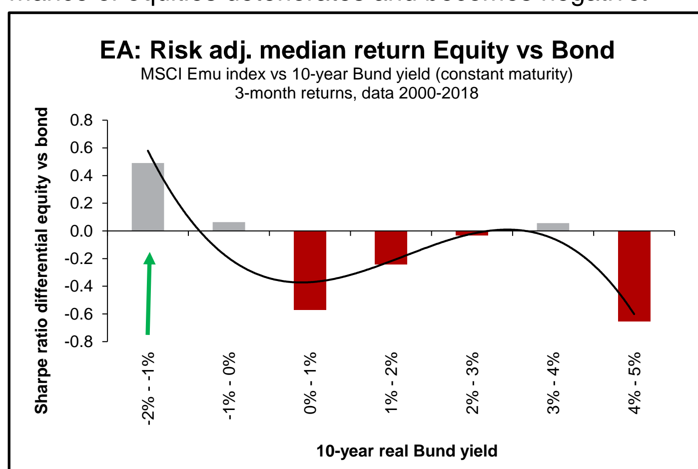


When the 10-year Bund yield moves above 0.5% the performance of equities vs bonds deteriorates progressively. That said, in terms of drawdowns the real “no comfort” zone begins at 10-year Bund yield level above 2.5%, a level that seems hard to reach in the foreseeable future.

Also the 10-year real Bund yield – calculating by subtracting headline inflation from the nominal yield – is still in a “safe” zone for equity returns over bonds, but as soon as real long-term yields move towards zero, the outperformance of equities deteriorates and becomes negative.



Conclusions

The cycle is ageing, but not dying yet. Neither the US nor the EA were in the late stage of the cycle as of Q2 2018, given rising employment. In the US, profitability is even staging a mild recovery. Based on consensus projections for corporate profits and real GDP, the US should remain in a recovery phase until Q4 2018, before entering again into a slowdown from Q1 2019 onwards. In the EA, some late cycle signals are emerging, e.g. annual employment growth moderated in Q1 while wages are picking up. However, unit labor cost growth is still low (0.8% yoy in Q1) thereby lacking considerably behind actual as well as projected inflation. Therefore, we deem it unlikely that the EA already enters the late cycle stage in 2018.

The signals coming from the business cycle indicator and the yield level analysis suggest that the **best period for equities is over; but we are not in the danger zone yet**. Therefore both the economic cycle analysis and the yield level analysis still support an asset allocation tilted towards an overweight of equity over the next 6-12 months.

Imprint

Head of Research Vincent Chaigneau (vincent.chaigneau@generali-invest.com)

Head of Macro & Market Research: Dr. Thomas Hempell, CFA (thomas.hempell@generali-invest.com)

Team:
Luca Colussa, CFA (luca.colussa@generali-invest.com)
Radomír Jáč (radomir.jac@generali.com)
Jakub Krátký (jakub.kratky@generali.com)
Michele Morganti (michele.morganti@generali-invest.com)
Vladimir Oleinikov, CFA (vladimir.oleinikov@generali-invest.com)
Dr. Martin Pohl (martin.pohl@generali.com)
Dr. Thorsten Runde (thorsten.runde@generali-invest.com)
Dr. Christoph Siepmann (christoph.siepmann@generali-invest.com)
Dr. Florian Späte, CIIA (florian.spaete@generali-invest.com)
Dr. Martin Wolburg, CIIA (martin.wolburg@generali-invest.com)
Paolo Zanghieri, PhD (paolo.zanghieri@generali.com)

Issued by: Generali Investments Europe Research Department
Cologne, Germany · Trieste, Italy
Tunisstraße 19-23, D-50667 Cologne

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In Italy:
Generali Investments Europe
S.p.A Società di gestione del risparmio

Corso Italia, 6
20122 Milano MI, Italy

Via Niccolò Machiavelli, 4
34132 Trieste TS, Italy

In France:
Generali Investments Europe
S.p.A Società di gestione del risparmio

2, Rue Pillet-Will
75009 Paris Cedex 09, France

In Germany:
Generali Investments Europe
S.p.A. Società di gestione del risparmio

Tunisstraße 19-23
50667 Cologne, Germany

www.generali-invest.com

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