ROBECO
The Investment Engineers

2018 5-YEAR EXPECTED RETURNS 2022

COMING OF AGE

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5-YEAR EXPECTED RETURNS
2022

COMING OF AGE

The Long-term Expected Returns (Chapters 3 and 4 in previous editions of our 5-year Expected Returns) have now been made into a stand-alone publication. Please visit www.robeco.com/expectedreturns for more information. Both documents have been compiled by Robeco Investment Solutions (Lukas Daalder, Peter van der Welle, Jaap Hoek and Leon Cornelissen).

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1 Executive summary

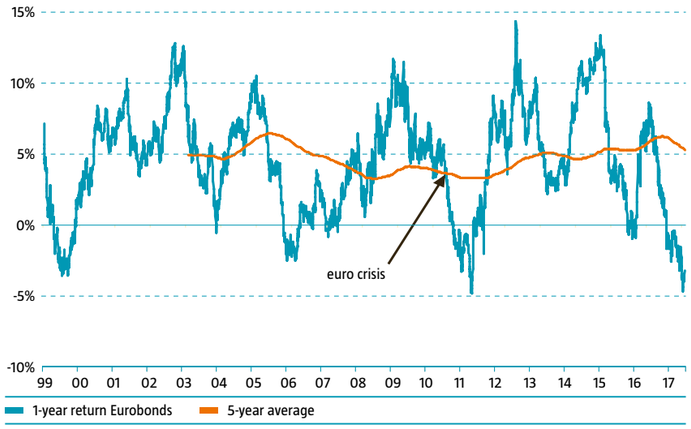
'It's always darkest just before dawn' was the title of last year's Expected Returns, a title which seems to have captured the mood at the time pretty well. Investor pessimism reigned supreme, with expectations on future growth and inflation at depressing levels and the outlook for stocks soft at best, while many expected bond yields set to stay depressed indefinitely. It was a dark time without doubt and it appears to have indeed been the low point, as things have improved since.

We start this year's Expected Returns with a warning, a disclaimer of sorts. This publication assesses the kind of returns one can expect to see in financial markets over the next five years. The catch is that five years is a very long time. Everyone knows this from personal experience, of course, but it is often forgotten when it comes to financial markets and economic trends. The here and now is the main focus. The reality is that much of what preoccupies financial markets in the present – the timing of ECB tapering, the lack of inflation and wage growth and even Trump – will have been overshadowed by other concerns and opportunities before 2022 is upon us. Most election cycles last four years, which means that the political environment may have completely changed five years from now. The same applies to most events that happen in financial markets. The 2013 taper tantrum, the 2015 bear market in high yield, even something as huge as the euro crisis all came and went within five years.

Make no mistake: these events felt scary at times and we should certainly not ignore their longer-term ramifications (we address the future of the euro crisis in our special on the Eurozone 'To integrate or to disintegrate – that is the question'), but in terms of the average five-year returns, these events tend to have a relatively minor impact. That's partly due to the averaging effect and partly because mean reversion normally takes place within a shorter timespan than five years. Even ordinary recessions – those that do not earn the distinction of 'Great' – have only a limited impact on five-year average returns. We mention this specifically, because that is exactly what we expect in our baseline scenario: a mild recession sometime in the next five years, one that has only a limited impact on five-year returns. Of course, risky assets will respond appropriately (decline) and it will get ugly at times, but they will respond equally once recovery mode is reached (recover).

The purpose of the warning is simple: to block out all the daily noise and focus on the structural underlying trends. We do not aim to give an accurate, detailed account of what will happen the next five years: we do not profess to know that. We present the broader trends, the averages.

Figure 1.1: Spot the euro crisis



Source: Bloomberg, Robeco

Bouncing cats at dawn?

Compared to expectations, 2017 is shaping up to be better than expected in terms of economic growth and stock markets continue to trend up, while European bond yields have rebounded out of negative territory. Whether that means dawn has broken, is still open for debate, though. One could easily argue that this is the proverbial bouncing dead cat, the exception that proves the rule. The underlying question is whether the slow recovery from the Great Recession can be attributed to an unlucky sequence of one-off headwinds (banking crisis, euro crisis, oil market crisis, emerging market crisis) or whether there has been a more structural driver at play, a question which we address in our special on secular stagnation: 'Have we entered the economic ice age?' The importance of this question should be clear. If we have entered an ice age, the 2017 rebound will be short-lived, with bond yields likely to decline again and the outlook for risky assets becoming vulnerable. If not, the reverse looks more likely. Our critical assessment shows that certainly not all of the secular stagnation arguments are convincing. While some of the underlying trends have weakened during the last couple of years, some structural factors (aging, inequality, excess savings in emerging markets) are likely to persist. However, a 'natural' solution may be just around the corner, in the form of tighter labor markets leading to higher wages. Not only would this end the decade-long period of disinflation, creating room for more consumption, it would also have a neutralizing effect on inequality and prepare the ground for a labor-saving investment boom.

Coming of age

So what is this year's theme, the common thread? If we look at the various trends that we expect to shape the financial markets in the five years ahead, coming of age seems to be a recurring theme. Narrowly defined, 'coming of age' refers to reaching adulthood, but is more broadly interpreted to mean the start a new stage of development, the next step in an ongoing evolution. Using this broader meaning, we have seen numerous developments in recent years and decades that are now on the verge of entering a new stage, which can have important consequences for financial markets moving forward.

The influence of central banks is the first thing that springs to mind. The Great Recession that started in 2008 prompted central banks around the world to push interest rates to unprecedented lows (negative in Europe and Japan), and sent them on a buying spree to the tune of USD 7,200 billion in assets, most of which was in the form of bonds. It has not left the financial markets unaffected. In fact, many have argued that it mainly impacted the financial markets and the underlying economy to a much lesser degree. Central banks have greatly tightened their grip on the bond markets, with the Bank of Japan's yield curve control being the most extreme example. Yields have dropped to unprecedented lows, prompting the whole search-for-yield quest in bonds, while acting as a liquidity support for the riskier assets.

QT will be no cutie?

What will happen to financial markets once central banks start to reverse this process? Their knee-jerk reaction will likely lead to a reversal of the low bond yield environment, a widening of credit spreads and a more uphill battle for equities. As logical as this sounds, it also assumes that central banks are unconcerned with financial markets, which is simply not the case. Just as parents won't suddenly let go of their children from one day to the next, central banks will only gradually implement Quantitative Tightening (QT). Central banks have learned the lesson of the 2013 taper tantrum, when US Treasury yields almost doubled within only six months. We are somewhat cautious with respect to the scope of the balance sheet reduction by the central banks, not least because of the expected (mild) recession. Still, they will ensure markets take first steps towards 'independence' from the liquidity driven support, which will indeed take some time to get used to. Volatility may rise from the current remarkably low levels, a topic which we address in our 'Getting back to "normal"' special on volatility.

The euro is a millennial

Coming of age also applies to the euro. 'Born' in digital form in 1999, the currency can be considered a true 'digital native', a term also used to describe the millennial generation. In the next five years, having survived its 'youth' and 'puberty', the currency will celebrate its 20th birthday. By all measures, it has been a pretty volatile process. Following the first blissful ten years, things went sour when the Great Recession hit back in 2009. The crisis exposed some fundamental flaws in the system, including the Greek government's fraudulent bookkeeping, an overexposed banking system and a financial bubble in the peripheral countries' real estate sector, as well as weak overall fiscal discipline. It took a number of Greek rescue packages and Draghi's 'whatever' to keep the euro from derailing in its youth. Despite the central banks' monumental efforts to save the euro, peripheral spreads have not returned to the 2000-2008 levels. Furthermore, the popularity of the numerous 'X'-exits shows that there is still a lot of uncertainty in the market as to the currency's future.

To integrate or disintegrate, that is the question. In our special on the future of the euro, we take a look at what's in store for the currency. Are the problems just temporary, i.e. a normal part of 'growing up', or will the volatility continue indefinitely? It is easy to argue the latter: there are many different scenarios by which the Eurozone could disintegrate. The rise of populism, political tensions between member states, growing economic divergence, the unwillingness of one group of countries to help another, the collapse of a national banking sector, government debt spiraling out of control: the list is long. As a currency area, the Eurozone is far from ideal, which makes it somewhat fragile. According to this view, volatility is bound to re-emerge before long and eventually, just saying 'whatever' may prove to be too costly. There is one very important reason why this cannot be allowed to continue: the cost of having any country leave the Eurozone would be crippling. The banking sector would have to be nationalized, capital and trade flows would be seriously disrupted and the government would most likely default on its debts. Although disgruntled electorates tend to ignore such risks, the Brexit process set to unfold over the next several years will no doubt lead to a broader awareness that you can't 'have your cake and eat it too'. We expect that logic will prevail, leading to further integration, rather than disintegration.

Credit cycle blues?

On the subject of reaching a new stage, one cannot ignore corporate debt. Corporate debt has continued to rise and it looks unlikely that this will continue unchecked. As we pointed out in last year's report, debt tends to be viewed as a one-dimensional negative, while it is actually a two-sided coin with assets on the positive side. That said, as we concluded then, too much debt does pose a threat. One concern in this respect is China, where private debt is now 220% of GDP, while non-performing loans – official or otherwise – are trending up. The other is the US' maturing credit cycle with the recent weakening of the credit quality and covenants of outstanding debt, a clear sign that a negative inflection point is drawing near.
It is because of these developments that our baseline scenario includes a recession. We have therefore lowered our average growth and inflation outlook in our baseline scenario. However, as we expect this to be an ordinary rather than a major recession, the impact on average five-year returns is not that drastic.

General outlook for returns

As for financial markets, in general, this year we expect assets to become more expensive than predicted last year. Despite the fact that the earnings recession has ended, stock markets have continued to rise more than underlying earnings, credit spreads have tightened regardless of an underlying erosion of the credit quality, while high yield spreads have quickly recovered from the 2015 oil market scare. The main exception in terms of an asset class that is becoming more attractive compared to last year is government bonds, although, in our opinion, the rise in yields has not been significant enough to justify their high prices. In fact, they are some of the most expensive assets available. Valuation is not a very reliable market timing mechanism, but it does play a role in a five-year timeframe, especially when central banks are expected to take their foot off the pedal. On balance, we have lowered our outlook for most assets and expect to see more volatility ahead. This may sound more negative than it is: the weighted returns for a well-diversified portfolio will actually decrease only slightly.

Table 1.1: Expected annual returns 2018-2022

Equities (global developed markets)	+5.00%
Equities (emerging markets)	+6.25%
Government bonds (German 10Y)	-2.50%
High yield bonds (worldwide)	+0.25%
Commodities	+2.75%
Indirect real estate	+4.25%
Cash or money markets (euro)	+0.50%

Source: Robeco

What have we left out? A lot, it seems. We have not discussed the alternative scenarios, focused on the two remaining specials covering the origins of returns ('Bonds are from Venus, equities are from... Venus too, actually') and a passive multi-asset approach ('There is no one-size-fits-all for multi-assets') or reflected on the purported death of the Phillips curve and real Italian funding costs, for example. Read on for the proper update on these subjects and many more. As always, we hope you will enjoy reading this publication and find it inspiring and helpful in charting your course in the years to come.

Lukas Daalder, Chief Investment Officer Investment Solutions
September 2017

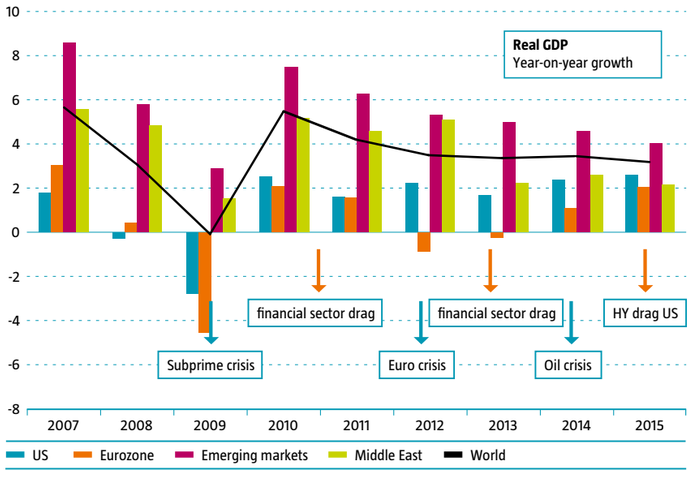
www.robeco.com/expectedreturns

SECULAR STAGNATION

HAVE WE ENTERED THE ECONOMIC ICE AGE?

Although the year is not yet over, 2017 appears to be on track to become the first year since the 2009 recession where economic activity has actually managed to surprise on the upside. Of course, the degree of this positive surprise is only moderate, as not all countries are managing to deliver to the same extent, but still, we seem to be enjoying a welcome break from the structural growth disappointments recorded in recent years. This positive momentum means that an increasing number of articles questioning the validity of the secular stagnation thesis have been appearing. It is pretty easy to understand why people regard this as an important theme. If secular stagnation really exists, the current economic rebound will only be a temporary episode; a mere blip, forgotten by next year. If this is the case, bonds will continue to surprise positively, while risky assets will become vulnerable. If, on the other hand, the whole thing is a misconception based on an unfortunate string of cyclical headwinds rather than a structural phenomenon, the opposite will apply. In this case, reflation will continue to be the underlying theme, making bonds a no-go area and enabling risky assets to continue to outperform. So is secular stagnation for real, or is it just a fad?

Figure 1: Is secular stagnation just a string of unfortunate mishaps?



Source: IMF, Robeco

What exactly is secular stagnation anyway?

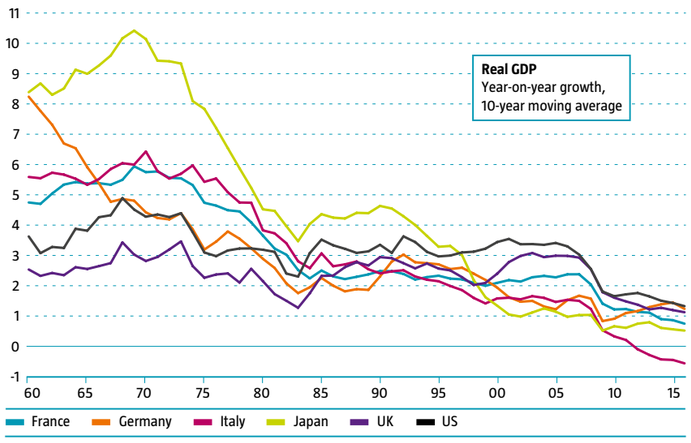
The term 'secular stagnation' was originally coined by Alvin Hansen back in 1938 and relaunched by Larry Summers in 2013, capturing the spirit of authors like Tyler Cowen (2010) and Robert Gordon (2012). Periods of secular stagnation have been declared quite often in the past: some people even go as far as to claim that it reappears during every recession. However, to date, all of the previous periods of stagnation have turned out to be temporary and not secular, including Hansen's 1938 situation. And yes, it is true that it took the Second World War for Hansen to be proven wrong.

So what is meant by secular stagnation? Although it may sound like a simple concept – something along the lines of 'growth will remain subdued for a long time' – in practice there have been various alternative interpretations of what it actually means, and not surprisingly, what causes the whole phenomenon. Rather than trying to reinvent the wheel ourselves, here is a description of the underlying problem, given by The Economist:

> *In a time of secular stagnation, the normal relationship between saving and investment goes haywire. People save some portion of their income each year. Because one person's spending is another's income, such saving can drain away demand and lead to recession, unless the funds set aside by savers are reinjected into the economy through lending to those looking to invest: as when banks lend savers' deposits to businesses, for example. Central banks help manage this process. When planned saving threatens to outstrip desired investment, they will reduce interest rates to keep the two in line and the economy on track.* ***But when secular stagnation strikes, the gap between what people want to save and what they want to invest grows too large to reconcile****. The interest rate needed to balance the two drops, ultimately to below zero. Central banks are stymied. The result is chronic economic weakness: low growth, low inflation, low interest rates and the constant threat of recession.*

'To date, all of the previous periods of stagnation have turned out to be temporary and not secular'

Figure 2: Lower, ever lower



Source: Penn World Tables, IMF, Robeco

Although this describes the symptoms of the disease (too much saving, too little investment), the reasons why the medicine does not work (interest rates cannot fall enough to correct the mismatch), and the prognosis (low growth, low inflation, low bond yields for an indefinite period), it does not address the original causes of the ailment. In order to answer the question of whether secular stagnation is a thing of the past, we will therefore look at the more commonly mentioned causes behind it, and see if they have materially changed recently. It should be noted that the list may not be complete and some of the causes may well have been more important than others. But the main question we address is – what were the most likely reasons why savings and investments got out of sync?

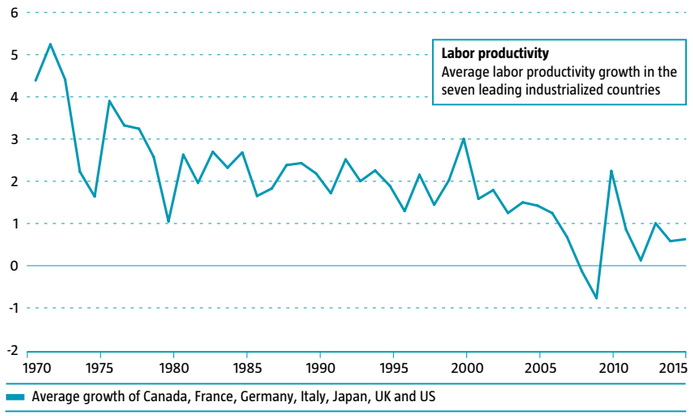
Technological progress has stalled

This is one of the original arguments put forward by Hansen back in the 1930s. The decline in technological progress (in combination with a decline in population growth) means that there is a structural decline in profitable investment opportunities, causing lower investments and higher savings.[1]

Although we can understand the underlying reasoning, it is hard to match this to the current environment. With disruptive technological developments like blockchain, driverless cars, machine learning and developments in DNA sequencing all taking place at the same time, there is plenty of progress occurring and this is accompanied by related investment opportunities. Mind you, we don't deny that there has been a structural decline in investments in the developed world as in reported productivity growth (see Figure 3), but we are inclined to think that this is not due to a lack of profitable investment opportunities or technological change. Alternative causes for this decline include globalization (investment has shifted to developing countries), declining prices for investment goods and the rise of disruptive companies, as well as increasing short-termism. Some of these topics will be discussed below. As a general point, we do not think that we have reached the limit of technological progress, so we do not think this is (or in fact has been) a cause behind the subdued growth environment.

1. There is some confusion as to whether lower technological progress is the cause or effect of secular stagnation. Here we show it is the cause of the present mismatch between investments and savings, but it can also be seen as an effect of this too: low growth is almost always a reflection of lower productivity.

Figure 3: Productivity has been on a downward trajectory for some time (in %)

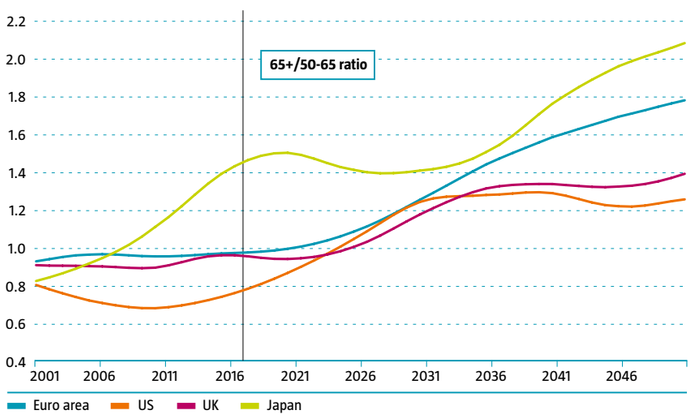


Source: OECD, Robeco

Aging

Aging is also one of the original causes mentioned by Hansen. Aging impacts both investment and savings. To start with investment; just as there is less investment in mature products or sectors, the same might apply to an aging economy in general. With future growth expectations capped by a declining labor population, companies respond by reducing investments. In terms of savings; people who face retirement, are likely to start saving more. More specifically, if the affluent 45-65 age bracket is the dominant group within a society, this can be expected to lead to a boost in savings. In fact, given the savers' underlying goal (a carefree retirement), there is even the risk that a self-fulfilling process will occur: more savings leading to lower bond yields, reducing expected returns, causing the savers to save even more.

Figure 4: Aging is a widespread phenomenon



Source: United Nations, Robeco

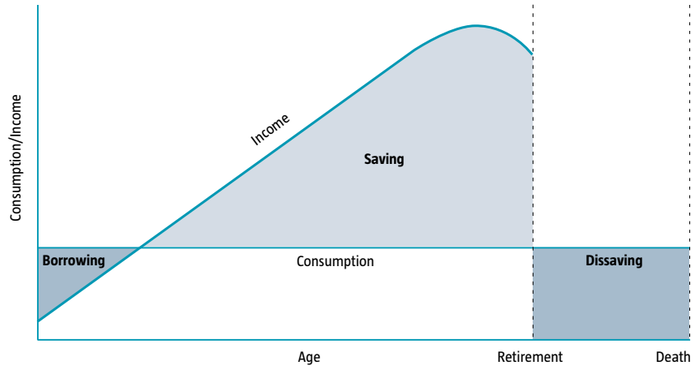
There is no denying that aging is a widespread phenomenon in large parts of the Western world, and it seems logical that it has played a role in the changing dynamics of saving and investment. Last year, the US Federal Reserve (Fed) published research stating that demographics is the leading reason behind the decline in US growth and interest rates (shaving as much as 1.25 percentage points from GDP growth) and concluding that real GDP and real interest rates will remain low in the 'coming decades'.[2]

2. Gagnon, Johannsen, Lopez-Salido (2016)

This conclusion has been disputed and the narrative above is probably an oversimplification of the situation. Looking at saving, the premise that aging always equals higher saving is simply not true. Until retirement, people save more, but once they retire, savers (quite abruptly) become dis-savers as they enter the decumulation phase. In other words, there is a naturel tipping point where aging leads to lower, not higher savings. Once the 65+ group starts to outnumber the affluent 50-65 age group, saving rates are expected to decline.[3]

3. It should be noted that a decline in the savings rate does not necessarily mean an increase in underlying spending: retirement normally results in a sharp reduction of income and a greater proportion of this reduced income being consumed.

Figure 5: Saving turns into dissaving quite abruptly



Source: St. Louis Fed

As for investment, as aging results in a steady decline in the size of the working population, companies have the incentive to automate more than would otherwise have been the case. So aging can lead to more, not less, investment, as shown in a recent study by Daron Acemoglu and Pascual Restrepo. The robot revolution in countries like Japan, South Korea and even China has been linked to this factor.

All in all, although aging has undoubtedly been one of the causes behind the savings-investment imbalance, it is equally likely that its impact will decrease over time. The stage at which the tipping point is reached will be different for each country, depending on demographic profile, retirement age, and the way that pensions are funded.

Inequality

Another potential cause of the savings/investments mismatch is the rise of inequality. The underlying rationale is simple: richer people save a bigger chunk of their income than those with a moderate or lower income. It then follows that the more unequal a society is, the lower the propensity to spend will be. The rise of the (ultra-)rich – 1% of the population in some countries and 0.001% in others – may therefore have contributed to the savings glut.[4]

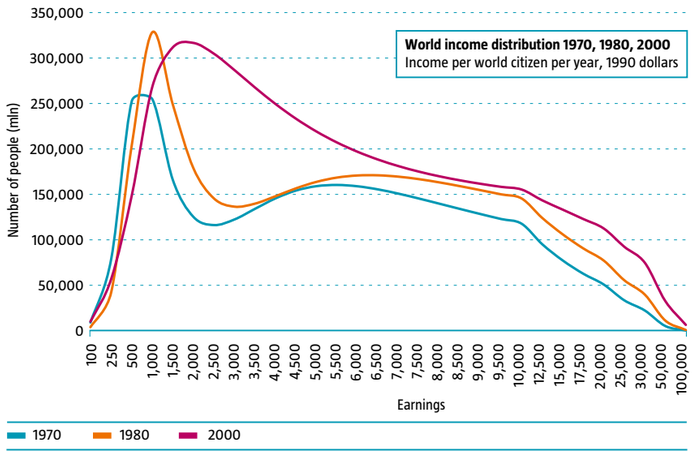
'A potential cause of the mismatch is the rise of inequality'

4. Although this can explain the increase in savings, it does not explain why investment has declined: it can be argued that the 'excess' savings of the ultra-rich should have triggered an increased appetite for risk-bearing investments.

The claim that richer people consume less and save more is certainly backed by evidence going back centuries, while the decade-long rise in inequality is also well-documented for Anglo-Saxon countries. Putting the two together does have a negative impact on spending. The IMF recently found that the rise in inequality during the 1998-2013 period suppressed aggregate consumption in the US by 3.5%, which is quite a substantial drag on growth.[5] Although the impact for the US and other Anglo-Saxon countries looks pretty clear cut, the results are far less convincing elsewhere. In most European countries, data does not show a significant rise in inequality and in emerging economies it even indicates the opposite, with a significant reduction in poverty over the past couple of decades. So from a worldwide perspective, it is not so easy to substantiate the claim that inequality has increased.

5. Aalichi, Kantenga, Solé (2016)

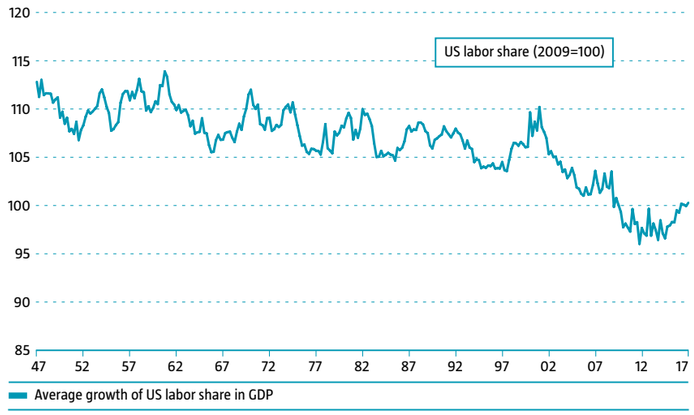
Figure 6: Inequality worldwide has clearly declined during the last 25 years



Source: Our world in data

Given the dominance of the US economy and the fact that it counts for a high percentage of total savings worldwide, it can still be argued that inequality has played an important role in the global savings overhang. The question then is: will this mismatch continue? The initial response would be a clear 'yes', given Trump's election victory. The current administration's plans seem to be skewed towards cutting taxes for the rich, not the poor. And when you see the extent to which inequality in the US is linked to the winner-takes-all mentality and the disruptive power of the new companies like Uber, Facebook and Google, the underlying trend does not appear to have changed either. The only real counter-argument here seems to be that the US labor market has moved closer to full employment, which could mean that low and middle income wages are catching up. In that case, the structural decline in workers' pay as a share of US economic output might be heading for a recovery, leading to a partial decline in inequality. But although there are some tentative signs of wages drifting higher both in the US and in Germany, on balance the wage push still appears to be quite small.

Figure 7: US workers have been on the losing end for years



Source: Bureau of Labor Statistics

Broken financial system

One of the factors that might have hampered growth during the past decade is the collapse of the financial system. The US and European banking sectors were seriously damaged following the US subprime crisis of 2008-2009 and the Eurozone crisis of 2010-2012. These events meant that banks were no longer properly performing their mediating role of relocating savings towards investment. The focus was on risk reduction, which was clearly reflected in the reduced willingness of banks to lend out money. Much of the liquidity supplied by central banks ended up forming passive reserves in the banking system, mostly in the form of high-quality government bonds. This process was further exacerbated by the drive of (monetary) authorities to de-risk the banking and pension sector by changing the regulatory framework.

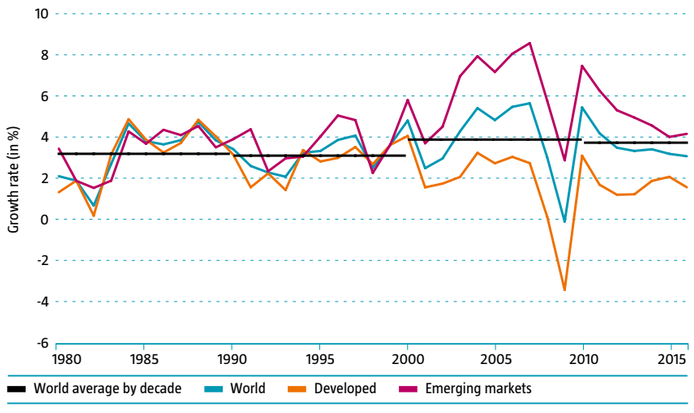
Whether this is a genuine cause of secular stagnation is a matter of debate. Sure, the health of the financial system is an important element in explaining the weak growth since the recession ended, but whether that makes it 'secular' is questionable. Looking at historical data, Reinhart and Rogoff found that recessions caused by a crisis in the financial or housing sectors, or both, are normally followed by tepid recoveries, as it takes time for the financial system to recover. As the US recession is now almost eight years behind us and banks are reaping the benefits of the Fed's very supportive policy, it is safe to say that this is no longer a relevant factor. In Europe the picture is less positive and there are still wide regional differences (Italy comes to mind). But overall this argument seems set to become less important as financial systems strengthen over time.

Globalization

There are numerous levels on which globalization may have played a role. International competition has kept wage rises in check (dampening consumption); has promoted a disinflationary environment (driving yields and rates lower); and has led to investment being redirected to emerging markets (distorting the whole investment/savings outlook in the West). From a global perspective, it is easy to claim there has been no stagnation, secular or otherwise. The lower growth reported in developing countries has been matched with a higher growth rate in emerging countries, which could be seen as a redistribution effect. We may be simply too preoccupied with the US and Europe when it comes to economic data.

'We may be simply too preoccupied with the US and Europe when it comes to economic data'

Figure 8: Secular stagnation, or just redistribution?



Source: IMF, Robeco

Although this is an interesting observation, it does not solve the problem of excess savings, a point made by former Fed Chairman Ben Bernanke. He pointed out that there is a global excess of desired saving (savings glut) relative to desired investment, emanating in large part from China and other Asian emerging market economies and from oil producers like Saudi Arabia. Whereas the developing world has traditionally been a net user of capital in the global system (running current account deficits), over the past decade it has transformed into a net supplier of funds to international capital markets. This is the result of government decisions in countries like China and Saudi Arabia to build up international reserves, partly in response to the Asian financial crisis of the 1990s. Given these countries' preference for relatively safe assets (mostly Western AAA government bonds), investment and savings have been flowing towards different regions.

Globalization is still with us, although it is clear that some of the underlying dynamics have changed recently. The decline in oil prices has reduced the amount of petro-dollars flowing into oil-producing countries, for example. At the same time, Trump's election has resulted in a US change of attitude towards the current account deficit it has been running. If this leads to a successful reduction in the Chinese trade surplus, for example (which at this time is little more than an assumption), it should reduce the excess savings pool in the developing world. But the current turbulent status of US politics means it is too soon to conclude that this savings glut will disappear.

Additionally, as long as international competition is not restricted by trade barriers, the pressure on wages and inflation is likely to remain, maintaining the bias towards low inflation. De-globalization could have a decisive impact, but it is questionable whether this should be hailed as the solution for secular stagnation: trade barriers are not exactly growth enhancing.

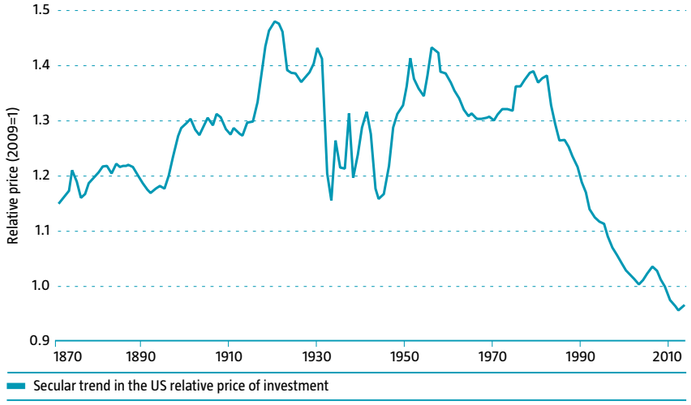
'Globalization is still with us, although it is clear that some of the underlying dynamics have changed recently'

Declining price of investment goods

Another potential explanation is the declining prices of investment goods. The story is simple: because of the very rapid price declines for computers and robotics, the nominal amount required for investment has declined too. This lower level of investment is therefore perhaps not a reflection of reduced willingness to invest and take risks, but rather a reflection of improved efficiency in the way money is invested. The money saved as a result of this may also have contributed to two trends: inequality (the explosion in CEO pay levels) and the rise in the corporate savings rate.[6]

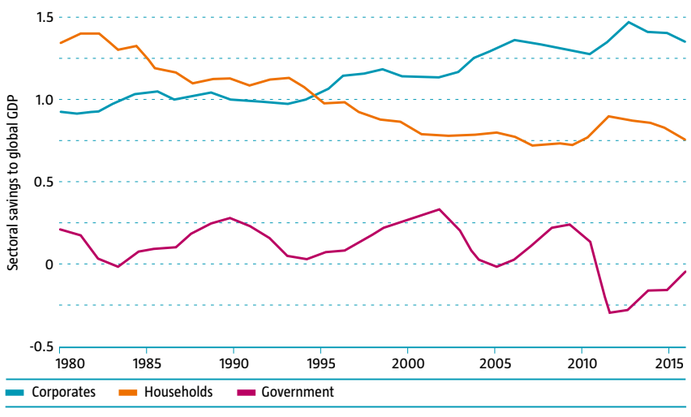
6 The latter may also have been driven by an increased preference for de-risking in the corporate sector, following the major financial market crises of the past 20 years, and by demand from (institutional) investors for less risky corporate policy, aimed at generating short-term results and dividends.

Figure 9: Is the secular decline in the price of investment the cause of secular stagnation?



Source: Barry Eichengreen, 'Secular stagnation: the long view'

Figure 10: Savings in the corporate sector have gone up



Source: Voxeu.org

The fact that investment goods have become cheaper over time should actually be applauded. As long as it does not impact the underlying growth dynamics of technological progress, this kind of efficiency should be supportive for the broader economy. It does raise the question, however, why the lower cost of investment goods has not triggered a bigger boom in the number of investment projects: with interest rates near zero and very low investment cost levels, the threshold is very low. One possible explanation is that this is linked to a shortage of people to take up these investment opportunities, but the high level of unemployment contradicts this theory. Or perhaps these investment projects are mainly being started in emerging markets. Intriguing as this argument is, it is difficult to assess how important it has been, or will be in the future. To quote Barry Eichengreen: "Even if the post-1980 decline in the relative price of investment goods is part of the explanation for the concurrent decline in real interest rates, there is no ruling out that it may be reversed in the future."

Monetary policy

Although monetary policy is presented as the victim in this story (becoming impotent to be effective), it is also possible to see monetary policy as part of the problem. Given that we have excess saving (high demand for AAA quality bonds), it is somewhat counter-logical to find central banks embarking on large scale bond-buying programs (quantitative easing or QE) and aggravating the shortage of safe assets. Given that low yields may in fact be causing a negative feedback loop (a shortfall in pension savings leads to more saving), this policy itself may have had an adverse effect. With the Fed raising rates and the ECB leaning towards tapering, this factor should become less important in the years ahead.

Debt

A final factor that has been cited as a cause of tepid growth, is the very high level of private sector debt. This is effectively acting as a drag on growth. This is certainly the case for countries with high levels of non-performing loans (Italy, Japan), with so-called zombie companies being kept alive because of the very low levels of interest rates. Having said that, the debt supercycle view does not have a ready explanation for the low real interest rate levels: higher debt should have led to higher rather than lower rates and yields. So although the debt supercycle may be a valid argument for tepid global growth, it does not seem to qualify as a traditional secular stagnation argument.

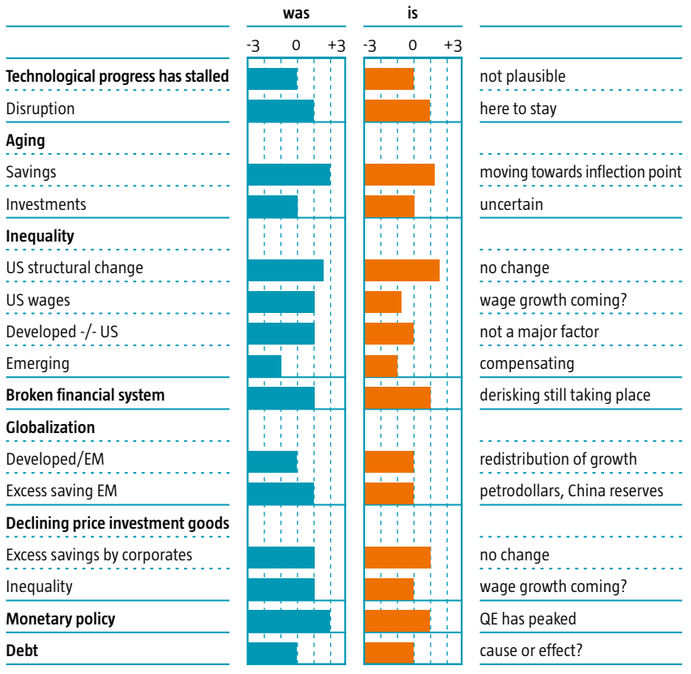
Conclusion

As simple as it may sound, secular stagnation is, in fact, a complex concept. This is further amplified by the high level of globalization and interconnectivity of modern-day markets, both financial and otherwise. From a global perspective, it may simply be the result of different regional characteristics: investment (and growth) has been skewed towards the developing world, while in a risk-averse post-crisis society savings probably flow towards high quality, low risk government bonds. Mismatches tend to be of a temporary nature, which means this current stagnation phase will probably prove to be as secular as all the previous ones.

That's taking the easy way out though. Looking at the various arguments presented above, it is true that some trends have been pretty structural (aging, declining prices of investment goods, inequality, excess saving in emerging markets) and are not expected to radically change in the short run. The most direct 'natural' solution seems to be a tighter labor market that pushes wages up. Not only would this end the decade-long period of disinflation, creating room for more consumption, it would also have a neutralizing impact on inequality and prepare the ground for a labor-saving investment boom. And, although often branded as a potential source of secular stagnation, we believe technological progress could in fact be the key to a more optimistic outlook: in the past pessimistic outlooks for productivity growth have usually proved to be wrong. There are many, however, who believe that these 'natural' solutions will take too much time to materialize, which explains the call for a more active government role, in the form of infrastructure spending projects to help take up the slack in investments.

> 'Mismatches tend to be of a temporary nature; the current stagnation phase will probably prove to be as secular as all previous ones'

Figure 11: Potential causes of secular stagnation and our responses



Source: Robeco

If we return to the assessment of the various potential sources of secular stagnation, we find that a number of these arguments are likely to be transitory rather than secular in nature. The banking sector is a lot healthier than it was five years ago and QE appears to be in its final stages, while the reserves of emerging markets and oil-producing countries have recently been shrinking. We feel that too much pessimism is misplaced in such a scenario. According to French economist Olivier Blanchard, historical correlations between non-overlapping five-year per capita GDP growth rates are close to zero, which means that looking at the recent growth track record is not a very reliable predictor for the five years to come. At the same time, expecting growth rates in the developed world to rebound to levels seen in the 1980s and 1990s seems equally unlikely.

EUROZONE

TO INTEGRATE OR TO DISINTEGRATE – THAT IS THE QUESTION

The worst of the financial crisis may well be behind us, but it is fair to say that the Eurozone has not managed to implement the level of structural reform it had intended. The currency area is now rapidly approaching a watershed. Will the rise of populism, political tensions between member states, growing economic divergence and government debt issues lead to disintegration, or will the member states decide to stick together at all costs? And perhaps once the dust has settled the Eurozone will even emerge as more of an optimal currency area than it has ever been before.

"How did you go bankrupt?" Bill asked.
"Two ways," Mike said. "Gradually and then suddenly."
"What brought it on?"
"Friends," said Mike. "I had a lot of friends. False friends.
Then I had creditors, too.
I probably had more creditors than anybody in England."

'The Sun Also Rises' by Ernest Hemingway

"Whatever it takes" were the famous words Draghi used in a speech back in 2012 to signal the ECB's commitment to keep the euro area together. At that time speculation was rife that a partial or even total collapse of the Eurozone was imminent, with spreads on Italian (500 bps), Spanish (600 bps) and Portuguese (900 bps) bonds reaching unsustainable levels. His statement marked the turning point for financial markets and the breakup speculation slowly but surely succumbed to the might of the central bank. As it stands right now, the 'whatever' has taken the form of a EUR 2.2 trillion bond buying program, a number of Greek rescue packages, as well as larger and growing imbalances in the Target2 clearing system.[1]

Although the fire in the financial markets has been more or less extinguished, one could claim that this is just a cosmetic improvement, not the structural change that we should be working towards. With the French elections out of the way, the short-term concerns with respect to the future of the Eurozone may have eased again, but it would be too easy to assume that this marks the end of speculation regarding a break up, especially over a five-year horizon. What will the euro area look like five years from now? If we avoid delving too much into the details of the individual countries, we think there are two feasible options that could emerge: integration or disintegration. We will address both, starting with the second.

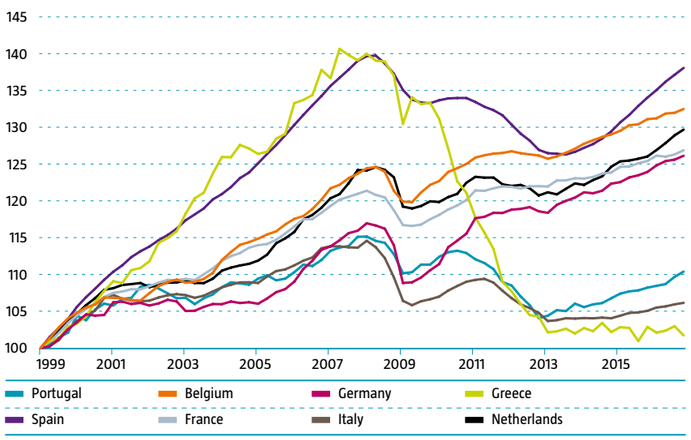
Disintegration

We can imagine a number of different ways in which the Eurozone may disintegrate. The rise of populism, political tensions between member states, growing economic divergence, the unwillingness of one group of countries to help another group, the collapse of a national banking sector, government debt spiraling out of control. Grexit, Frexit, Italexit, even Nexit and – our favorite when it comes to the name – Fixit (Finnish exit) have all been mentioned in the course of the last year. Although all these potential 'x-its' have different direct causes, it does not take much imagination to bring them back to a single root cause: the Eurozone is not an optimal currency area. The literature on optimal currency areas was developed in the 1960s and '70s, with Robert Mundell generally regarded as the pioneering thinker in this field. The idea is that losing the ability to adjust your exchange rate has benefits (the predictability of trade) but can also increase costs (you lose an easy adjustment mechanism). The costs outweigh the benefits if there are frequent asymmetrical shocks and no alternative adjustment mechanisms. Mundell's four main criteria for an optimal currency area are labor and capital mobility, symmetrical business cycles and a fiscal transfer mechanism, but shared customs or language are sometimes also put forward as being essential. Joining a joint currency area tends not to benefit regions that have a completely different economic make-up, as they will be impacted more often by asymmetrical shocks. But this does not mean that all the regions involved need to have a completely synchronized growth pattern: that's certainly not the case for the various States of the US, for example, which is generally seen as a text book example of an optimum currency area. Economic differences are normal even on a regional level, but prolonged divergence, or increased boom-bust developments within a currency area are tell-tale signs that the adjustment mechanisms are not working effectively. And this will ultimately undermine the much needed solidarity within the system. Also, while people have complete flexibility to move from one part of the US to another, the absence of a shared language in the Eurozone acts as a barrier to do the same in Europe: the free movement of labor may not be as free as it sounds in theory.

1. Target2 is the leading European platform for processing large-value payments and is used by both central banks and commercial banks to process euro-denominated payments in real time.

'Joining a joint currency area tends not to benefit regions that have a completely different economic make-up'

Figure 1: Real GDP path in selected euro area countries (1999=100)



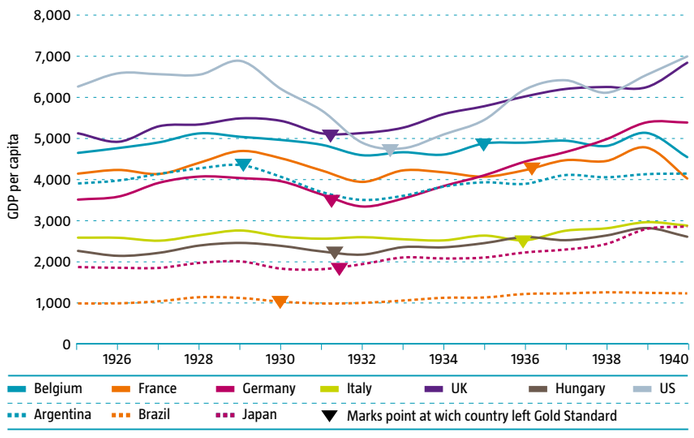
Source: Eurostat, Robeco

Does this look like an optimal currency area or not?

It should be noted that although applying the theory of an optimal currency area can deliver pretty black and white results, the reality is one big gray area. However, if we take past economic performance as a measure, Germany, the Netherlands, Belgium and Austria do look like a reasonably logical fit, possibly with France added to the mix. The economic performance of this group of countries has been pretty synchronized since the start of the euro, even though the structurally high level of unemployment in France may be seen as a cause for future concern. If we look further than this group, the case for a joint currency weakens quite rapidly, with countries like Ireland and Greece the most obvious outliers. One could argue that these are small economies so the costs to keep them on board are manageable for the group as a whole. This may be true, but it disregards the huge costs incurred by Greek and Irish citizens. There is a currency area, but just how optimal has it been so far? One country that is probably more threatening to the Eurozone's existence is its third biggest economy – Italy. The Italian economy has hardly grown since it joined the euro, its debt ratio is massive, its banking system is weak and burdened by a relatively high proportion of non-performing loans and the Eurosceptic Five Star Movement is currently a frontrunner in the polls.

As stated, there are numerous potential scenarios for a partial or total disintegration of the Eurozone. This could take the form of the gradual unwinding of the gold standard, which occurred in the 1920s and '30s – a process that took seven years to complete. Such an outcome is more likely if smaller countries exit unilaterally, but the process is likely to be more of a big bang if, for example, Italy leaves.

Figure 2: Is leaving the euro the same as leaving the gold standard?



Source: The Maddison project (http://www.ggdc.net/maddison/maddison-project/home.htm)

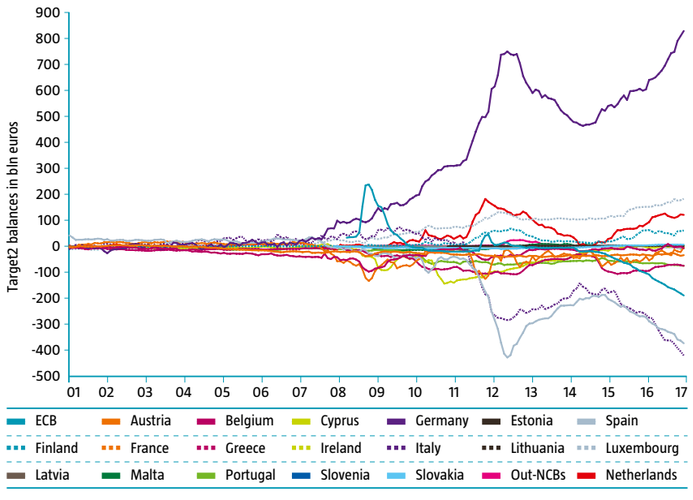
But how would such a process occur? A referendum would be the logical way to legitimize it democratically and could in itself act as a trigger for an irreversible process in financial markets. In case of an exit-vote win, the country in question could immediately initiate steps to unilaterally leave the euro. This would set off a number of adverse reactions. For one, severe capital restrictions would have to be implemented immediately, to stem the flow of capital leaving the country and try to save the banking system. Banks would probably need to be nationalized. The new currency would probably fall sharply against the euro, so both foreigners and local citizens alike would scramble to get their money out of the country. ECB support for the local bond market would cease immediately, only adding to the selling pressure on government debt. Bonds issued after 1 January 2013 contain Collective Action Clauses which require a super-majority to approve any changes to the currency of the bond, but it remains to be seen whether such clauses would really help at such a time. Withdrawal from the euro would also be a flagrant breach of the Lisbon Treaty, throwing all existing agreements into confusion and probably causing trade to grind to a halt, certainly until a new currency is introduced, but probably for much longer. Depending on the availability of domestic resources, shortages may arise for certain goods. The economic fallout resulting from all these developments would be extreme.

The pain would not just be a national affair though and numerous spillover effects could trigger more dominos to fall. Trade with the exit country would come to a sudden stop leading to big losses for exporters. The exiting country's bond markets would collapse, triggering speculation and bank runs in countries in close economic proximity. Capital would start to flow out of those countries suspected of being next, leading to a self-fulfilling process. Much would depend on the policy response of the ECB, but whether a "whatever it takes" statement from the President would still suffice, would also depend on how hard the central bank has been hit. Direct losses would be linked to bonds bought via the public sector purchase program: the ECB would claim that these should be paid back in euros, but whether this will ultimately carry much weight is questionable. The same applies to the balances that have been accumulated in the Target2 clearing system over the years. The ECB President has suggested that, in the event of an exit, Target2 liabilities have to be settled immediately. In practice this won't happen and they will turn into bad debts. A good analogy is perhaps Britain's World War I debt. During the Great Depression, Britain ceased payment and outstanding bonds such as the War Loan were only finally paid off in 2015! Bond portfolio losses and potential Target2 losses not only weaken the balance sheets of the ECB and the national central banks, but probably also reduce the willingness to do whatever it takes to fight speculation regarding further disintegration.

The remains of the euro would probably be closer to what might be defined as the optimal currency – more of a German mark than the original euro, most likely even excluding France. It is clear that this would become the 'strong' currency of continental Europe, but there is little reason to expect its strength to extend far beyond that. The suspension and perhaps destruction of parts of the internal market and the huge increase in financial instability would also damage the German economy considerably. German government debt would have to rise significantly to absorb the huge private sector losses that occur when a major euro country steps out. It would unleash a major economic, social and political crisis in Europe that could last for years. In this scenario, it is clear that European bonds, equities and the euro all stand to decline in value. Unhedged, non-euro assets would be the preferred investment option in this case.

'The remains of the euro would probably be closer to the optimal currency – more of a German mark than the original euro'

Figure 3: How will financial markets respond to an Italexit?



Source: BIS, Robeco

Integration

Given the carnage that a disintegration of the current Eurozone would probably cause, there is obviously a clear intention to stick together. In itself, there is no real reason why we can't continue with the current let's-not-fix-anything-and-hope-for-the-best approach. Not so much has been written on non-optimal currency areas but if the central bank is more than committed, even doing nothing, although it's not the best solution, may still be enough. There are reasons to suspect that this is not likely to happen though. For one, the rising imbalances in the Target2 system mean that the financial stakes are increasing. One could argue that central banks have enough (in fact unlimited) power to cope with these imbalances, but even central banks can fold once the stakes get too high. A good example is the Swiss National Bank withdrawing from the franc's peg with the euro when the potential financial impact became too great. But looking at the rise of populism we have seen in recent years, it is also clear that ignoring the wishes of the people and not changing anything is not a sensible approach either. So far, so good, but do governments really want to risk a possible anti-euro outcome at each national election? The best way to solidify the future of the euro would be to move forward with integration.

There are numerous steps of varying sizes that can be taken with respect to this integration process. One idea floating around is investments financed by Eurozone bonds, which could be an embryonic form of the much debated Eurobonds: bonds issued on a supranational rather than national level. If all Eurozone debt were to be issued like this, speculation on individual bond markets would become a thing of the past. Not that we expect full debt mutualization any time soon. But even if only some debt is issued on a supranational level, it could help act as a macroeconomic stabilizer at Eurozone level, increasing the longer-term survival chances of the euro. A complete banking union is a second potential step, but one which is much less discussed nowadays. A Eurozone-wide deposit guaranty could prevent a bank run, if a sovereign issuer appears to be running into financial trouble.

Conclusion

Although these steps would help to solidify the bloc and reduce speculative attacks, they may be measures that are more aimed at fighting the symptoms of the disease (financial market speculation), than the underlying problem itself. Ultimately, steps should be taken to enhance the Eurozone, making it more of an optimal currency area. Given that we will not be able to change the wide-ranging differences between the financial and economic structures of the various economies anytime soon, a further fiscal and even political integration would seem to be what is ultimately required to safeguard the future of the euro project. It's quite easy to identify this as the solution, but we also have to conclude that current popular and political sentiment has been moving in the opposite direction.

Or has it? There may be some room for optimism following the French elections. The Franco-German bloc is now pushing for greater Eurozone integration, which could result in the current zone becoming more of an optimum currency area. The Franco-German 'deal' looks to consist of supply-side reform in France (especially labor market reform) and greater German flexibility towards fiscal spending at Eurozone level. Although this is not the big turnaround that will solve all of the Eurozone's problems, it is at least a step in the right direction. Whether this will be enough to ensure that the Eurozone will survive in its present form for the next five years remains to be seen.

'The Franco-German bloc is now pushing for greater Eurozone integration, which could result in more of an optimum currency area'

ORIGIN OF RETURNS

BONDS ARE FROM VENUS, EQUITIES ARE FROM… VENUS TOO, ACTUALLY

Where do returns come from? Ask this question to various people working in the asset allocation industry and you are bound to get a whole array of different answers. These can range from profit growth, the compensation required to delay consumption, the mismatch between the demand for and supply of capital, to the reward for risks taken. Although these are all valid answers to the question, they do not really help much when it comes to explaining the differences in the returns that we see from various asset classes. We can look at the past and identify differences in performance – like we do in the separately published 'Long-term Expected Returns' document – but that does not help us to answer the original question.

So where do returns come from? One very basic notion is that returns need to be earned and for that to happen, some form of growth is required. If there is no economic growth and no inflation, the returns on broader asset classes are likely to be suppressed too. Nominal growth boosts earnings, which pushes stock prices higher and leads to higher dividends, improving your returns. In a scenario of rising inflation, higher compensation will be required to postpone consumption, pushing nominal bond yields higher. In a sense, nominal growth is the tide that lifts all asset returns, which is also why we should question whether stagnation is secular or not. If it is, returns are going to stay low in the future. But this does not necessarily mean that there will be no returns if nominal growth permanently drops to zero. In a prolonged zero growth scenario, some regions or sectors are likely to show growth while others decline. Even if the broader equity market remains unchanged, there are still always relative returns to be made. In general, the prices of stocks, bonds, commodities and other assets will always be based on expectations, which introduces the element of volatility and with it returns (positive and negative). This is the case even if the longer-term return ends up actually amounting to almost zero percent.

This brings us to the second fundamental source of returns, which is intrinsically linked to the first source: compensation for risk. The term spread in bonds, the credit spread that rises as bond credit quality declines, the lower valuation of – say – Russian companies are all simple and observable reflections of the notion that there is a premium required for capital to be attracted to the more risky parts of the asset markets. This relationship is certainly not perfect, nor constant: expectations can sometimes lead to mispricing of the underlying risks, while behavioral aspects can even result in permanent deviations, like the low volatility factor anomaly. Having said that, however, in the longer term, one would expect returns to reflect the underlying risks.

Macro Risk Factor Approach

This question of where returns come from, has triggered research which has led to the development of a fairly new approach in strategic and dynamic asset allocation, commonly known as the Macro Risk Factor Approach.[1] Instead of looking at assets as independent categories with their own unique return drivers (bonds are from Venus, equities are from Mars) it looks at the common factors that can explain the returns of the various assets. Of course, given the noisy character of financial markets, it is almost impossible to fully explain the returns of every asset class by examining just a limited number of underlying drivers. But research carried out by Robeco and others shows that these factors do explain a substantial part of all the returns. And that, starting with the risk free return on cash, this approach can explain the returns on all the asset classes by analyzing a limited number of well-chosen factors.

We think the strength of our approach is that it is intuitive and relatively simple to understand. Our starting point is the risk free rate, the return generated by the safest asset. In order to get a higher return, you need to move up the risk curve. In the same way that you add bonds to a cash only portfolio, something that is done in a classic portfolio context. The question raised by the Macro Risk Factor Approach, however, is what type of risk do you actually add by moving from a risk free asset to a riskier asset class? Our analyses show that there are six factors affecting returns. Some are common to all assets (like inflation), others are more unique to a limited number of asset classes.

These six factors explain, on average, 80% of the returns of the various asset classes.[2] They are intuitively easy to understand, hold up under the scrutiny of our statistical analyses and are a valuable additional tool in explaining the composition of the underlying returns.

‘We have identified six drivers which on average explain 80% of returns’

1. Early research in the field was done by Chen, Roll and Ross (1986), Ilmanen (2011), Asl and Etula (2012) and Ang (2014) amongst others.

2. Neither the number of factors, nor their exact nature is constant in all the research on this subject. Ilmanen (2011) identified four ‘most important’ factors (growth, inflation, liquidity and tail risks), while, for example, Greenberg, Babu and Ang (2016) use six factors (equity, inflation, real rates, commodity, credit and emerging markets). These differences are linked to whether the researchers use pure macroeconomic variables, or whether investable factors are also used. We have opted to use a mixture of these two approaches. The research we have carried out so far has been based on US data.

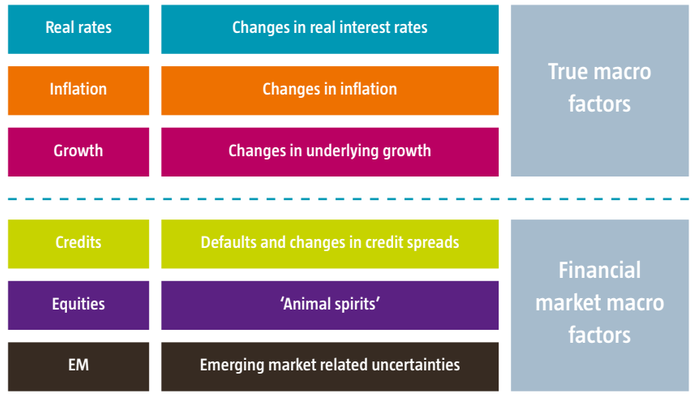
They can be subdivided into two blocks: one is linked to the macroeconomy (the macro compensations) and one to the animal spirits that are an integral part of the financial markets (the financial markets part) and/or the unexpected changes in risk premiums. The pure macro risk factors are:

- **Real rates**. Changes in real interest rates, the compensation for lending money for a longer period.
- **Inflation**. Changes in nominal prices. Fixed coupon nominal bond investors are particularly vulnerable to the risk of unexpected inflation surprises, for which they should earn a premium.
- **Growth**. Unexpected changes in economic growth. This premium can be best harvested by investing in ‘real assets’ like equities.

There are three less tangible factors that are linked to the ‘fear and greed’ element that drives the financial markets:

- **Credit**. Associated with bond spreads and default risks. In theory, these default risks can extend to sovereign defaults as well as corporate bonds.
- **Equity**. Associated with equity-specific risks. These can range from company defaults, periods of exuberant expectations and flash crashes. This factor can be equated to the ‘animal spirits’ that are more prevalent in equity markets than in other assets classes.
- **Emerging markets**. Associated with taking (political) risk by investing in less developed and therefore less stable markets.

Figure 1: The six macro risk factors driving returns

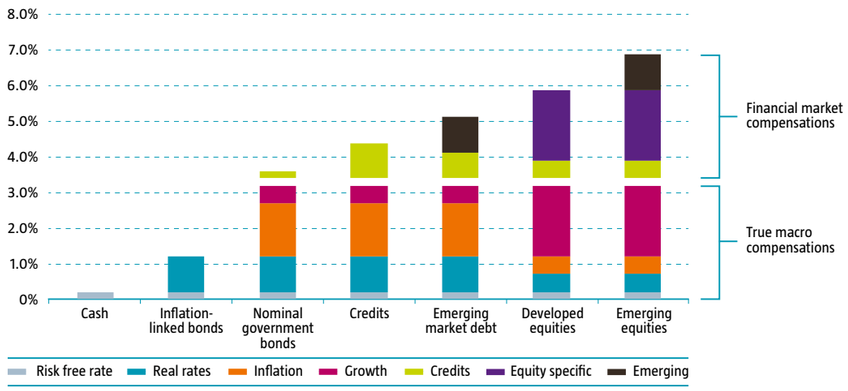


Source: Robeco

Based on the six factors identified above, we can now explain between 75% and 90% of the variability of returns in most broader asset classes. In other words, we can now say that we have a pretty good idea where most of the returns come from.[3]

3. Attentive readers may have noticed that this accumulation of returns deviates from the longer-term accumulation we present in our steady-state framework. The reason for this is linked to the fact that the steady state’s long-term nature means we assume we can disregard volatility and uncertainty. But this assumption does not apply in the real world, on a day-to-day basis.

Figure 2: Assets meet the six macro risk factors that determine returns



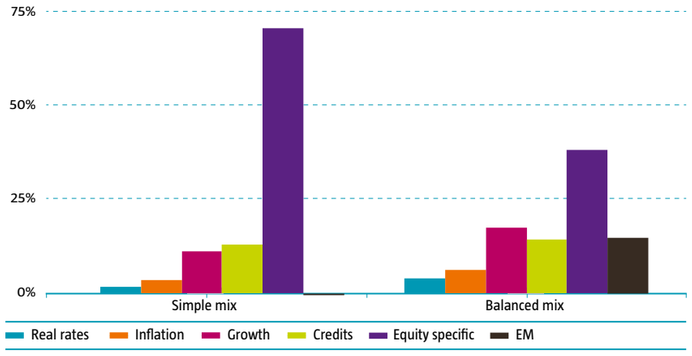
Source: Robeco. For illustration purposes only.

A different way of looking at your portfolio

These six return factors make it now possible to look at strategic & dynamic asset allocation in a different way. Rather than just seeing the individual assets, we now get a better understanding of the 'true' risks underlying any portfolio. This has a couple of advantages:

– By dissecting the investment portfolio into various macro risk factors, one can test whether it reflects the asset owner's underlying growth and inflation assumptions. In other words, the Macro Risk Factor Approach provides a reality check on whether the portfolio's current positioning is in line with the macroeconomic expectations of the asset manager.
– Traditional portfolios may look well diversified, while in fact the assets they contain may be exposed to the same underlying macro risk factor. Dissecting the portfolio can help to identify these overlaps. In the next chart we compare the risk decomposition of a simple 60/40 portfolio of stocks and bonds with the distribution of the risks of a more balanced portfolio.[4] It is evident that investing in other asset classes rather than this common combination can reduce sensitivity to the equity factor.

Figure 3: Risk diversification of two example portfolios



Source: Robeco. For illustration purposes only.

4. 40% developed equity, 5% emerging equity, 20% government bonds, 20% corporate bonds, 5% EMD and 10% alternatives.

– By looking at factors rather than asset classes, the traditional bonds-are-from-Venus-and-equities-are-from-Mars way of looking at the world becomes less appealing. Nobody will deny that bonds and equities have different risk reward characteristics, but by analyzing the underlying macro risk factors, the line between for example EM bonds and EM equities blurs, enabling a more effective risk reward trade-off between the two asset classes. The fact that most of the industry is split into different asset classes implies that there are efficiency gains to be realized by doing this.

One question that is often raised by investors is how these macro risk factors relate to the better known style factors, like momentum, value and low volatility investing. Whereas these well-known style factors are at least partly the result of persistent anomalies in financial markets, based on behavioral aspects, the macro risk factors are not based on anomalies: they are the clear and simple building blocks underlying the various asset returns we see. Furthermore, while style factors focus on investing within a certain asset class (equities, bonds), macro risk factors specifically look at the common factors driving performance across asset class boundaries.

Conclusion

The Macro Risk Factor Approach is a relatively new, but promising development in the field of multi-asset investing. The big advantage is that it enables portfolio managers to see what the underlying risks of a portfolio are and cross check that exposure with their own macroeconomic expectations. But identifying these macro factors is not the only step required in achieving optimal portfolio construction: for that you need to look at the rewards as well as the risks. The ultimate goal is to achieve true diversification between risk factors which are rewarded with returns, which means that a regular assessment of expected returns is also crucial. For this we invite you to read the other chapters of our annual Expected Returns document.

'The ultimate goal is to achieve true diversification between risk factors which are rewarded with returns'

VOLATILITY

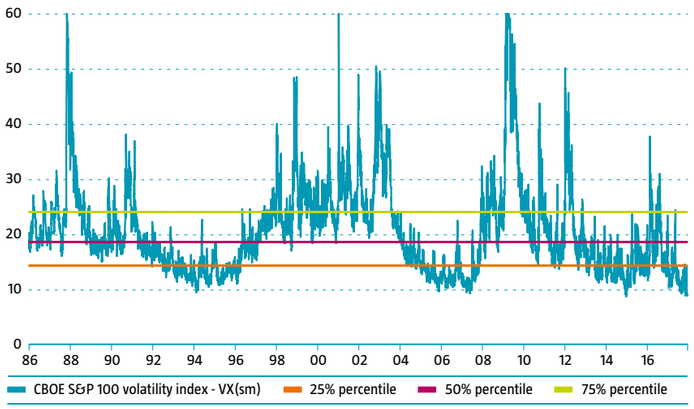
GETTING BACK TO 'NORMAL'

Financial markets have been remarkably stable in recent years. This is quite surprising given all the political shocks we have witnessed. Has the market become too complacent about (imminent) risk and have commentators who predicted the return of risk been out of sync with today's reality? We think both the market and commentators have actually been quite on the ball. Risk plays an important role in financial markets. Typically, investors demand a return premium for running risk. The higher the perceived risk, the higher the premium should be and vice versa. In classic financial modeling, risk was perceived to be constant or homogeneous. Practice has proved this concept wrong.

Risk periods in financial markets tend to move in clusters. One relatively calm period is often followed by another. In contrast, a volatile period like the global financial crisis does not just last for a couple of days. Risk remains at elevated levels for a while, before returning to normal.

Figure 1 shows the movements in the VXO Index. This index is the predecessor of the well-known VIX Index. It goes back to 1986, whereas the VIX starts in 1990. The index captures the implied volatility of at-the-money options on the S&P 100 with a remaining maturity of or close to 30 days.

Figure 1: Implied volatility of 30-day option contract on S&P 100



Source: CBOE, Robeco

It is easy to spot the 1987 stock market crash and the uncertainty resulting from the collapse of Long-Term Capital Management in 1998 and the Russian crisis that followed. And more recently are the financial crisis in 2008-2009 and the Eurozone crisis in 2012. After most of these events, volatility expectations returned to their median level within a couple of months. However, there are periods where volatility remained stubbornly low or high. So placed in a historical context, recent volatility expectations are not exceptional.

In order to more effectively capture the dynamics of volatility, the existing models needed to be changed. Engle (1982) introduced the ARCH model. The acronym ARCH stands for Autoregressive Conditional Heteroscedasticity. In this model, the risk or volatility is not constant (homogeneous) but it varies (heteroscedastic) and its value depends on previous deviations (autoregressive). Hence one low reading will likely be followed by another – the same applying to high readings. Of course, the past is not the only factor, volatility will also change due to information that has become recently available. If we use the model to capture today's market, it shows that volatility has remained in line with the previous low readings (as explained by the autoregressive part) and that there has been no new information (the conditional part) meaningful enough to derail it. Of course there has been more than enough 'information' – Brexit, the Trump victory etc. But this only led to temporary shocks that soon faded out. Markets quickly reverted to their underlying trend.

But can we use the ARCH model to predict future volatility? Well, it's not perfect. Soon after its introduction the first modification followed. Bollerslev (1986) introduced the General ARCH model. Many modifications like the Threshold GARCH model, Integrated GARCH model etc. followed. Figlewski played a practical joke when he introduced the YAARCH – Yet Another ARCH model at a conference for fellow researchers. Figlewski (2004) compared different models' ability to predict future volatility over different time horizons. He found that "In general, historical volatility computed over many past periods provides the most accurate forecasts...". So we don't need a complex model to make predictions, especially for longer periods like the coming five years. A model using historical volatilities over different periods will be sufficient. This does not mean that the ARCH models are useless. They help us understand how volatility can change over time, improve our data fitting and are useful in scenario analysis.

It is interesting to observe that Figlewski states that the volatility should be calculated over many past periods. Too short a period can easily result in an under- or overestimation of future volatility. For example, would we dare use the volatility of the last five years as the best proxy for the coming five years? In Table 1 we look at the realized annualized volatility for the MSCI region indices over successive five-year periods.

Table 1: Realized annualized volatility of net local returns for MSCI region indices

	Europe	North America	Pacific
May-17	10.5%	9.4%	13.2%
May-12	18.4%	18.8%	19.1%
May-07	15.2%	12.1%	12.5%
May-02	18.0%	17.7%	16.9%
May-97	11.6%	9.5%	17.4%
May-92	18.6%	17.3%	22.2%
May-87	12.1%	14.8%	16.2%
May-82	11.5%	14.3%	10.5%
May-77	17.4%	16.7%	18.6%

Source: MSCI, Robeco, using month end data

So volatility over the last five years certainly wasn't the best predictor for the coming five years. For example, the low volatility of the '92-'97 period was a pretty bad indicator for what followed in Europe and North America. Nevertheless, it wasn't such a bad idea to use the realized low volatility as a predictor at that time. Developed economies had weathered past financial storms like the Tequila Crisis successfully. We had learned from past mistakes and monetary policy under Greenspan had proved itself. It seemed to be really different this time. We now know, that was not the case. Volatility came back with the Asian Crisis (July '97) and when the dotcom bubble burst in 2000-2001. Instead of a five-year period, it would have been better to use a longer-term historical average or a weighted combination of periods.

Looking at all these historical lessons, it would be most logical for the market to be expecting higher or more normal volatility than today's low level, even over a shorter time period than five years. So those commentators who predict a return of volatility have history on their side. But why then is the market so complacent? To answer this question, we must turn to the exceptional role central banks have played since the 2008 financial crisis. In 2000, former Fed Chairman Bernanke and economics professor Mark Gertler wrote a working paper entitled Monetary Policy and Asset Price Volatility. In this publication they answered the question of whether central banks should consider asset price volatility in their monetary decision-making. They see a clear relationship: asset price volatility can impact the real economy via balance sheets.

'Volatility over the last five years certainly wasn't the best predictor for the coming five years'

Households, firms and governments can face severe stress if the value of their assets suffers a large drop in value. In the case of housing, for example. When house prices start to drop sharply, house owners find it more difficult to get a loan or to renew existing loans. If the balance sheet is relatively sound at the outset, a drop in asset value should not be a real cause for concern. However, if the fall in value is significant, or the balance sheet has already been eroded, the situation can become dangerous. Think of Japan, the 2008 financial crisis or even worse the Great Depression. Following this line of thinking, one would expect the volatility of financial markets to also depend on the state of balance sheets. If we look at current balance sheet levels, the message appears to be mixed. Equity and house prices have moved up, but the debt overhang is still huge. As most commentators point out, there seems to be a high degree of vulnerability. It is not strange that some have been expecting risk to increase. Like the commentators, central banks also recognize this vulnerability.

In their article Bernanke and Gertler argue that central banks should look primarily at inflation expectations rather than asset price volatility. As history has shown, inflation expectations tend to move down or stay low if balance sheets are vulnerable. During the 2008 financial crisis, central banks shifted to an accommodative policy. First traditional monetary policy, then non-traditional policy where central banks became active on the asset side of investors' balance sheets. For example, the ECB bought private loans, while the BoJ bought ETFs. More importantly central banks adopted a policy of forward guidance. If conditions deteriorate the market can expect them to do 'whatever it takes'. Central banks effectively put a floor under volatility. It is no surprise then that markets expect risk to remain low as long as central banks retain this stance, or, as in the case of the Bank of England, are prepared to return to it if necessary.

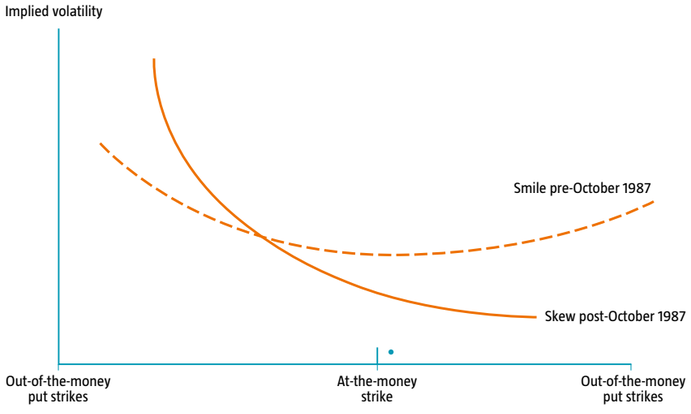
Looking at the above analysis, it seems as though the market has been more on the ball than those commentators who predicted a return of risk. However, if we look at another measure of risk the market seems to agree with the commentators.

When we talk about risk, most of the time we talk about volatility. The higher the volatility, the larger the potential loss. Traders use volatility to price options using models like Black-Scholes. The assumption in this model is that the log price of the underlying asset follows a normal distribution. In practice we see that the distribution has fatter tails than implied by the normal distribution. This means that the probability of a big loss is greater than one would expect using a normal distribution. Traders correct for these fat tails in the volatility they use to price options. The volatility used to price an option that is far out of the money will be higher than the volatility used to price an at-the-money option. This difference in volatility is known as the volatility smile. This smile is illustrated in Figure 2 from Chicago Board Options Exchange.

We can see that the more or less symmetrical smile which applied before the October 1987 crash, shifted in a clockwise direction to become a more skewed smile for the period that followed. At that time the implied volatility of regular (at-the-money) options dropped to below crisis levels. This should indicate that the market expected lower risk going forward. However, when we look at the volatility used to price 'disaster insurance' type of options (out-of-the-money puts) we see that the implied volatility actually increased. The market assigned a larger probability to tail risks.

> 'It seems as though the market has been more on the ball than those commentators who predicted a return of risk'

Figure 2: The S&P 500 implied volatility curve pre-and post-1987

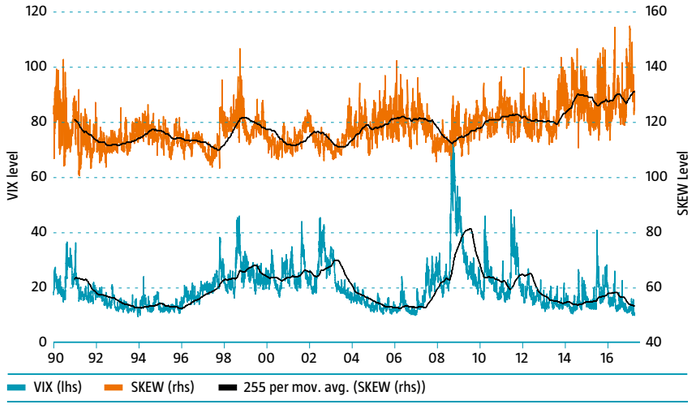


Source: CBOE

The difference between the implied volatility of the tails is captured by the SKEW Index. So the level of the SKEW shows the extra volatility investors are willing to pay for as insurance against large downward movements in asset prices. If the SKEW increases, it generally means that more investors feel there is a greater risk that large disasters will occur.

Figure 3 shows the movements of the VIX (left hand side) and SKEW (right hand side) indices since 1990. In addition, we have added the one-year moving average to show the trend. The figure shows that the trend in the VIX has slowly dropped since the 2008 financial crisis. The trend in the SKEW on the other hand has been increasing. What this means is that investors are actually not as fearless as one would expect based on the realized and center-based implied volatility. Their perception of tail risk has not fallen.

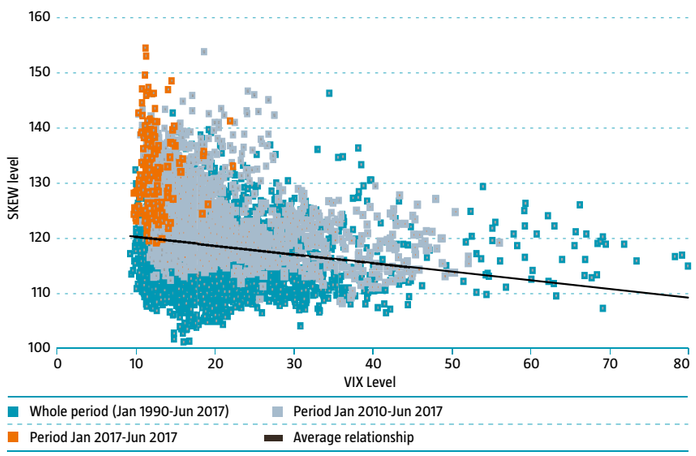
Figure 3: Daily VIX and SKEW levels, including a (yearly) moving average showing the trend



Source: Bloomberg, Robeco

To illustrate this further we zoom in on the relationship between the VIX and the SKEW level in Figure 4. The figure shows all the different daily observations using blue dots, based on which we can estimate a linear relationship to determine the 'average' VIX/SKEW level. Above this level the SKEW can be considered high, and thus signal fear. The light blue dots show that over the last seven years the market has had a higher level of SKEW than it did in the '90s, for instance. This is in stark contrast to the downward trend in the VIX level over the same period. Even more surprising is the level of the SKEW in 2017, which is well above the average.

Figure 4: Scatterplot of VIX and SKEW levels



Source: Bloomberg, Robeco

The analysis above shows us that commentators were in sync with the market. Central bank action has proved to be a powerful tool in reducing volatility, but the market does not believe that central banks can halt the next crisis. Hence the probability of the tails has not changed that much, as shown in the SKEW levels versus the volatility.

Conclusion

In the search for yield, it is tempting to add risk to the portfolio, especially when risk expectations are low. We have shown that there are good reasons why markets expect risk to remain low. However, at the same time we have also demonstrated that markets are aware that the tail risks have not been reduced. Looking at the movement of the so-called SKEW Index it actually seems as if markets have become more worried about these risks. Regulators typically focus on tail risks for financial markets. Solvency II for insurance companies uses a 99.5% Value at Risk, while the Dutch DNB model for pension funds is comparable to a 97.5% Value at Risk. At times these models may feel too restrictive and limit desired portfolio allocation. But this time, the market, the commentators and the regulators all agree that we would be wise to keep an eye on the tail risks.

'Central bank action has proved to be a powerful tool in reducing volatility, but can it halt the next crisis?'

PASSIFICATION

THERE'S NO ONE-SIZE-FITS-ALL FOR MULTI-ASSETS

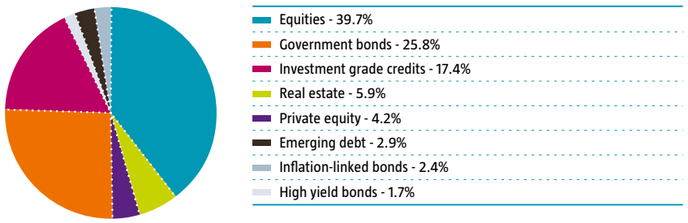
Passive or not? If there has been one trend that has dominated the asset allocation industry in recent years, it has been the near stellar rise of passive investing. This trend has been strongest in the US stock market, where the share of passive investments has now reportedly risen to 35%, but its increased popularity has also been evident in other markets such as government bonds, credits and even the less liquid high yield market. Given this trend, it is logical to ask how the 'passification' of the multi-asset space is shaping up. Although there is little doubt that the popularity of passive funds has also increased among multi-asset managers, they tend to use them more as a tool to allocate to certain asset classes, rather than as a total solution. The problem is that while there are some true benchmarks for stocks (S&P, MSCI) and bonds (JPMorgan GBI, Barclays Agg Credit), there is no such undisputed benchmark in the multi-asset space. In itself this is not that surprising as there are significant differences between multi-asset investors: anything from 10% in equities and 90% in bonds to the opposite extreme of 90% equities and 10% bonds. This type of divergence in the underlying risk profiles appears to be the main obstacle preventing the development of a true passive multi-asset benchmark.

What would a true passive benchmark for multi-asset investors be like and would it have the potential to achieve true benchmark status in the future? In this special topic, we present a candidate and assess its potential as a useful passive benchmark.

The true Passive Index

True passive investors do not actively deviate from the broader market in which they wish to invest. This means that even an investor in an ETF that tracks the S&P is not a truly passive investor, as this index does not include the complete universe of US stocks. Although the deviation may be only negligible, the S&P 500 is actually a subset of the total US stock market and thus not fully representative. Passive investors take no view on what the markets will do, which means they opt for the most neutral positioning versus the market. In other words, a true passive investor simply wants to buy the market. The global market portfolio (GMP) is the aggregate portfolio of all investors worldwide, with weights that reflect the constitution of the average portfolio. It includes all free float marketable assets in which financial investors have actually invested, while excluding items like durable consumption goods, human capital, private housing, and family businesses, for example. The breakdown of the total marketable assets for the world based on 2016 data looks like this.

Figure 1: Estimated market values (USD trillions) and weights in the global market portfolio (GMP)



Source: https://personal.eur.nl/lswinkels/

The advantage of the database is that it does not just give a one-off breakdown, but gives a historical record going back to 1960. This database builds on the work of Ibbotson and Siegel (1983), who were the first researchers to carry out a rigorous study on a global multi-asset market portfolio for the period 1960-1980. Although the Dimson, Marsh, and Staunton (2015) database has a longer history (going back to 1900), the data presented here has two additional asset classes: corporate bonds and real estate. Based on this data, we can now describe and analyze the returns of the invested global multi-asset market portfolio in the period 1960 to 2015 from the perspective of an US investor.[2]

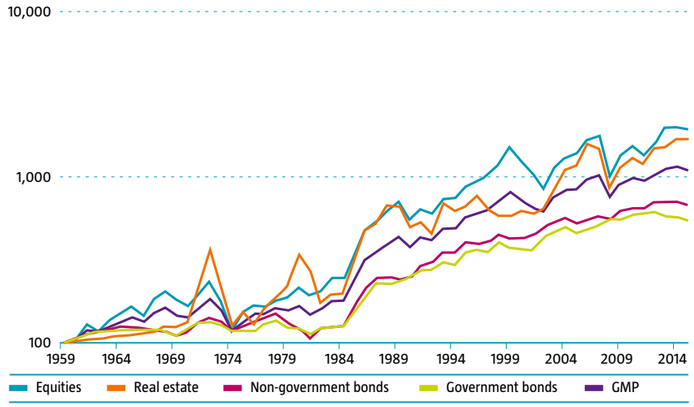
During the 56-year sample period (1959-2015), the global market portfolio delivered a compounded annual return of 8.4%. Equities realized the highest compounded annual return of 9.5%, followed by real estate (9.2%), non-government bonds (investment grade and high yield) (7.4%), and government bonds (7.0%).[3] An investment in three-month Treasury bills would have returned 4.9%, which implies that the equity return has been 4.5 percentage points above cash. The global market portfolio has had a standard deviation of 11.5% over this period.

Real returns are useful as these provide insight into the changes in purchasing power through time, so it is interesting to adjust the returns for inflation – US inflation averaged 3.8% during the sample period. Figure 2 shows the cumulative real return of the global market portfolio and the four asset categories. The real value of the GMP grows from 100 at the end of 1959 to 1,105 at year end 2015, which implies a compounded annual return of 4.4%. Equities reached a value of 1,954 (5.5%), followed by real estate at 1,699 (5.2%), non-government bonds with 687 (3.5%) and government bonds with 541 (3.1%). The risk-free asset (three-month US Treasury bills) grew to 185 and delivered a compounded real annual return of (1.1%).

2. All underlying data is unhedged calculated to USD, which means that there can be a distorting currency effect. See next note.

3. The relatively high return for government bonds compared to equities is probably partly linked to this FX effect. The Japanese government bond market is relatively big and the yen has seen a structural appreciation versus the USD. According to the Dimson, Marsh and Staunton database, Japanese government bonds had a 9.7% geometrical return in the period 1960-2015.

Figure 2: Cumulative real return of the global market portfolio and the four asset classes



Source: Doeswijk, Lam, and Swinkels (2017)

In the inflationary period from 1960 to 1979, the average annual real return of the market portfolio was 2.8%, while in the disinflationary period from 1980 to 2015 the GMP had an average return of 6.2%. So the difference between these two periods is 3.4% points.

From Figure 2 it is also obvious that the eighties and nineties yielded higher returns than other decades, for both the market portfolio and the asset categories, with real estate being the only exception in the nineties. To illustrate, the market portfolio yielded a real return in the eighties and nineties of 10.6% and 6.6% respectively, while in the other four decades returns were, in chronological order, 3.9%, 0.7% and 1.1%. The last six years of the sample added 3.3%. There has not been a single decade in the sample period with a negative compounded real return for the market portfolio.

The reward for the average investor, in the sample period, is a compounded return of 3.2% points above the cash saver. This reward came with a standard deviation of 11.2%. In 18 of the 56 years the investor ended with a lower return than the saver, but in the other 38 years the investor's return was higher. The most painful times for the average investor in the sample period, would have seen an annual loss of wealth of 25.4% and a maximum cumulative loss of 35.0%, compared to the results for a saver. The longest period that the investor's cumulative return lagged that of the saver was 12 years. On average, in both inflationary and disinflationary environments, the investor was better off than the saver.

Are there better alternatives?

As we have already noted, there is only one true benchmark for passive investors. This is the portfolio in which all investable assets are weighed according to their market capitalization weights. As such, the global market portfolio is the portfolio for the true passive investor.

'There is only one true benchmark for passive investors'

At any point in time the market portfolio mirrors the benchmark – marginal rebalancing to reflect differences in issuance and redemptions of asset categories is carried out in order to achieve this.

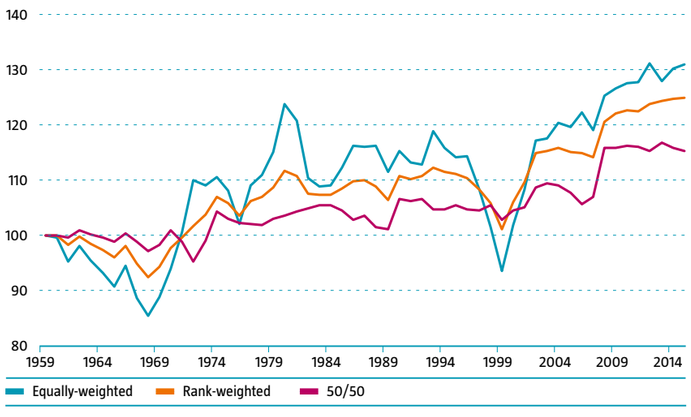
There are various reasons to believe that the market portfolio is not an optimal portfolio from an ex ante perspective. In terms of asset demand, investors might not be able to incorporate news efficiently into asset prices, leading from time to time to over- and undervaluation at asset class level. A classic example of such a period of overvaluation was seen at the time of the dotcom bubble, when technology stocks traded at hefty multiples based on expectations that later turned out to be incorrect (for the market as a whole). In terms of asset supply, corporate managers may time the market by issuing shares that are overvalued and repurchasing those that are undervalued. When calculating the time-series return at asset class level, these timing effects are hidden.

Given these demand and supply side arguments, it is clear that there are probably better alternatives available. We constructed three portfolios with fixed weights that are annually rebalanced. As their allocation never changes, it makes them easier to compare over time. However, as these portfolios differ from market capitalization weights, they cannot be followed by all investors at the same time as they do not correspond with the GMP.

The first of these alternative portfolios was equally-weighted in all four asset classes. For the second portfolio, the size of each asset class's market capitalization was taken into account and the portfolio constructed using weights based on this. This is a long-only version of the Koijen, Moskowitz, Pedersen, and Vrugt (2016) portfolio ranking methodology. As the ranking of each asset class's market capitalization is the same in each year of the sample, this results in a portfolio that starts each year with a 40% weight in equities, 30% in government bonds, 20% in non-government bonds and 10% in real estate. The third alternative is a simple 50/50 portfolio which contains 50% equities and 50% government bonds. In the period 1959-2014, the average weight of equities in the GMP was 52.5%, while real estate, non-government bonds and government bonds had average weights of 3.2%, 15.0% and 29.3%.

'There are various reasons to believe that the market portfolio is not an optimal portfolio'

Figure 3: Cumulative performance of the three portfolios relative to the global market portfolio



Source: Doeswijk, Lam, and Swinkels (2017)

Figure 3 provides an overview of the relative return and risk characteristics of the three allocation strategies relative to the market portfolio. All three result in a higher average compounded return than the market. The annual compounded return difference with the market of at best about 0.5 percentage points might not be astonishing, but it is economically meaningful. During our sample period, the return relative to the market return amounts to 31% for the equally-weighted portfolio, 25% for the rank-weighted portfolio and 15% for the 50/50 portfolio, as shown in Figure 2. The Sharpe ratios of the rank-weighted and 50/50 portfolio are significantly different to that of the market, but that of the equally-weighted portfolio is not.

Our results suggest that our three portfolios achieved a higher return in falling markets and in recessions. From a utility perspective, this is an attractive characteristic, since Kahneman and Tversky (1979) demonstrate that investors feel the pain of financial loss much more intensely than the pleasure of an equivalent financial gain. This pain often results in risk-averse behavior, or risk avoidance that is disproportionate to the expected outcome. Our results also show that both the equally-weighted and the rank-weighted portfolio achieved a higher return than the market in both inflationary and disinflationary environments.

Summary and conclusion

A true passive multi-asset benchmark would be one that has no active deviation from the broader market. We can construct such a passive benchmark using the Doeswijk, Lam and Swinkels (2017) database and use it to analyze past performance. This analysis shows performance can be improved by using relatively simple and static alternatives. All three alternative portfolios result in a higher average compounded return than the GMP or market return of 4.4%. In other words, the global market portfolio is probably not the optimal portfolio. This, in conjunction with the fact that, as mentioned earlier, the multi-asset market approach varies significantly when it comes to risk profiles, seems to indicate that there is limited scope for a successful future for the true passive approach.

This special topic is based on an article by Doeswijk, Lam, and Swinkels (2017).

2

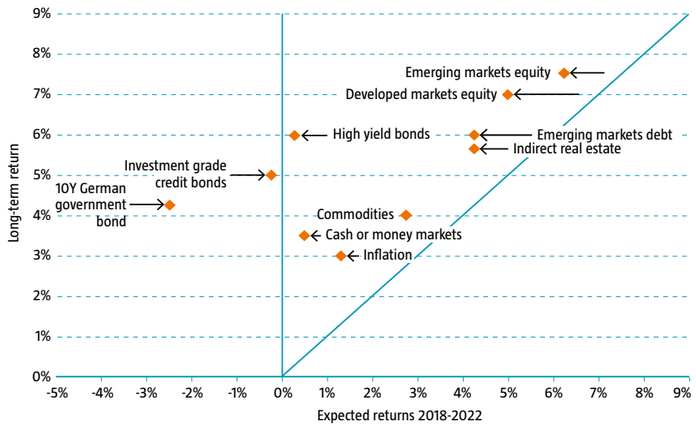
Expected returns 2018-2022

Predicting asset returns is never easy. How can a long- term investor navigate basically unknown territory? The good news is that visibility seems to have improved as we predicted in last year's report titled 'It's always darkest just before dawn'. Since last autumn, we have seen a structural improvement in the consistently disappointing macro data of the last five years. Global economic surprises surged into positive territory evidencing the arrival of an overall and synchronized cyclical upswing.

Has dawn finally broken for the global economy? Yes and no. Given an environment in which volatility has remained historically low, the financial media's renewed use of the word 'Goldilocks', meaning a world of stable growth and moderate inflation, and central banks' ongoing efforts to provide ample liquidity, it seems as if everything is going to be fine for financial markets, particularly for risky assets. We feel the forces of secular stagnation at the margin have indeed weakened as explained in our special feature about secular stagnation. The current tightness in global labor markets has not yet translated into wage growth but should eventually improve the negotiating power of workers and thus consumption spending, an important engine of economic activity. Our forecast regarding the probability of secular stagnation has therefore been lowered from 30% to 20%, while that of a high-growth scenario, characterized by a boom-bust dynamic, has been raised from 10% to 20%.

So we have become more constructive in terms of the way forward. On the other hand, we are a bit more cautious with respect to the growth potential in our baseline scenario. While a period of expansion doesn't die of old age, it doesn't last forever, either. Although we do not foresee a major recession in the near future (structural imbalances have so far remained relatively limited), the odds of some sort of temporary slowdown occurring have become significant. Chinese corporate debt and the maturation of the US credit cycle are potentially disruptive forces, although it is clear there may be others. Central banks will be quick to respond in order to limit damage, and with misalignment still at relatively minimal levels, the recession should be minor. So the bad news is that a recession is likely; the good news is that it will be unremarkable: unlike the Great Recession, this slowdown will come and go again within a five-year timeframe.

Figure 2.1: Expected returns 2018-2022 and changes in five-year expected returns (arrows)



Source: Robeco. Arrows show the change in expectations from last year's estimates.

Figure 2.1 and Table 2.1 summarize our outlook for 2018-2022 for the main asset classes. The second column of Table 2.1 shows the steady state, longer-term returns for each asset class. The next column shows the effects of the current macroeconomic conditions on the returns of each asset class over the next five years, the macro tilt. These are the macro tilts in our base case scenario. The fourth column shows the impact of the valuation on the returns, the valuation tilt. In the remainder of this chapter, we discuss the underlying framework for this table in more detail. We first discuss how valuation reflects the current state of market pricing, which is independent of our five-year economic scenarios.

Table 2.1: Expected returns 2018-2022 and changes in five-year expected returns (arrows)

	Returns	Medium-term influences*		Returns	Returns	Risk
Bonds	**Long term**	**Macro**	**Valuation**	**2018-2022**	**2017-2021**	**Volatility**
10y German government bond	4.25%	-/-	-/-	↑ -2.50%	-3.50%	6%
Cash or money markets	3.50%	+		↓ 0.50%	0.75%	1%
Investment grade credit bonds	5.00%	-/-	=	↑ -0.25%	-1.25%	5%
Emerging markets debt	5.75%	+	+	↓ 4.25%	5.50%	10%
High yield bonds	6.00%	=	-/-	↓ 0.25%	1.00%	9%
Equity-like						
Developed markets	7.00%	=	-/-	↓ 5.00%	6.50%	15%
Emerging markets	7.50%	=	+	↓ 6.25%	7.25%	22%
Indirect real estate	6.00%	-/-	=	↓ 4.25%	5.00%	19%
Commodities	4.00%	=	=	= 2.75%	2.75%	17%
Consumer prices						
Inflation	3.00%	=		↓ 1.25%	1.50%	

* The medium-term influences correspond with our qualitative assessment on the valuation and macro influences described in Chapter 2. Medium-term influences on equity-like are relative to developed equities. In line with the recommendations of the Dutch Association of Financial Analysts, the expected returns are geometric returns that are better-suited to long investment horizons. Equity-like returns are in local currency. Bond returns are hedged to euro except for EMD which is the unhedged return in EUR. The 10Y bond return has been derived as follows: we assume the bond is sold each year and that a new 10-year bond is bought with the proceeds. In this way we replicate a strategy in which investors retain their investment in the 10-year benchmark bond. Note that the return will vary for other strategies such as a buy-and-hold strategy. The value of your investments may fluctuate, and past performance is no guarantee of future results.

Source: Robeco

2.1 Valuation

As in previous years, we will take a closer look at the valuation of each asset class. Our aim is to assess how current asset prices relate to their underlying fundamentals and determine how this actual relationship relates to its own history. Although valuation is not a timing factor for short-term returns, it has shown itself to be a relevant factor for medium- to longer-term returns. While the power of valuation for predicting future expected returns is at times impressive, it should not be overstated. Academics like Dimson, Marsh and Staunton (2014) warn that we learn "far less from valuation ratios about how to make profits in the future than about how we might have profited in the past". And the ongoing, sometimes heated debate between respected industry practitioners (see Asness 2017) about whether valuation works for factor timing in equity markets, has only led to a consensus about the direction of expected returns given a particular valuation level, not when or the degree to which a valuation signal will pay off.

In the short run, anything can happen with asset prices, regardless of the starting valuations. To illustrate, only twice before in history has a higher Shiller CAPE ratio than the current 30.5 been recorded: in 1929 and in 1997. In 1929, a stock market correction occurred after just three months, and in 1997, a bubble had only begun forming which would not burst until 2002. Nevertheless, the idea of mean reversion of valuations over the medium term is a powerful one, that indeed helps us gauge the directionality of the respective market for our five-year outlook. Keynes once warned that markets can stay irrational for longer than you can stay solvent. But equally, fairly efficient markets won't stay irrational forever and prices will eventually change along with fundamentals.

For a long-term investor, tilting the portfolio towards asset classes that have cheap valuations by historical standards is often a sensible starting point. Of course, the problem in today's financial markets, after years of central banks pursuing 'easy money' policies, is finding these cheap assets. From a valuation point of view, the discussion about asset allocation has in recent years therefore become more focused on relative valuations. As observed last year, the stretched valuation levels are showing up not only in the equity market, but the sovereign bond markets have become even more decoupled from traditional fundamentals and look particularly unusual from a historical perspective. Of course, one can argue that valuations may deviate from history because fundamentals deviate significantly from history and may continue to do so in the future. When it comes to financial markets, it is always risky to assume that this time is different. In a late cycle phase, a bull market often invents a narrative to validate stretched fundamentals, which in our view can be traced back to a confirmation bias. The probability of the historically rare event (unusual valuation levels) reoccurring is overestimated because it is the observable state of affairs and is therefore the one which is validated. A present-day example of such a narrative is the idea that the neutral rate of interest is now structurally lower and therefore validates equity valuations to remain above historically observed averages.

2.1.1 Cash

Cash is the central building block of our asset valuation framework, as it is the benchmark you hope to beat by adding risk to an investment portfolio. It is thus the ultimate reference point for any investment process. At the same time, cash is somewhat elusive when it comes to valuation, as it is, by definition, a component that is not determined by the market, but depends crucially on the policy pursued by central banks. This raises the interesting question of whether central banks are in the business of assigning a neutral valuation to the cash rate, or whether they at times have other motives.[1] It is interesting to note that central banks consider it their responsibility to move the policy rate towards a certain neutral rate. At the same time, they leave us in the dark as to what proper neutral cash valuation entails, with ECB's Constancio (2017) defining it mainly in terms of what it is not:

"The disconnect between low rates of government bonds and the real rates of return of capital invested by non-financial firms, indicates that any concept of natural rate of interest cannot simply be a result of the marginal productivity of real capital as Wicksell and other neo-classical economists believed."

With nominal interest rates currently below zero, the question concerning the level of the neutral real rate has become even more relevant. With pundits arguing that the neutral rate of interest is structurally lower now, it is fair to note that the neutral rate of interest as such is unobservable (Friedman 1968). This should lower one's confidence in claims based on cumbersome modelling efforts as to whether the level of the ex ante neutral rate has really changed for good.

Based on a tool like the Taylor rule, which captures the reaction function of central banks, it is clear that the European central bank in particular would like to keep policy interest rates where they are for now, with the Taylor rule still supporting a deposit rate of -40 basis points. The other approach would be to look at the growth of the nominal economy, apply a liquidity discount and take that as the neutral valuation level. On the basis of this metric, rates are too low, especially in Europe.

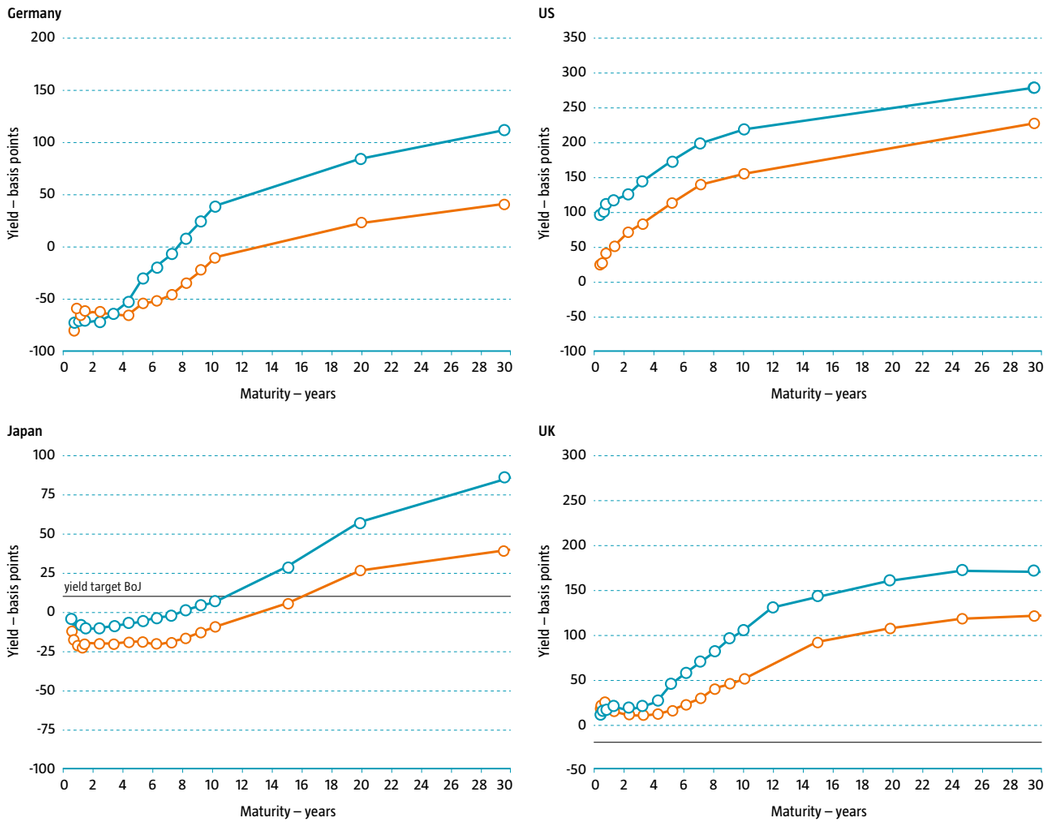
As interesting as this discussion is, judging whether rates are too low or too high from a longer-term perspective does not have much impact on how we expect interest rates to develop over the next five years. As there is no market force that determines rates, it is up to central banks to decide which path we take. As such, we prefer to refrain from making a qualitative call and instead will assess the direction of rates based on the macro tilt of the three scenarios.

1. Contingency planning for instance could be a motive, see a speech by Constancio (2017) given on 25 May 2017 in which he argues that a standard, mechanical policy rule is not able to capture all the risks a central bank has to cope with.

2.1.2 Government bonds

The global government bond market is still under the spell of central bank policy behavior. In the aftermath of the financial crisis, central banks have used a multi-dimensional policy framework to create excess liquidity. The negative interest rate policy and forward guidance have mainly affected the short- to medium-term end of the curve. The bond buying or QE programs have been aimed primarily at compressing term and risk premiums at the longer end of the term structure. Last year, the ECB continued monthly bond buying, and is currently doing so at a rate of EUR 60 billion per month. Overall, the balance sheets of the G4 central banks (Fed, ECB, BoE and BoJ) have expanded considerably in recent years and total almost EUR 14 trillion. Although the market has become accustomed to this massive interference in the bond market with central banks actively influencing bond prices on a daily basis, it cannot be taken for granted in the future. Especially when central bankers, as Draghi recently did in Sintra, show confidence that inflation will return and deflation has been dealt a decisive blow (via QE). With the bond markets' most brilliant minds now preoccupied with the dreaded prospect of 'tapering', considering bond market valuations has become even more pressing.

Figure 2.2: Yield curves for Germany, the US, Japan and the UK



Source: Thomson Reuters Datastream

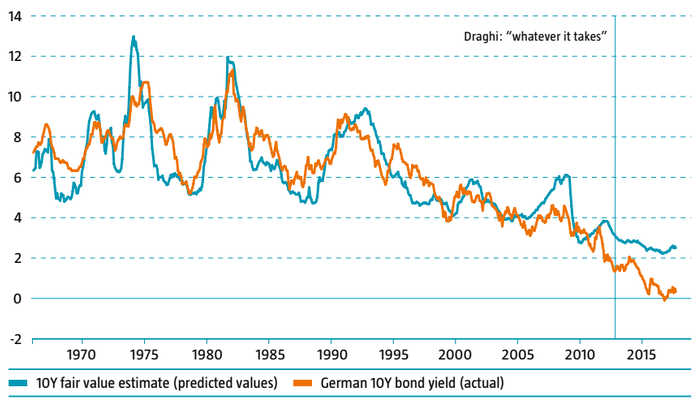
With the return of reflation and discussion of tapering in the markets, yield curves moved up last year. The curve in developed markets steepened since last year, which partly reflects the repricing of risk premiums as central banks plan their QE exit strategies. Still, for the Eurozone and Japan, the short end of the yield curves is negative-yielding, as these central banks have continued their negative interest policy, while the Fed has initiated three policy rate hikes so far.

The big question is how valuations will influence bond returns going forward as this unprecedented phase in the bond market will gradually normalize over the next five years.

It should be noted that in recent years, the disconnect between actual bond market behavior and traditional fair value models has grown. For the past 50 years, industrial production, short-term money market rates and CPI inflation numbers have provided a fairly convincing explanation for the German Bund market yield moves. But this picture has changed in recent years as the influence of unconventional central bank policy has become increasingly apparent, forcing a wedge between traditional macro factors and actual bond market behavior.

The surge in central bank sovereign bond buying has distorted the signals sent by these traditional market factors, leaving the current German 10-year bond yields at almost 200 basis points below their model implied yield. In our opinion, the ECB balance sheet expansion is a pretty valid explanation for this wedge, so in this sense the market is expensive for a reason. However, we think this massive distortion in market pricing created by central banks will ultimately be limited in terms of magnitude and duration and will dwindle in the medium term as the advanced economies show real GDP growth around potential and experience mild reflation.

Figure 2.3: German Bund valuation



Source: Thomson Reuters Datastream, Robeco

Another way to look at bond valuations, is to study the methodology used to derive our steady state expectation for bond yields. According to this methodology, steady state yields are calculated by taking real growth and inflation figures and subtracting a 0.25% risk premium for the lower risk profile of bonds compared to risk relating to the growth of the real economy. If we take the long-term consensus growth estimate of 1.5% for the Eurozone

and add either the long-term consensus inflation estimate of 1.5%, or the priced in inflation figure of 1.6%, it is clear that current Bund yields of 0.55% are actually 250 basis points below what can be considered equilibrium levels.

The next question is of course whether this historical/market approach is still relevant when central banks are buying up and now own a substantial part of the bond market. The answer is: probably not. Prices have changed because bond market fundamentals have, too. As long as central banks are willing (and able!) to buy bonds at all costs, there is no reason why yields should converge to traditional fair value yield proxies and close the current gap of 200 basis points we see in our simple Eurozone bond valuation model. In short, the question of whether bonds are overvalued or not boils down to the extent to which we believe that central bank involvement in the market will or will not continue.[2]

2. See also our discussion of this topic in the macro tilt equity section 2.2.3.

Moreover, do current prices adequately reflect the future reaction function of central banks? The Fed has indicated it wants a balance sheet total that is "appreciably lower" than it is now, but significantly higher than before the great financial crisis. It is logical to assume that other G4 central banks will follow the Fed's example in this respect at some point in the next five years, thereby changing current bond market technicals. Central banks will likely pursue tapering with caution, depending upon improving inflation and economic growth in order to avoid a bond sell-off that would trigger a sharp rise in capital market rates that could eventually lead to a recession. But the fact that yields are currently way below levels traditional pricing factors would suggest, points to a bond market that assumes that either there won't be a QE exit or that the QE exit strategy will be executed perfectly. The market could very well be disappointed.

We expect the pricing power of traditional factors like inflation and economic activity to regain strength over the next five years and as central banks retreat, the remaining QE will become even less effective in driving yields further away from their fundamentals. The current starting yields, which are very low from a historical standpoint, predict below average historical expected bond returns in the next five years, which is why the valuation tilt for sovereign bonds is negative.

2.1.3 Investment grade credits and high yield

For the valuation of investment grade (IG) credits and high yield (HY), we concentrate on the evolution of the credit spread. We use global credit spread data to determine the valuation of these asset classes. HY spreads at a top-line level have become significantly compressed over the last year and are now 150 basis points below the historical median spread. However, global IG valuations are 20 basis points below the historical median spread as measured versus the longer dated US data. Purely from a historical spread perspective, global IG spreads are 16% below the historical median, which is somewhat on the expensive side. As for high yield, current global spreads are now around 375 bps, significantly below the median spread of 526 bps recorded since 2000, and below the median spread of 470 bps noted in the US since 1994. The HY market has seen strong spread compression as a result of the ongoing rebalancing in the oil market (which benefited US high yield energy sector related issuers) and the global synchronized recovery.

Furthermore, we look at the HY spreads from a top-down macro fundamentals view, based on a fair value model reminiscent of our sovereign bond model using variables like the US Kansas financial conditions index, the realized sovereign bond volatility and the ISM manufacturing index. Based on this macro top-down model, HY spreads were expensive as of the end of Q2 2017, with model implied spreads 146 basis points above actual spreads as of 30 June. The current top-down valuation configuration bears some resemblance to the 2004 episode when the economic recovery was progressing.

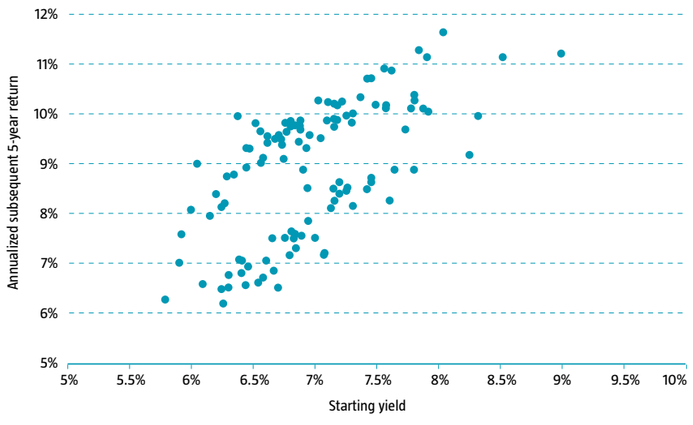
Next, we look at HY spreads from a more bottom-up corporate fundamentals point of view. Using a model based on interest coverage ratios, the global HY spread has undershot fair value by 100 basis points. Despite improving interest coverage as the global profit recession ended last year, market worries about leverage and interest coverage ratios are validated somewhat as spreads do not fully compensate for this. Further deterioration in interest coverage would impact HY, in particular. Note that spreads can undershoot fair levels for a long time, as seen between 2004 and 2007. In summary, high yield is expensive, while investment grade is more neutrally valued.

2.1.4 Emerging market bonds

In this section, we concentrate on the valuation of unhedged emerging market debt (EMD) in local currency. This asset class offers higher yields together with higher credit ratings than high yield. However, in contrast to high yield, it is exposed to considerable emerging market currency volatility. A basket of emerging currencies (JP Morgan EM Currency Index) indicates a 60-month rolling correlation of 0.90 with monthly EMD unhedged in dollar returns. The duration of EMD is around 4.75, which is somewhat higher than European HY (4.25), but equal to global HY. So valuation of this asset class implicitly requires a valuation of both the yield component and an emerging market currency valuation versus the US dollar.

First, we look at the yield component. Data is scarce. In the 1980s and early 1990s, most emerging market countries were unable to issue bonds with a medium- to long-term maturity, as their inflation track records were poor. This changed after the Asia crisis. JPMorgan's GBI-EM Diversified index began in December 2002. The index yield at that time was 6.0% versus 6.1% at the time of writing. Figure 2.4 shows the rolling 5-year bond return of this index versus the starting yield of the corresponding period. Since its inception, yields have been much higher than today's yield, reaching 9% in October 2008. Typically, rising yields are bad for bonds. But as an increase in yield goes hand in hand with a higher reinvestment coupon, depending on the starting yield and the duration (historically close to 4-5), the net effect can easily be positive, as shown in the chart.

Figure 2.4: Local bond return JPMorgan GBI-EM Global Diversified versus starting yield



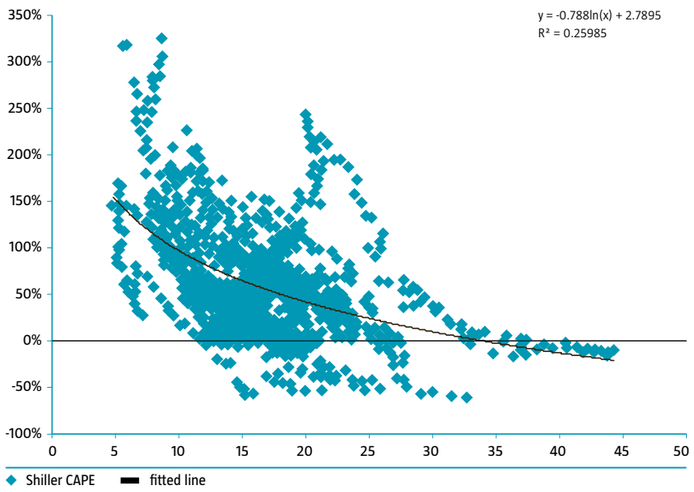
Source: Bloomberg, Robeco

Second, we investigate currency movements in terms of purchasing power parity compared to the trading partners of the EMD issuing countries. We look at the average deviation from trend in the BIS real exchange rates for the top 10 EMD issuing countries. This metric for long-term currency valuation shows that the ten major emerging market debt issuing countries are currently 5% below their long-term real exchange rates, which means emerging currencies are still cheap. EM currencies have rallied, as the discount became as high as 13% late in 2016. As the market has recognized the value in holding EMD currencies, the historical extremes in valuation have disappeared. In summary, local currency EMD is cheap relative to other fixed income categories, both from the yield component as well as the currency component.

2.1.5 Global stocks

Our preferred metric for stock valuation is the well-known Shiller PE ratio, or cyclically adjusted price earnings ratio (CAPE). This measure can be considered a relatively conservative way of looking at stock market pricing, as it looks at current pricing levels based on the 10-year average of earnings. The underlying idea of this method is to filter out the volatility of the business cycle, creating much more stable earnings projections. It also looks at historical earnings corrected for inflation to allow a comparison in real terms over time. The main drawback is that it is retrospective: in a scenario of rapid earnings growth, this measure will lag considerably. Also, the rolling ten-year window for real earnings is still sensitive to outliers like the deep earnings recession in 2008/2009. This lowers the denominator of the ratio and suggests that the stock market is more expensive than actually would be if this outlier were accounted for. Nevertheless, the track record of the Shiller PE as a predictive tool has remained very solid. The same can be said of other valuation measures like Tobin's Q (see box on page 63) or the equity risk premium (ERP).

Figure 2.5: Shiller CAPE versus subsequent cumulative five-year returns

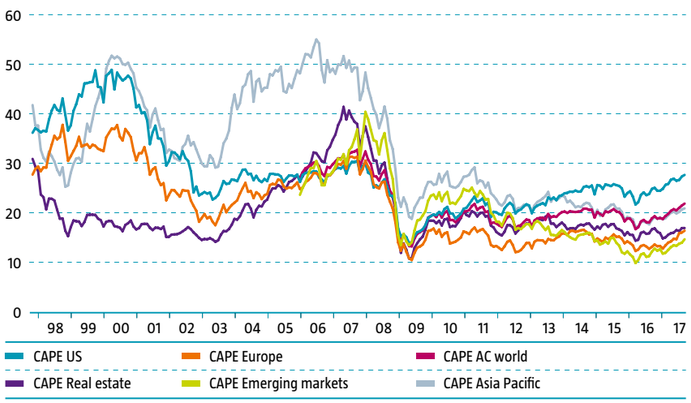


Source: Shiller database, Robeco

Figure 2.5 illustrates the level of the CAPE for the S&P 500 and the subsequent five-year total stock returns, using data since 1881. This analysis shows that as multiples expand and stocks get more expensive, the historical average future return on a five-year horizon declines. The current CAPE of 30.5 is 84% above the average CAPE of 16.5 recorded since 1881 and suggests that the returns in the next five years will be below the historical average. The charted regression of CAPE and subsequent five-year returns also indicates just a 9.6% cumulative return over the next five years for the US stock market, just a 2% nominal return per annum. These returns are also typically accompanied by higher volatility. As shown in Expected Returns 2016-2020, the volatility of five-year future S&P 500 returns is notably higher when the Shiller CAPE exceeds the threshold of 25. The high US CAPE tells us the low volatility environment won't last.

Rather than restricting ourselves to the original Shiller CAPE, which is geared to the US, we also revisit the worldwide measure, as well as other regional proxies based on the Shiller methodology.

Figure 2.6: Cyclically adjusted price/earnings



Source: Thomson Reuters Datastream, Robeco

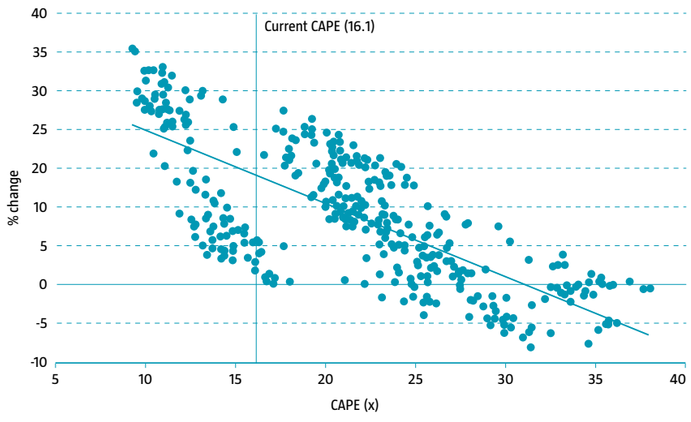
Looking at these measures, we find that at present, global stocks are roughly 30% overvalued, which is a higher premium than last year. This implies that prospects for global stock returns have worsened, in view of the implied five-year subsequent return with the current global CAPE level at 21.6.

With a CAPE of 14.2, from a regional perspective, emerging market equity valuations have become somewhat less attractive since last year as the discount of emerging markets compared to the global stock market has been compressed by 13% over the last year. This does not seem entirely warranted as the global cyclical upswing last year has mainly been concentrated in developed markets, rather than emerging markets. Last year, we said that the EM-DM valuation discount is largely a function of expected future real GDP growth differentials. We still stand by this assertion. Given the relative deceleration in GDP growth that we expect to occur in China in the next five years compared to developed markets, the valuation discount for emerging markets is more likely to widen again. Nevertheless, current valuations do suggest that emerging market equities will generate returns that are close to, but below average historical returns in the next five years.

European equity performance has clearly improved on the back of attractive valuations, both from an absolute and relative CAPE point of view. Also Europe has become more

expensive with the CAPE rising from 12.5 to 16.1. European equities had a reappraisal by investors as political uncertainty, one of the main factors explaining the existing valuation discount of European equities, decreased as a result of last year's benign election outcomes in Europe. Especially the victory of Macron was perceived to represent a reinvigoration of the German-Franco axis and thereby of the European project, diminishing euro break-up risk. The continued monetary support via the ECB's bond buying program also diminished systemic risk at the margin. We expect only a fairly modest rise in the CAPE valuations of Europe in the next five years as the clouds that were looming over Europe have not entirely cleared. Italy, one of the largest bond markets in the Eurozone, could become a real concern for markets as its population harbors relatively strong anti-euro sentiment, while the country's government debt is high and productivity growth is low (see our special feature about this topic, pages 24-30). Systemic risk will not disappear off the radar, even though Eurozone growth will remain fairly resilient in our view for the next five years. The Brexit process could have repercussions as well. The mild global recession which we expect to hit Europe's open economy, in particular, will lower valuations. Caution is advised as the European valuation discount will not simply mean revert until the continent works more convincingly on repairing confidence in its institutions. Current valuations do suggest European equity returns above the historical average.

Figure 2.7: MSCI Europe and subsequent 5-year annualized returns (in %)



Source: Thomson Reuters Datastream, Robeco

For the Asia-Pacific region, multiples have increased as well rising to 20.7 from 17.5. For the Asia Pacific MSCI index, which is tilted towards Japan exposure, we expect above average historical returns.

Tobin's Q

Back in 1969, economist (and Nobel laureate) James Tobin published a paper titled 'A general equilibrium approach to monetary theory' in which he introduced a concept that was later known as 'Tobin's Q'. His research focused on the link between financial markets and the market for goods and services and, in particular, the investment behavior of corporates. He agreed with Keynes that "there is no sense in building up a new enterprise at a price greater than that at which it can be purchased (General Theory, p.151)". Therefore, he invented a ratio that captured the willingness of corporations to make investments. The numerator of this ratio is the market value of corporate assets as represented by their stock market value. The denominator is the replacement or reproduction cost, i.e. the price in the market for newly produced goods and services that substitute existing goods and services on the balance sheet.

At equilibrium, the value of this ratio should be 1 for a company (or on an aggregate level the stock market) as the value of the corporate should equal the cost of replacing all assets of that firm at current prices. Values above 1 should in principle encourage investment as the firm is rewarded for incurring investment costs because the market value exceeds the replacement costs of existing productive capacity.

Tobin finds empirical evidence that changes in market valuation are indeed reflected in consumption and investments so that there is an equilibrium relationship.

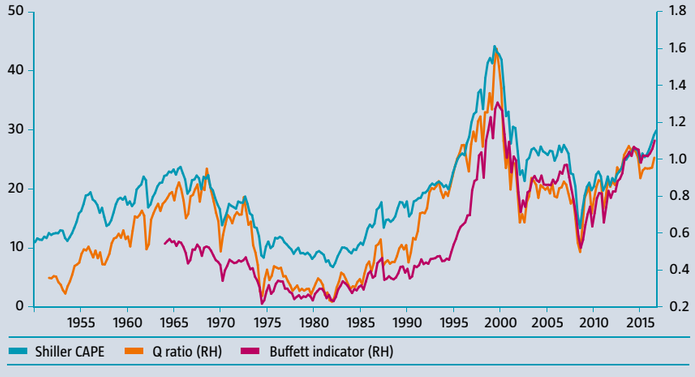
Why is this important for equity market valuations? Although originally an economic concept, Tobin's Q has a gained a prominent place in the finance literature and has become a popular metric among practitioners for stock market valuations, along with Shiller's CAPE, which is a financial concept. If Tobin's Q is above 1 it could signify a healthy investment climate for corporates but could at a certain point also indicate that the stock market has fallen prey to hype and spin and has irrational expectations about the productive capacity of the corporate sector. Investors are paying up too much for the future underlying productivity of goods and services that can actually be bought in the marketplace to replace existing corporate assets. This was the case in the first quarter of 2000 when Tobin's Q for the S&P reached an all-time high of 1.61. While Tobin's Q is an entirely different concept compared to the Shiller CAPE, the correlation between the two in the US stock market is striking. Basically their messages are the same: that equity valuations for the S&P 500 are looking stretched with Tobin's Q now above 1 at 1.04.

For practical purposes, the denominator in the ratio, the replacement cost, is often taken to be the firm's book value, as statistics on replacement costs are sparse. But this weakens the concept, as replacement costs also account for inflation while book value does not. Fortunately for the US, the Fed provides replacement costs data for non-financial corporates in its Z.1 Statistical Release of Financial Accounts.

As with any valuation metric, there are of course a few drawbacks. The first is that it is not a very recent metric as the Z.1 data is over two months old by the time it is released and it is only updated quarterly. The CAPE is more timely. Second, like the CAPE, it does not indicate the timing of stock market corrections or crashes and can only reveal the direction in the medium term. Third, while Tobin said that economic logic dictates that the ratio should be 1 at equilibrium, in practice the average value has been much lower, i.e. 0.71 since 1950. This would make the current value of Tobin's Q an even more bearish signal for expected returns. In all likelihood, the caveat is that replacement costs are consistently overstated. For instance, the statistics may not adequately capture the structurally declining replacement costs associated with technology goods like computers. All in all, Tobin's Q enriches the valuation toolkit, but it should be used with caution.

The figure below shows a third valuation metric, which, in 2001, Warren Buffett called "probably the best single measure of where valuations stand at any given moment"; the market capitalization of the S&P 500 as a percentage of nominal US GDP. Since Q1 2017, this indicator has told us that the total value of the major US stock market index exceeds the total monetary worth of underlying economic activity in the US by 6%. Together, the CAPE, Tobin's Q and the Buffett indicator point in the same direction and show that US stocks have become pricey.

Tobin's Q, Shiller CAPE and (S&P MV/GDP)



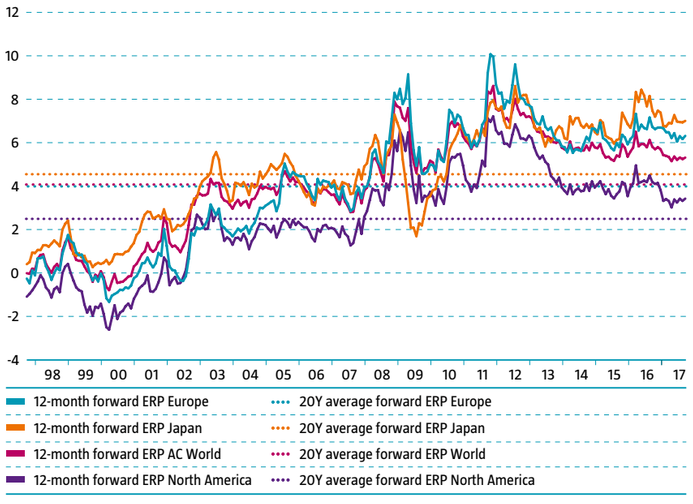
Source: Thomson Reuters Datastream, Robeco

Equity risk premium

We also look at the equity risk premium (ERP) as an alternative valuation measure. This measure looks at the so-called earnings yields (the inverse of the PE), compared to the yield of the other alternative, the bond market yield. This measure has several shortcomings. Apart from the fact that current earnings do not provide the same kind of certainty as a coupon on a bond (which is normally fixed until maturity), and that there is no guarantee that an investor can lay claim to those earnings (dividends can be reduced to zero), the maturity of the earnings income stream is not easily comparable with the duration of the average risk-free bond. Another drawback is that it is a relative measure. A high ERP can be a sign that stocks are indeed cheap, but it could just as easily indicate that bonds are very expensive, or a combination of the two. Therefore, one should keep in mind our view that sovereign bonds are overvalued when looking at the equity risk premium.

Nevertheless, despite the shortcomings of the so-called Fed model, the metric is still in use and recently appeared again in Fed minutes. But the key reason to look at the ex ante implied ERP is that it can be related to the historical realized excess return of equities over bonds, which has been 4.2% since 1900 for global equities.

Figure 2.8: Regional equity risk premiums (in %)



Source: Thomson Reuters Datastream, Robeco

The ERP confirms the message from the global CAPE that equities became more expensive last year. We use the ERP to look at the regional split. US equities now show an equity risk premium of 3.3% over bonds, which is very close to the average 3.2% excess return for US equities over Treasuries observed since 1900.

The European equity risk premium is 6.1%, compared with the historical average of the equity risk premium in Germany (the closest proxy) of 4.7% since 1900. Japan remains cheap on this metric as well, with the ERP being 2.1% above its long-term ERP of 4.8%. The global implied ERP is 5.2%. Purely from the point of view of implied equity risk premiums, barring the US equity market, equity investors can still expect a compensation for taking risk in the global equity markets that is above the historical values. This may be perceived as a counterintuitive message after an almost decade-long bull market, but the point is that equity risk as such is compensated because the alternatives (i.e. bond markets) look more dire.

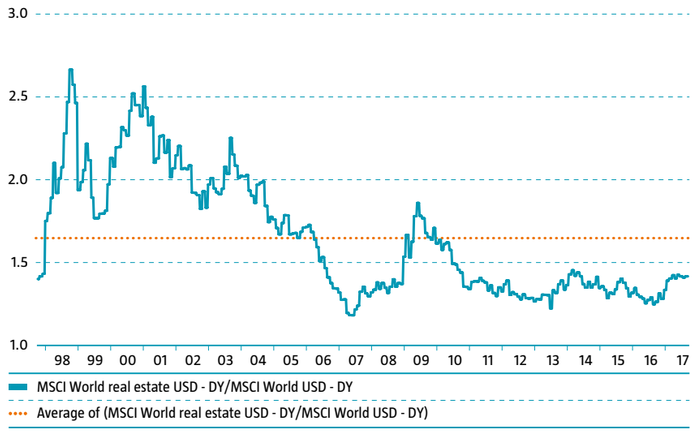
As general concerns about US equity market valuations are increasing, we introduced new valuation metrics for the US stock market to strengthen our conviction. This year we introduced Tobin's Q, as well as the Buffett indicator, the market value of the S&P 500 divided by nominal US GDP. All these metrics send the same message: the US stock market (which is 58% of the MSCI World) is indeed expensive. The Buffett indicator shows that the value of the US equity market is now 20% above the monetary value of its annual gross domestic product. Tobin's Q shows the market value of US stocks has also risen 4% above its replacement value.

Combining these four measures, we conclude that US equity valuations are on average negative for the direction of returns in the next five years compared to the steady state return of 7%, while the more restricted set of valuation metrics (CAPE and ERP) for the other regions still indicates stocks could move in a positive direction. All in all, discounting the weight of the US market in global indices, the valuation tilt for the equity market has become negative.

2.1.6 Listed real estate

We primarily compare real estate to equities as this asset class tends to have equity-like volatility. For this purpose, we have also developed a CAPE-like valuation metric for listed real estate to compare valuation levels with those of global equities. From a CAPE metric perspective, real estate is currently less expensive than global equities as a whole (16.6 versus 21.6) and it is also below its own historical median CAPE of 23. Improvement in valuation ratios compared to global equities has become more pronounced since last year in line with rising capital market rates. The relative dividend yield is now roughly 1.4x higher than that of stocks, which is 15% below the average level of the past 20 years (see Figure 2.9). This seems to suggest that in terms of the dividend yield metric, real estate is overvalued compared to equities.

Figure 2.9: Dividend yield of real estate versus equities



Source: Thomson Reuters Datastream, Robeco

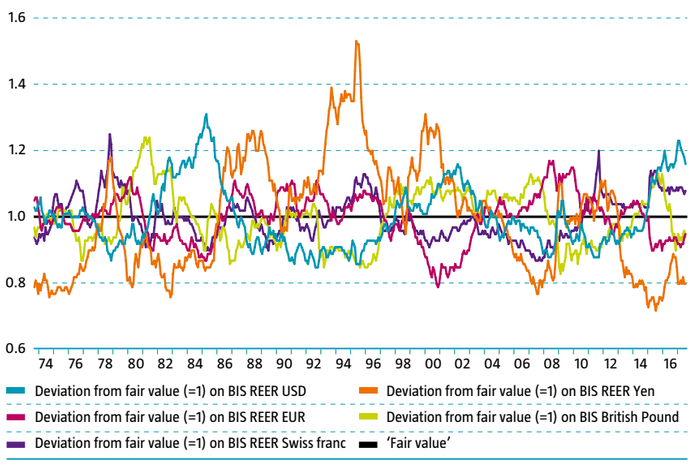
Nevertheless, based on the data from both the dividend and the CAPE measure, we believe that global real estate is neutrally valued compared to stocks.

2.1.7 Valuation of currencies

In the 2016-2020 edition of Expected Returns, we presented a framework for valuing developed market currencies based on the concept of purchasing power parity (real exchange rate). In this section we revisit this framework to update the five-year directional expectations for the major currencies. In the long run, relative purchasing power parity holds and the expected real exchange rate should be equal to its steady state value (Qe USD/EUR = QUSD/EUR or '1' in Figure 2.10). This figure illustrates the deviations from 1 for the major currency pairs. The current deviation from fair value is expected to mean revert, and we found that it is roughly equal to the expected change in the real exchange rate over a five-year horizon. There is ample literature confirming the real exchange rate's tendency to revert to the mean (Rogoff 1996, Frankel and Rose 1996, Hegwood and Papell 1998, Lothian and Taylor 2004).

Based on this framework, we have been calling for a dollar and pound depreciation against the euro and a stronger yen against the euro. The dollar has been overvalued on PPP for several years now without giving up its bull run, but since the start of 2017, the dollar has started to depreciate against its counterparts on a trade-weighted basis. Still it remains 16% overvalued and seems to have just 'turned the corner'. The British pound has significantly depreciated since the Brexit and is now more or less on a par with the euro. This suggests that against the euro, the pound will not go in any clear direction in the next five years from the perspective of current deviations from PPP.

Figure 2.10: Main currencies: deviation from fair value (=1)



Source: Thomson Reuters Datastream, Robeco

The yen has cheapened again compared to last year, now at 21% below its fair value. With the FX forward market currently pricing in an annual 0.4% appreciation in the yen against the euro over a five-year horizon, our metric suggests a higher rate of appreciation against the euro if full mean reversion occurs over the five-year period. As a Eurozone based investor, it is worth investigating if portfolio risks and restraints allow hedging the dollar and leave yen positions open in the next five years as a dynamic allocation.

2.2 Baseline scenario: recession on the horizon? (60%)

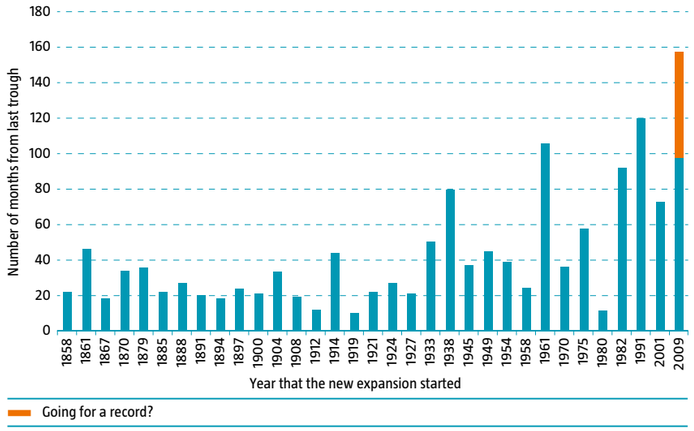
Ask longer-term investors what their biggest concerns are and you are bound to get answers that are heavily influenced by a recent event. A sharp rise in the euro, increasing political tensions in Korea, the latest disappointing US inflation report: the here-and-now is likely to be foremost on our minds. While this preoccupation is certainly not surprising, it does not help in assessing a five-year outlook of asset returns. In a five-year outlook, one must block out all the daily noise and focus on the underlying structural trends. Of course, that's easier said than done.

It is almost impossible to stress enough, that most of our current concerns will play little or no role in a five-year timeframe. Take the election of Trump, for example. There is no doubt that his election was a major event, which could have a profound impact on the medium-term developments in geopolitics. However, whether that means he will also succeed in having a lasting impact on financial markets, remains to be seen. Even if he manages to make progress on his ambitious tax reforms and the America-First trade relationships – which has become increasingly less likely with every passing month – it should not be forgotten that in five years' time, when we are focusing on the US mid-term elections of 2022, there will probably be a different president in the White House. Five years is a long time in politics and even if radical changes are made now, many of them may already be in the process of being undone again before the period is over. Equally, any market reaction may have been reversed, reducing the impact on a five-year average timeframe.

The same can be said for many developments in financial markets themselves. Take the biggest developments in bond markets, for example. The 2013 taper tantrum, the US high yield 'bear market' of 2015 and even the 2011-2014 euro crisis all came and went within a five-year timeframe. Sure, some of these events have had longer-term ramifications (read the special topic on the euro for example) and we should certainly not ignore them. However, once you move to a five-year timeframe the impact of these events on your asset returns tends to be relatively small, partly because of the averaging effect and partly because of the mean reversion that normally takes place within a shorter timespan than the five years.

The same even applies to recessions. The average recession lasts less than a year, with economic activity and financial markets mostly rebounding within two years' time. Of course, there are exceptions to this rule: the effects of the Great Recession are still reverberating nine years after its ending. The point, however, is that it is not called 'Great' without reason: living through this recession has been a pretty devastating and rather unique experience for many. Unless you believe that we have moved a step closer to an increasingly violent boom-bust world, the next recession is likely to be a much more ordinary event. And five years on, any lasting impact will be limited.

Figure 2.11: Going for a new record?

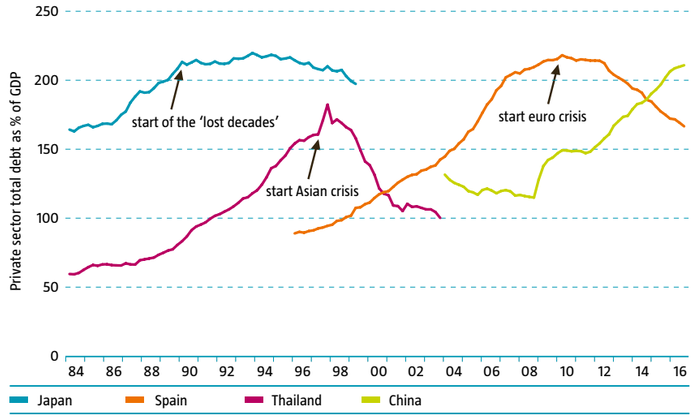


Source: NBER, Robeco

Speaking of recessions, let's take a closer look at this thorny topic. The current expansion phase in the US has entered its eighth year, making it the third longest on record. Adding another five years of undisrupted growth, would put it firmly in the number one spot. Although this would be unprecedented for such a big and developed country, it is certainly not impossible. The current expansion has been relatively shallow, with misallocations within the broader economy so far remaining limited in scope: there is no overinvestment, inflation is limited and there is no need for the central bank to abruptly hike rates. However, limited is not the same as non-existent. For one thing, the system is always subject to shocks, which can cause a recession. Moreover, specific developments in recent years have made us more cautious about expecting smooth sailing for yet another five years.

The first of these relates to the maturing of the US credit cycle. US corporate debt has seen a steady rise in recent years, in part due to the very low interest rate environment and high investor appetite for corporate debt (ample liquidity). Even more worrying is the weakening of the credit quality and covenants of outstanding debt. Although they have not reached alarming levels just yet, it's hard to imagine that the current credit cycle won't hit a bump somewhere in the next five years. The Chinese private sector debt could cause another such bump. Over the past five years, the Chinese private debt as a percentage of GDP has risen by 50 percentage points, reaching 220% of GDP by mid-2017. Historically, such a strong debt build-up has been linked to some big corrections: Japan (1990-present), Thailand (Asian crisis of 1998) and Spain (2009-2014). China is different from true market economies in the sense that the Chinese authorities could handle the debt with a centralized approach (it is mostly a domestic affair), but in the absence of such an approach, it is likely to harm the the (global) economy.

Figure 2.12: Heading for troubles...

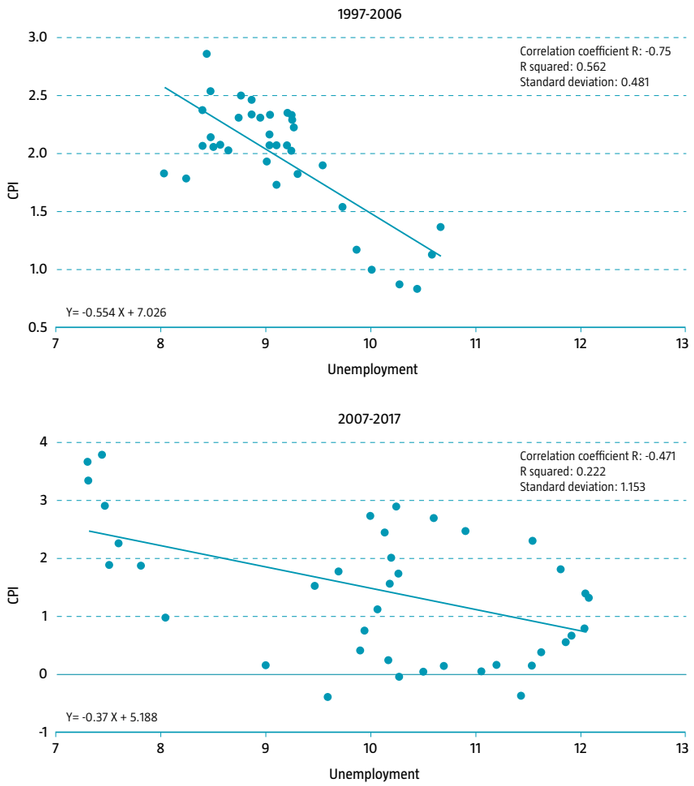


Source: BIS, Robeco

Based on these risk factors, it is reasonable to assume there will be a mild recession in the next five years. Taking our own warning to heart, we avoid the pitfall of predicting a specific chain of events. We do not profess to know which scenario will play out, or the exact timing. What we can say is that given the length of the timeframe, an 'ordinary' recession is almost par for the course. We believe that neither a Chinese slowdown, nor a hiccup in the US credit cycle will result in a strong recession. If a US credit event should occur, there is no doubt that the central bank will be willing and able to supply the necessary liquidity. It will not keep the US economy out of recession, but we expect it to be short-lived and shallow. The Chinese debt situation is less manageable and may therefore have a more complex outcome. That said, given that Chinese debt is mostly a local problem, with limited spillovers and contagion via the financial markets, there is again no reason to expect a major impact. There is no denying that average growth will take a hit, but the risk of a major contraction is relatively low. In that sense, the Chinese correction will be more comparable to the Japanese demise of the 1990s than the US subprime meltdown in 2008: damaging, for sure, but not particularly detrimental to the overall world economy.

Based on these observations, we have lowered our growth and inflation outlook in our baseline scenario. We now expect the world economy to grow by an average of 2.6%, down from 3% last year. This lower average growth forecast is entirely due to the temporary growth slowdown, as well as the subsequent classical growth rebound to occur in the years thereafter. As for inflation, we expect inflation to remain below the central bank targets for the better part of the period, as wage growth has so far failed to materialize. Any 'self-sustaining' rise in consumer prices will largely depend on labor unions demanding (and getting) higher wages. Wage demands have remained timid even as unemployment rates have dropped. Under-employment, more part-time employment, greater job uncertainty due to automation, weaker labor unions and subdued labor productivity seem to play a role in a flattening of the Phillips curve (see Figure 2.13).

Figure 2.13: A flatter Eurozone Phillips curve



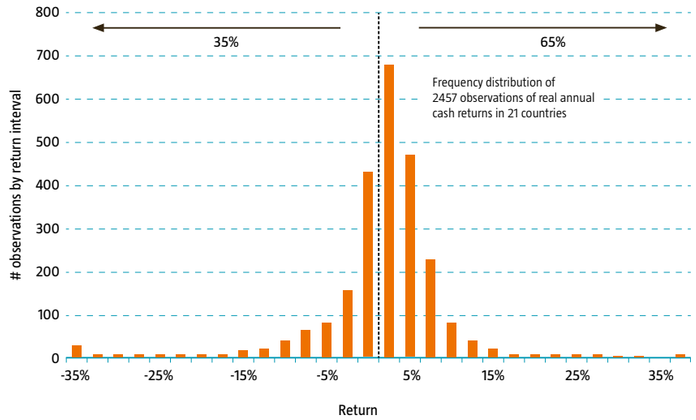
Source: Thomson Reuters Datastream, Robeco

We do not believe that the Phillips curve is 'dead', as some analysts do. What we are witnessing is the result of a variety of the above mentioned factors at work along with the rise of what has become known as the 'gig' economy. All of these factors have reduced the pricing power of labor, which is illustrated by the flattening of the Phillips curve. However, reduced pricing power does not mean that wage pressures are a thing of the past: as long as the law of supply and demand still applies, scarcity will eventually lead to higher prices (in this case wages). We think that the current lack of wage growth indicates that inflation will not rise until the end of our forecasting period. We expect inflation in the Eurozone to reach 2% by 2022, while it may rise to a level as high as 2.5% in the US.

2.2.1 Cash

Nowadays, cash presents a paradox. The default option for the risk averse investor actually lost money as demand for safe assets surged, pushing interest rates into negative territory. A euro-based investor who put his money in the bank overnight at the going bank deposit rate would have seen his capital erode even in nominal terms over the past five years. The EONIA cash rate return in euros was -0.1% during this period. Historically, negative real returns have been quite common, but this has always been a result of inflation exceeding nominal rates. The fact that we have negative nominal rates in Europe is unprecedented.

Figure 2.14: Cash – negative real returns have been quite common



Source: DMS Global Investment returns database 2017, Robeco

Of course, the reason for this anomaly is obvious: the ECB's aggressive approach to fighting what was perceived to be the huge risk of deflation. Unlike the Fed, the ECB did not stop at the zero bound, but rather moved its key policy rate into negative territory in 2014, sealing the fate of the risk-free savers in Europe. According to the recent statements of Draghi, the deflation risks have declined, but the ECB does not seem to be in a hurry to hike rates just yet.

When will they? Predicting how central bank policy will develop in the future is never easy. Our preferred tool is the Taylor rule, which is an established monetary policy rule that in the past has shown strong co-movement with actual policy rates.

The Taylor rule is a simple, but relatively robust rule that quantifies how much central banks should adjust policy rates in response to changes in inflation and output. As American economist John Taylor (who is on Trump's shortlist to replace Yellen as Fed president in 2019) suggested in a 1993 paper, central bank policy rates should be aimed at achieving the two main goals of monetary policy: a) price stability and b) stable real economy that is operating at full capacity. Our version of the Taylor rule assumes that the ECB changes interest rates in response to two deviations:

- Deviations between forecast inflation rate and the ECB's target
- Deviations between forecast unemployment rate and the estimated non-accelerating inflation rate of unemployment (NAIRU)

The resulting data, though still making the case for negative nominal policy rates, has surged close to positive territory. From this perspective, it is no wonder that 'tapering' has become the talk of the town. Central bankers also took notice of the global synchronized uptick in growth and inflation with Draghi expressing his confidence this year at the central bankers' meeting at Sintra that inflation will return to target, triggering a mini 'taper tantrum' in the bond markets.

Now that the parameters of the traditional trade-off between employment and wages seem to have changed compared to the standard Taylor rule assumptions, the manifestation of a classic wage-price spiral that delivers self-sustaining inflation will likely be delayed.

In our view, self-sustaining inflation rates will eventually come about in the second half of our projection period as most of the factors distorting the Phillips curve trade-off are unlikely to be long-lasting.

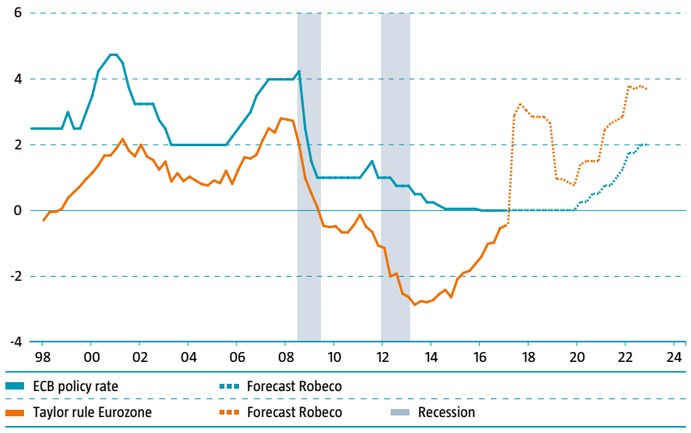
Although we expect the ECB to be relatively relaxed in setting interest rates, its policymakers' more hawkish characteristics should not be ignored. In this respect, ECB board member Coeure's recent remarks that the ECB does not like to be 'behind the curve' were unequivocal:

"But should we reach a point where the path of inflation is expected to be self-sustaining, but long-term unemployment remains high, there should be no doubt as to how I would decide regarding our policy stance. Monetary policy cannot 'run the economy hot' as insurance against labor market risks."

Especially if Bundesbank hawk Weidmann were to replace Draghi in late 2019 as the next ECB president, the ECB will avoid lagging behind the curve. We expect policy rate normalization, starting only in 2020, with a 'peak' ECB policy rate of 2%, which is considerably lower than in previous rate hike cycles.

Nominal cash returns for a Eurozone based investor will likely average 0.5% in the next five years, with real cash rates remaining in negative territory around -0.7%. Cash is no longer king and will not soon be enthroned again in a mild reflation environment with real GDP growth averaging just below potential output levels. Nevertheless, cash will prove valuable on the brink of a mild recession which we do expect to transpire in the next five years.

Figure 2.15: Taylor rule Eurozone



Source: Thomson Reuters Datastream, Robeco

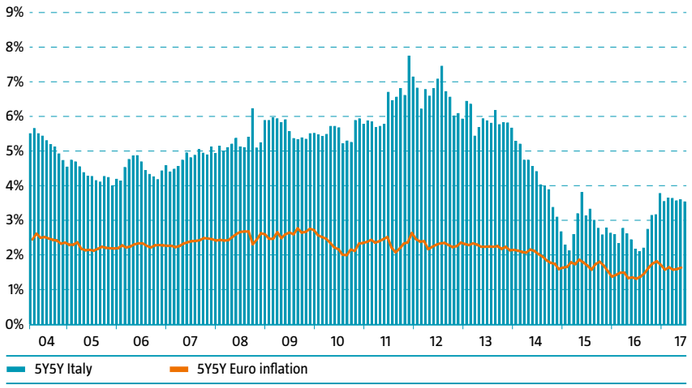
2.2.2 Government bonds

In the past, the distinction between cash and bonds was clear. The level of (and return on) cash was almost entirely determined by the central bank policy, with commercial banks competing for customers, and local laws dictating the rest. Bonds, on the other hand, were only partially influenced by central banks, in the sense that the short end of the yield curve was fixed based on the level of short rates. The long end of that yield curve was driven by factors like inflation and economic growth expectations, perceived credit risks and the demand for a risk free investment vehicle (in the case of the AAA rated bond markets). Things changed once central banks stepped into the market and started to buy bonds directly, disrupting the 'natural' demand/supply mechanism that had existed in the market. Central banks have clearly tightened their grip on the bond market, with the Bank of Japan's yield-curve control being the clearest example. Irrespective of the future level of inflation and credit risk, central banks can keep bond yields lower for longer, as long as they are fully committed to keeping them there. Only when central banks are willing to relinquish their direct control, will the old drivers again become dominant factors. Any assessment of the expectations of the outlook for bonds should therefore start with central bank policy.

As concluded in the previous paragraph, central banks appear to be growing more willing to experiment with giving up control. We say this with some reservation, and with good reason. Much as Quantitative Easing (QE) was a step into the unknown, so is its reversal, Quantitative Tightening (QT). The taper tantrum scare, which began when US bond yields almost doubled in anticipation of the Federal Reserve winding down its buying program, underscores that bonds are very sensitive with respect to (expected) changes. It is not just expectations: one should not underestimate the importance of a shift from QE to QT. Nomura's Richard Koo, for example, compared QT to a government running a bigger deficit by the same amount: all the bonds no longer bought by the Fed need to be absorbed by the market. According to his calculations, this net new 'financing' could be as high as USD 600 billion by 2019, comparable in size to the 2016 deficit. Whether the Federal Reserve will indeed be as ambitious remains to be seen, especially if we are indeed going to experience a (mild) recession in the next five years. We expect central banks to be very sensitive to the developments in the bond market, thereby limiting the scope for aggressive QT moving forward.

Whereas the Fed is already heading for QT mode, the ECB appears to be close to the point the Fed had reached back in 2013, when it began winding down the QE program. There too, the scope of the actual unwinding of the acquired bond position was limited. A major concern for the ECB is the development of the funding costs of countries and companies. As risk premiums increased during the euro area crisis, countries and companies witnessed a negative feedback loop impacting growth and debt development. In Figure 2.16 we derive the implied funding cost for one of Europe's most troubled countries: Italy.

Figure 2.16: Expected 'real funding' cost for Italy



Source: Thomson Reuters Datastream, Robeco

The figure compares the 5-year 5-year forward euro inflation expectation with the expected funding cost of the Italian sovereign for the same period. This gives us a proxy for the real funding cost. The figure shows that this real funding cost became dangerously high during the euro crisis, peaking at 5.4% which is well above Italy's growth potential. The latest readings show a normalization with a real funding cost close to 2%. Although this is still a challenge for Italy, the level is not at odds with pre-crisis levels.

Overall, most signs point to a gradual normalization. This should not be too big a concern for the bond market, except that we are coming from an extremely low base. Especially if we perform the previous analysis for Germany, we see that expected real funding costs are negative. Whether the ECB acts will depend on how sovereign spreads within the Euro area develop. The situation in Italy is manageable, but if rates pick up quickly, it may reawaken fears. Therefore, the ECB will aim to manage QT and the return to policy normalization without endangering the debt sustainability of Italy. As we wrote in our special feature 'To integrate or disintegrate' we are optimistic about the outcome in the euro area, while still recognizing the risks.

As stated previously, another key indicator to watch is the development of (expected) inflation. Inflation is always an important variable for bonds, but as the move by the ECB to implement QE and to lower its lending rates into negative territory has been directly linked to the (lack of) inflation, it is more important than usual. So far, inflation expectations have been bullish for bonds as shown in Figure 2.17. The figure shows the 5-year forward inflation expectation for the following five years. The levels are derived from the inflation-linked swap market. Since Mario Draghi's Jackson Hole speech in 2014, this measure has been widely seen as the ECB's preferred indicator for medium-term inflation expectations. Actually, at this point in time, the inflation swap market tells us the market does not believe the ECB will achieve its mandate of ensuring an inflation rate "below, but close to 2%", as the 5Y5Y inflation expectation is just 1.6%.

Figure 2.17: Inflation expectations vs ECB target (in %)

Source: Bloomberg, Robeco

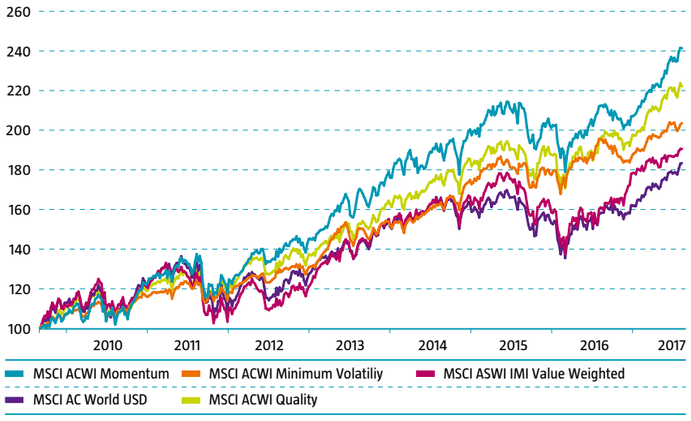
We think the ECB's determination to fulfill its mandate should not be underestimated. Based on our expectation that inflation (expectations) will remain below the ECB's target for the first half of the period, we have lowered our expectations for bond yields, but we expect inflation expectations to return to 2% in the second half of the period. We expect German 10-year yields to rise to a level of 2.5% by the end of 2022. Though relatively modest, this rise will result in a negative 2.5% YoY return for German bonds for the five-year period as a whole.

2.2.3 Equities

It is said that 'opportunity seldom knocks twice'. But in hindsight, over the past five years, opportunity has knocked frequently on the door of equity investors. Across the board, investors have been rewarded with equity returns in local currency above the historical averages. The MSCI World has generated 13.5% in local currency over the past five years, which is well above our steady state equity return of 7%. Notable exceptions have been countries that experienced deep recessions like Russia and Brazil. Now that the synchronized global recovery is finally underway and corporate earnings are perking up, one wonders if opportunities for the equity investor will remain strong in the next five years.

And why shouldn't they? As developed stock markets have set new record highs over the past year, discussions about deflation have turned to reflation instead, gloom has made way for optimism, Goldilocks is getting dusted off and secular stagnation worries have faded. German producer confidence reached a 47-year high in May, while the VIX index declined that month to its lowest level in 24 years. We are now experiencing a bull market that can be interpreted as stemming from a 'buy the dip' psychology. Positive momentum quickly returns after each dip. In retrospect, buying in each dip has led to new highs, so reluctant investors are eventually drawn in. The result is a self-reinforcing positive feedback loop.

Figure 2.18: A 'what you see is all there is' momentum-driven bull market



Source: Thomson Reuters Datastream, Robeco

However, the positive feedback loop underlying the 'buy the dip mentality' is ultimately fragile, as it is largely driven by a 'what you see is all there is' mentality that takes the big picture for granted. Yet for the next five years, it is that big picture and the possibility of regime change that matter. There is no sense in buying the dip if the underlying imbalances in the global economy become unhinged, slowing down the corporate profit cycle which typically forebodes a recession.

US profit margins challenged

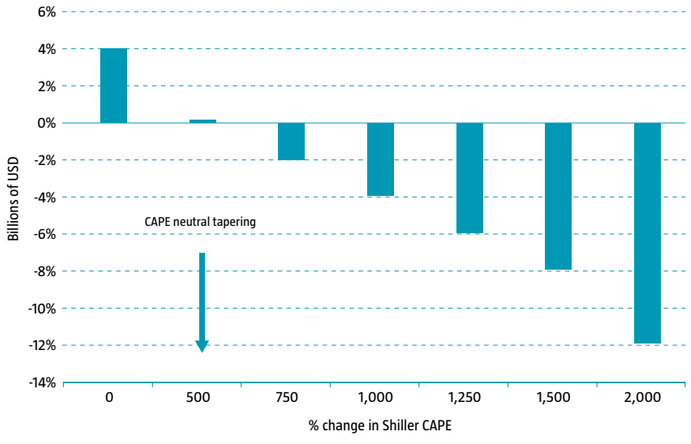
Economic expansions do not die of old age (nor do equity bull markets) as long as there is something to rejuvenate them. The themes that govern a bull market can vary over time, but in the end they can be traced back to either positive demographics and/or faster productivity growth. While we do expect moderate expansion of economic growth, we are not convinced there will be any strong acceleration in productivity growth that could lengthen this cycle beyond 2022. Demographics are not supportive with a global labor force participation rate that has declined over the last several decades and is not likely to mean revert given the aging workforce and increasing automation of labor. In fact, we have observed various macro-economic and financial market imbalances that could very well trigger a mild recession in the next five years.

More importantly, the era of abundant excess liquidity that has kept risky assets buoyant is about to take a decisive turn in the next five years with central banks actively planning their QT (Quantitative Tightening) strategies. Inflation and growth are not yet convincing enough for central bankers to cut off support immediately but there is still reason to take former Fed governor McChesney Martin's words seriously that the task of the Fed is to "take away the punchbowl just as the party gets going". We are moving away from a world where the market anticipates what central banks will buy to a world where the market must anticipate what central banks will sell. For now, the richly valued equity market seems to be discounting a perfect execution of the QT strategy in line with the evolving economic cycle.

The QT strategy assumptions of the market will likely be put to the test. Note that this departure from unconventional policy, which caused central bank balance sheets to double in the last seven years, has no historical precedent. We did some research to assess the potential impact of the QT strategy. The graph below shows the (1-year lagged) estimated sensitivity of the global CAPE multiple to the cumulative annual change of total assets on the balance sheet of the 'big three': the Fed, BoJ and ECB. A cumulative annual shrinkage of USD 500 billion would lead to 'CAPE neutral tapering' as the multiple would remain largely unchanged and this market neutral impact would be synonymous with perfect execution. But beyond that amount, equity valuations are very likely to falter.

Figure 2.19: Estimated taper reaction function – 500 billion per year seems CAPE neutral

Regression-based reaction function of 1Y lagged % annual change in global CAPE versus 1Y annual cumulative change of Fed, BoJ and ECB balance sheets in billions of USD



Source: Datastream, Robeco

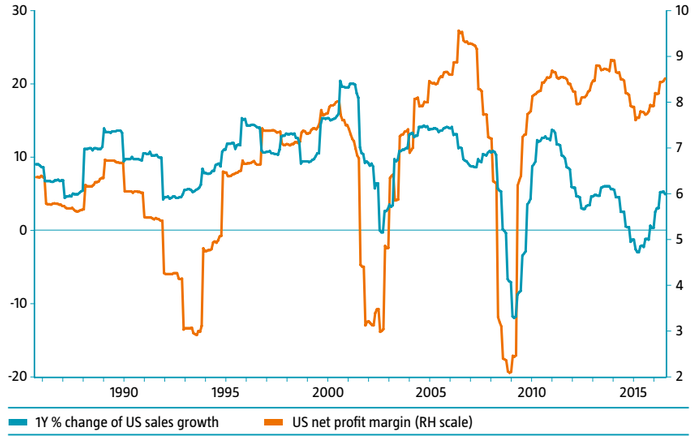
Unfortunately, we are left in the dark as to the exact degree of balance sheet shrinkage and the corresponding timeframe. The Fed has stated that it wants to reduce its balance sheet to "appreciably below that seen in recent years" but that it wants it to be "larger than before the financial crisis". Since 2009, the big three alone have added USD 7,200 billion in assets to their balance sheets. Reducing this by half in a similar seven-year timespan would already result in an annual cumulative balance sheet reduction of USD 500 billion. If the ECB and BoJ follow the Fed's example, it is not unthinkable the market currently underestimates the pace of the QE exit, which could bring down equity valuations.

If the pace of reducing excess liquidity catches the market by surprise and has the potential to deflate equity prices, the burden is on earnings growth to provide compensation. Buffett captured this point aptly when stating that, "Only when the tide goes out do you discover who's been swimming naked." Our earnings growth outlook for the dominant US market (still 58% of global market capitalization, with 22% of total profits coming from overseas) reflects a less benign outlook for global equities compared to last year, thus providing less cover.

In a steady state world, earnings growth should equal nominal economic growth as constant profit growth above GDP would imply that in the long run, all of the monetary reward for economic activity will end up in corporate pockets, while a constant profit growth rate below GDP would eventually eliminate all corporate activity, as there would be no reward for entrepreneurship. Based on our expected average real GDP growth in the US of 2.3% and the average inflation rate of 1.8% for the next five years, using simple regression, EPS growth in the US equity market is expected to be 3.9%. This is indeed quite close to the nominal GDP growth rate of 4.1% we expect to see, though still below it. An earnings growth rate below nominal economic activity also implies a decline in the corporate profit share of GDP. This is an important point, as the profit share of GDP, with the NIPA profit metric now around 11%, has in recent years been at an historically high level (median 9.5%).

The reasons why we expect a moderate (i.e. a couple of percentage points) decline in US profit margins are explained below.

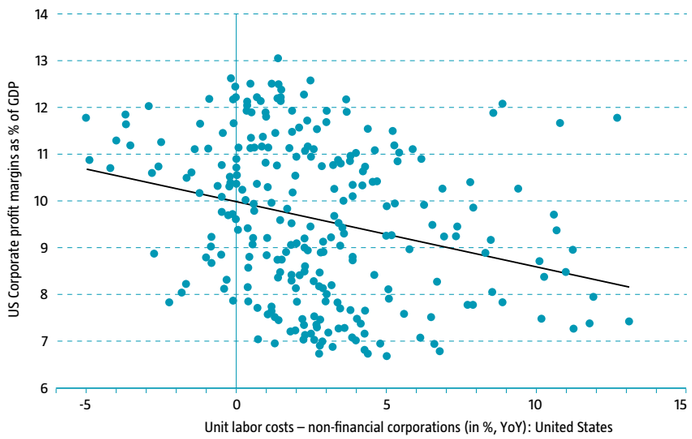
Figure 2.20: The earnings recession has been left behind



Source: Thomson Reuters Datastream, Robeco

First, profit margins depend on many factors like capacity utilization, producer prices, exchange rates, interest rates, taxation etc., but they typically peak around the same time as unit labor costs. As long as output per worker exceeds wage growth at the margin, the corporation still has the advantage of pricing power. But as micro-economics and empirics have taught us, as the bargaining power of workers increases and wage growth starts to exceed marginal labor productivity, profit margins erode. In the next five years we expect the bargaining power of labor (and thus wage growth) to increase.

Figure 2.21: Rising US labor costs will squeeze profit margins

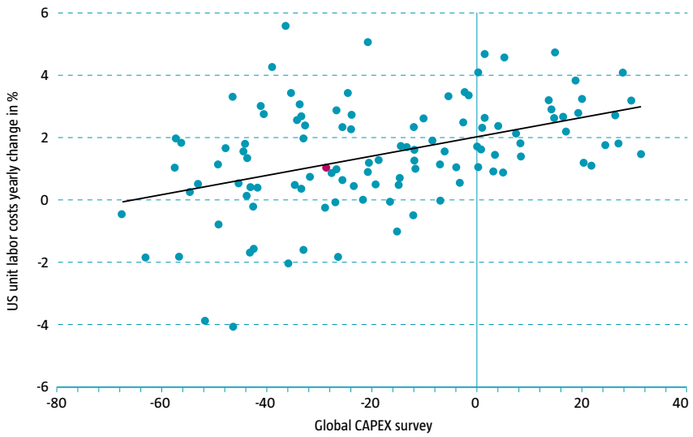


Source: Thomson Reuters Datastream, Robeco

To explain this in more detail, we have seen very strong job creation in the US with average nonfarm payrolls showing an average of almost 200,000 new jobs being added each month, with the labor market tightening to a 4.3% unemployment rate. Yet wage growth, now at only 2.5%, has clearly lagged the improvement in the unemployment rate. Although this currently appears to be a global phenomenon, we do not believe that the US Phillips curve (i.e. the trade-off between unemployment and wage growth) is dead. As explained previously, there are good reasons to assume the long-term Phillips curve has indeed flattened somewhat, but this does not mean that a tight labor market will no longer have any impact on wages.

Second, in an environment of moderate economic expansion and producer and CEO confidence levels that demonstrate a certain degree of optimism (we expect the ISM producer confidence index on average to remain in the 50-56 bracket for the next five years), it is unlikely that employers will sit back in apathy as unit labor costs rise. Instead they will ramp up capital deepening investments to save on future labor costs, as we have seen in the past (see Figure 2.22). Well-aimed CAPEX spending will enhance corporate pricing power but with a lag, initially squeezing profit margins.

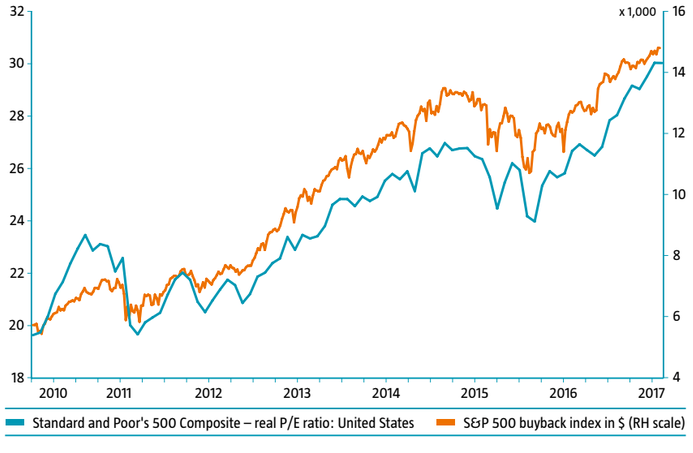
Figure 2.22: Corporations increase CAPEX spending as labor costs rise



Source: Thomson Reuters Datastream, Robeco

Third, we expect a rise in interest rates, which will make corporate financing more expensive, either via the bank lending channel or via the capital market. Corporate leverage has risen, making a worsening debt service problematic for countries/sectors with excess leverage and weak productivity. Although we expect the Fed to take a very cautious approach, corporations expenses due to rising interest rates and bond yields will be higher, thus eroding margins. A side effect of higher financing costs is that it also could lower buybacks, thereby compressing multiples.

Figure 2.23: Shiller CAPE multiple has risen along with buyback performance

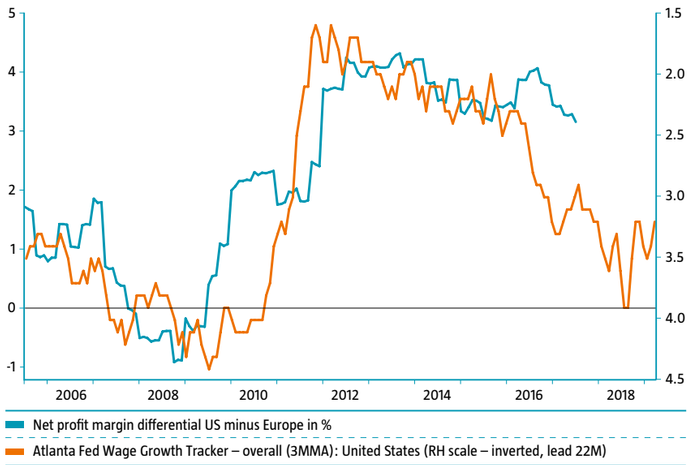


Source: Thomson Reuters Datastream, Robeco

Prefer cheap markets that lag in the earnings cycle

Regional equity allocation on a tactical horizon is notoriously difficult as just 6.8% of 60 asset managers managed to outperform an equally-weighted benchmark in 2016 according to Alpha research, an independent investment research firm. On a five-year horizon, longer- to medium-term themes will have more time to play out and will therefore become more important for relative performance. Given the weight of the US, accounting for 58% of the MSCI World, misjudging the US equity market will be hard to overcome. But recently equity market correlations on a sectoral and regional level have come down as well. With regional markets less aligned, regional allocation may be more rewarding. What are the themes that will matter for regional country allocation? First, the earnings cycle comes to mind. In this recovery phase, the US earnings cycle has advanced compared to Europe's. As discussed previously, we expect US profit margins to contract by a few percentage points. In a relative sense, the wage growth pickup in the US is leading in profit margin developments, suggesting European profit margins will need to catch up with the US. For a country like Japan, the room for earnings catch-up seems more limited, especially as the yen has already weakened considerably and is less likely to provide the same tailwinds for Japanese exporters as before.

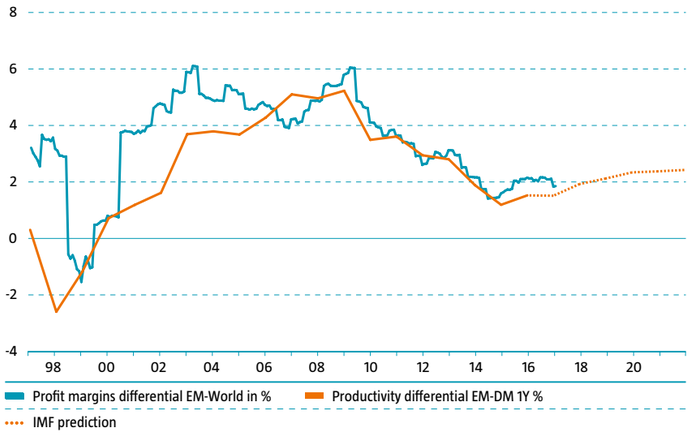
Figure 2.24: US wage growth acceleration predicts European profit margin will catch up



Source: Thomson Reuters Datastream, Robeco

For emerging markets, productivity growth is expected to outpace productivity growth in advanced economies like the US, boding well for a modest earnings catch-up versus the US.

Figure 2.25: EM profit margin developments coincide with productivity catch-up

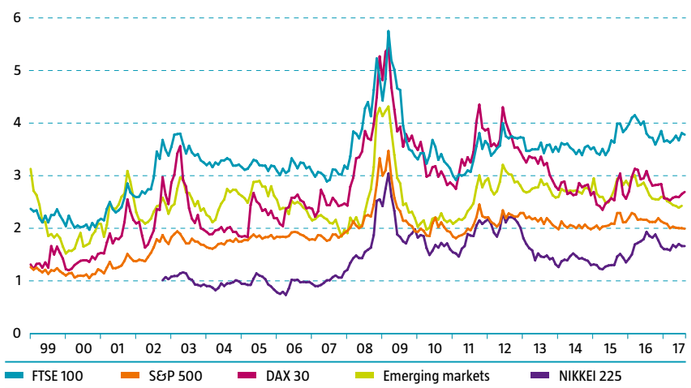


Source: Thomson Reuters Datastream, Robeco

Second, the regional equity market reaction function to global QT is an important discriminatory variable. In the end, the more expensive market, the US, seems more vulnerable to lower excess liquidity compared to regions like Europe and Japan that are less stretched in valuation terms. We expect a relative multiple compression of the US compared to Europe, Japan and the emerging markets. Also, Japan has not yet come close to implementing QT. Third, the compounding effect of dividend yield differentials does matter on a five-year horizon. Currently, dividend yields look more attractive in Europe and emerging markets.

All in all, it looks as if the conditions for the next five years will be favorable for relatively cheap markets that somewhat lag in the earnings cycle like Europe and the emerging markets and are therefore able to leverage on our projection of resilient global economic activity and mild reflation.

Figure 2.26: Dividend yield



Source: Thomson Reuters Datastream, Robeco

Below historical average equity returns, but in the end it is a relative game

On balance, we expect below historical average returns from the global stock market in the next five years and have lowered our return compared to last year to 5% in local currency, which is a 1.5% reduction compared to last year. Observe that on a currency hedged basis, global equity returns are likely to be even lower for a euro investor. We expect 4%. This return difference could provide a reason to leave currency exposure open, but as we showed in the currency outlook earlier, the potential loss on the dollar can be even larger from the perspective of a euro investor.

2.2.4 Corporate bonds

Credit investors have not had much to complain about lately, having received above average excess returns on sovereign bonds. Hedged to euros, global investment grade has generated a return of 3.8% on average in the past five years, earning a premium of 1.2% over global government bonds hedged to euro. This excess return is well above our estimated steady state 0.75% credit risk premium that investment grade should theoretically earn. For high yield, the return picture has been even more rosy with a euro hedged return of 7.0%, actually earning a premium that is even 1% above the steady state excess return of 1.75%.

Investment grade issuance levels are at a ten-year high, which reflects elevated demand from income seeking investors. Spreads for global investment grade have steadily grinded lower over the last 12 months from 150 to 110 basis points at the time of writing this report.

Moody's measure of a bond's legal protection, the covenant quality index, fell to its lowest level on record in June 2017. The willingness on the part of investors to scoop up covenant lite bonds shows how forcefully market power has shifted towards the supply side, an indication of a mature credit cycle. Spreads for global high yield were also compressed from 580 last year to 370 basis points. As a result, there is little room for error with credit markets almost priced for perfection, as discussed in the valuation section.

Fundamentals do matter

These developments beg the question as to whether credit markets are justified in their upbeat assessment of the future. Admittedly, choosing between a decent yield of 2.6% (IG) or even 5.3% (HY) versus a barely positive money market return seems almost like a no-brainer. Who needs to fret about fundamentals when central banks have entered the credit market as new technical buyers (as the ECB did with its corporate sector purchase program (CSPP))?

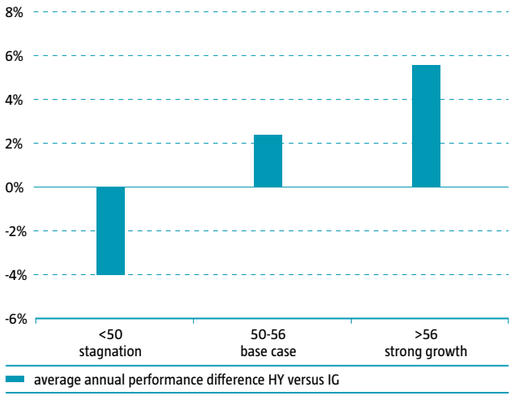
In a market where there are ample buyers for each seller, it is easy to forget that credit markets can be pernicious. Credit risk can suddenly manifest itself, pushing spreads higher and returns deep into negative territory as seen most recently in the aftermath of the 2013 taper tantrum, when investment grade witnessed a drawdown of more than 6% within only a month's time.

With central banks becoming more vocal again about unwinding easy money policies, there is less room for complacency. Therefore, investors have to test credit fundamentals more thoroughly than before to see whether the asset class can weather a period of lower liquidity and higher (bond) market volatility.

Unconditional macro factors remain supportive

As for fundamentals, our base case scenario of mild reflation and real growth evolving around advanced economies' potential output over the next five years is basically good news for credit markets, especially for high yield which is more sensitive to the macro-economic growth factor. In an expansion phase, as reflected by an ISM producer confidence index above 50, high yield typically outperforms investment grade (see Figure 2.27).

Figure 2.27: Performance HY versus IG in various economic cycles
(as proxied bij ISM: <50 contraction, >50 expansion)

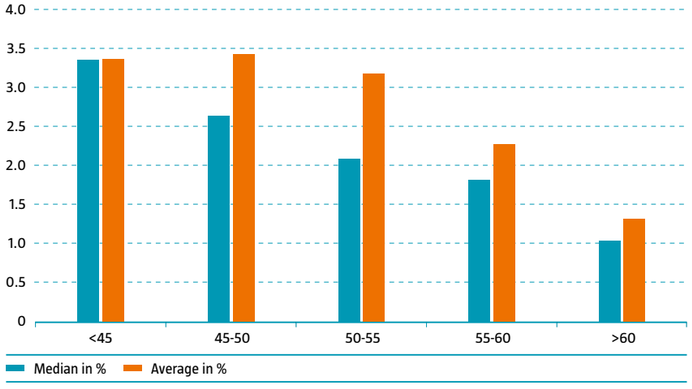


Source: Thomson Reuters Datastream, Robeco

Complicating factor: mild recession ahead

Good news aside, our baseline scenario is not a linear projection of the current synchronized global recovery, as we also expect a mild recession to occur before 2023. This downturn will likely be caused by a worsening financial cycle in the US or China as capital misallocation and leverage have increased in specific sectors of their respective economies. Potential recession triggers in the US can come from the automotive industry (car loans), energy sector, student loans and credit card debt which already show delinquencies at 2007 levels. Stalling consumption growth as a result of exposed financial imbalances will hit high yield returns in particular and will imply underperformance of high yield compared to investment grade as the producer sentiment drops below 50 and defaults start to rise (see Figure 2.28). The tricky part with respect to average credit performance on a five-year horizon is that by nature, any recession can potentially be high impact and is also extremely unpredictable. If a recession occurs in the middle of our projection period, say 2020, it will have less of an effect on average credit returns over the five-year projection period than if it occurs at the end of the period.

Figure 2.28: Defaults typically rise in a mild recession (ISM between 45-50)

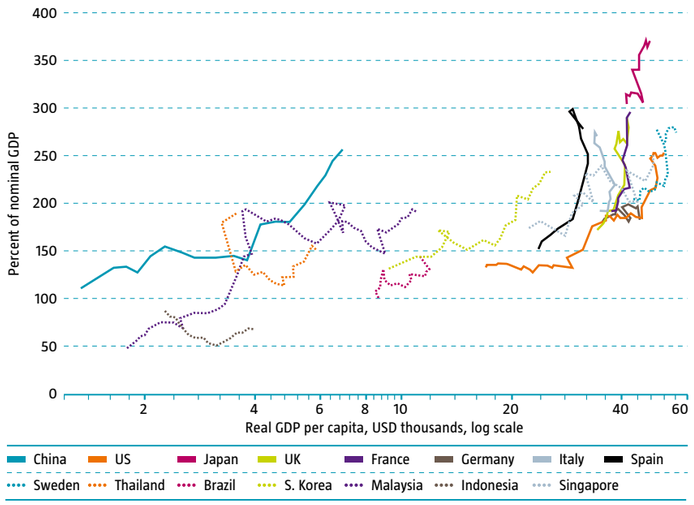


Source: Merrill Lynch BoFA, Robeco

Is leverage the overarching problem?

Our view of weakening credit fundamentals in the (US) credit market is corroborated by the IMF which has expressed concerns about increased indebtedness and balance sheet risks. Climbing this wall of debt is getting increasingly difficult.

Figure 2.29: The credit buildup is becoming difficult to surmount



Source: Thomson Reuters Datastream

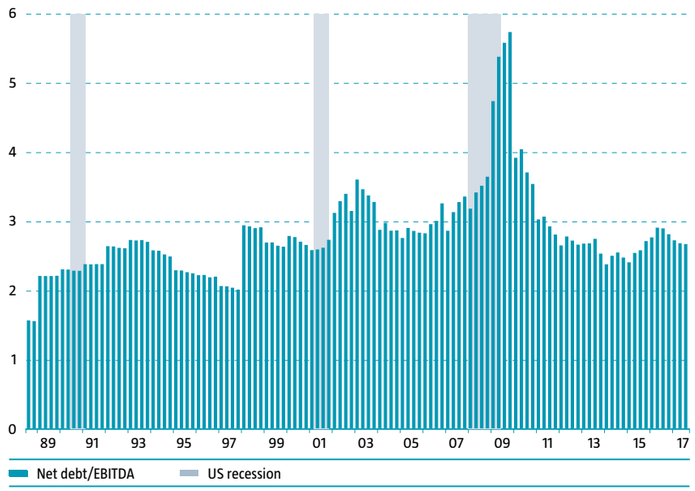
Also, the BIS recently pointed out the rise of 'zombie' firms as an illustration of capital misallocation, urging central banks to raise policy rates. Inevitably, the ability to service debt is hampered if policy rates rise while earnings growth keeps lagging as a result of weak productivity.

Among investors, the debate about balance sheet quality at the corporate level is far from settled. For some investors, the US credit market in particular seems to be in a very late stage of the credit cycle characterized by an exclusive focus on shareholder-friendly corporate actions like share buybacks, M&A transactions and dividend payments. They point to the fact that leverage has increased as a result of new debt issuance to finance these shareholder-friendly corporate actions.

More sanguine investors point to the fact that in the US, there are ample buffers in place – with cash balances amounting to close to USD 1,200 billion for industrials – to mitigate credit shocks. Though not every sector is created equal and technology firms claim the bulk (around 30%) of this cash pile, recording even negative net debt on a sectoral level. The steady accumulation of cash since the financial crisis is an indication of prudence rather than reckless corporate behavior.

In our view, as they currently stand, leverage ratios do not pose an immediate threat to high yield performance, although it is crucial that earnings growth outpaces debt growth in the next years to prevent a worrisome credit bubble build-up. This is something to keep an eye on, especially as the search for yield will not vanish overnight, evoking increased levels of debt issuance. Leverage is more of a slow ticking time bomb that will eventually reach a critical level and explode. Looking at US high yield data since 1988, we have observed that negative returns for the asset class emerged only after net debt/EBITDA levels in the previous year exceeded 3.5. We are now in the second quartile with a net debt/EBITDA level of 2.9 for the broader US universe, which is comparable to the 2004-2006 mid-cycle expansion episode.

Figure 2.30: Leverage not exceeding 2004-2006 levels

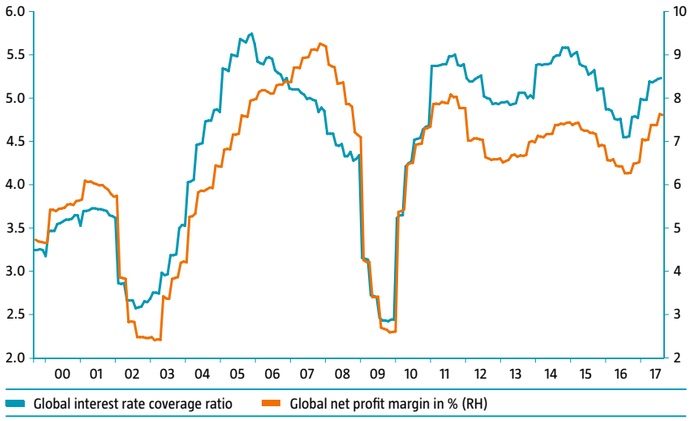


Source: Thomson Reuters Datastream, Robeco

Eroding corporate pricing power, the real danger

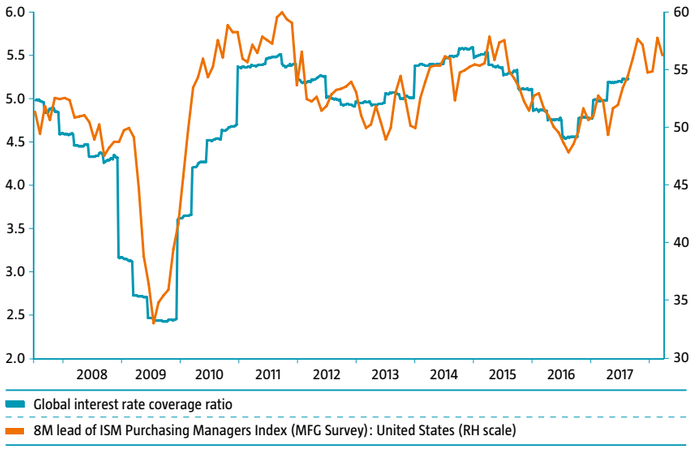
With debt levels as such not posing immediate risk of a major sell-off at a global level, what about the corporate ability to manage and service this level of debt? An elevated debt level can be managed effectively as long as the debt service remains healthy. At first glance, there is nothing alarming about this debt service. On the back of sound corporate global earnings growth in the first half of 2017, interest rate coverage ratios – the number of times corporations can pay their actual interest burden out of their current earnings – have risen further from already high levels. And a leading indicator like the ISM suggests the end of 2017 will even see further improvement in the ability on the part of global corporations to pay off debt.

Figure 2.31: Global interest coverage has improved on the back of good earnings



Source: Thomson Reuters Datastream, Robeco

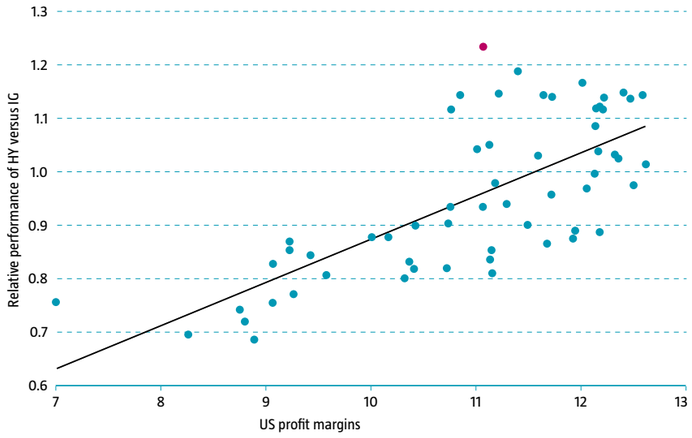
Figure 2.32: With even better near-term developments ahead



Source: Thomson Reuters Datastream, Robeco

However, it would be all too easy to assume the status quo will prevail and give the all clear signal for the next five years. There are several forces that will affect the ability to pay debt negatively in our projection period, especially in the US. The most obvious one is that the mild reflation and resilient growth will allow central banks to hike policy rates which will raise the marginal cost of capital. But the more important factor is the earnings outlook. As discussed in the equity section, we expect a decline in profit margins for the US by a couple of percentage points. Higher unit labor costs play a decisive role in this outlook but US high yield companies could also be confronted with the end of tax deductibility of interest costs under Trump's tax code reforms. If US profits, which tend to lead the global earnings cycle, slow as a percentage of GDP, then this decline could have a material impact on the relative performance of high yield companies versus investment grade. In fact, our calculations show that a decline in gross profit share of GDP from the current 11% to 9% has historically seen high yield companies tending to underperform compared to investment grade.

Figure 2.33: Profit margins below 11% start to hamper relative high yield performance
US profit margins versus HY/IG performance



Source: Thomson Reuters Datastream, Robeco

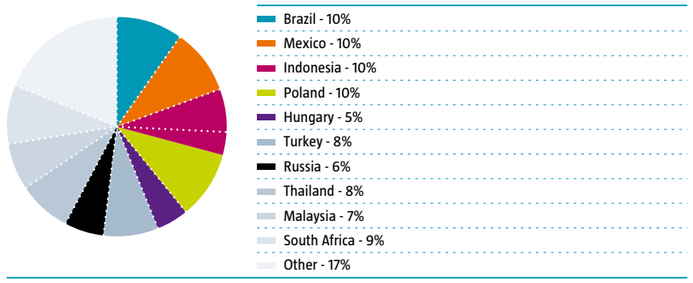
Excess returns on investment grade will be more aligned with historical averages

On balance, we have raised our global annual average default rate expectations for high yield from 3.8% to 4.0%. Based on the above assessment we estimate an excess return of 1.0% on sovereign bonds in the next five years. On investment grade credits, we estimate an excess return over sovereign bonds of 0.75%. This forecast may sound like overly optimistic, given the expectation of a recession. It should be stressed that this outcome is very much path dependent, as we expect the credit market to be in positive territory at the end of the period. The average obscures a higher level of volatility and a pretty weak start.

2.2.5 Emerging market bonds

Over the past five years, emerging market debt in local currency has generated a disappointing -0.7% in USD. This relatively new asset class became especially unpopular among investors during the taper tantrum in 2013 and the subsequent oil market rout in 2014 which aggravated the sell-off of emerging market currencies. But last year saw a drastic change of heart as investor appreciation of emerging market debt surged. Who would have thought that Argentina, a country with an infamous credit history, would be able to issue a 100-year sovereign bond which was actually oversubscribed? Yield-hungry investors in advanced economies have increasingly been looking overseas with the JPMorgan emerging market debt in local currency index generating 6.4% in dollars over the past 12 months, though the return in euros has been a much more modest 2.3%.

Figure 2.34: JPM-GBI-EM (LC) global diversified: weights



Source: Bloomberg, Robeco

In last year's Expected Returns, we explained that emerging market debt in local currency experienced the biggest upgrade of the various assets. The main reason for this had to do with the undervaluation of EMD currencies, as well as the general average financial economic improvement expected for the group of EMD issuers. Indeed, we have seen benign developments for emerging markets with a weakening dollar and an upswing in global trade, though political institutions and reforms have remained weak while the commodity market rebalancing has been very modest. The fact that emerging market currencies managed to rally against the dollar despite weak commodity prices and several Fed rate hikes is predominantly an indication of the market recognizing the increasing value in buying emerging market debt, and to a lesser extent evidencing an improvement of fundamentals within emerging markets.

Productivity catch-up is the key variable

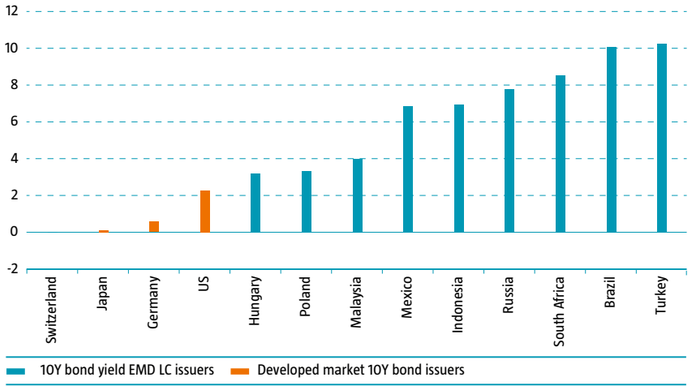
In our baseline scenario of continued growth catch-up of emerging markets versus developed markets, it is likely that fundamentals will improve further. Ultimately currency appreciation, which is one of the most important drivers of returns in local currency EMD, is the result of positive real productivity growth differentials in developed markets. We expect emerging markets (except for China which is not a major benchmark constituent of EMD indices) to exhibit a 1% higher growth rate on average compared to the overall global economy.

The lure of high yields

One of the reasons for the positive momentum and strong inflows into emerging market debt is the lure of attractive yields in contrast to the exceptionally low yields seen in developed markets. In fixed income, yields in emerging market debt have also become more attractive compared to investment grade and high yield.

Of course, high yields could be a sign that inflation risks and/or credit risks are lurking just around the corner. What should therefore matter to investors is whether these risks are contained in relation to the compensation they are receiving via the local yield curves.

Figure 2.35: Nominal bond yields in %

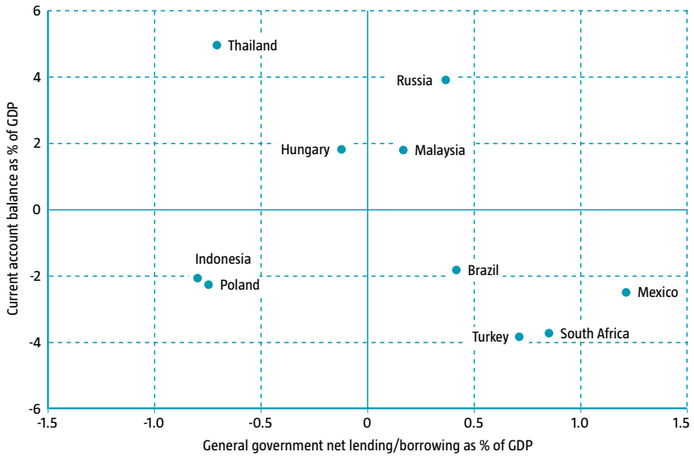


Source: Datastream, Robeco

Building robustness

Hence, we revisit our framework which captures the medium-term perceived ability of sovereigns to pay their debts. Figure 2.36 shows IMF projections for the average primary budget balance and current account in the next five years, both as percentages of GDP. As an investor, one would typically like to see both an improvement in the internal and external ability to pay debt in the next five years, with all EMD issuers showing up in the right hand upper quadrant. Compared to last year, we see a major upgrade for Turkey and Thailand on the expected government budget, but no notable increase in countries towards a higher external balance and improved internal balance as only Russia and Malaysia can be found in the upper right hand quadrant. That said, it should be noted that overall government debt as percentage of GDP is expected to remain around 48%, which is far below those of Western economies.

Figure 2.36: Ability to pay – internal versus external balance, 5Y averages of 2018-2022 IMF projections

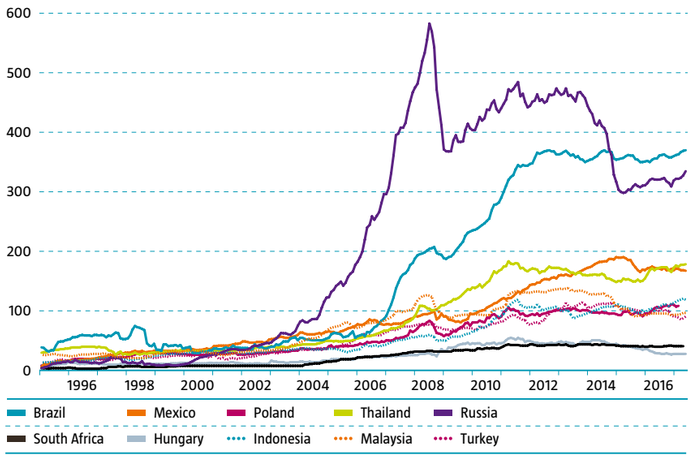


Source: Thomson Reuters Datastream, IMF, Robeco

In our view, the IMF is too optimistic about the internal balance while being too pessimistic about the external balance. Concerning internal balance, given the historically high leverage of emerging market corporates, it can't be ruled out that possible defaults in the corporate sector will lower tax revenues while raising government spending via unemployment benefits, which would cause budget deficits to deteriorate. Concerning external balance, if the global economy advances as we expect it will in the next five years, emerging market economies are likely to see stronger improvement in current accounts given that their currencies are still cheap, which improves productivity and competitiveness.

More robust internal and external balances combined with healthy foreign exchange buffers enhance the ability to withstand a negative global shock associated with the kind of a mild recession which we do expect to occur in the next five years.

Figure 2.37: FX reserves of top 10 debt issuers in JP Morgan GBI-EM Global Diversified index



Source: Thomson Reuters Datastream, IMF

Some leeway for EM central banks in global tightening cycle

Inevitably, emerging central banks are not operating in a vacuum and will follow the tightening cycle underway in advanced economies in the next five years. But stronger currencies and increased productivity (i.e. moderating unit labor costs) will also lower inflationary pressures, creating some leeway for central banks. Some central banks in the EMD universe will have the freedom to pursue policy to actually cut rates as inflationary pressures recede, as Brazil already demonstrated last year. Overall, a more moderate reaction to the Fed-initiated global tightening cycle and a shorter duration of emerging market debt in local currency compared to other fixed income asset classes are attractive features.

Not a free lunch

Are there no risks? There certainly are. The asset class has received a favorable re-evaluation from investors and the valuation discount we identified last year in the currencies, though still present, is no longer exceptional. Now that they are no longer as cheap, a reversal in the domestic cyclical recovery, worsening fundamentals or a global shock could easily scare emerging market investors again.

In our base case scenario, the slowdown in China's real GDP to 3.0% we envisage around 2022, could pose a threat to EM exporters that are exposed to the investment side of the Chinese economy, like Brazil and Chile. The decline in excess liquidity as central banks start to normalize their balance sheets after ending the QE experiment could also lower liquidity in emerging market debt. The realization that central banks are unable to perfectly execute their QE exit strategies could have repercussions for a 'high beta' asset class like emerging market debt. Stricter banking regulations could also discourage banks from using their balance sheet, shrinking liquidity in the debt market. Political risk might have trended down, but there will still be the occasional scandal (see the recent scandal surrounding Brazil's Temer). Moreover, a new wave of protectionism advanced by a defiant Trump administration would typically hurt emerging market economies. Lastly, the changing global monetary tide could forcefully expose the ongoing divergence within emerging market external balances due to differences in their export orientation, fiscal and monetary policies and political stability. This makes country allocation more important if the overall market changes direction.

Taking all of the above risks into account, as well as the lower FX discount, we adjust the return in euros of emerging market debt in local currency to 4.25% from the previous 5.5% for the base case scenario. We prefer emerging market debt from a fixed income perspective and remain constructive on the broader macro-economic backdrop, but the risk-reward balance has somewhat deteriorated.

Figure 2.38: EMD issuers 5Y credit default swaps in basis points

Source: Thomson Reuters Datastream, Robeco

2.2.6 Real estate

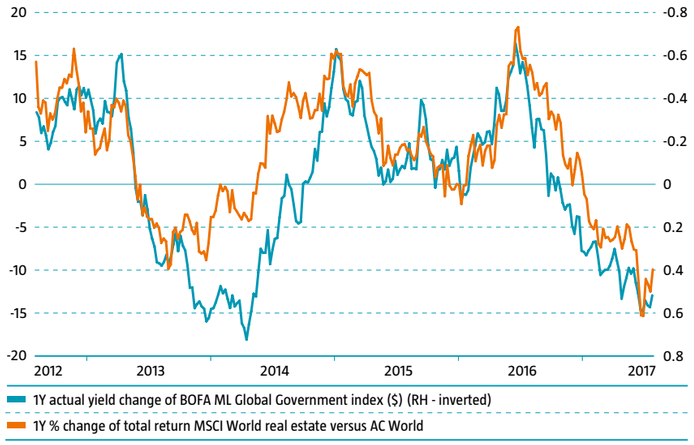
Investing in 'bricks' has paid off quite handsomely as the MSCI global real estate index returned an average of 8.6% in USD over the past five years, though it lagged global equities in euros by 2.5%.

Our base case of global growth averaging 2.6% in the next five years and advanced economies like the US and Eurozone experiencing growth rates around potential, is not a negative

one for the asset class. On the other hand, the upside for real estate is limited, as global growth is not expected to stay above potential, a scenario that typically corresponds with US producer manufacturing indices around 60 or higher. Higher wage growth which we expect to broaden, can sustain demand for rental space as consumers will spend more in shopping malls. Mild reflation, which we expect to be more pronounced in the US, will also be beneficial for real estate.

But there are caveats. Although leverage for global real estate markets as measured by net debt to EBITDA has been trending down in recent years, the vulnerability for higher bond yields remains. This is clearly demonstrated by the close relationship between the relative performance of global real estate versus global equities with the yield of the global government bond index. Of course, this correlation could occasionally weaken to the benefit of real estate as it did late in the previous expansion cycle around 2005-2006, for instance, but overall tighter monetary policy in the next five years is likely to create headwinds for the relative performance of real estate versus global equities.

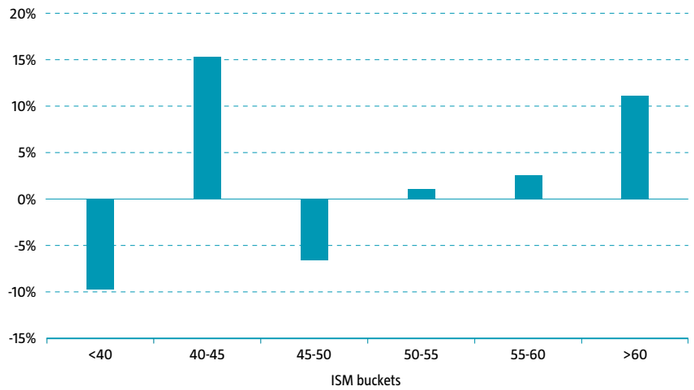
Figure 2.39: Rising yields create headwinds



Source: Thomson Reuters Datastream, Robeco

Another threat is that real estate does not hold up well in a mild recession which we expect to occur in the next five years. This is typically characterized by the ISM producer confidence index lingering between 45 and 50.

Figure 2.40: Relative performance of real estate compared to global equities during different phases of the US economic cycle (annualized)



Source: Thomson Reuters Datastream, Robeco

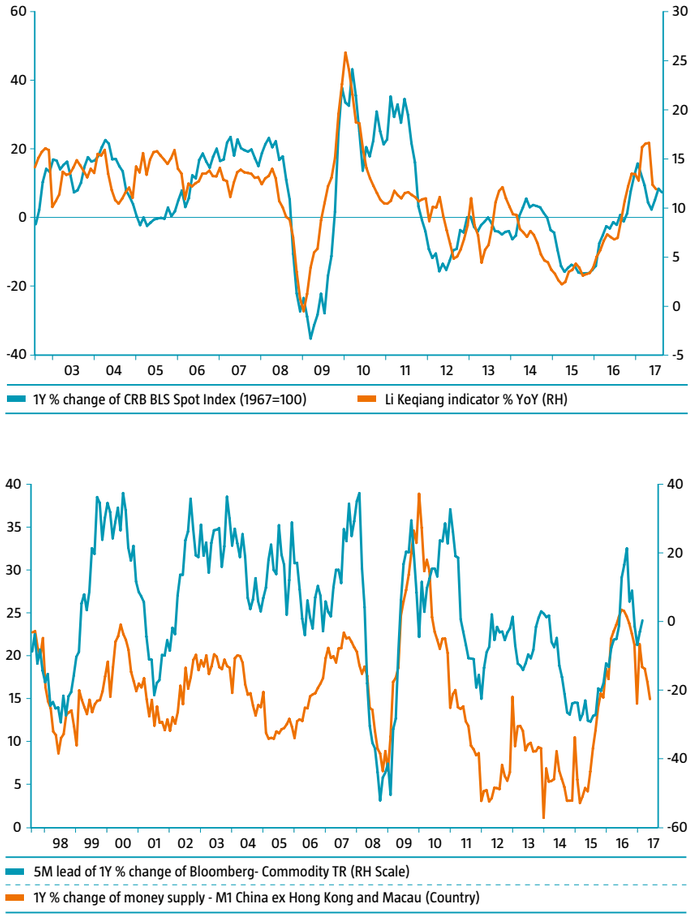
Lastly, whether or not surging e-commerce and traditional 'bricks and mortar' can peacefully co-exist is questionable. In the US, several hedge funds are already actively wagering against prime A listed shopping malls as they think even highly rated malls will not escape the threat of online disruption. We expect real estate to lag equities by 0.75% in the next five years with an expected return of 4.25%.

2.2.7 Commodities

Three factors drive commodity returns: the risk-free rate, the spot return and the roll return. The academic literature points out just how important roll returns are for commodities, but we still believe that it is nearly impossible to determine in advance what future roll returns will be. For our return estimates, we just focus on the spot return.

The deceleration in economic activity in China we expect in the next five years, with real GDP growth in China reaching just 3% around 2022, is a clear negative for spot prices in commodity markets, especially if this slowdown in China is concentrated in the 'old economy', i.e. manufacturing. The price of base metals like copper correlates very strongly with this and actually predicts short-term activity levels in China, one of the major commodity importers. As Figure 2.41 shows, the CRB spot commodity index moves largely in parallel with the Li-Keqiang index. The Li Keqiang index is an equally-weighted index of railway freight, electricity usage and credit growth in China. Higher producer prices and profit margins in Chinese manufacturing suggest that the battle waged by policymakers against overcapacity in the Chinese industry has achieved initial results, implying that the risk of a sudden commodity demand collapse is more limited. Nevertheless, the fact that credit growth is still strong and Chinese investment share as percentage of GDP remains high, suggests overcapacity will linger.

Figure 2.41: It's all about China?



Source: Thomson Reuters Datastream, Robeco

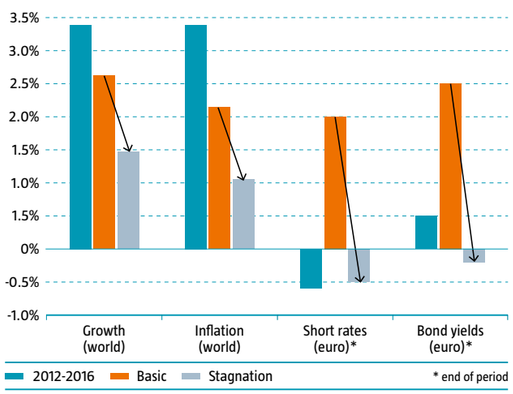
Concerning oil, it is no secret the Trump administration wants to make the US mining and energy sector great again. In this supportive environment, the remaining supply glut and very high US oil inventories could be with us for longer. OPEC seems less united than before and lately, members have had more difficulty reaching consensus about oil cuts, which is something we expect to continue. For oil, we estimate a price between USD 40 and USD 65. The high end of this price range exceeds market expectations (58 dollars for Brent) priced into oil futures curves, but our baseline scenario expects stronger oil demand due to resilient economic growth by major oil consumers like US and India, barring a short-lived mild recession. Also, we think the current market is overestimating the global impact of the future US oil supply, which will become less price sensitive when the leveraged US energy sector starts to face rising borrowing costs when refinancing. We estimate commodities will return 2.75% in the next five years.

2.3 Stagnation scenario (20%)

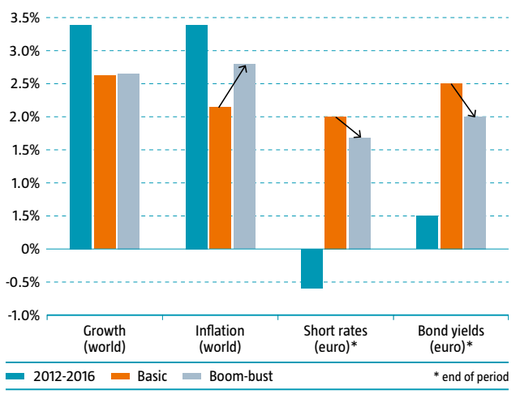
As we stated last year, coming up with a credible downturn scenario is not that difficult. Pessimism about potential economic growth is still widespread, which can easily become a self-fulfilling prophecy. As we explained in our special on secular stagnation, structural elements like aging and inequality are likely to continue to weigh on growth so it won't take much to tip the boat. A China hard landing, trade wars, or further unraveling of the European economic union can act as the negative catalyst that results in an adverse scenario. In our experience, many of the institutional investors tend to believe in a negative scenario.

However, this stagnation scenario should not be confused with a recession/depression scenario. Barring any extreme episodes resembling those from the 2008-2009 period, even the Japanese economy, which has been struggling to escape from deflation for over 25 years, has seldom experienced a period of five years in which there was no net growth. What is exceptional for one country, is close to unheard of for the world economy as a whole: weakness in one region is normally compensated by strong growth elsewhere. As such, even in an adverse scenario, an economic depression does not seem likely, but rather continued decline in global economic growth. On average, we expect this growth to decline to 1.5%, which is half the level of the past five years. Parts of the world economy will be hit by recession and growth will drop to zero in China, after which it will experience subdued recovery. Inflation will drop to an average of 1%, but will reach deflationary average levels without factoring in the contribution of the emerging markets. The Western world will sink into a Japan-like scenario, with aggregate price levels remaining unchanged for prolonged periods and with growth only rebounding temporarily before dropping to disappointing levels again. Not surprisingly, this is not a very beneficial environment for the returns of the major asset classes. We go on to discuss the various broader asset classes below.

Figure 2.42: Stagnation – growth and inflation will become scarce commodities



Boom-bust: the fun will not last long



Source: IMF, Robeco

2.3.1 Cash

Declining growth and zero if not negative inflation: clearly, central banks will continue having to accommodate for this scenario, but the main question is, how. One option would be to push short-term rates even lower, but that does not seem very likely. Lower rates come at a cost: there are negative consequences for bank profits and it eventually causes

a loss of control over physical cash. They are more likely to continue pursuing the current QE policy, although it cannot be ruled out that either the ECB or the Fed will follow the Bank of Japan's example with yield curve control. Whether it will help revive the economy much remains to be seen: diminishing returns certainly seem to apply to the effectiveness of monetary policy, too.

The scope and effectiveness of lower rates may be limited in this scenario, but the economic costs of doing nothing could be even larger. Certainly in Europe, deposit rates will remain negative. The US may be the exception in the developed world – the only place where short-term rates may just barely stay above zero, but the margin will be slim. From the perspective of a European institutional investor, nominal and real returns on cash will on average be negative for the whole period.

2.3.2 Government bonds

Historically, the best returns in the bond market are achieved in periods of disinflation or deflation, so in itself, the stagnation environment is not necessarily negative from a bond investor's perspective. There is one factor that can potentially spoil the bond party however: credit risks and defaults. Weak and disappointing growth has a negative impact on the financial position of governments, as tax income declines, while unemployment-related spending rises. More often than not, governments have stepped in as the spender of last resort during recessions even though this hurts their financial position. Historically, the list of government defaults is long and remarkably constant over time, and there is no reason why the same fate won't befall smaller – and fragile – emerging markets, for example. That said, it is difficult to imagine this happening to the bigger developed economies or even the weaker Eurozone economies, as the role of central banks has structurally changed. A classic default scenario is typically triggered by a sharp increase in yields, pushing government debt into a self-sustaining default spiral: higher refinancing leads to a higher deficit, making investors even more reluctant to step in. With central banks now actively controlling the bond market, such a classic scenario will not come to pass. As long as central banks are deemed credible, governments can always rely on the lender of last resort to avert a crisis. Just look at Japan: the Japanese government lends at 0% despite a 230% debt-to-GDP ratio.

Given that we do not think defaults will play an important role, what kind of the return can investors expect in this scenario? As mentioned, in this scenario, we expect central banks to remain accommodating throughout the whole period, as they try to kick-start the economy with negative deposit rates and extended QE programs. In this scenario, we expect bond curves to flatten across the globe. In terms of the European bond markets, we expect the yield curve at the end of the five-year period to be completely flat at the level of the deposit rate (-0.5%). In this scenario, average returns are expected to be around 1.75% for European bonds (German 10-year Bunds) and 5.25% for US 10-year Treasuries.

2.3.3 Equities

Based on the past five years, one could be tempted to conclude that equities are not such a bad bet, even if growth is disappointing. The combination of low growth and low inflation has led to some pretty nice equity returns, right? Although this is true from a historical perspective, it seems less likely to apply to the future. For one thing, the stagnation scenario is clearly more bearish than we've been used to in recent years: we forecast global economic growth to be less than half of that of the past five years, with virtually no inflation. Nominal growth for the next five years will be below 3% compared to nearly 7% over the past five years. This low nominal growth will cause the real debt burden of consumers, governments and corporations to remain stubbornly high, with real spending cuts being the only means to get them under control. Add to this the fact that corporate balance sheets have deteriorated in recent years, a factor which is bound to come home to roost and have a negative impact on the markets. Defaults are set to rise, which will not only affect the individual companies involved, but will also lead to investors requiring a higher risk premium to hold on to stocks.

Nor should we forget that the respectable performance of worldwide stocks has clearly been boosted by the performance of the world's heavyweight market, the US. A fair part of this solid performance is linked to a multiple expansion. Taking the Shiller PE as a proxy, US stocks traded at a PE of 21x back in 2012, while we are currently at a level of 30x. Given the higher level of risk awareness in this stagnation scenario, we expect this overvaluation to weigh on the market. Although this does not apply to the European and Asian stock markets, the overall weight of US stocks and the US market's role as leader mean this will clearly drag down results everywhere. One could argue that central banks will continue to intervene whenever stocks decline too much, but even then we question whether recent developments have offered much support for the stock market moving forward and we expect to see diminishing returns on QE. Combining the starting dividend yield of 2.4% (which can be viewed the 'coupon' you receive by investing in equities), a world economy growing by less than 3% in nominal terms, and a rerating of US stocks, we estimate an overall negative return of 3% in this scenario.

2.3.4 Corporate bonds

As for corporate bonds, the underlying return dynamics will deviate strongly according to the issuer's credit profile. At the high end of the credit quality spectrum, corporate bonds look a lot like government bonds, with the Japanese and European central banks lending direct buying support. At the other, there is no such direct support, with the help mainly coming from the lower debt service costs thanks to interest rates being pushed to ultra-low levels. Although this can be seen as a positive, the drawback of this policy is that absolute returns in overall bond markets are depressed compared to their historical averages. And although low interest rates help, they certainly do not shield corporates from underlying economic developments. Corporate debt has risen in recent years and leverage has increased, lowering the overall quality of outstanding debt. It is clear that in our stagnation scenario with limited nominal growth, defaults will rise, even in the higher rated credit space.

In order to determine the excess returns on government bonds, we have taken a fresh look at the factors that determine returns. Specifically, we have developed a tool that looks at the development of credit ratings over time, based on historical data from Standard and Poor's, as well as the spread development. All these variables have been linked to an annual assessment of the underlying credit environment based on three ratings: negative, neutral or positive. For example, in a negative year, downgrades, defaults and spreads will all rise, which will clearly have an adverse impact on returns. The longer this negative state persists however, the smaller the negative impact on average returns will become, as the spread will then eventually widen enough to compensate for the losses. As we can evaluate the credit environment for each of the five years individually, the tool gives us the flexibility to assess the sensitivity of average returns over time. Not surprisingly, the results depend largely on the spread/default paths chosen: if spreads rise early on in the forecast period, the investors reap the benefits of higher coupons for longer. It should also be noted that the return figure does not say much about the volatility of the returns. Volatility in the stagnation scenario will be a lot higher than it is in our baseline scenario.

Based on the expectation of two 'neutral' years frontloaded to the beginning and three 'negative' years, we end up with an excess return of -0.25% for Eurozone and -0.5% for US credits. Based on the blended US/EU government benchmark (60%/40%) and the government bond returns, the total return for global IG credits ends up at around 2.25%. In this scenario, spreads are set to widen from the current 100/110 basis points to a maximum of around 200 basis points by the end of the fifth year. For high yield we end up with a negative excess return for both regions, as spreads are forecasted to widen at the end of the time horizon. US excess return will amount to -2.0%, while European excess return will be closer to -1.00%. On a blended level, this means that the total return is close to -0.5%.
It is clear that this return is very much dependent on the sequence of the 'neutral' and 'negative' credit years: if we shift a 'neutral' period to the end of the period, blended excess return would be zero instead of negative.

2.4 Boom! Bust! (20%)

But what if...? What if we have been fooled into thinking that we have entered a new economic environment, when in fact we have not? We wouldn't be the first investors or economists that think that 'this time is different', would we? Massive quantitative easing and no inflation: how likely is that? Milton Friedman talked about 'long and variable lags' with which monetary expansion would inevitably translate into higher inflation and although this 'lag' indeed seems long, it could still always come back to haunt the economy. Central banks and economists seem quite adamant that inflation is a thing of the past, which hints at a high level of complacency, should it materialize again.

In this scenario, Godot will finally appear. The US and the Eurozone economies will expand rapidly, initially boosted by consumption, but eventually strengthened by investment, too. The world economy will enter a virtuous circle. Debt ratios will come down. China will succeed in transforming its economy into one driven more by domestic consumption and less by investment. In the slipstream of the stronger economies, Japan's will accelerate, as well. However, what starts out as a pleasant surprise, boosting sentiment and risky assets, will soon run into a brick wall of tight labor markets. Labor markets in Japan and the US, which are already tight, and then with some delay those in Eurozone, will push up wage growth. Central banks in the developed world will become more anxious to kill off inflationary pressures and, along with them, they will extinguish the boom, too. Growth will slow down, as will inflation with a lag. As the boom and the bust will both happen within the five-year timeframe, the average growth will not deviate too much from the baseline (2.6%), but inflation will clearly be higher (3%). As the bust will occur towards the end of the five years, short rates and bond yields will actually be lower by the end of 2022 compared to the baseline outcome, but will peak at levels higher than we've seen in more than ten years. The stronger the boom, the bigger the bust, with US clearly more cyclical than Europe: labor markets will be tighter, while the central bank will probably wait longer to react adequately. For financial markets, the main takeaway will be one of higher volatility

2.4.1 Cash

Of the three scenarios, this one will clearly yield the highest returns for a cash investor. As indicated, we expect central banks to react to the rising inflation, pushing real short-term rates into positive territory. The US will take the lead, with inflation forecasted to peak at 4.0%. In order to get this inflation under control, the Fed will push short-term rates to a level of 5%. From the current perspective, these may sound like outlandish levels, but they are in fact close to the 2006 and 2007 rates. At this level, the real cash rate (cash adjusted for inflation) will be around 1%, which puts it above the average of the pre-Great Recession period, but still well below the peak level of 4% over the last 35 years. As inflation is expected to peak at lower levels in Europe (2.5%), short-term rates there will also be hiked less aggressively in this scenario. In the case of Europe, there is far more slack in the economy at the start, especially in the labor market, so inflation will start to rise later. We also expect the ECB to be somewhat more prudent with respect to inflation, in line with the historical differences between the US and Eurozone. Based on these observations, we expect Eurozone rates to peak at a level of 3%. Rates will not stay there for long, as the central banks will react to the subsequent bust, cutting rates again. On a five-year basis, this will result in an average return of around 1.5% on cash.

2.4.2 Government bonds

With growth moving above trend levels and inflation acting like the comeback kid, this scenario is initially not going to be very supportive for the average government bond investor. Higher bond yields will ultimately mean that we are approaching a point where bonds offer value in both absolute and relative terms, but the transition phase beforehand will be the painful part. As stated previously, the exact returns you will receive are path-dependent. As we assume that the rise in yields will take place earlier on in the period and will be followed by a subsequent decline, the average return on bonds will not be as bad as one would have expected.

We forecast peak bond yields at 4.5% for the US and 3% for Europe. The latter figure may sound benign, but is in line with the relatively modest inflation peak seen in Europe. From these peaks, which will occur somewhere in the middle of the period, yields will start to decline again. Because of the temporary nature of the inflation scare, the results for the bond investor will not be as negative as one would initially expect. However, as the net change still entails higher bond yields at the end of the period, the return on German bunds will end up with a negative return of -0.5%. US investors will have a positive return of 3.25%, which is the result of higher starting yields, as well as a bigger rise in yields in the mid-term period. In both cases, investors will initially incur quite substantial losses (-8% in Germany and -4% in the US), so the scenario should certainly not be seen as uniformly bullish.

2.4.3 Equities

This scenario represents a number of challenges for the equity markets, with the earnings outlook negatively impacted by margin pressures. For one thing, this scenario will mark the end of the steady decline in the labor share as a percentage of national income, at the expense of the capital share. Due to the high growth, unemployment will decline further, pushing up employee bargaining power. Although increased productivity will to some extent help mitigate this, unit labor costs will nevertheless start to rise. Given the different regional stages of labor market recovery, it should come as no surprise that the US will be leading Europe in this process. Add to this the rise in the cost of capital. This deterioration is expected to hurt margins, albeit with some delay, as many companies have secured financing with a longer time horizon. A third factor that will eat into earnings margins are higher raw materials prices. The combination of abundant growth on the one hand and the current underinvestment in exploration on the other will trigger a substantial rebound in the prices of various core commodities like energy and copper. The actual level of price erosion will of course depend on corporate pricing power and the ability to pass on these costs to end clients. Given the ongoing rise in international competition, most companies will be restricted in the extent to which they can aggressively offload these cost increases. Nominal growth will be boosted initially, but will subsequently slump as growth drops and inflation starts to level off.

On balance, we expect equity return expectations to be more difficult to predict in this scenario, than in our baseline scenario. Higher inflation will create more uncertainty with respect to monetary policy, especially if markets are speculating that inflation will overshoot its mark. On balance we expect returns to stay below those in our baseline scenario, yielding an average return of 2%. It should be noted that this return figure masks considerable potential underlying volatility and the possibility of a 25% drawdown certainly cannot be excluded.

2.4.4 Corporate bonds

Just as equities will be hit by higher volatility, so will corporate bonds. Growth may start out looking good, but inflation, and in turn, the rising refinancing rates, will not. Corporations have had increased leverage in recent years, and although debt has been financed at favorable rates and with a relatively long duration, things can go wrong once refinancing is required at substantially higher rates. Unlike the current situation, government bonds will over time become a more interesting investment alternative, which means that the current low-cost easy financing may no longer be available. Following the inflation boom, the bust won't be pleasant at first, either. Growth will slump, although central banks will react by supplying new liquidity. Whether or not investors are being rewarded for all these risks very much depends on the spread development in the final year: if negative credit conditions prevail, the average excess return will be negative for credits and high yield; if the final year is neutral, you end up with a positive excess return on credits (0.25%) and a flat excess return on high yield. This shows how path dependent the outcomes are from a return perspective.

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