ROBECO
The Investment Engineers

EXPECTED RETURNS

2020
2024

ESCAPING THE HALL OF MIRRORS

5-year outlook

Sustainable Investing Expertise by
ROBECOSAM

ESCAPING THE HALL OF MIRRORS

2020-2024 outlook

Contents

Foreword

Markets were volatile over the summer, mirroring investor nerves about the US-China trade war and slowing global growth. In this outlook, we look beyond these short and mid-term events and present our forecast for the next five years. Robeco has been publishing its Expected Returns since 2011. As with our past editions, we combine our return forecasts for all of the major asset classes with related content, to provide readers with a deeper understanding of the markets in which they invest. Given the past success of the publication, this year's outlook has a similar structure.

Expected returns are a vital element of any investor's strategic decision making. The view we take in this report is based on a five-year outlook, extending to 2024, and the forecasts we present can be used as input for the plans of both institutional and professional investors. A notable shift in this year's report is our downward revision of expected returns, owing to our view that a recession is inevitable between now and 2024.

This year's theme, 'Escaping the hall of mirrors', is inspired by the peculiar conditions investors face in today's financial markets. Central banks have been very central indeed and dictated market outcomes for a long time. Has their role changed recently – to merely reacting to what markets seem to demand? Two of our special topics discuss the importance of central bank policies and the need to escape this modern-day 'hall of mirrors'. Other important topics deal with the rightful allocation to China in a portfolio and the more generic challenge of asset allocation in a market rife with uncertainty.

The opinions in this report are those of Robeco Investment Solutions and are not necessarily shared by other departments or subsidiaries of the Robeco Group. We have included many references to academic and other articles for readers wishing to delve deeper into the topics discussed.

We hope you enjoy reading this publication and find it helpful in navigating the investment landscape in the period ahead.

Bart Oldenkamp
Head of Investment Solutions

For an assessment of the long-term expected returns, please visit www.robeco.com/expectedreturns.

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Executive summary

Escaping the hall of mirrors

It is said that Henry the Navigator (1394-1460), a Portuguese prince and noted patron of voyages of discovery, encouraged his sailors to dare to go beyond what was then feared as 'the edge of the world'. Poring over charts and using all available information, he was a maritime visionary who managed to convince his sailors of the limits of their perception. Their discoveries brought great riches. In today's financial markets we have experienced our own 'edge of world' phenomenon of what was once unthinkable: negative long-term nominal bond yields. Irony has it that the archetypical safe haven asset, the sovereign bond market, has set sail for the unknown. To stay with maritime terminology for another moment: a fleet of USD 15 trillion in outstanding bonds has already sailed beyond zero.

Clearly, the sands of the global economy and the financial system are shifting: globalization as we know it is under threat. In our view, a recession in the next five years is inevitable and will result in many assets generating returns below-average historical returns. Tariffs are just a symptom, not the disease. Stanley Baldwin, UK prime minister in the 1930s, described the root problem: "Business can flourish with tariffs, business can flourish without tariffs, but business cannot flourish where there is uncertainty". The rot is in pervasive policy uncertainty that now is at the highest level in decades. The typical Davos (wo)man, looking "to improve the state of the world" is struggling to reach consensus with peers as we have moved from a unipolar to a multipolar world. Bond prices partly reflect the expectation that an age of transition may end up as an age of disruption.

Which state of world are we transitioning to in the next five years?

In this publication, we challenge the deflationary worldview embedded in bond prices as the new normal. In our view, there will be no secular stagnation, but no secular expansion either. On the contrary, we hold that the market is underestimating inflation risk on a five-year horizon. We expect the massive fleet of negative-yielding bonds to turn around but at the same time, a return to the 'old normal' (if there has ever been one) will remain out of sight in the next five years, as we acknowledge that the gravitational pull towards low interest rates will be present for longer.

The global economy is running a marathon, with the US economy now enjoying the longest expansion in post-WWII history. However, global growth has since last year become more uneven and continued to decelerate at a faster pace than we expected. China and the US have slowed to around-trend growth, but Germany, the manufacturing powerhouse of the Eurozone, is struggling. Unemployment rates in advanced economies are generally at decade lows, but there are no signs of an overheating economy exhibiting inflationary pressures. Inflation is the dog that hasn't barked.

Our theme stems from former Fed President Ben Bernanke. Back in a 2004 lecture, he said: "What do markets expect about the future course of monetary policy? The question is important to policymakers, not because we are concerned necessarily that we should meet the market's expectations – such a strategy quickly degenerates into a hall of mirrors – but as a check on the efficacy of our communication." Fifteen years later, the monetary policy pursued by the Fed seems to be degenerating into a 'hall of mirrors' strategy. Monetary policy ought to be data dependent and made on the basis of evidence. Instead, central bankers seem increasingly occupied with meeting market expectations for ever lower interest rates. The context for the emergence of this dynamic is understandable as inflation remains anemic while recession fears are growing; markets see dovish monetary policy as the only solution. A barrage of tweets from a US president trying to bully the Fed towards a monetary easing stance does not help either to stay the course.

By reacting to market expectations for further easing, monetary policy becomes a distorted image of its former self. This is harmful. Fed President Jerome Powell recently said that "An ounce of prevention is worth a pound of cure", but economic history shows time and again that it is hard to prevent a buildup of imbalances in the economy that ultimately usher in a recession. Not least because the pound of cure (i.e. a central bank staying accommodative for too long) proves to be an overdose.

Escaping the hall of mirrors

In our view, it is essential for central banks to escape the 'hall of mirrors' strategy. Escape is the right word here, because monetary space needs to be optimized in advance of a recession. As New York Fed President John Williams recently stated, "if we fail to prepare, we prepare to fail". Central bankers need to adopt the visionary mindset of Henry the Navigator by leading markets rather than reacting to them, using all of the tools available. Very low real rates led to an escape from a liquidity trap in the 1930s and it is no surprise to see today's central banks aiming for an inflation overshoot, signaling to markets that policy rates will remain low for longer. However, achieving an inflation overshoot this way is like engineering an escape from Alcatraz. We give central banks the benefit of the doubt, though we note cheap money has failed to bring inflation to target during this expansion. Furthermore, it remains doubtful why moving the goalposts on inflation would result in success as long as the mindset of market participants remains tilted towards deflation.

With nominal policy rates close to or at the effective lower bound, our view is that central banks in advanced economies are ill-equipped to counter a recession. We do not underestimate the ability of central banks to push the frontier of unconventional policies, but there will be an increasing recognition that monetary policy has its limits. Central banks have been too central in market discussions. Monetary authorities can't eliminate the savings glut and they can't change consumer risk aversion in an environment of skyrocketing political uncertainty. Central bankers can't tweak factors like a lower degree of unionization, declining bargaining power for workers or the fact that global value chains have made domestic inflation more sensitive to global output gaps.[1] If, for instance, global trade goes into reverse, like it did in the 1930s after the introduction of the Smoot-Hawley tariffs, durable goods might turn from a deflationary force into an inflationary force again.

1. See for instance Auer, Borio and Filardo (2017), and Forbes (2018).

Governments are better equipped to shift these crucial macro parameters. We expect fiscal policy to step in. This view is rapidly gaining ground and is strongly advocated by Olivier Blanchard, a former IMF chief economist, who points out that the low nominal interest rate environment offers an opportunity for fiscal policy.

The monetary policy space – and increasingly so the fiscal policy space, too – provides the building blocks for the states of world we deem likely and the interplay between these two policy tools is a common thread throughout our scenario thinking. The quest for policy space will remain a key focal point for the next five years.

In our base case scenario, 'hall of mirrors', the escape route from the failed 'hall of mirrors' strategy for central banks is an uncoordinated fiscal response. The fiscal stimulus is effective in increasing aggregate demand and inflation expectations, but comes at a price. Debt sustainability is eroded and, as the recession proves to be mild, the private sector anticipates a swift return to fiscal prudence and lower budget deficits. The recovery from downturn remains sluggish.

In our bull case scenario, 'a reboot for globalization', central banks stay out of the 'hall of mirrors' quagmire as political uncertainties dissipate and trade issues are resolved, though the zero lower-bound problem remains prevalent when the recession hits. Increased international cooperation makes fiscal stimulus effective.

In our bear case, 'echoes of the 1970s', the world faces a negative supply shock. An age of transition morphs into an age of disruption and techno-nationalism. The global world order crumbles and the US leaves the WTO. In the US-China battle for global hegemony, other countries are caught in the crossfire and the decades-long process of globalization goes into reverse. The escalated trade war proves to be inflationary. Chinese authorities aim for full employment to stem social unrest by combining monetary stimulus with massive fiscal stimulus, becoming a global exporter of inflation instead of deflation. Stagflation, though more timid compared to the 1970s, ensues.

General outlook for returns

What does this all mean for investors? This expansion is not secular, and a recession in the next five years seems inevitable. We penciled in a recession in last year's publication, which was entitled 'Patience is a virtue', but advised that, despite looming downside risk, the greater risk would be doing too much de-risking too soon. With the prices of risky assets up over the year, patience has proven to be a virtue so far. Risk taking in a late-cycle environment may be rewarded initially, but asset returns will remain below their long-term historical averages over a five-year horizon. We don't think the next recession will be an edge-of-the-world event, like the GFC was. It will likely be more of a smörgåsbord recession – smaller pockets of excess in the global economy snowballing into something substantial enough to stifle global growth.

Table 1.1: Expected annual returns 2020-2024

	5-year annualized return	
	EUR	**USD**
Bonds		
Domestic AAA government bonds	-1.75%	2.50%
Developed global government bonds (hedged)	-0.375%	2.00%
Global investment grade credits (hedged)	0.25%	2.75%
Global corporate high yield (hedged)	0.75%	3.25%
Emerging government debt (local)	2.75%	4.00%
Cash	-0.50%	1.60%
Equity-like		
Developed market equities	3.25%	4.50%
Emerging market equities	3.75%	5.00%
Listed real estate	3.25%	4.50%
Commodities	4.00%	5.25%
Consumer prices		
Inflation	1.60%	2.00%

The value of your investments may fluctuate and past performance is no guarantee of future results.
Source: Robeco

On a five-year horizon, we have revised downwards our return forecast for most asset classes. For government bonds, the outlook for the next five years is divided. German Bunds are significantly overvalued and as inflation picks up, returns are predicted to remain well below cash. In contrast, US Treasuries will benefit the most when the recession sets in, comfortably beating cash.

Valuation is also a negative factor for developed market equities. Still, returns can remain relatively strong in the first half of our forecasting period. However, as we expect a recession around 2022, returns end at relatively low levels towards the end of our projection period. Emerging equities are generally quite cheap, but we kept our return outlook relative to developed markets intact: due to lingering protectionism we expect only a 50-basis-point premium.

There is one bright spot in terms of relative return, namely commodities. The macro environment is becoming less supportive for investment grade credit and high yield, and we expect excess returns to be below historical average levels, despite neutral valuations.

Special topics

This year we have included four special topics. Three of them are highly topical, while one is timeless. The first two topics fit our 'Escaping the hall of mirrors' theme, while the third looks at the investment consequences of China's increasing weight in benchmarks.

This publication presents different scenarios and our return expectations under each scenario. These expectations can play an important role in portfolio construction. In our fourth special topic we introduce a method for integrating these views into the portfolio construction process.

1. Paving the way for unconventional policy

Our first special report describes one escape out of the hall of mirrors: monetary policy. Yet, with policy rates close to their effective lower bound, monetary policy space to fight the next recession has dwindled. Luckily, monetary policy space is not the only game in town. In this article, we show that the policy space available and the willingness to use it have important consequences for economic recoveries and asset returns following a recession or financial stress event.

2. Celebrating 30 years of inflation targeting?

Inflation targeting is celebrating its 30th anniversary. It is widely seen as a success, but has it been too successful? Stubbornly low inflation rates have led central banks to bring down policy interest rates to or close to their effective lower bound. In this special report, we focus on a debate that is taking place at the Fed and which will likely shape future monetary policy. The outcome of this debate has major consequences, especially for bond markets.

3. Giving China its rightful share in your portfolio

It's a puzzle to most investors: why is China's market weight in investment indices so low compared to its economic weight? Many will argue that China's weight should and will be greater in the future. What should an investor do? Wait for this to happen, or act now? Investors can and need to take time to address all the consequences of a greater allocation to China, including ESG factors. With a rising allocation, the impact of China on the ESG profile of a portfolio becomes a factor which investors can no longer ignore.

4. Refining the inclusion of views in portfolio construction

Humankind has a tendency to be fooled by conviction. However, a base case scenario is only one of many scenarios that may unfold. As the investment consequences of other scenarios can be large (for instance, our 'echoes of the 1970s' scenario) investors would be advised to assess how the "tail can wag the dog". So, investors face a difficult task: how can one effectively combine all views in a portfolio? In this special report, we describe a well-known approach that can be used to deal with this task, the Black-Litterman model. As the model can be quite challenging with respect to market views, we propose enhancements that enable market views to be more easily translated into portfolio construction.

2

Expected returns 2020-2024

Valuation

It was Warren Buffett who once thanked the disciples of the efficient market hypothesis, referring to them as "opponents who have been taught that thinking is a waste of energy".[1] Yet, in today's financial markets, the invisible hand of market micro-efficiency reigns supreme and the trade-off between speed and accuracy in reacting to news remains.

A recent study by Baron et al. (2019) noted that high-frequency trading firms (HFT) have a decision latency of between 42 microseconds and 0.5 seconds.[2] In the competition for speed, even the slowest automated trader beats its human counterpart hands down. While markets may have become almost micro perfect, they are still imperfect on a macro scale. Buffett's claim about market inefficiencies has also been corroborated by empirical evidence suggesting the rise in passive investing has led to a decrease in market efficiency.[3]

1. Buffett, W., 1985. In a letter to the shareholders of Berkshire Hathaway, http://berkshirehathaway.com/letters/1985.html, accessed August 2019.

2. Baron, M., Brogaard, J., Hagströmer, B. and Kirilenko, A., 2019. "Risk and Return in High-Frequency Trading", *Journal of Financial and Quantitative Analysis*, 54(3), 993-1024. Doi:10.1017/S0022109018001096.

3. See CFA note, 2019.

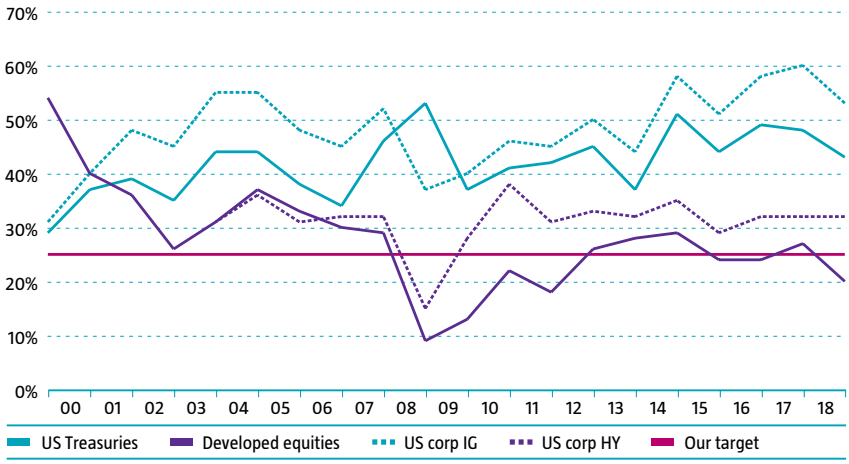
It is this imperfection that keeps alive investors' quest for the holy grail of active management: return predictability. Though predictability is limited in near-efficient markets, it is not absent. As Buffett's firm Berkshire Hathaway exemplifies, pondering asset valuations remains the key to unlocking predictability and excess performance. We, too, have done some hard thinking about the intricacies involved in the valuation of different asset classes. This time around, we have adopted a new perspective by introducing a Sharpe ratio analysis. After all, what multi-asset investing boils down to is beating the risk-free rate.

The conclusions to be drawn here seem straightforward. Most valuation indicators point to very expensive asset classes. Eurozone bonds, for example, offer negative yields that are well below inflation expectations. And the cyclical adjusted price-earnings ratio for US equities is in the top quartile, pointing to overstretched valuations. So, does this mean we should be overall short? Fortunately, the answer is no. We believe there are asset classes that still offer value.

To assess the value of an asset class, we must first understand an investor's objectives. We assume that their goal is to earn a relative return rather than an absolute one. In other words, the investor wants to earn a premium over cash. They are willing to invest and thus take risk, provided the expected reward is high enough. Therefore, Eurozone bonds may still have attractive valuations despite their historically low and negative yields, as long as they outperform cash. Given that cash yields in the Eurozone are also negative, such outperformance should not be ruled out.

Historically, most asset classes have earned a positive premium over cash, as can be seen in Figure 2.1. This figure shows the Sharpe ratio of the major asset classes.

Figure 2.1: Sharpe ratio per asset class – 20-year rolling window



Source: Bloomberg, Robeco

The Sharpe ratio reflects the portfolio excess return relative to its volatility. Given this explicit link between risk and return, this ratio is in line with our objective of optimizing relative return rather than generating an absolute return. In Figure 2.1, we have added a Sharpe ratio target of 25%. This is the level at which we believe an asset class has a neutral valuation. While this might seem too low, as most asset classes have shown much higher Sharpe ratios, the results in Figure 2.1 may not be representative of future returns. Recent decades, in particular, have been extraordinary as interest rates have steadily declined. But, given where they are today, we do not think this trend can continue. Furthermore, we do not believe that extrapolating trends is a good starting point for valuation. The target of 25% is also more in line with our long-term expectations. For example, our estimated steady-state Sharpe ratio for equities is 28%.

2.1 Government bonds

In this section, we assess the valuation of three major markets – US Treasuries, AAA-rated euro-denominated government bonds and Japanese government bonds (JGBs) – based on the forward curve, carry and mean reversion.

Table 2.1 shows the target excess return of each market using the Sharpe ratio target of 25% and volatility over the last 15 years.

Table 2.1: Target excess return for government indices

	US	Euro AAA	Japan
Excess return	98 bps	102 bps	50 bps

Source: Robeco

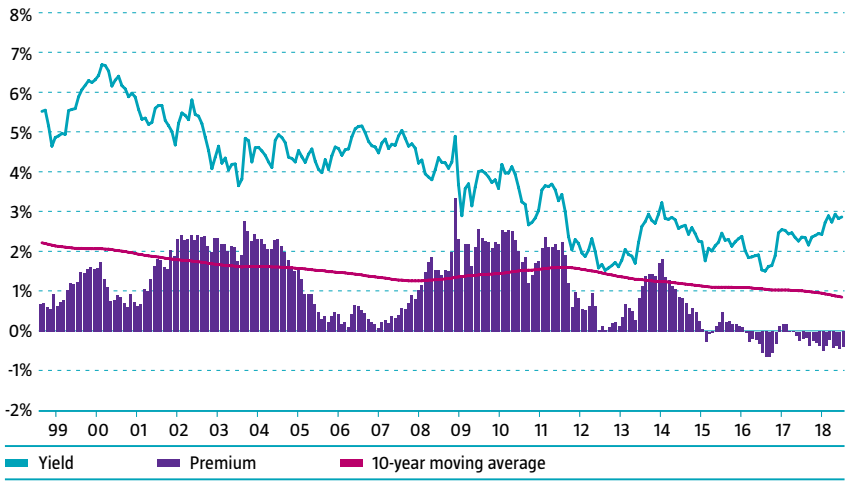
Valuation based on the forward curve

Here, we assume that future interest rates are depicted by the forward curve. Assuming there is no arbitrage, future interest rates can easily be calculated using today's rates. In practice, these rates are used daily in derivative contracts such as forward-starting swaps. As one can actually trade on these rates, it could be argued that they are the best predictor

of future interest rates. We disagree. Most, but not all, investors will seek compensation via higher rates for longer-dated bonds as they carry a higher risk than their shorter-dated counterparts. As investors need to be compensated for this higher risk, we assume that bonds offer a positive risk premium, also known as the 'term premium'. Why, then, are we looking at the forward curve? The answer is simple: in today's market, there might not be a term premium.

We were deliberately careful in the wording of our last statement, mainly because there is no consensus on how this 'term premium' should be measured. It cannot be observed and, in practice, it is estimated by subtracting a best guess of what interest rates should be from whatever they actually are. The challenge, of course, is in determining the best guess. A popular solution is to use econometric models. Yet, while these models are extremely helpful, they are also prone to incorrect assumptions, for example that the period used to fit the model is representative of today's market.

Figure 2.2: Best guess for the 10-year term premium for US Treasuries has turned negative



Source: New York Fed, Robeco

Figure 2.2 shows the best guess for the term premium based on one of the most popular models: the ACM model.[4] In line with our expectations, the term premium is positive during the early part of the sample. However, it turned negative from 2015. One might question whether this is correct. A study by Cohen, Hördahl and Xia in 2018[5] shows the outcomes of other models, most of which confirm the negative reading.

A negative term premium means that investors are willing to pay a premium to invest in bonds. But why is this? There are a number of possible explanations. For example, the investor base has changed over time. Central banks, in particular, are now a major player in the government bond market. Unlike typical bond investors, central banks do not demand a risk premium, as their aim is to manage their monetary goals. To meet these goals, they offer investors forward guidance, which greatly reduces uncertainty about future short-term rates. Central bank participation in this market has also improved the perceived risk profile of government bonds. Investors have come to believe that central banks will ease monetary policy when economic sentiment turns sour. Typically, risky assets perform poorly on such sentiment, but government bonds do well. So, bonds can be seen as cheap insurance against bad economic news.

4. Developed by Adrian, Crump and Moench in 2013 at the Federal Reserve Bank of New York.

5. Cohen, B.H., Hördahl, P. and Xia, D., 2018. "Term premia: models and some stylised facts", BIS Quarterly Review, September.

A zero term premium can therefore exist, hence using the forward curve as a proxy for future rate movements seems sound. The return of the forward curve would be equal to the cash return, resulting in an expected Sharpe ratio that is equal to zero. This outcome is at odds with historical ratios and would be disappointing for investors that demand a positive risk premium. Using the forward curve approach, we assign a negative valuation to all government bond markets.

Valuation based on carry

The forward curve has been a poor predictor of future returns. A popular alternative is the assumption that the curve of today will also be the curve of tomorrow; in other words, interest rates do not change. The track record of this approach is not good, but it is clearly better than that of the forward curve. Since we assume that the interest rate curve will not change, we can easily calculate the expected excess returns of government bonds. In Table 2.2, we calculate the expected excess returns of these bonds versus the return of a one-year government bill.

Table 2.2: Expected excess return if curve does not change

	US	Euro AAA	Japan
2-year	-38 bps	-13 bps	-34 bps
10-year	13 bps	82 bps	-5 bps
20-year	64 bps	113 bps	56 bps
Index	-4 bps	43 bps	8 bps

Source: ECB, Fed, BoE, Bloomberg, Robeco

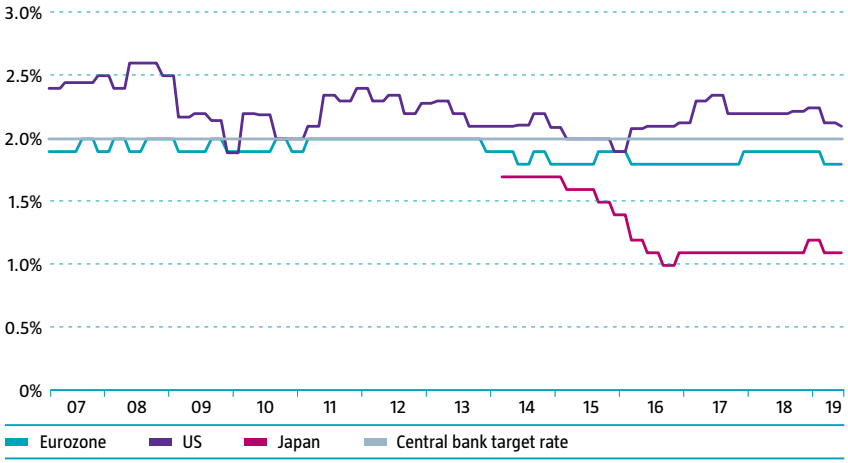
With the exception of short-term government bonds, the carry approach shows that there is value in AAA-rated euro-denominated government bonds, in particular.

Historically, the carry approach has performed better than the forward approach as the term premium has been positive, which can be seen in Figure 2.2. As a result, the forward curve – which has typically been upward sloping – has overestimated future interest rate rises. Now, as we have seen, the best guess for the term premium is negative. If this is true, the forward curve would actually underestimate future interest rate rises. Assuming that the curve will not change at all is, therefore, quite a stretch of the imagination. And, so, we move on to our last approach: mean reversion.

Valuation based on mean reversion

Although the forward curve may be a poor predictor of future interest rates, over the last decade it has fared better than the mean reversion approach. Yet many investors, including us, still like this approach as it challenges the notion that 'this time is different'. While today's economic circumstances may validate current pricing, over the economic cycle it would be strange to assume that, for example, inflation will not return to normal. Such an assumption implies that central banks will be unable to deliver on their mandates. This is not the base case of most economists. Figure 2.3 shows the five-year inflation expectations of professional forecasters or economists. The forecasts for the Eurozone and US are close to the central bank target. Japan is the exception. The Short-Term Economic Survey of Enterprises in Japan (Tankan) shows that most professionals believe the BoJ will miss its inflation target in the coming five years.

Figure 2.3: Five-year inflation expectations – is this time different?



Source: Bloomberg: ECB survey of professional forecasters, Philadelphia Fed, Tankan survey

If we assume that inflation mean reverts, does this also mean that nominal rates will mean revert as well? Historically, nominal rates have offered bond investors a premium above inflation to compensate them for inflation risk and/or gains they would have made by investing in the real economy. Different factors have driven this premium into negative territory, as discussed in a 2015 working paper by Lukasz Rachel and Thomas D Smith.[6] Based on this literature and how the market has moved in recent years, we take a cautious stance with respect to this premium. For a bond market like Japan, where inflation is expected to remain well below the BoJ target, we assume that cash rates will need to stay close to zero. For the Eurozone and the US, where inflation is expected to mean revert, we assume that cash offers investors a premium equal to just 10% of real economic growth over inflation. Using a long-term growth forecast, we arrive at the mean reversion forecasts in Table 2.3.

6. Rachel, L. and Smith, T.D., 2015. "Secular drivers of the global real interest rate", Staff Working Paper No. 571 (2015), Bank of England.

Table 2.3: Mean reversion levels for short-term rates

	US	Euro AAA	Japan
(A) Inflation	2.1%	1.8%	1.1%
Close to target	Yes	Yes	No
Economic growth	2.0%	1.4%	0.5%
(B) Compensation for economic growth	0.2%	0.15%	-1.0%
Mean reversion level (A) + (B)	2.3%	1.95%	0.1%

Source: ECB, Fed, BoE, Bloomberg, Robeco

We then add a term premium to the short-term rates, which is set so that the expected Sharpe ratio of a 10-year bond will equal 25% when the rate is reached. Here, we assume that the curve does not change from that point onwards. Based on this assumption, we arrive at the 10-year rates shown in Table 2.4.

Table 2.4: Mean reversion levels for long-term rates

	US	Euro AAA	Japan
10-year	2.6%	2.3%	0.4%

Source: ECB, Fed, BoE, Bloomberg, Robeco

Assuming that interest rates will steadily increase to this mean reversion level, we can estimate the excess bond returns. These are shown in Table 2.5.

Table 2.5: Expected excess returns assuming mean reversion

	US	Euro AAA	Japan
10-year	-1.5%	-4%	-100 bps
vs. target	-2.5%	-5%	-150 bps

Source: Robeco

Eurozone bonds are clearly very expensive using this approach.

Combining the approaches

We have looked at three different approaches, each of which has its own appeal. The carry approach demonstrates that bond markets still offer value, despite negative nominal yields in some markets. This approach is most suitable for a 'muddle through' environment: markets that do not change. The other two approaches discount a mild normalization (forward curve) or a full normalization (mean reversion). These are best suited to investors who believe that inflation will return to the central bank's target level of 2%. Based on the latter approaches, government bond markets are expensive. As the term premium is negative, we believe that the carry approach is not the best method to use. Therefore, we give more weight to the mean reversion and forward curve approaches, leading us to conclude that government bonds are expensive.

2.2 Credits

For our valuation assessment of credits, we look at the expected excess return of credits over comparable government bonds. So, we look at relative valuation versus government bonds. Table 2.6 shows the target excess returns of each market using a slightly lower Sharpe ratio target of 20% and volatility over the last 15 years.

Table 2.6: Target for excess IG credit returns

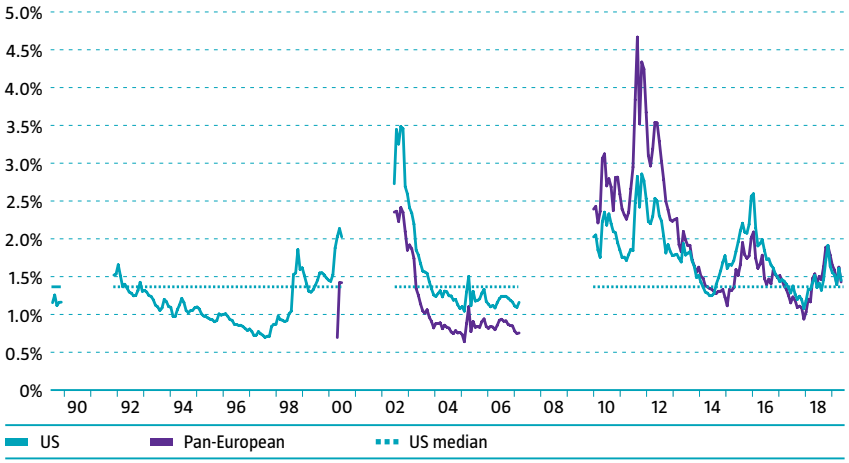
	US	Pan-Europe	World
Target	100 bps	76 bps	81 bps

Source: Robeco

Investors in credits can typically expect a positive excess return. Generally, credits are less liquid and have a higher default risk than comparable government bonds. To compensate investors for this, credits offer investors a higher yield than government bonds. The yield differential between credits and government bonds is called the 'spread'.

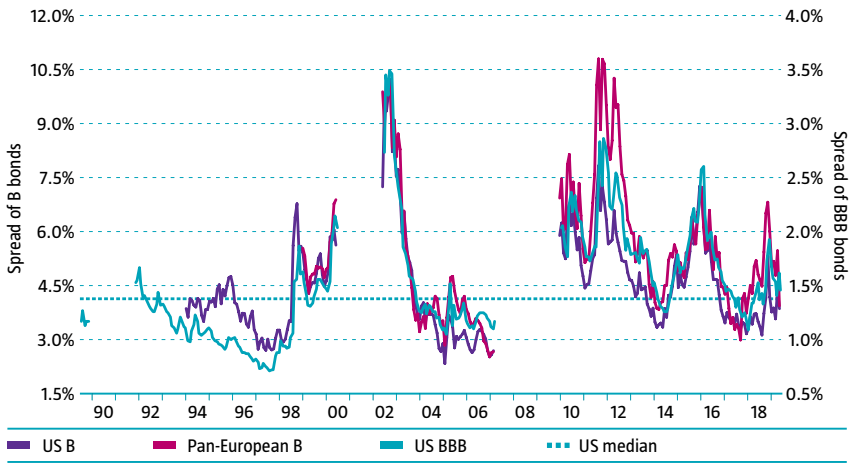
The current spread is a good starting point for our valuation assessment. The spread varies over time: during recession periods, the spread is typically high as bond issuers are more likely to default than during non-recessionary periods. Figure 2.4a and 2.4b show the option-adjusted spread of US and pan-European BBB and B-rated credits, respectively.

Figure 2.4a: OAS of Bloomberg Barclays Corporate BBB indices



Source: Bloomberg, Robeco

Figure 2.4b: OAS of Bloomberg Barclays Corporate B indices

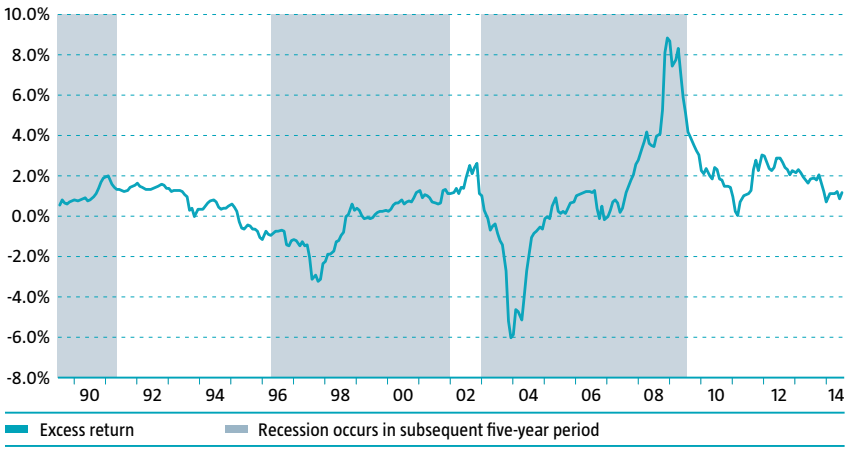


Source: Bloomberg, Robeco

In Figure 2.4, we have left out US recessions and the months before and after them. This is because we believe a recession is unlikely in the near term and, therefore, today's valuation should be assessed against other non-recessionary periods. The current option-adjusted spread is close to the median level seen for US BBB-rated bonds during non-recessionary periods since 1989. The results are similar for single A-rated corporate bonds, which together with BBB-rated bonds account for most of the investment grade corporate bond universe. Figure 2.4b shows that the high yield spread aligns closely with the valuation of investment grade credits.

Figure 2.5 shows the subsequent annualized five-year geometric excess return of US corporates over comparable US Treasuries, excluding transaction costs.

Figure 2.5: Subsequent annualized five-year excess return of US BBB corporate bonds

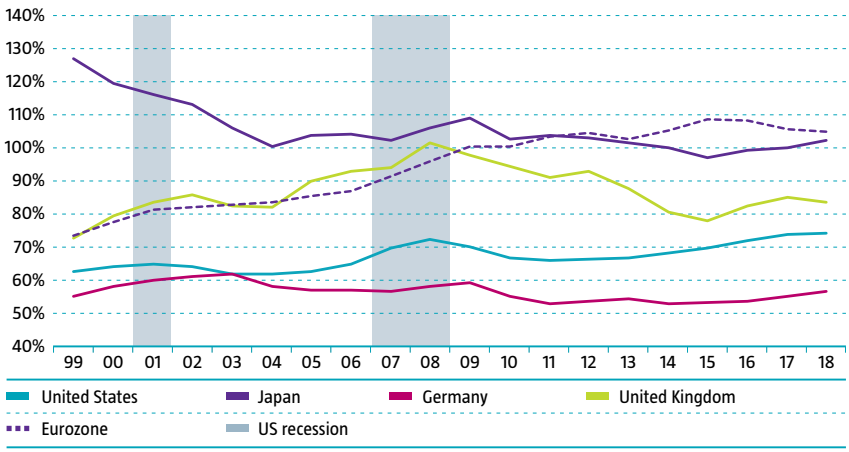


Source: Bloomberg, Robeco

On average, US BBB-rated corporate bonds have offered investors an excess return close to 75% of the initial spread during five-year non-recessionary periods. During five-year periods in which a recession has occurred, the excess return has varied significantly. Typically, it has been negative when the recession hit at the end of the period – as witnessed in 1996, 1997 and 2003 – and a high positive when the recession occurred at the start of the five-year period – as witnessed in 2009. In the case of the last example, the recovery also fell within the five-year period, leading to positive excess returns.

Given the above analysis, our assessment of the valuation of credits should depend on whether we expect a recession to occur in the next five years and, if so, when it will take place. However, for this we need to move on to our macro section. Here, we refrain from macro forecasts and assess the market against its historical valuation in similar periods. Of course, one could argue that history is not representative of today's market. This is illustrated in Figure 2.6, which shows total credit to non-financial corporations (core debt) as a percentage of GDP for major developed countries/regions. Interestingly, the amount of credit to GDP has been on the rise for most markets.

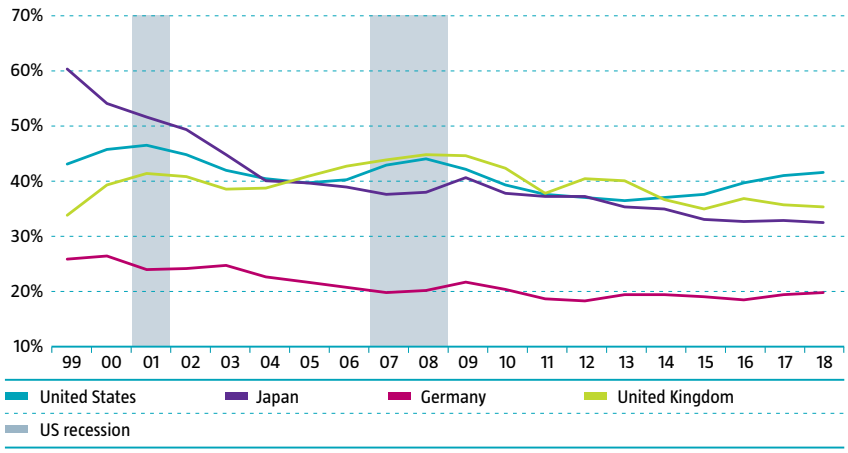
Figure 2.6: Total credit to non-financial corporations (core debt) as a % of GDP



Source: BIS, Robeco

Furthermore, the quality of covenants has been deteriorating, which is typically a sign that credit quality is deteriorating. However, due to the significant fall in real interest rates, debt servicing is manageable. The debt-service ratio shown in Figure 2.7 represents the ratio of interest payments plus amortizations to income. Hence, a lower ratio can be seen as a positive for future debt servicing.

Figure 2.7: Debt service ratios of non-financial corporations



Source: BIS, Robeco

Provided that real interest rates remain below the real income growth rates of corporates, high debt loads are manageable. However, a strong pick-up in real rates or a large drop in corporate earnings could represent a significant challenge for the credit market. With this in mind, we turn to today's valuation, for which we use a neutral macro view. As we cannot rule out a recession, we have lowered our previous excess return estimate from 75% of the spread to 50%. This latter number is widely used in the literature as a good proxy for credit returns; see for example Hennink (2016).

Table 2.7: Excess returns equal to 50% of current spread

	US	Pan-Europe	World
IG excess return	61 bps	57 bps	60 bps
HY excess return	212 bps	197 bps	217 bps

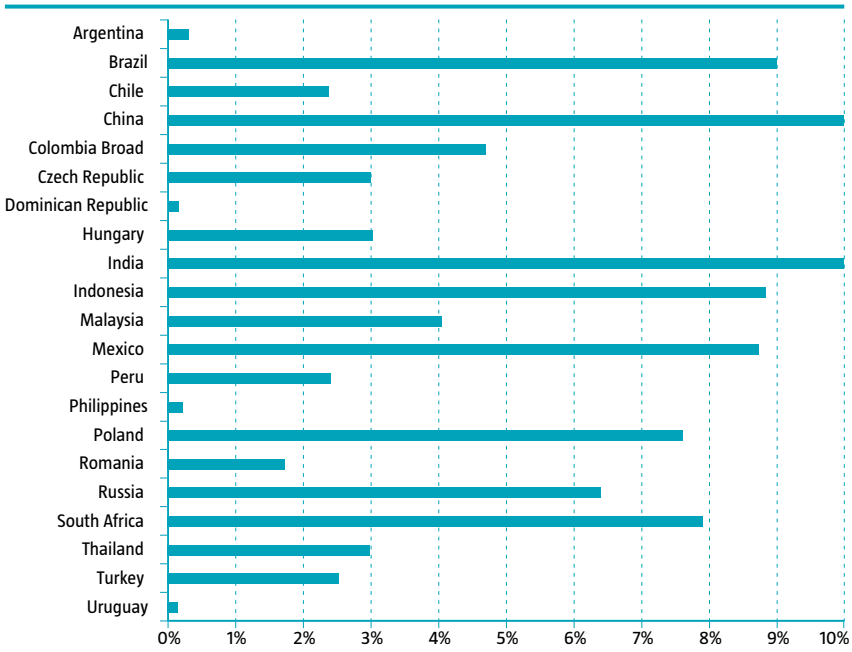
Source: Robeco

Based on Table 2.7, we consider the valuation to be neutral.

2.3 Emerging markets debt

In this section, we look at the valuation of emerging market local currency sovereign debt. For our five-year outlook, we use the J.P.Morgan GBI-Emerging Markets Broad Diversified Index. Although this benchmark is not the one used by most investors, it does include China. Our view is that Chinese bonds will be included in most investors' benchmarks in the coming years, hence the preference. Using this diversified index, which has a 10% allocation to Chinese bonds, we have calculated the target excess returns to be 258 bps. The weights in the index at the end of June are shown in Figure 2.8.

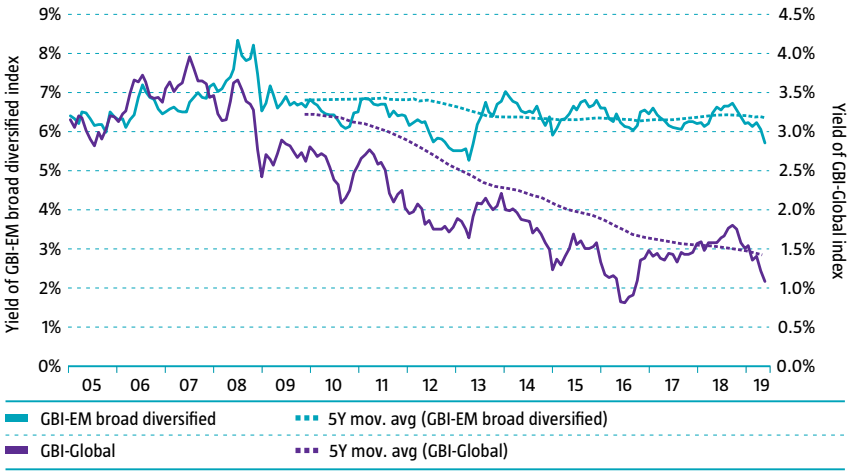
Figure 2.8: J.P.Morgan GBI-Emerging Markets Broad Diversified Index – country weights



Source: J.P.Morgan, Robeco

The return on emerging market debt can be divided into two parts: the local bond return and the FX return. Historically, emerging debt has offered international investors a relatively high yield compared with developed market debt. Figure 2.9 shows the yield to maturity of these markets.

Figure 2.9: Yield to maturity – EMD vs. DMD



Source: Bloomberg, Robeco

Since the global financial crisis, the yield to maturity in developed markets has fallen, while in emerging market countries it has remained more or less constant. As a result, emerging market debt (EMD) offers investors an interesting yield pick-up compared with developed market debt.

Part of the yield differential can be explained by credit risk and inflation differences. We use World Bank data to estimate inflation for both the developed market and emerging market index. To get an estimate of the credit risk, we examine sovereign spread data from the J.P.Morgan Emerging Markets Bond Index or, if this data is not available, the five-year CDS spread. Table 2.8 shows the results of our analysis.

Table 2.8: Value of local EMD adjusted for inflation and credit risk

	2014	2015	2016	2017	2018	July 2019
Credit risk – spread	2.1%	2.7%	2.3%	1.6%	2.2%	1.9%
Inflation						
Emerging debt	4.3%	4.1%	3.9%	3.7%	3.7%	3.5%
Developed markets	1.6%	0.3%	0.7%	1.6%	1.9%	1.2%
Inflation differential	2.7%	3.8%	2.3%	2.1%	1.8%	2.3%
Yield differential	4.9%	5.2%	5.2%	4.8%	4.8%	4.5%
Yield differential adjusted for inflation	2.2%	1.4%	2.9%	2.7%	3.0%	2.2%
Yield differential adjusted for inflation and credit risk	0.1%	-0.7%	0.2%	0.3%	1.4%	0.3%

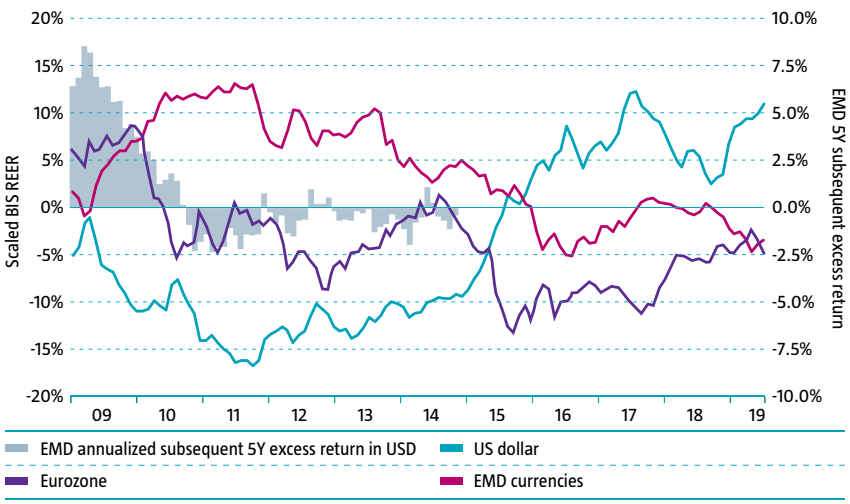
Source: Bloomberg, World Bank, Robeco. Numbers represent the average for the universe using index weights.

Table 2.8 provides an idea of how attractive emerging debt in local currency is compared with developed market debt. We start by subtracting the inflation differences from the yield differential. As can be seen, the former offers a positive real yield premium. A large part of this premium could be explained by the credit risk.[7] Although, technically, the credit risk of sovereign debt is not the same as the credit risk associated with local debt, we think it offers a good proxy. Table 2.8 shows that almost all of the yield differential can be explained by inflation and credit risk differences. However, since 2018 emerging market local debt has offered investors an additional premium. As the yield on emerging debt has not changed much over time, unlike the inflation and credit risk, we believe that the extra premium can largely be attributed to developed markets being expensive. We consider the valuation of the local bond market to be neutral.

For our overall valuation, we also need to look at currencies. For this, we return to the REER discussed in the section on the valuation of currencies in developed markets. Unlike with developed markets, we cannot use OECD data as too many countries are missing. Instead, we have used data from the BIS to calculate the REER for the emerging market index based on the index weighting at the end of June. We have scaled the REER against its 15-year history as we assume it should be neutral over this long period. In Figure 2.10, we compare the scaled emerging market REER with that of the US dollar and the euro. The results show that emerging market currencies were overvalued in the period from 2009 to 2014. During this time, the subsequent five-year excess return versus US dollar cash was generally negative. The latest valuation shows that emerging market currencies are undervalued versus the US dollar. Versus the euro, however, the valuation looks neutral.

7. Here, we assume that the credit risk of developed markets is the same as the risk of US Treasuries. Of course, greater risk is associated with issuers like Italy and Spain.

Figure 2.10: BIS REER scaled vs. 15-year history



Source: BIS, Bloomberg, Robeco

Combining the local bond market valuation with the currency valuation, we believe that valuation of EMD is still positive. EMD in local markets offers more or less normal returns. For a euro investor, we need to compare these normal returns with a very low euro cash return, resulting in a high Sharpe ratio. For US investors, the cash benchmark to beat will be higher, but investors can expect a real appreciation of EM currencies versus the US dollar based on the BIS REER analysis.

2.4 Global stocks

In 2013, Asness et al. argued that "value and momentum are everywhere".[8] But where is the value for equity investors allocating capital using a traditional regional allocation framework? It is safe to assume that value in regional equities is not just "everywhere". And even if one does find it, it is not obvious whether it represents a real opportunity or a value trap. To complicate things further, the predictability of returns using even the best valuation metrics is very limited. In near-efficient markets, it is no surprise that quant models have difficulty predicting more than 5% of the return variation out of sample; indeed, "95% of movements of the market should be unpredictable," according to Ang (2014).[9] Why bother about actual equity valuations if return predictability in general is so low in near-efficient markets? One should keep in mind the dictum offered by Samuelson that markets are "micro efficient" but "macro inefficient".[10] As the predictive horizon stretches and the universe broadens, the case for predictability of returns improves somewhat. As such, valuations are far from irrelevant. Ang (2014) finds that of 15 return predictors, comprising both macro and financial variables, only one manages to really stand out and show the ability to predict returns on a five-year horizon: the Shiller earnings yield (the inverse of the CAPE).

We will assess regional equity valuations on a five-year investment horizon by revisiting our valuation framework. This consists of the following four equity valuation metrics: the Shiller CAPE, Tobin's Q ratio, the Buffett indicator and the equity risk premium. In addition, we introduce a new element – a Sharpe ratio analysis – to broaden our perspective on valuation.

8. Asness, C.S., Clifford, S., Moskowitz, T.J., Pedersen, L.H., 2013. "Value and Momentum Everywhere", The Journal of Finance 68, no. 3, pp. 929-85.

9. Ang, A.,2014. Asset Management: A Systematic Approach to Factor Investing.

10. This quote is from a private letter from Paul Samuelson to John Campbell and Robert Shiller. The quote appears and is discussed in Shiller, R., 2000. Irrational Exuberance, Princeton University Press.

CAPE meets its critics

The CAPE, or Shiller PE, is the conventional price-earnings ratio for stocks with two adjustments that, intuitively, make sense. The first is the use of the average of ten-year prior earnings instead of the most recent year's earnings; the second is the correction of those earnings for inflation. Thus, it makes a 'business as usual' estimate for earnings over the business cycle which can be compared with the current market price. The metric has its critics, including Damodaran (2016),[11] who argues that the CAPE is not very informative given its strong correlation with more traditional valuation metrics and that its short-term predictive power is limited. He does admit, though, that the CAPE starts to deviate around turning points in the earnings cycle from conventional valuation metrics. Moreover, it continues to show up in our and other empirical studies as a useful predictor, especially on a five-year horizon (or longer). While, as Damodaran stated, a single metric like the Shiller CAPE may be "too weak to capture the complexity of the market", even among its weaker peers, it does an outstanding job of dealing with this complexity.

11. Damodaran, A., 2016. Retrieved from http://aswathdamodaran.blogspot.com/2016/08/superman-and-stocks-it-not-cape-cape-it.html.

Navigating around CAPE neutral

The message of the Shiller CAPE for the global equity market remains sobering, as it did last year. Currently, the global Shiller CAPE stands at 22.75, which is 37% above a fair value real PE of 16.9 (the inverse of the real earnings yield of 6% we assume in our steady-state return for global equities). Critics like Damodaran do have a point: the use of the historical average CAPE (which has been 16.9 for the US since 1880) as the ultimate reference point to which the actual CAPE should mean revert likely exaggerates the degree of overvaluation. The structure of the global economy has changed dramatically over the past century and neutral real rates of interest have declined, which may also have pushed up the neutral CAPE level.

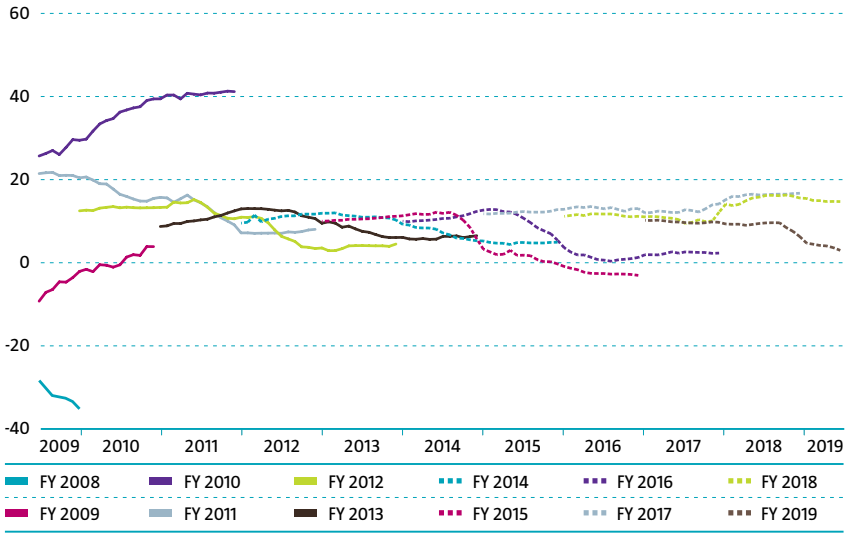
Analogous to the central banking debate about the level of the neutral real rate of interest (a variable that is unobservable according to economists such as Milton Friedman[12]), the quest for the 'new' neutral CAPE remains unsolved. A 40-year moving average CAPE seems to strike an improved balance between the structural shifts the global economy has undergone over the past century and taking enough data into consideration (including multiple business cycles) to infer a reliable reference for mean reversion. Using the higher 40-year moving average of 21.4[13] makes global equities look less stretched today, at around 6% above fair value. In that sense, they seem to be navigating around 'CAPE neutral'. The message, however, remains the same: global equity valuations are above historical averages, so keep an eye on downside risk.

12. Friedman, M., 1968. "The Role of Monetary Policy American", Economic Review 58.

13. US CAPE 40-year moving average is used as a proxy here due to the lack of data availability for the MSCI World Index.

Above-average equity valuations, especially those emerging from a CAPE already conditioned for structural shifts, suggest investors have been willing to pay a premium for future earnings. This could be due to the belief that in the current low-rate environment, they are going to be undercompensated in less risky alternatives to equities, i.e. bonds, thereby overcompensating the underlying value in equities by bidding up their price (i.e. driven by discount rates). Another reason could be that investors are expecting high earnings growth to continue (i.e. driven by cashflow). However, looking at IBES data for the MSCI World over the past ten years, investors have seen earnings downgraded by an average of 1% per annum compared with prior expectations, even with the business cycle in expansion mode since 2009. The upside bias in analyst earnings forecasts will be further tested as we think the future earnings path for global equities is strewn with obstacles. This view is elaborated in the macro section.

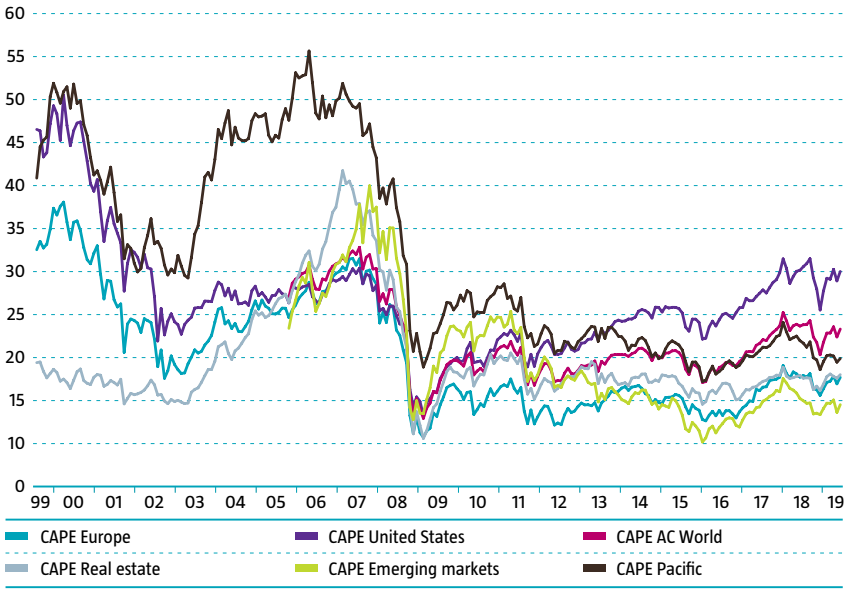
Figure 2.11: MSCI World EPS growth estimates (YoY)



Source: Refinitiv Datastream, Robeco

Empirically, elevated CAPE levels mean revert more often by lower prices, not the materialization of high earnings. As a result, a simple regression line of global CAPE levels versus subsequent five-year MSCI returns is downward sloping and shows that global equity returns will likely be below, but close to historical average returns following a starting CAPE of 22.75. However, underlining the limited predictability of expected returns, the bulk of the variance in subsequent expected returns remains unexplained by prior valuation ratios.

Figure 2.12: Cyclically adjusted price-earnings ratio



Source: Refinitiv Datastream, Robeco

The global Sharpe ratio rhymes with history

Let us consider, for a moment, what current market pricing might tell us about future returns by assuming that, rather than being near-efficient, the market actually has perfect foresight. In other words, there is no news of any imminent cashflow or discount-rate-related shocks, and that the disciples of the efficient market hypothesis got it right. As a result, there is no market repricing and the CAPE level remains unchanged for the next five years. In that case, what would be the market-implied returns given the current CAPE levels? Using a Gordon growth model set-up as used in our steady-state framework[14] delivers the following results:

14. See our Long-Term Expected Returns publication for our detailed steady-state framework.

Table 2.9: CAPE neutral: market-implied equity returns if CAPE does not change

	Global	US	Emerging markets
CAPE neutral derived real dividend yield	2.2%	1.7%	3.5%
Forward real EPS using IMF GDP forecast	1.6%	1.0%	3.0%
Consensus five-year inflation	2.0%	2.1%	4.0%
Sharpe	30.3%	18.6%	33.7%

Source: IBES Datastream, Robeco

What about the market-implied five-year forward earnings? The difficulty here is that IBES data only has analysts' forward earnings expectations 18 months out. Although one could infer implied earnings forecasts from long-dated dividend future prices, we aim to keep the analysis simple and consistent with our steady-state derivation of long-term dividend growth. In the long run, real earnings growth should converge with real GDP growth. Therefore, we use the average IMF real GDP 2020-2024 forecasts as a proxy for consensus real GDP expectations on a five-year horizon and calculate the expected real earnings growth, conditioning for earnings dilution. As a proxy for inflation expectations, we use the consensus inflation estimates on a five-year horizon.

Adding the three components, we get a market-implied equity return estimate for global equities, US and emerging markets. Looking at volatility-adjusted excess returns, the Sharpe ratio, we get implied Sharpe ratios that are above, but close to the corresponding historical average Sharpe ratio of 25%. Thus, implied returns look fair and the global Sharpe rhymes with history. The US is the exception, with a below historical average Sharpe ratio. Current market pricing reveals that the US equity market may have gotten ahead of itself with volatility-adjusted US equity returns below historical averages in the medium term.

Of course, the previous assumption of perfect foresight and fully efficient markets is hypothetical. In the introduction, we noted that markets are predictable, albeit to a limited extent, undermining the notion of perfect foresight. What would change in our implied return outlook if we assume there will be news that warrants changes in cashflow projections and discount rates for equities? In other words, we introduce the more realistic assumption that the CAPE is time-varying and mean reverts over time.

This changes the Gordon growth set-up because we now have to add changes in the multiple (equity repricing) to the total return equation. To work out the expected change in the global multiple, we make the conservative assumption of a partial mean reversion on a five-year horizon. This implies that the CAPE for global, US and EM only retraces by one-third of the current deviation from fair value CAPE levels. This time-varying view of CAPE is depicted in Table 2.10.

Table 2.10: CAPE partial mean reversion: market-implied equity returns if CAPE changes

	Global	US	Emerging markets
CAPE neutral derived real dividend yield	2.2%	1.7%	3.5%
Forward real EPS using IMF GDP forecast	1.6%	1.0%	3.0%
Consensus five-year inflation	2.0%	2.1%	4.0%
Multiple change	-0.4%	-2.1%	1.2%
Sharpe	27.7%	4.9%	40.1%
Valuation	=	-/-	+/+

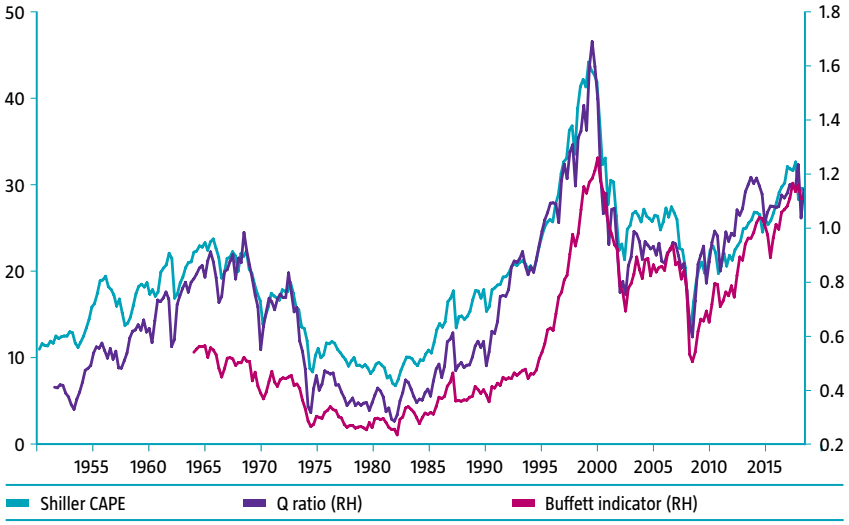
Source: IBES Datastream, Robeco

Table 2.10 shows that even a conservative assumption of a partial mean reversion results in greater divergence in expected volatility-adjusted excess returns compared with Table 2.9. Even a CAPE decline to 27 from the current level of 30 (the one-third of a full mean reversion assumption) could see US equity returns drop significantly below the historical average Sharpe ratio.

Outspoken equity bulls would disagree and object that our assumption is not conservative at all, as there are good reasons why investors have been willing to pay up for US equities. Again, equity prices in a near-efficient market are a reflection of expected cash flows and corresponding discount rates to value those future cashflows. Low discount rates raise equity valuations. These have been induced by the decline in the cost of capital, while very low macroeconomic volatility has lowered risk aversion. The decline in real interest rates in conjunction with a rise in corporate market power may also have lifted longer trend earnings estimates, pushing valuations higher. These factors could persist.

The risk we flag is that valuations (not only those of the US equity market) will compress notably when these factors go into reverse; in other words, macro-volatility rises and/or real rates edge up as the neutral real rate of the global economy eventually lifts.

Figure 2.13: Buffett indicator, Shiller CAPE and Tobin's Q ratio – US valuation metrics



Source: Refinitiv Datastream, Robeco

Tobin, Buffett and Shiller: where independent minds meet

There are other valuation methods that echo the outcome of the Sharpe ratio analysis. The elevated level of the global CAPE is, to a large extent, due to stretched valuation levels in the US, which account for 55% of global market cap. In last year's edition, two of our special topics expressed concern about the implications of historically elevated valuation levels in the US. It is worth revisiting our conclusions. In 'Time to get defensive', we observed that a CAPE in the top quintile, as it is nowadays, implies that the market probability of a real loss is 57.9%, with an average loss of 17.5% over a five-year period. Note that the loss probability is still only marginally more reliable than a coin toss, indicating that a loss is not a given. Cognizant of this, we quoted Shiller, who last year expressed concern but admitted that "equity markets could remain bullish for years to come", as valuation levels do not foretell the end of the bull run.

Since our call for a more defensive positioning (especially aimed at US investors, who still allocate around 80% of their exposure to US equities), the US equity market has remained in the lead, generating double-digit returns. This again proves that in the short run, anything can happen – regardless of the actual valuation level. However, in the long run, empirical evidence shows that past returns are no guarantee for future performance and, in the end, the US will no longer be able to defy the odds: high valuations are a predictor of low returns. Based on the current CAPE level, one should expect below-historical average US equity returns on a five-year investment horizon. This message is also corroborated by other valuation metrics, such as Tobin's Q ratio (the ratio between the market value of an asset and its replacement value) and the Buffett indicator. The Buffett indicator, the market capitalization of the S&P 500 divided by US nominal GDP, has declined somewhat over the year, but is still indicating that the S&P 500 is valued at 10.6% more than the total value of annual US economic activity. This is a level not seen in the last 55 years, except in the run-up to the IT bubble. Both indicators are above 1, indicating above-historical average valuation levels in the US market. Tobin's Q ratio echoes this, with the market value of US corporates now 14% above their replacement value. In short, the illustrious and truly independent minds behind the above-presented metrics – Tobin, Buffet and Shiller – would agree that US equity prices look expensive.

How do other regions fare? In Asia Pacific, emerging markets and Europe, CAPE levels appear less stretched or even point to a sizeable discount compared with their own history and/or relative to the global market. If there is value, it is to be found in these regions in the next five years.

Emerging markets: unspectacular value

The emerging markets discount on a CAPE basis versus global stocks is now 37%. In nominal terms, conventional valuation metrics like price to book, price to cashflow and price to earnings show a more modest discount of around 25%. Does that make emerging markets cheap? It certainly looks that way, but one should exercise caution. Since 1995, there has been an average emerging market discount of 23.1%, which means the current discount is not hinting at excessively cheap emerging market stocks. In addition, as we argued in our 2016 edition, the discount is partly a reflection of the GDP productivity growth catch-up of emerging markets, notably China, versus advanced economies. Emerging markets look cheap for a reason as the market was pricing in China's economic slowdown as a systemic risk factor well before there was even talk about a trade war. Our simple regression model, explaining the emerging market CAPE discount by expected consensus growth differentials between China and the US, delivers a CAPE discount that is close to current levels. With no significant mispricing present that can be arbitraged away, China's growth story needs to surprise to the upside in the medium term in order to see the emerging market discount to compress. History suggests the 25% discount should deliver emerging market outperformance over developed market equities, but expect this outperformance to coincide with even more emerging market volatility than usual as the veil of protectionism hampers the productivity growth catch-up in emerging economies.

Banking on Europe?

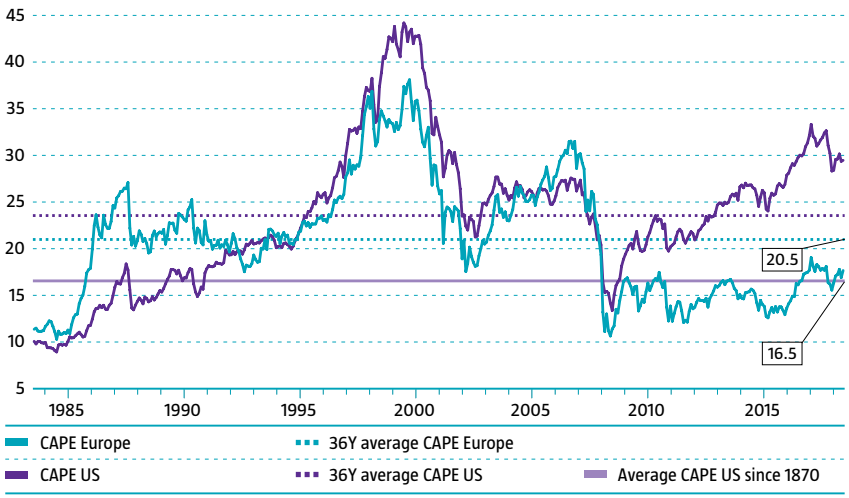
Many observers see the almost staggering 50% European CAPE discount versus the US as meaningless, pointing to the huge differences in earnings potential, and sector and factor exposure between the two regions. Europe is more exposed to the value factor, while the US has a growth factor tilt. So, part of the story should be that Europe has become cheap as value massively has lagged the growth factor over the past decade. Investors who choose to be agnostic about factor timing (and there are good reasons for this)[15] should be more cautious about loading up on European equities just because they look historically cheap. Also, struggling banks are dominating European indices (18% for MSCI Europe), while the globally leading US technology sector dominates the MSCI US (22%).

These objections to downplaying the signal of the European equity discount seem legitimate, but when the arguments are put to the test, they appear to be half-truths. If the value-growth tilt and technology-banks tilt really determine the valuation gap between US and European equities, these tilts should be able to explain a large part of the variation in the relative valuation of Europe versus the US based on CAPE.[16] Regressing quarterly changes in the relative CAPE Europe/US on the quarterly returns of the global value-growth factor reveals that the presence of a value tilt is virtually absent: the coefficient is positive but not even significant, at a 90% confidence level. However, the sector bias is clearly present, as the relative performance global banks versus global technology is positive and significant. There is, however, another variable that proves to be significant, even when conditioning for sector bias: relative political uncertainty.

15. See Baltussen, G., Swinkels, L. and Van Vliet, P., 2019. "Global Factor Premiums", https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3325720.

16. We are aware of the autocorrelation present in using the CAPE in a quarterly regression; however, a similar analysis using conventional trailing PEs produces roughly the same results. A notable difference is that political risk drops out of the conventional P/E equation as an explanatory variable of the European discount.

Figure 2.14: European vs. US CAPE



Source: Refinitiv Datastream, Robeco

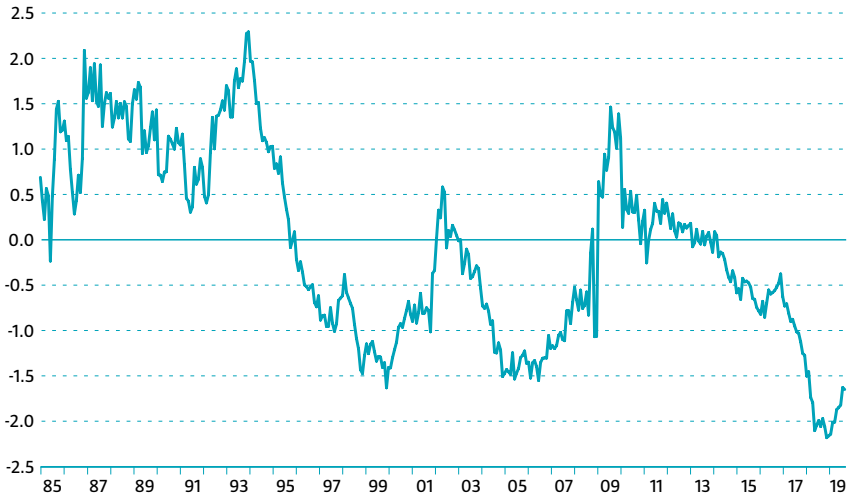
The quarterly changes in the difference of the US-EU economic political uncertainty index are positive and significant in a joint regression with the sector-tilt variable. The importance of political risk as a pricing factor is also illustrated by the fact that the divergence in valuation between the US and Europe really took off around 2010, when the Eurozone crisis erupted. The scars of this crisis are healing, yet political uncertainty has persisted and remains relatively elevated compared with the US. In simple terms: if Europe does not get its political house in order or, on the other side of the Atlantic, the 'Trump put' on the US political economy does not expire, it is hard to see the equity discount on European equities disappearing. However, for investors who see European systemic risks fading and expect regulatory pressures for the US tech sector to rise, banking on European equities makes sense.

Triumph of the realists

Nevertheless, cross-regional risk perceptions seem to be on the move as, from a forward-looking equity risk-premium perspective, investors are starting to demand a risk premium for US equities that is more aligned with its global counterparts. The risk premium is what the market demands to invest in riskier equities instead of the risk-free alternative, government bonds. In retrospect, equity investors have earned more than they wished for, aptly dubbed the 'triumph of the optimists'[17] by Dimson, Marsh and Staunton in 2002. Equities have delivered a geometric annualized excess return of 3.2% compared with risk-free government bonds for 23 countries in the DMS database since 1900. However, if the forward-looking risk premium is exceptionally low compared with the historical equity premium, this might signal complacency as investors may demand too little compensation for the underlying equity exposure, leaving the market vulnerable to a repricing of risk. In this respect, the forward-looking risk premium analysis corroborates the above Sharpe ratio analysis: the below-historical average Sharpe ratio for the US signals repricing risk to the downside. In last year's special 'The potential rewards of diversifying away from US equities', we observed that never in recent history had the US equity risk premium been so low compared with that of the global equity market.

17. Dimson, E., Marsh, P. and Staunton, M., 2002. "Triumph of the Optimists: 101 Years of Global Investment Returns", Princeton University Press.

Figure 2.15: US vs. global equity risk premium (Z-score)



Source: Refinitiv Datastream, Robeco

We debated the reasons for this low forward-looking risk premium, nuancing the complacency by pointing to various drivers of risk aversion and remaining in favor of US equities instead. US risk premiums plunged versus the rest of the world after November 2016. So, one plausible explanation of stretched US valuations is what we call the 'Trump put': investors believing Trump remains business friendly, taking stock market returns as a gauge of his presidential success. With investors understanding the rules of his game better than elsewhere, risk aversion to US equities has been lowered. However, the spread between risk premiums in the US and the rest of world has become less extreme since last year. This convergence has often signaled a late-cycle bull market for the US. In the previous cycles, the bottoming out of the US equity risk premium relative to the rest of the world has been followed by a peak in the US equity market by 3 months (2000) and 18 months (2006). Empirically, the current level of risk premium in the US is a predictor that excess returns for US stocks will undershoot excess returns on global equities, especially on a one to three-year horizon. However, the same disclaimer as the one made earlier regarding the elevated US CAPE applies: history often only rhymes and US equities could stay afloat for longer than the most representative historical case suggests.

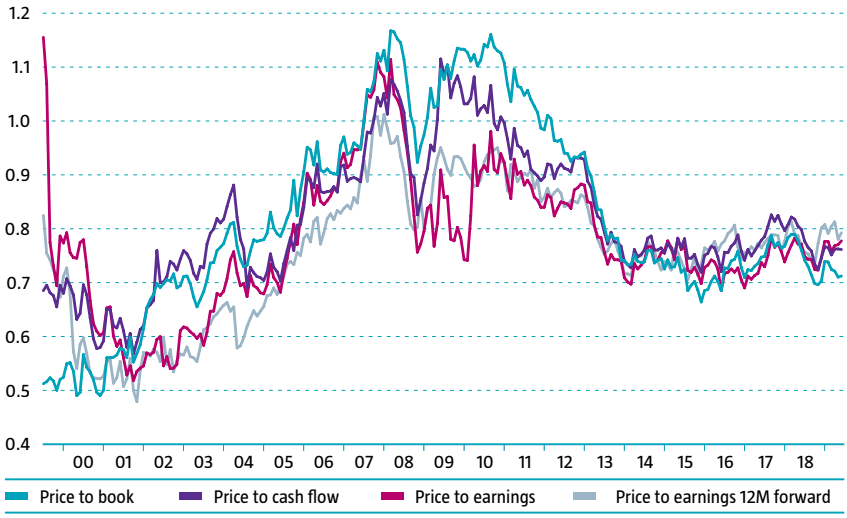
Table 2.11: Subsequent realized equity risk premium differential US vs. rest of world (%)

Z-score	1-year	3-year	5-year
-2.0 to -1.5	-6.89	-1.69	-0.26
-1.5 to -1.0	-4.70	-1.94	0.29
-1.0 to -0.5	1.44	0.36	-0.77
-0.5 to 0.0	-3.37	1.93	-0.31
0.0 to 0.5	2.69	2.39	2.59
0.5 to 1.0	1.62	4.35	5.98
1.0 to 1.5	4.92	6.65	8.30
1.5 to 2.0	7.37	10.78	11.39
> 2.0	15.89	15.35	17.87

Source: Refinitiv, Robeco

All in all, global equity valuations appear less stretched compared with last year. At the margin, this will improve expected global equity returns somewhat in the next five years from an unconditional perspective. However, we continue to deem valuations to be tilted to the expensive side of the spectrum, suggesting investors should discount downside risk in their expected return equations. Especially in the US, prices could trump value for longer, but current valuations speak of a triumph of the realists rather than the optimists.

Figure 2.16: EM vs. global equities valuation (ratio)



Source: Refinitiv Datastream, Robeco

2.5 Listed real estate

In our asset allocation framework, we compared listed real estate with global equities. Though exposed to somewhat different risk drivers, listed real estate is a sector in the equity universe and has similar risk and volatility characteristics. According to our CAPE metric, the CAPE of real estate stands at 17.8, showing a discount of 22%, indicating a modest rerating versus global equities since last year. The dividend yield gap has decreased to 1.32%, now 17.5% below the average dividend yield gap seen over the last 20 years. At the margin, this decline in the relative yield buffer makes real estate somewhat less attractive. Looking at a conventional price-earnings ratio metric relative to equities, the current 15% discount shown by real estate indicates a modest upside of 1% excess return for real estate compared with global equities, on a five-year horizon from an unconditional valuation perspective. However, taking into account the declining yield buffer on real estate, we feel the upside is even more limited than this regression suggests and remain neutral on the valuation compared with global equities.

2.6 Developed currencies

President Trump has on several occasions said that the US dollar is expensive, and he may be right. For the valuation of developed currencies, we look at the REER. This inflation-corrected exchange rate measures the development of a country's currency against the currency of its trading partners. As seen in Table 2.12, the weight given to each trading partner's currency is in line with trade flows.

Table 2.12: Weights of countries used in REER based on 2014-2016 trade

		AU	CA	CN	XM	JP	CH	GB	US	Other
Australia	AU	X	0.9%	26.7%	15.6%	7.9%	1.4%	3.4%	13.9%	30.2%
Canada	CA	0.3%	X	13.4%	8.6%	3.1%	0.9%	1.7%	57.7%	14.4%
China	CN	1.4%	2.1%	X	18.0%	11.9%	1.4%	3.0%	19.7%	42.5%
Eurozone	XM	0.6%	1.3%	18.4%	X	4.5%	5.5%	10.4%	14.6%	44.7%
Japan	JP	1.1%	1.3%	31.9%	12.7%	X	1.4%	2.0%	16.5%	33.2%
Switzerland	CH	0.5%	1.0%	10.8%	46.4%	3.4%	X	5.1%	11.6%	21.3%
United Kingdom	GB	0.7%	1.1%	13.2%	45.0%	2.8%	2.5%	X	11.8%	23.0%
United States	US	0.7%	11.7%	23.3%	17.0%	7.1%	1.7%	3.2%	X	35.3%

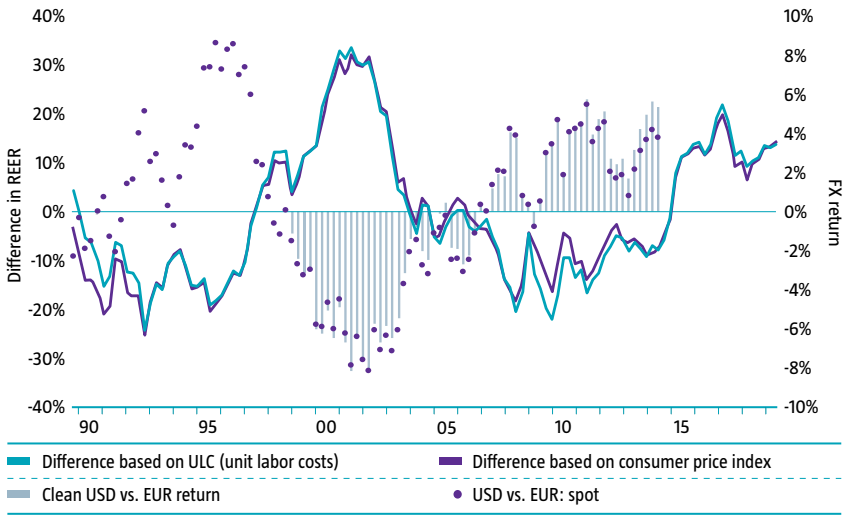
Source: BIS, Robeco. Weights of trading partners per country is given in columns.

For our valuation, we assume that a country's currency cannot continue to appreciate in real terms versus its trading partners, as ultimately the country will either lose its competitiveness or consumers will start buying their goods abroad en masse.

To measure the REER, we look at data from the OECD. The OECD offers two methods for constructing a country's REER: based on unit labor or on consumer price inflation. In our analysis, we look at both approaches. As economies can differ from country to country, developments in unit labor cost or inflation can differ for quite some time. For example, the unit labor cost for a region with a large service sector like the Eurozone can differ substantially from a country that has a large manufacturing sector like China. Here, we only look at developed countries.

The OECD offers data series with 2010 as the base date. For this year, each REER has a value of 100. For our valuation assessment, we first need to transform the OECD data as it is unlikely that every currency traded at its fair or neutral value in 2010. Instead, we assume that on average a currency has traded at its neutral level over the last 15 years. Using this 15-year average, we have scaled each REER level against its average to get an indication of whether the REER is high or low. In our view, a high level for this scaled REER can be seen as a signal that the currency is overvalued and a low level that the currency is undervalued. To test this assumption, we compare the movements of the US dollar versus the euro, the euro versus the British pound and the US dollar versus the Japanese yen.

Figure 2.17: USD vs. EUR – Subsequent annualized five-year FX return vs. differences in scaled REER



Source: Bloomberg, OECD, Robeco

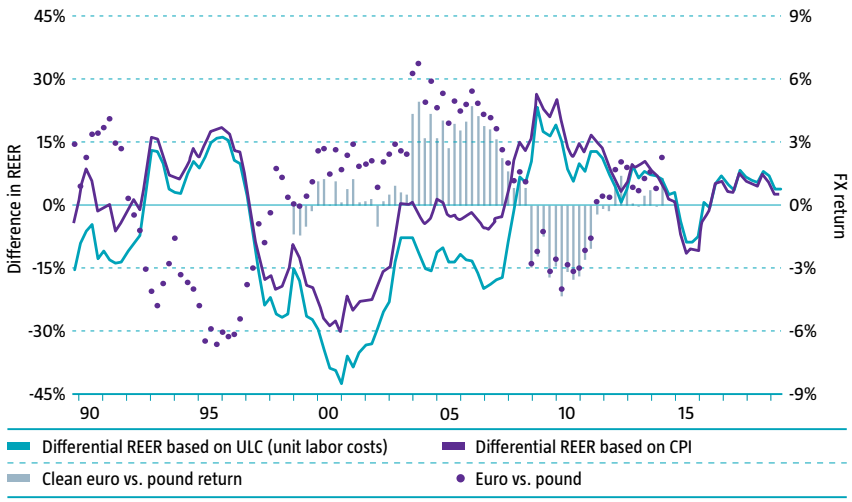
Figure 2.17 shows our analysis for the US dollar versus the euro.[18] We started by determining the difference between the scaled US dollar REER and euro REER based on unit labor costs and consumer price indices. These differences are shown by the lines. Our view is that these differences indicate whether the US dollar is expensive or cheap versus the euro. To test this assumption, we have calculated the subsequent five-year spot return of the US dollar against the euro. The outcome is shown via the annualized return represented by the dots. This reveals a reverse pattern: almost every time the scaled REER difference is negative, the US dollar appreciates and vice versa. So our assumption seems correct, at least with hindsight. Based on the latest value in Figure 2.17, the US dollar seems overvalued versus the euro. Based on the relationship we found, we estimate that the US dollar will depreciate by roughly 3.4% per year against the euro.

18. For the pre-euro period, a basket of pre-euro currencies is used.

In Figure 2.17, we also compare the spot return of the US dollar against the euro with the return of a forward contract. The latter return mainly reflects the expected US dollar movement based on interest rate differentials. When the US short-term interest rate is much higher than its euro counterpart, the US dollar should, in theory, depreciate. By subtracting the forward return, we obtain a clean FX return. This clean FX return – which is shown by the bars – is the most relevant for our comparison. Note that over our sample period, the clean FX return measured over a five-year period is almost identical to the spot return. However, at the end of the period, the returns begin to diverge as short-term euro interest rates fall far below US interest rates.

We compare the value of the British pound with the euro, as the Eurozone is clearly the UK's most important trading partner. Figure 2.18 shows the outcome of our analysis. We see a similar relationship to that shown in Figure 2.17: an appreciation of the euro versus the pound often coincides with a negative difference between the REERs. As the latest readings only show a small difference, we consider the valuation of the pound versus the euro to be neutral.

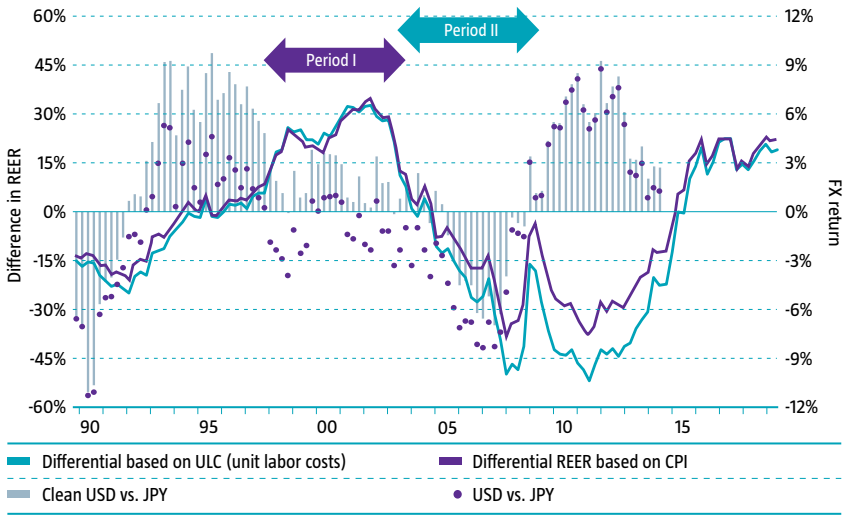
Figure 2.18: EUR vs. GBP – Subsequent annualized five-year FX return vs. differences in scaled REER



Source: Bloomberg, OECD, Robeco

The Japanese yen is the only major developed currency that is missing in our analysis. This currency is also the most challenging for us. Based on our REER analysis, the Japanese yen seems undervalued versus the US dollar, as shown in Figure 2.19. The difference seen is as large as the US dollar versus the euro. However, what can we conclude from this? If we look at the historical relationship between the REER differences and the subsequent FX return, there is no clear pattern. For example, in period 2, we can see that the US dollar lost value versus the Japanese yen in the subsequent five-year period. At that time, the REER indicated that the US dollar was undervalued. So, we should have expected an appreciation. However, the US dollar depreciated. In period 1, we can see that the US dollar depreciated in the following five years, as expected. The REER was positive during this period, so market movements correspond with our assumption. However, the clean FX return was positive. Interest rate differentials pointed to a larger depreciation than actually occurred. So, investors would have been better off staying in the US dollar than moving into the Japanese yen at the time. Since the global financial crisis, the relationship between the REER and FX return has normalized. Maybe not incidentally, interest rate differentials were relatively small during this period. Although our sample is much too short to draw conclusions, we believe that large interest rate differentials can greatly distort the relationship between the REER and FX return.

Figure 2.19: USD vs. JPY – Subsequent annualized five-year FX return vs. differences in scaled REER



Source: Bloomberg, OECD, Robeco

Over the last couple of months we have seen a good example of this distortion. Based on REER differentials, the US dollar is currently overvalued versus the euro. However, short-term interest rates in the US are much higher than in the Eurozone. This large difference has supported the US dollar strongly. However, as the Federal Reserve became more dovish, the market expected this difference to narrow, making the US dollar more vulnerable to its expensive valuation. In Table 2.13 we show the depreciation of the US dollar based on forward currency contracts for different tenors.

Table 2.13: What will the US dollar do based on forward pricing (annualized return)?

	1-year	3-year	5-year
Euro	-2.5%	-2.2%	-2.1%
British pound	-1.2%	-0.8%	-0.8%
Japanese yen	-2.3%	-2.0%	-2.0%

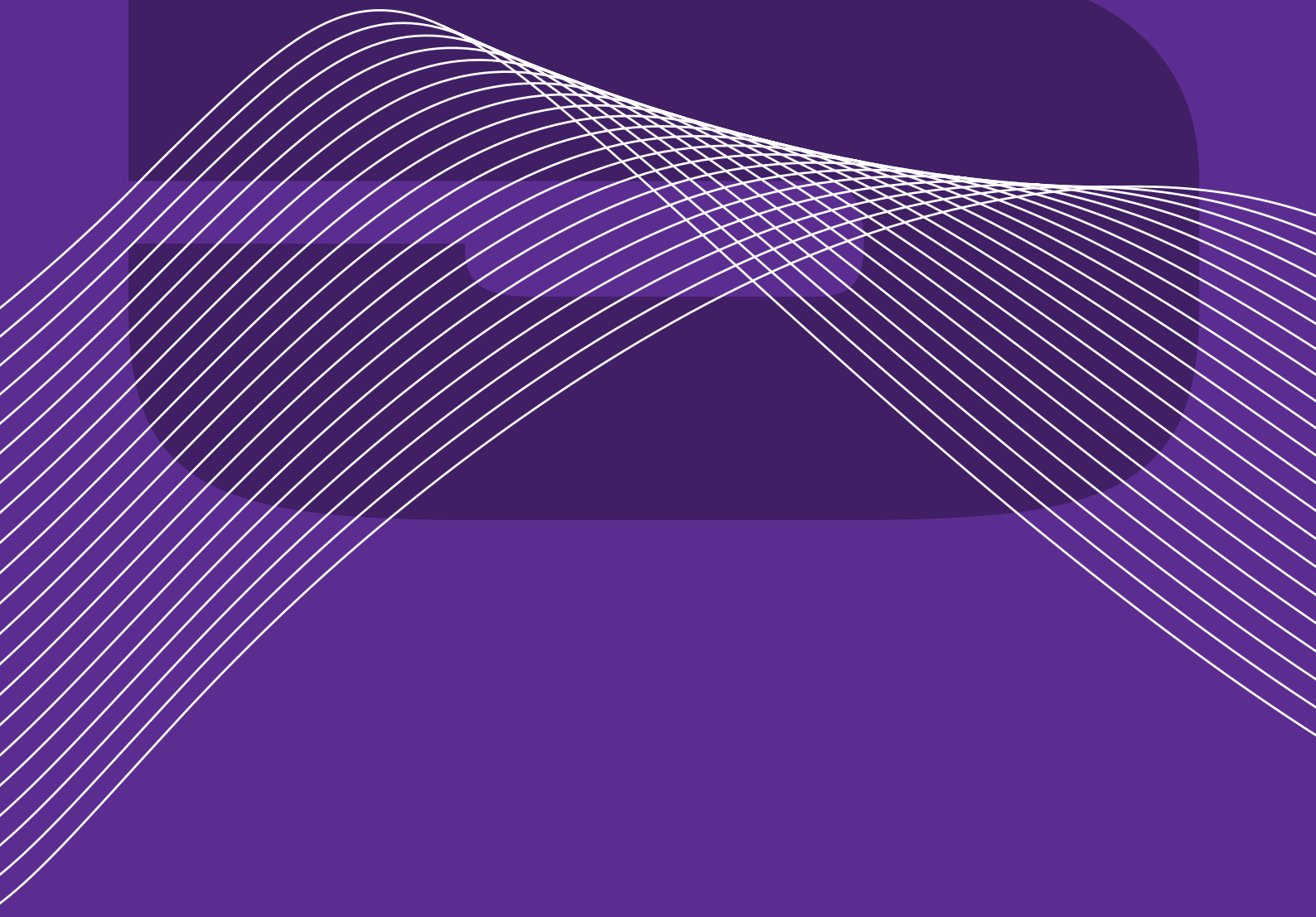
Source: Bloomberg, Robeco

Previously, we estimated that the US dollar would depreciate by 3.4% against the euro based on REER differences. An investor that hedges the USD can expect to pay 2.5% based on forward pricing. The difference is just 0.9%. Given the volatility of the US dollar versus the euro of roughly 10%, shortening the US dollar no longer represents an appealing proposition.

Based on our analysis, we do not have overly strong valuation views for the major currencies. Adjusted for forward pricing, the differences are small. If anything, we believe that the US dollar is slightly expensive versus the Japanese yen and euro, while the British pound is slightly cheap versus the euro.

Special topics

Long-term investors generally face long-term challenges. In this section, however, we address four topics that institutional investors may very well be facing right now or in the near future.



POLICY SPACE

PAVING THE WAY FOR UNCONVENTIONAL POLICY

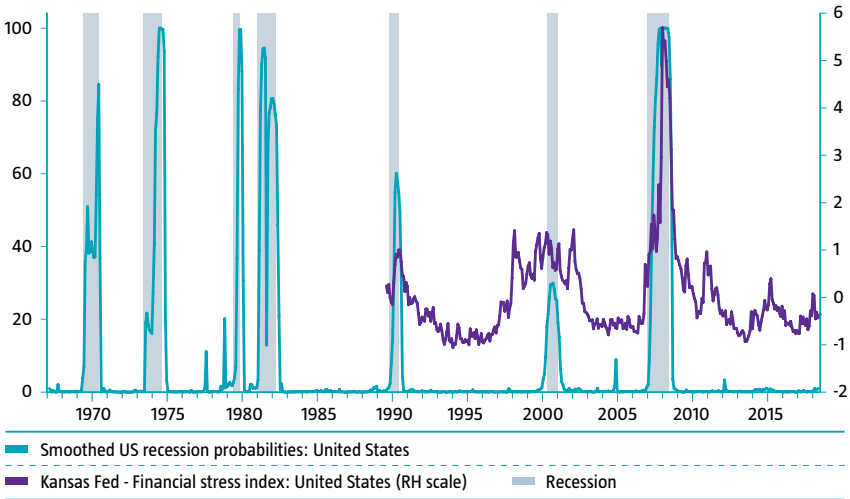
Nowadays, the overwhelming consensus is that the global economy is in the latter stages of economic expansion and that the chances of a recession in the next five years are high. In contrast with previous recessions, policymakers now seem to have limited room for maneuver. In this article, we look at what space is still available and argue that the unconventional toolkit is not yet empty. Over the past decade, central banks have turned to unconventional monetary policy. We believe policymakers will turn to unconventional fiscal policy next, but will we see Modern Monetary Theory (MMT) put into practice in the next five years?

An economist correctly calling a recession in advance is a statistical outlier.[1] Our predictions of a recession in the next five years may therefore be wrong. Financial stress events, however, happen more often than recessions and the turbulence they create, as seen during the 1998 LTCM crisis, is a force to be reckoned with. The misallocation of capital that unconventional monetary policies have done little to prevent, despite urgent warnings from organizations such as the BIS,[2] may well cause a smörgäsbord of financial stress events. Policymakers will undoubtedly attempt to mitigate their impact on financial markets and the real economy should these events unfold. But how much firepower do central banks still have? US nominal policy rates are currently at 2.5%, whereas the average policy rate cut from peak to trough during recession periods has been 6.5%. This amounts to a shortage of 4% in conventional policy rate cuts in the event of a recession. For the Eurozone and Japan, conventional monetary policy is as constrained as one would expect in a recessionary environment. With both regions already stuck at 0% and an historic peak-to-trough cumulative policy cut of 3.25% and 2%, respectively, further cutting into negative territory to kickstart aggregate demand would be challenging, to say the least.

1. IMF working paper 18/39 by Zidong An, João Tovar Jalles and Prakash Loungani shows economists correctly called only 5 out of 153 recessions 8 months in advance.

2. Banerjee, R. and Hoffmann, B., 2018. "The rise of zombie firms: causes and consequences".

Figure 1: Financial stress events happen more often than recessions



Source: Refinitiv Datastream, Robeco

Traditionally, policymakers seeking to mitigate the impact of cyclical downturns have had two instruments at their disposal: fiscal stimulus and monetary stimulus. Given the anticipated backdrop of elevated recession and financial-stress risks in the next five years, as well as the apparent inability of central banks to make the rate cuts required, it is vital that investors consider the monetary and fiscal space policymakers still have. In our view, the ability (monetary/fiscal space) and willingness of policymakers to use the macroeconomic policy space available to them will, to a large extent, determine how asset markets evolve in the medium term.

Policy space will become a key market driver

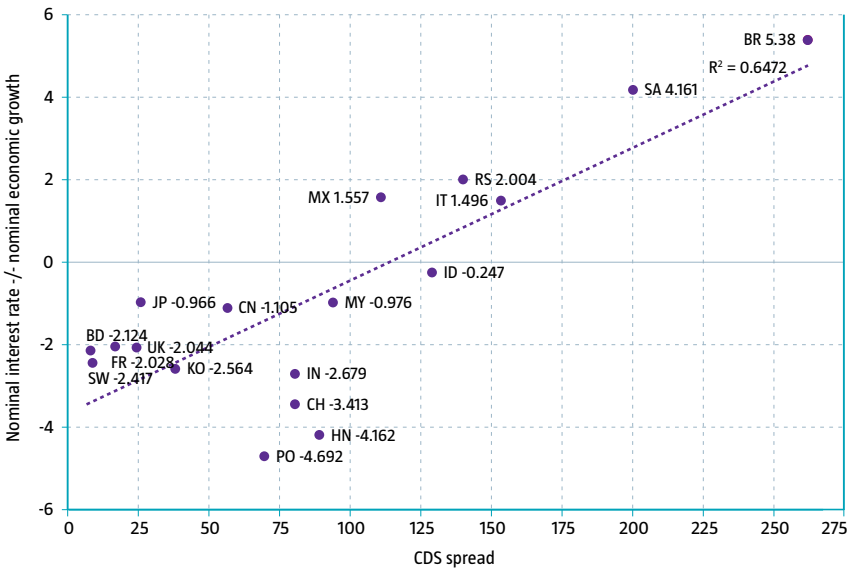
This study therefore concentrates on the actual availability of policy space in major regions and the consequences of a varying degree of policy space for regional financial market outcomes.

But what exactly is 'policy space'? The IMF defines fiscal space as the room to raise spending or lower taxes relative to a pre-existing baseline, without endangering market access and

debt sustainability. The latter aspect is especially important because even if there is limited ability to raise spending or lower taxes, sovereign bondholders may not allow this as it causes debt sustainability issues further down the road. While public debt may be a cheap lunch for many governments nowadays, generally speaking it is not a free one! Figure 2 shows this observation as a proxy for sovereign debt service (and therefore for debt sustainability) inversely related to the compensation for credit risk demanded by investors in the sovereign CDS market.

'While public debt may be a cheap lunch for many governments nowadays, generally speaking it is not a free one!'

Figure 2: Debt is no free lunch



Source: Refinitiv Datastream, Robeco

In contrast to the IMF, Romer and Romer (2017) capture the fiscal space definition by simply looking at a country's gross debt-to-GDP ratio, where a lower debt-to-GDP ratio signals more fiscal space. They investigated how the ex ante availability of monetary and fiscal space prior to a financial crisis[3] influences subsequent economic growth. Using a unique financial stress metric, they found that the degree of macroeconomic policy space greatly affects the aftermath of crises.

Romer and Romer found that the presence or absence of policy space had a significant effect on the degree to which a financial stress event reduced GDP. For countries with policy space, GDP fell just 1% overall following a financial stress event, whereas countries with neither fiscal nor monetary policy space experienced a decline of almost 10%. Also, when policy space was ample, more aggressive use was made of monetary and fiscal policies. Where policy space was available and used, financial distress proved to be less persistent.

These observations may be highly relevant for gauging financial market reaction functions; given the subsequent variation in the evolution of GDP as policy space differs, financial markets are highly likely to respond differently to different degrees of ex ante policy space in the aftermath of financial stress events (or to start discounting policy space based on the likelihood of a financial stress event). Policy space will become a key market driver in turbulent episodes ahead.

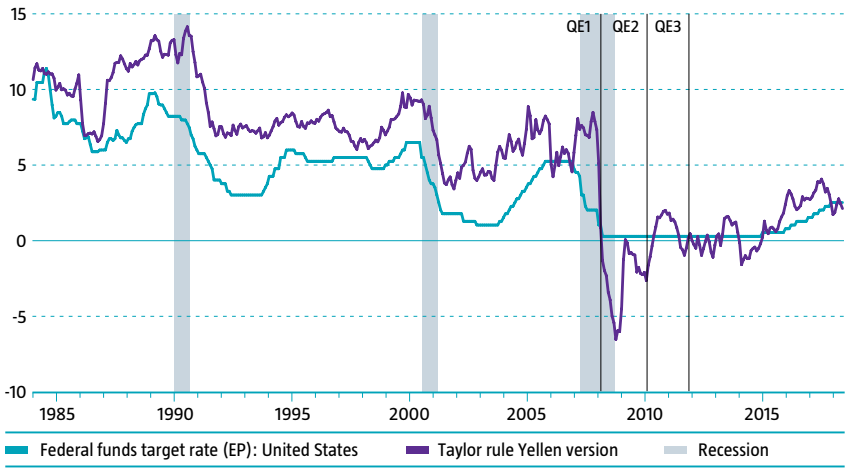
3. Romer, C. and Romer, D., 2017. "Why Some Times Are Different: Macroeconomic Policy and the Aftermath of Financial Crises", NBER Working Paper No. 23931.

No escape from the effective lower bound

The concept of monetary space is arguably more tangential. Romer and Romer define monetary space as "whether the policy rate is above the zero lower bound". They see a nominal policy rate above 1.25% as an indication that there is policy space. However, we find that this proxy for monetary policy space neglects the possibility that the neutral policy rate for a country may actually lie below this 1.25%. If the neutral rate were, say, 0.75%, lowering the policy rate by 25 bps from 1.25% to 1% in the event of financial distress would be equal to just a lower degree of net tightening of monetary policy, not a net stimulus. In the aftermath of a financial stress event or recession, monetary space should be defined as the ability to net ease monetary policy in an effort to kickstart the real economy.

Therefore, we like to define conventional monetary policy space more narrowly; the policy rate above the effective lower bound determines the policy space. The effective lower bound is the point at which a monetary authority is unable to reduce interest rates further and must therefore consider unconventional options. The monetary goals of the Federal Reserve are to foster economic conditions that achieve both stable prices and maximum sustainable employment. In a bid to meet these goals, the central bank introduced unconventional policy tools (QE1) at the same time the Taylor Rule indicated policy rates would become negative. Likewise, QE2 was initiated after the Taylor rule indicated another drop in the policy rate.

Figure 3: Reaching the effective lower bound and the need for unconventional policy



Source: Refinitiv Datastream, Robeco

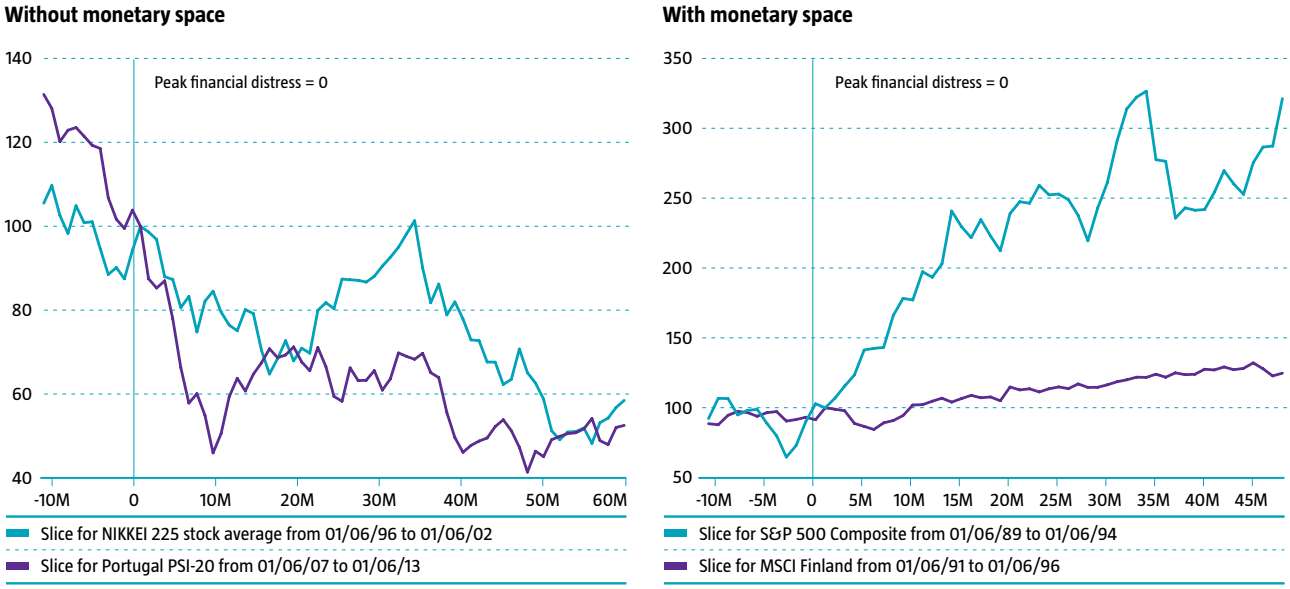
The effective lower bound recognizes the fact that the lower bound could be far below zero, at least in theory.[4] As Kocherlakota (2017) points out, many central banks in developed markets have spent much of the past decade at their own effective lower bounds. The Fed has been trying to normalize its monetary policy stance, but is still neutral at most, with a real policy rate of 0.5%. This is very close to the estimate of the neutral real interest rate of the Laubach-Williams model (0.56%), and the actual Taylor estimate (2.5%) provides another confirmation that the current 2.5% nominal Fed policy rate is around neutral. Other developed market central banks have stayed in outright accommodative territory. However, accommodating the real economy will become more challenging. Given today's low neutral rates of interest in advanced economies, the reality is that central banks will hit the effective lower bound very soon, even with a modest drop in neutral real rates, leaving them largely unable to insulate the macroeconomy against a negative demand shock via a conventional policy rate setting.

4. Cœuré, B., 2015. "How binding is the zero lower bound?", speech at the conference Removing the zero lower bound on interest rates organized by Imperial College Business School/Brevan Howard Centre for Financial Analysis, CEPR and the Swiss National Bank.

The room available to cut interest rates matters. In the absence of monetary space, the Romer study noted a peak decline of 9.5% in GDP, while in the presence of monetary space, GDP showed a more modest peak decline of 3.0%.

Romer and Romer also studied several cases of GDP evolution involving no monetary space. They looked specifically at Japan in the second half of 1997 and Portugal in the second half of 2008. We, therefore, have analyzed the equity markets of these countries following the financial stress events in those years. It turns out that the equity returns in the subsequent five years were remarkably consistent. Both markets declined by 40% after the start of the financial stress event. While it is clearly unwise to draw firm conclusions from this anecdotal evidence, the absence of monetary space in advance of financial stress events clearly seems to matter.

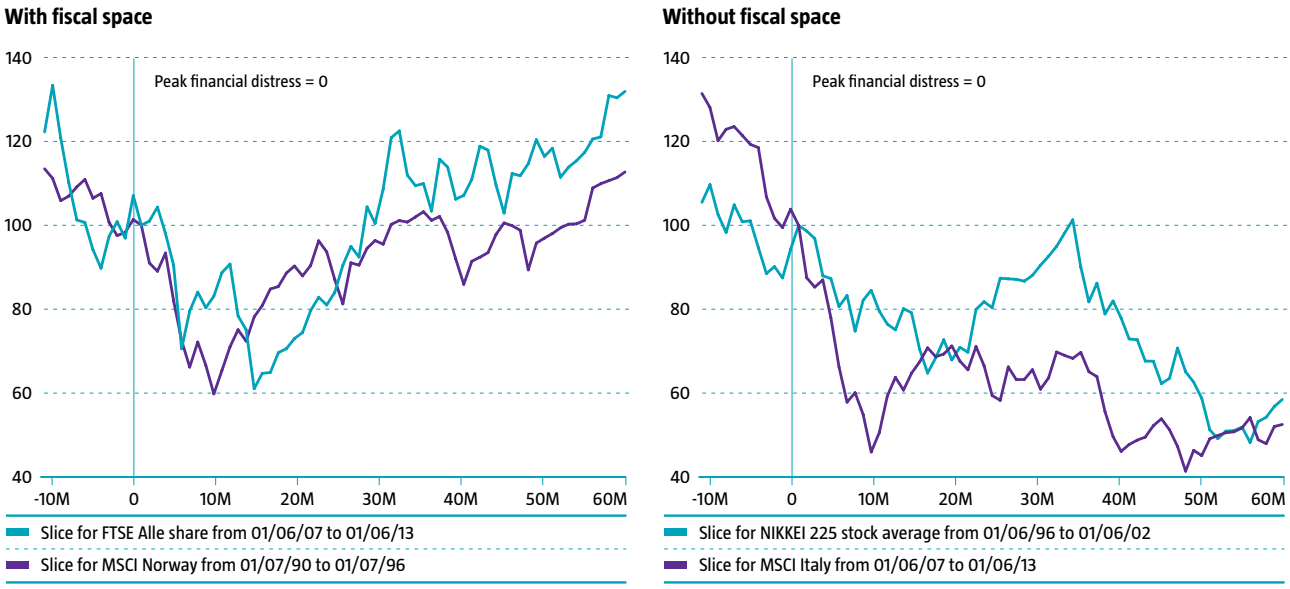
Figure 4: Equity returns following peak financial distress without monetary space (left) and with monetary space (right)



Source: Refinitiv Datastream, Robeco

The same holds for fiscal space. Without this flexibility, the fall in GDP following a crisis shows a peak decline of 8.8%, whereas with it the peak decline is just 1.6%. Again, case studies confirm this pattern in financial market impact. Looking at equity returns during episodes when there was no fiscal space in Japan and Italy shows large losses on the subsequent five-year horizon, whereas equities managed to recover when fiscal space was available prior to the financial stress event.

Figure 5: Equity returns following peak financial distress with fiscal space (left) and without fiscal space (right)



Source: Refinitiv Datastream, Robeco

Given the significant variation in financial market outcomes conditional upon the presence of macroeconomic policy space, the case studies encourage us to develop a broader picture of the availability of fiscal and monetary space.

Assessing monetary and fiscal space

Our framework is based on normalized data from 17 major countries, to allow cross-country comparisons and ranking. As a proxy for fiscal space, we use the standard deviation from the historical mean (z-score) gross debt-to-GDP ratio (we multiply the measure by -1). To capture monetary policy space, we use the standard deviation from the difference between the actual real policy rate and the effective lower bound. These proxies resemble the Romer and Romer approach, but by using a z-score methodology we aim to establish how stretched or relaxed country-specific conditions are with regard to their respective history. In our view, a low gross debt-to-GDP ratio does not equate to fiscal space; a country with a low absolute and relative debt level but a strong positive deviation from the specific country mean could display worsening debt dynamics, impairing fiscal space. As shown before, CDS markets 'punish' worsening debt dynamics and Reinhart and Rogoff (2009)[5] find that debt always surges as a crisis nears.

5. Reinhart, C.M., Rogoff, K.S., 2009. "The Aftermath of Financial Crises", American Economic Review, 99 (2), pp 466-72.

Table 1: The amount of monetary and fiscal policy space that is available

Z-score	Monetary space	Fiscal space	Combined policy space
AU	-1.2	-1.4	-1.3
China	-1.4	-1.1	-1.3
UK	-1.0	-1.4	-1.2
Brazil	-1.0	-1.2	-1.1
Japan	-0.7	-1.2	-1.0
Norway	-1.4	0.0	-0.7
Korea	-0.2	-0.9	-0.6
Canada	-0.4	-0.7	-0.6
Mexico	0.1	-1.2	-0.6
EZ	-1.3	0.3	-0.5
US	-0.1	-0.8	-0.4
Sweden	-0.8	0.8	0.0
SA	1.1	-1.0	0.0
India	-0.1	0.5	0.2
Taiwan	0.9	-0.3	0.3
Turkey	0.5	0.7	0.6
Russia	1.7	0.4	1.1

Source: Refinitiv Datastream, Robeco

Macroeconomic policy leeway seems to have become most limited for the country that has managed to escape a recession for over 25 years: Australia. On the other hand, Russia – a country that has suffered several major crises in recent decades – seems to have room to maneuver. But for many emerging market countries, monetary and fiscal space have to be high for a reason: they are often needed to counterbalance external weakness in the form of current-account deficits and the elevated risk of capital flight during a crisis. Countries that have limited fiscal space typically seem to have limited monetary space as well, while the converse is not always true (as seen with the Eurozone). For countries where monetary policy is constrained, it is therefore not obvious that fiscal policy can fill the gap. One escape route is to maximize the effectiveness of unconventional monetary policy; the other is to seek refuge in fiscal policy.

Do we underestimate fiscal policy space?

Lately, there has been a clear shift in the focus of academics and policymakers alike towards fiscal policy as a tool to mitigate the impact of a future crisis event. Olivier Blanchard (2019)[6] challenged conventional wisdom by stating that the fiscal and welfare costs of government debt may be lower than expected, as long as governments expect the nominal economic growth rate to be higher than the nominal interest rate on their debt (g>r). In this scenario, higher public debt can be rolled over without additional tax hikes, provided that the primary deficit remains small. This would mean there is fiscal policy space after all. The debate on debt policy is a logical evolution. It was Blanchard, in his role as the IMF's chief economist in 2013, who admitted that with hindsight, fiscal consolidation was not the optimal post-crisis strategy as fiscal multipliers (the ratio of change in economic growth for a given change in government spending) were higher than expected. Also, an era of financial repression has artificially lowered interest rates and made it possible for the inequality (g>r) to hold for longer, removing a major obstacle for government by allowing fiscal expansion without the politically harmful duty of raising taxes.[7]

6 Blanchard, O., 2019. "Public Debt and Low Interest Rates". NBER Working Paper No. 25621: https://www.nber.org/papers/w25621.

7. g = nominal economic growth, r= interest rate on government debt

It is questionable whether higher government debt is as cheap a lunch as Blanchard supposes. If a government like the US runs a primary deficit that is larger than the gap between g>r, it is mathematically impossible to sustain debt levels. Given the increasing primary budget deficits in the US (in excess of 5% of GDP) in the next five years, US nominal economic growth needs to accelerate further ahead of rising interest rates for Blanchard's idea to work out. This seems an unlikely scenario given the late phase of economic expansion we have entered, with growth decelerating instead.

Nevertheless, there is a group of economists who go as far as to say public debt is not cheap but actually constitutes a free lunch for governments. Popularized by Democrat member of Congress Ortez, to finance her Green Deal policy proposal, Modern Monetary Theory states that developed countries should never need to default on their sovereign debt in their own fiat currency, as they can simply order the central bank to start the printing presses to service their debts. The government has the 'exorbitant privilege' of issuing money which, as MMT proponents rightly claim, is even profitable for the state. Whereas mainstream economists like Blanchard work on the assumption that states need to finance themselves with hard earned money generated by underlying real economic activity, MMT takes the easy route of stating that the government can print as much money as it wants as long as this does not lead to inflation. Some proponents of MMT therefore argue that the government should be tasked with targeting a price level rather than the central bank.

There is also a hidden irony with MMT proposals to fill the void that monetary policy has left. Rather than freeing the economy from a liquidity trap and the effective lower bound that monetary policy faces, they could deepen the liquidity trap. As long as the expansion of the monetary base dominates the real demand-side (consumption/investment) response to fiscal expansion, interest rates will fall; and the result may be too much money chasing too few opportunities. This could of course change in a world where MMT-practicing governments manage to raise 'animal spirits' and get people into dis-saving/spending mode. In the latter scenario, MMT could provide the ingredients to turn away from the effective lower bound, with a sizeable shift in aggregate demand pushing interest rates up.

The risk resides in the timing of MMT. MMT could work in a recessionary environment, but raising 'animal spirits' may be hyperinflationary in an economy that is already firing on all cylinders. With unemployment in the US at a 50-year low and capacity utilization above historical averages, MMT in the US could prove to be an ill-timed experiment at this point in time that prompts investors to seek shelter via inflation hedges.

'Luckily, some countries have the fiscal space needed to fill the gap left by monetary policy'

Bold steps required

What type of policy response will be likely for policymakers faced with the next financial stress event or recession? For many G20 countries, the conventional policy space needed to respond seems limited. Monetary policy in particular is in the doldrums. The late phase of expansion makes it difficult for countries to escape the effective lower bound before a recession hits, and they may be stuck there for a while once it does.

Luckily, some countries have the fiscal space needed to fill the gap left by monetary policy. In the absence of conventional policy space, policymakers will be pushing the boundary of possibilities in the next five years, seeking unconventional solutions to stabilize the global economy. Exploring uncommon territory can be challenging and monetary policy mistakes cannot be ruled out. Bold policy steps must be taken to escape from the liquidity trap.

As the case studies illustrate, investors would be well advised to allocate to those countries and regions that have the most policy space left. However, implementation is key in assessing expected policy outcomes. Depending on the policy space, different institutional settings will yield different policy outcomes. For example, the willingness to use fiscal space is not a given in the Eurozone as the 'fiscally hawkish' Maastricht Treaty limits room to maneuver. And while the US's fiscal space may seem limited, its track record of exploring and successfully implementing unconventional policies is good.

The real challenge however involves the countries with the lowest scores in Table 1. We are particularly concerned about China, which given its current situation and limited space, might be forced to turn to unconventional fiscal policy in the next five years. The Chinese economy may very well become the first to embrace MMT. This would mean a U-turn for financial markets, because rather than being a source of deflation, China would become a source of inflation.

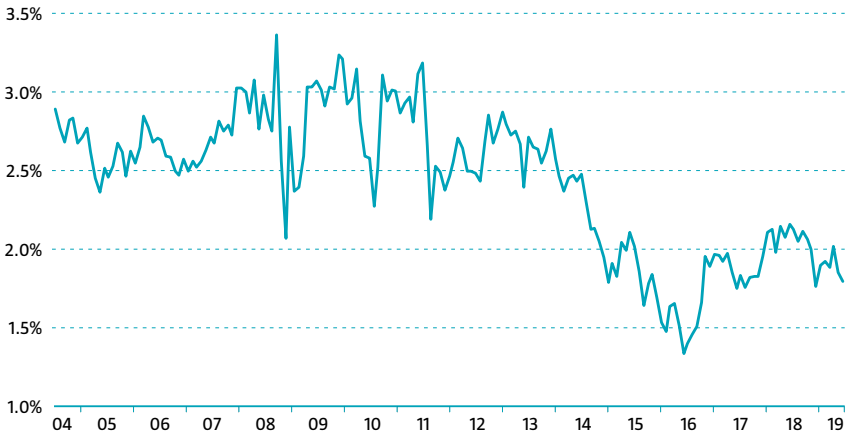
INFLATION TARGETING

CELEBRATING 30 YEARS OF INFLATION TARGETING?

Inflation targeting is celebrating its 30th anniversary. Back in 1989, the Reserve Bank of New Zealand was the first central bank to formally introduce an inflation target. Many others adopted the policy in the subsequent decades. The US Federal Reserve was slow in following suit, only formally introducing an inflation target in 2012. Yet, while it might have been one of the last to make the shift, it may well be one of the first to change its target.

Inflation targeting has been a success. And although central bank policy is just one of many factors driving down inflation, and arguably not the most important, in developed economies inflation is now firmly anchored at moderate levels. In New Zealand, for example, inflation declined from 7% in 1989 to an average of 1.6% since 2010. Similar averages have been seen in the US (1.8%), Canada (1.7%), UK (2.3%) and the Eurozone (1.4%) over the past decade. Inflation expectations have followed the decline, although to a lesser extent. In the US, the Philadelphia Fed's survey of professional forecasters shows a decline in ten-year expectations from around 2.5% in 2005 to 2.2% recently. Market-based measures of future inflation compensation, which are more volatile, have declined to similar levels, from close to 3% between 2005 and 2010.

Figure 1. US market-based measures of inflation expectations (5y5y forward)

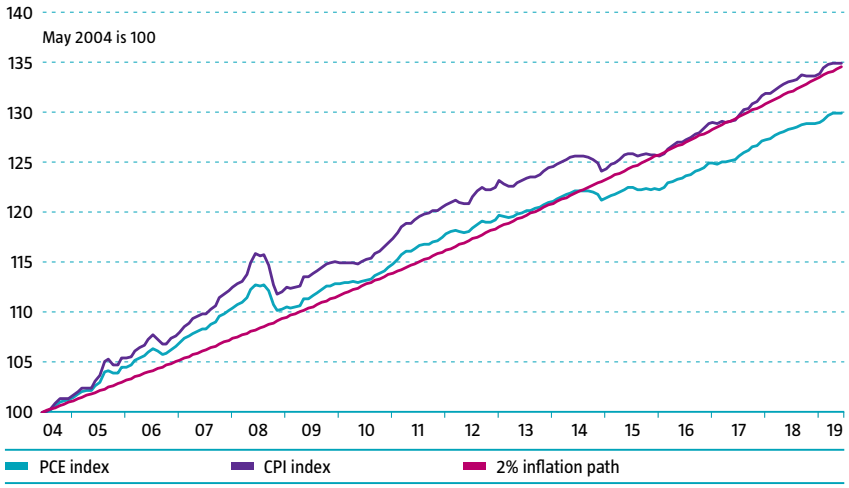


Source: Bloomberg, Robeco

Has inflation policy been too successful?

The decline has been more pronounced in the Eurozone, where prices for forward (5y5y) inflation have almost halved since 2010, to just 1.2%. This measure is watched closely by the ECB, to see if the market believes its price target of inflation 'close to but below 2%' is credible. In Japan, forward (5y5y) inflation was priced at a paltry 0.1% in mid-2019. Many central bankers in Frankfurt and Tokyo will argue that inflation and inflation expectations are currently too low for comfort. Even in the US, one could reason that the policy has been too successful, as the targeted Personal Consumption Expenditure (PCE) inflation measure has lagged the desired 2% path by a total of five percentage points over the past 15 years. But that is also a matter of definition: PCE inflation is based on surveys of what businesses are selling to consumers, while the Consumer Price Index (CPI) is based on a survey among households of what they are buying. And CPI data suggests that inflation has been perfectly on track, as Figure 2 shows.

Figure 2. US inflation versus the 2% target



Source: Bloomberg, Robeco

As inflation expectations have followed the decline in actual inflation levels, there is a risk of inflation becoming anchored at undesirably low levels and having a more persistent downward impact on prices and wages. While we could of course debate the pros and cons of higher inflation, there is one area where sub-2% inflation levels would undoubtedly have a negative impact: the effectiveness of monetary policy. The ability to steer real interest rates has been one of the most powerful macroeconomic instruments available to policymakers. This ability is now being threatened from two sides: low inflation and the decline in natural – or 'equilibrium' – interest rates, which are expressed in real terms.[1] The latter is explained by factors such as demographic trends, declining productivity growth and higher global demand for safe and liquid assets.[2]

1. The natural rate of interest is expressed in real terms and is the interest rate consistent with point at which output equals potential output and inflation is stable. Laubach, T., and Williams, J., 2003. "Measuring the Natural Rate of Interest," *Review of Economics and Statistics* 85, no.4 (November): pp. 1063-70.
2. See Williams, J., New York Fed, November 2018. "Monetary Policy Strategies for a Low-Neutral-Interest-Rate World".

Figure 3: US natural rates of interest have remained low since 2008

Source: Bloomberg, Robeco

Rethinking the current monetary policy framework

The combination of low inflation and a low natural rate of interest has made it much more difficult for central banks to steer the economic cycle by controlling real interest rates. One has to wonder, therefore, whether a policy framework that was designed for the economic conditions of the late 1980s and early 1990s is still fitting for the economic reality of today. However, this discussion is not new; in 2010, for instance, Blanchard, Dell'Ariccia and Mauro from the IMF made a case in favor of rethinking macroeconomic policy.[3] They concluded that low inflation would limit the scope of monetary policy in deflationary recessions, as the zero bound in yields would restrict the degree to which real rates can be reduced. Since 2010, inflation has only declined further, as noted above. More recently, a growing number of central bankers, including the ECB's Olli Rehn and New York Fed President John Williams, have openly supported a rethinking of the current monetary policy framework. And in the US, this is actually taking place. The process is likely to lead to changes in the monetary policy framework and, therefore, interesting to discuss in greater detail.[4]

3. Blanchard, O., Dell'Ariccia, G., and Mauro, P., 2010. "Rethinking of Macroeconomic Policy" , IMF Staff position note February 2010.

4. The last review was in 2011, when the Fed decided to formally adopt an inflation target.

This year the Fed has organized several 'Fed Listens' roundtable discussions, as well as a conference in June to talk about its monetary policy frameworks, tools and communication strategy. It will share its conclusions in early 2020. The data on real rates illustrates the need for a review of the policy framework. In the low-rate, low-inflation recession environment of the 1950s and 1960s, the US central bank's ability to bring down real rates was more limited than in the decades that followed, when core inflation and rates were higher. And in the arguably fierce recession of 2007-2009, lowering real yields by 4% was insufficient to trigger a recovery. With the Fed funds rate now much closer to the effective lower bound of zero and inflation at around 2.0%, bringing down real rates to stimulate the economy in the next recession will be a challenge.

Table 1: Real Fed funds rate in recession periods

NBER recessions		Fed funds		Core CPI		Real rate
Start	End	Cycle high	Cycle low	At start	At end	Change
Aug 57	Apr 58	3.5%	0.6%	3.2%	2.4%	-2.1%
Apr 60	Feb 61	4.0%	1.2%	2.0%	0.7%	-1.5%
Dec 69	Nov 70	9.2%	3.5%	6.2%	6.6%	-6.1%
Nov 73	Mar 75	13.0%	4.75%	4.5%	11.4%	-15.2%
Jan 80	Jul 80	20.0%	9.5%	12.0%	12.4%	-10.9%
Jul 81	Nov 82	20.0%	8.5%	11.1%	4.3%	-4.7%
Jul 90	Mar 91	9.75%	5.75%	5.0%	5.2%	-4.2%
Mar 01	Nov 01	6.5%	1.0%	2.7%	2.8%	-5.6%
Dec 07	Jun 09	5.25%	0.25%	2.4%	1.7%	-4.3%

Source: Bloomberg, Robeco

Beefing up its arsenal

Needless to say, the Fed has responded by beefing up its monetary arsenal with forward guidance and quantitative easing (QE). Once dubbed 'unconventional', these instruments have been found by Atlanta Fed's Wu-Xia to have yielded the equivalent of another 300 bps in interest rate cuts.[5] However, more and more unconventional policy will be needed in the future, as the natural rate of interest has remained stubbornly low. In a 2016 Fed Staff Working Paper entitled "Gauging the Ability of the FOMC to Respond to Future Recessions", David Reifschneider suggests that in the event of a recession, as much as USD 4 trillion in asset

5. For their methodology, see. Wu, J., and Xia, F., 2015. "Measuring the Macroeconomic Impact of Monetary Policy at the Zero Lower Bound", Journal of Money, Credit and Banking 48 (2-3), pp 253-91

purchases would be needed to compensate for policy restraints caused by the effective lower bound. Despite being for a 'normal' recession rather than one the scale of the 2009 crash, this is quite a bit more than the USD 3.5 trillion in assets purchased between 2009 and 2014.

It remains to be seen to what extent the Fed can curb the erosion of the effectiveness of 'traditional' monetary policy. Many of the trends that explain the decline in the natural rate of interest appear to be beyond the influence of the central bank. Yet the Fed will not simply accept the erosion of traditional monetary policy, with good reason. It is one thing to have to support traditional policy instruments (rates) with non-traditional tools such as forward guidance and QE, but it is quite another to have to rely almost entirely on non-traditional instruments for monetary policy – which, arguably, is now the case in the Eurozone and Japan. Avoiding this central banker's 'horror scenario' should serve as a very powerful non-official motivation for the Fed to evaluate its current policy framework.

The Fed's current dual mandate is to promote price stability and maximize sustainable employment. The current evaluation focuses mainly on the former, price stability, which is defined as PCE inflation at a rate of 2% over the longer run. A range of policy options have been discussed over the past year, including at the Fed's 'Monetary Policy Strategy, Tools, and Communication Practices'[6] conference in June.

6. See: Svensson, L., May 2019. "Monetary Policy Strategies for the Federal Reserve".

Below are some of the alternatives:

1. *Raising the inflation target* – pursue a policy aimed at higher inflation, for instance 3%.

2. *Introduce an inflation target range* – follow the example of central banks such as the Bank of England and the Bank of Canada in aiming for inflation to be in the range of, for instance, 1% to 3%.

3. *Price level targeting* – set a trajectory for the price index and manage monetary policy to make up for any past deviations from this path. Under this policy, bygones would no longer be bygones. In 2010, Chicago Fed President Charles Evans proposed adopting a temporary price level strategy. By temporary, he meant that it should be abandoned once the target level had been reached.

4. *Nominal GDP level targeting* – set a trajectory for an index of nominal GDP growth and manage monetary policy to make up for any past deviations from this trajectory caused by both real GDP growth and inflation.

5. *Forecast targeting* – set monetary policy in such a way that the resulting forecasts for inflation and unemployment are in line with the objectives of the Fed's mandate. This strategy is based on the idea that expectations for the entire path of future monetary policy have a much greater impact on economic conditions than any change in rates or other policy instruments. One could argue that the Fed is already pursuing this strategy to a certain extent, for instance via its forward guidance.

6. *Average inflation targeting* – target an average level of inflation with a horizon of more than a year. The Fed would then allow inflation to drift higher or lower to make up for any under- or overshoot of the target. Such a policy has many similarities to price level targeting, but would be less strict.

In a paper entitled "Preparing for the Next Storm: Reassessing Frameworks and Strategies in a Low R-Star World" (May 2017), New York Fed President John Williams set out principles for a successful monetary policy framework which can be used to evaluate these alternatives:

a. Adaptability – be able to adapt to change in an uncertain world
b. Accessibility – be transparent enough so that the public can plan and act accordingly
c. Accountability – be a reliable benchmark. Williams doesn't mention it explicitly, but accountability should also refer to monetary policy in general. Any policy objective that risks eroding the Fed's credibility should be avoided.

Rating the alternatives

If we assess these six alternatives against Williams' principles, we arrive at the following conclusions.

1. *Raising the inflation target* – while this would be a transparent approach, it would score low on adaptivity and accountability. Changing the target level would probably be a difficult, lengthy process. But if the target were to be flexible – so it could be raised when economic conditions allow – it would not be reliable. In addition, it would currently be quite difficult to reach a 3% target. Introducing an unrealistic target risks eroding the credibility of inflation targeting. It is therefore no surprise that Fed Chair Jerome Powell has argued against this approach.

2. *Introduce a target range* – although this option has received less attention, it would score high on adaptivity as it embeds flexibility in the policy objective itself. It would add some uncertainty, so be a less valuable planning yardstick at first glance, but it would be realistic and hence score higher for accountability/credibility than the current framework.

3. *Price level targeting* – this scores high on adaptability, as it allows for temporary over- and undershoots of inflation, provided that the index trajectory remains intact. The score for accessibility would be lower. A moving index level just doesn't have the same appeal as an inflation number. The accountability of this approach can also be questioned, as the policy framework would put the spotlight on any accumulation of missed targets. This would underline the limitations of monetary policy and could erode its credibility.

4. *Nominal GDP targeting* – while this has similar pros and cons to price level targeting, it would also be a more radical change from the Fed's current policy objectives. As several Fed officials have already expressed their preference for an evolution rather than a revolution, nominal GDP targeting is probably a step too far.

5. *Forecast targeting* – this would respond to changes in expectations and thus be quite adaptive. But it would also raise a lot of questions, such as whose forecasts the Fed is targeting and how these are quantified. In other words, who is in charge of the Fed. To formulate it differently, it would score poorly on accessibility. Moreover, it would increase the risk of measurement errors and thus score lower on accountability. As forecasts already play a role in current policy setting, one could wonder if adopting such a strategy would bring the desired change in inflation expectations.

6. *Average inflation targeting* – this option would score high on adaptability as it explicitly allows for temporary deviations from the target. In that sense, it is similar to price level targeting. While this policy would involve some loss of transparency, as the Fed would have to define the length of the averaging period, the objective would be more transparent than an index level. This policy would also score better on accountability as it would allow inflation to deviate from the target without accentuating misses.

'The alternatives that achieve the highest scores are introducing a target range and inflation averaging'

Measured against Williams's metrics, the alternatives that achieve the highest scores are introducing a target range and inflation averaging. Both policies would allow the Fed to make up for past missed inflation targets and involve a limited loss of transparency. More importantly, neither would risk undermining the credibility of the Fed. Between the two, inflation averaging would probably be the preferred option. This policy framework would require the Fed to explicitly make up for lost inflation or remain restrictive for longer after a significant overshoot. It would have the benefit of a more clearly identifiable anchor and it would mean only a modest change from the current strategy. And it would involve the desired evolution rather than revolution. The question remains whether such a change in policy framework would indeed raise inflation expectations. If factors beyond the control of central banks have played an important role in lowering expectations, it is hard to see how evolutionary changes in monetary policy could curb these trends. While this doesn't mean it isn't useful to evaluate and adjust policy, it does mean we should have modest expectations about the effects of doing so.

Implications for US rates

In the current environment, inflation is below target. One thing, therefore, is clear: each of the options discussed would allow for a more dovish monetary policy than would otherwise be the case. The four percentage point miss on PCE inflation in the past five years likely implies that even on a medium-term horizon, monetary policy should be more expansionary than in the current setting.

A dovish Fed policy would also allow other central banks to keep rates lower than would otherwise be the case. This is especially relevant for central banks, such as those of emerging countries, for which the exchange rate plays an important role in monetary policy setting. All other things being equal, lower short-term US interest rates should have a negative impact on the USD exchange rate versus currencies of economies where official rates are even lower than in the US. While these central banks also have 'unconventional' monetary policy tools at their disposal, their arsenal is arguably more limited than the Fed's. If inflation were allowed to become more volatile and drift higher, the inflation risk premium should rise. This would drive up the price of inflation-linked bonds and cause yield curves to steepen.

Implications for the ECB, BoJ and other central banks already facing negative rates

The direct implications of a more dovish Fed policy may be somewhat punitive for the ECB and the BoJ. Their respective currencies might appreciate against the US dollar, which in the short term could depress inflation further via lower import prices. Longer term, however, the ECB and BoJ can only benefit from the discussion at the Fed. At the very least, it will revive the debate on monetary policy and lead to a comprehensive evaluation of existing policies. Some of the ideas put forward could, ultimately, be adopted by these central banks as well. Yet a broader rethinking of macroeconomic policy could also result in a different role for monetary policy. In recent decades, governments have relied heavily on their central banks to navigate their economies through the cycle. Going forward, this debate could well increase the role of fiscal strategies in macroeconomic policy setting. While the suggestion is not new – the IMF has already called for a larger role for fiscal policy[7] – it is very much alive, especially in a world where the costs of fiscal expansion have never been lower. So, expect to see changes to both fiscal and monetary policy, with the Fed most likely leading the way.

7. Blanchard, et al., 2010

CHINA

GIVING CHINA ITS RIGHTFUL SHARE IN YOUR PORTFOLIO

China has been a potent force in financial markets for more than a decade. Its impact on global economic growth has increased markedly. However, international investors own very little of its domestic stock and bond markets. Following major market reforms, main index providers such as MSCI, FTSE and Bloomberg Barclays decided to include Chinese assets with a local listing in their flagship indices. In 2019, we have seen a noticeable increase in the weight of Chinese assets in these indices and further inclusion is likely. The conventional wisdom seems to be that investors will benefit from increasing their holdings of locally listed Chinese assets. Is it time to give China its rightful share in your portfolio?

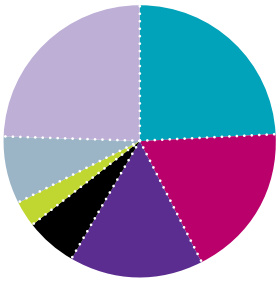
The global multi-asset market portfolio is a good starting point for investors. This is the aggregate portfolio of all investors worldwide, with weights that reflect the composition of the average portfolio. It includes all free-float marketable assets in which financial investors have actually invested. As William Sharpe points out, the portfolio thus represents the optimal portfolio for the average investor. Nevertheless, it does not mean that all – or even any – investors should use it to inform their investment decisions. Investors may want to deviate from this portfolio in the belief that it can be improved. A much-debated deviation is allocation towards emerging markets. But what, if any, are the reasons for deviating from the allocation implied by market capitalization of the global multi-asset market portfolio?

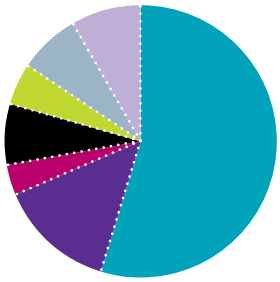
'Most international investors have found it difficult to invest in mainland China A-shares'

Shouldn't the weight of China and other emerging markets be bigger by now?

A common argument for increasing the weight of emerging markets or Chinese equities above the weight implied by their free-float market capitalization is the size of the economy. Measured by gross domestic product (GDP), these countries are much bigger than measured by freely floating market capitalization of equities. Figure 1 shows the composition of the global economy on the left and the composition of the freely floating global stock market on the right. It is clear that emerging markets, and China in particular, account for a larger share of the global economy than the stock market. However, there are reasons why this empirical fact should not be the sole reason for investors to allocate more to emerging markets than their market capitalization implies.

Figure 1: The case for global asset allocation





Estimated % of 2018 global GDP	
United States	24.2%
Europe ex UK	18.5%
China	15.8%
Japan	5.9%
United Kingdom	3.3%
Other developed	7.8%
Rest of world	24.4%

Composition of global stock market (May 2019)	
United States	55.0%
Europe ex UK	13.7%
China	3.7%
Japan	7.3%
United Kingdom	5.1%
Other developed	7.1%
Rest of world	8.2%

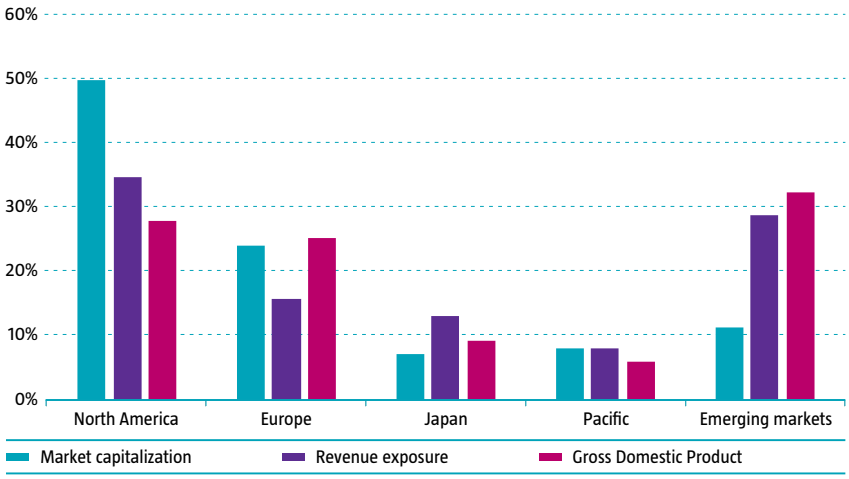
Source: IMF, MSCI, Robeco

The right-hand side of Figure 1 shows the composition of market capitalization by listing location. However, multinational companies are typically listed in the major financial centers in developed markets, such as the United States, but contribute to global economic growth. An example is BMW, which has its primary listing in Germany while its revenues are truly global, with about 20% in 2018 coming from China and only 15% from Germany. This involves not only BMW sales to Chinese customers; the company also produced close to 20% of its vehicles in its Chinese plants in Shenyang. Needless to say, investing in BMW shares offers exposure and contributes to the development of the Chinese economy. This

example suggests that it makes more sense to estimate the geographical composition of revenues for companies in a market capitalization-weighted portfolio to understand their true economic exposure. Based on MSCI Economic Exposures data, Swinkels and Xu (2017)[1] find that the revenue composition is much closer to global GDP than the market capitalization weights suggest. Therefore, an investor with a market capitalization allocation already has economic exposures close to GDP for emerging markets and overweighting is not necessary; see Figure 2.

1. Swinkels, L., Xu, Y., 2017. "Is the Equity Market Representative of the Real Economy?", Economics, Management, and Financial Markets 12(2), pp. 51–66.

Figure 2: Market cap versus revenue exposure



Source: MSCI, IMF (2012), Swinkels and Xu (2017)

As such, the first reason to increase the weight to emerging markets seems flawed. Let's take a look at a second. Emerging markets have a higher growth rate than their developed counterparts, which should lead to higher returns. While this argument sounds valid, some academics argue that the relationship between economic growth and equity returns tends to be negative instead of positive.[2] So, even if emerging markets continue their economic growth path above that of developed markets, there is no reason to believe that this will translate into higher equity returns for emerging markets equity portfolios. Markets already anticipate and have priced in this higher future growth. Therefore, investors need to be able to beat investors' consensus growth predictions to benefit from 'surprise' economic growth. The use of historical economic growth figures has not been a particularly effective means of detecting such surprises, at least not in the past century.

2. See Ritter (2005, 2012) and Dimson, Marsh, and Staunton (2010)

In our view, the reasons discussed are not a basis for deviating from the global market portfolio. Which brings us to the key question: What should we do about China in view of its increasing weight in the indices?

China's weight in indices is bound to increase

International investors have been investing in China for more than a decade. Typically, they invest in Chinese shares listed offshore, for example in Hong Kong. The weight of these shares is quite large in emerging market indices, but still benign in broad indices like the MSCI All Country Index. Most international investors have found it difficult to invest in China A-shares; in other words, Chinese mainland shares. And while the Qualified Foreign Institutional Investor (QFII) program established in 2011 to facilitate foreign investment and its predecessor RQFII[3] allow foreign investment, both cap the amount that can be invested.

3. See the English website of the Shanghai Stock Exchange for more information: http://english.sse.com.cn/overseasinvestors/qfii/intro/

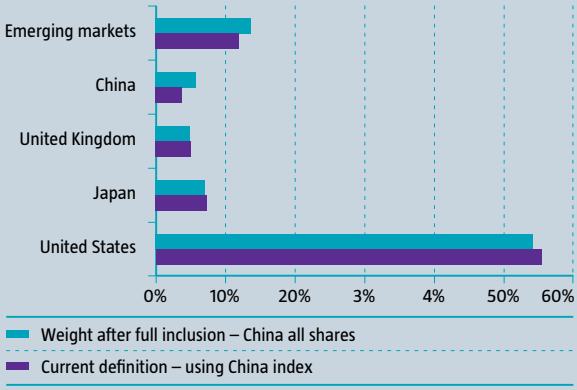
The introduction in 2014 of the Shanghai-Hong Kong Stock Connect – a two-way system between Hong Kong and the mainland indices – has made the China A-share market more accessible for international investors. It allows them to buy China A-shares from Hong Kong, using the Chinese Yuan Renminbi offshore (CNH) currency for their transactions. Unlike the quota schemes, the Stock Connect program provides access to most institutional investors. As a result, the free-float weight of China in the global market portfolio has increased and, unsurprisingly, index providers like MSCI and FTSE have started to include China A-Shares in their indices. Quota, however, still apply. For example, buy orders will be halted if foreign holdings in a given China stock reach 28%.

MSCI and China inclusion

MSCI started to include China A-shares in its indices in 2018. In four steps, it is increasing the weight of these shares. It does so by including a Foreign Inclusion Factor (FIF), which started at 5% and will reach 20% at the end of 2019. The FIF is used to reflect the capacity of the Stock Connect program and the CNH market. The MSCI cites the lack of hedging tools like derivatives as a reason for the incremental increase.

MSCI has previously also used a FIF for Korea and Taiwan. In 1992, the FIF for inclusion of Korean shares in the MSCI indices was 20%. After four years, it was raised to 50% and after six, Korean shares were included fully at 100%. The same might happen to China A-shares. To quantify a full inclusion, we use the MSCI China All Share Index. As MSCI notes: "The index aims to reflect the opportunity set of China share classes listed in Hong Kong, Shanghai, Shenzhen and outside of China. It is based on the concept of the integrated MSCI China equity universe with China A-shares included." The index is broader than the MSCI China index. This MSCI China Index is used in the construction of the MSCI Emerging Market and All Country indices. In Figure 3, we compare the weight of China in these indices based on full and partial inclusion.

Figure 3: China's weight may rise further (MSCI All Country Index)



Source: MSCI, Robeco (May 2019)

Once China is fully included in the indices, it will be the third largest market in the MSCI All Country Index after the US and Japan. The weight of China and the universe of other emerging markets would increase by almost 2% and China's weight in the Emerging Market Index would rise 10% to almost 42%.

Many investors expect China's weight to increase beyond that shown in the table, with some believing it could even overtake Japan as the second-largest market. Based on data from the World Federation of Exchanges, we calculate that the weight may increase to 9%. For this to happen, the size of strategic owners (often the state) needs to come down or there needs to be a wave of Chinese companies seeking a stock market listing.

It is interesting to observe that index providers cap the weight of China A-shares. Yet investors are not bound by this cap. One could argue that investors who follow the global market portfolio should give importance to China based on its unadjusted free-float weight, rather than its index weight. One way or the other, China's share in most portfolios will most likely increase – or are there reasons to expect a different outcome?

Financial economic consequences of further inclusion

Due to the increasing importance of indices in the investment industry, several researchers have investigated the financial economic consequences of changes in index constituents. This research is very relevant, as China's weight is likely to rise.[4] The researchers found a positive effect for shares that are included in emerging market indices. There are two types of price effects: short term and long term. The short-term price effect is typically positive. The demand for a share increases as new investors want or need to allocate to the share following inclusion. This effect is, however, not persistent. After obtaining their desired allocation, the temporary imbalance between demand and supply disappears. One would expect the share to then trade at its fair value again, reversing earlier gains. A more persistent effect, however, can occur when investors assign positive sentiment to the inclusion and thus see it an improvement of the company. For example, a sign that governance is up to par as the company has met the criteria of the index provider. Hence, investors adjust their fundamental value.

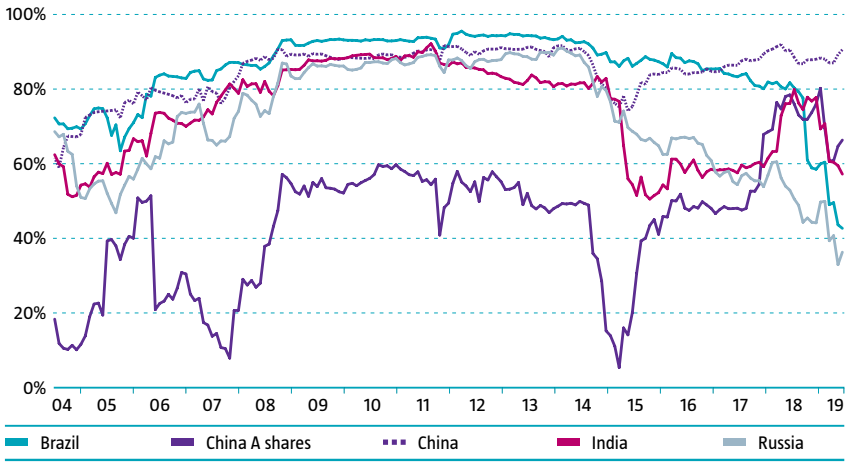
4. Hacibedel and van Bommel (2007) contains a nice overview of the relevant literature.

Short-term price increases for stocks included in the S&P 500 have been documented since the 1980s, and the same effect has been confirmed for international equity markets.[5] So, it is understandable that many asset managers advise clients to invest in China A-shares. However, can we expect a short-term positive effect and subsequent reversal, or will it be more lasting?

5. For example, Harris and Gurel (1986) examined stock inclusions in the S&P 500 Index and Chakrabarti, Huang, Jayaraman and Lee (2005) examined index additions in international stock indices.

Research often notes that China A-shares have unique characteristics that result in a low correlation with other indices. Obviously, this has value for international investors, which would be reason to expect a more long-term effect on the price. In Figure 4, we show the rolling correlations between the BRIC equity markets and the MSCI Emerging Market Index.

Figure 4: Correlations between BRIC countries and the MSCI Emerging Market Index



Source: MSCI, Robeco

As can be seen, the correlation of China A-shares was much lower than that of other BRIC countries until 2015. Following various market reforms, international investors then gained easier access to China A-shares. We can see how the correlation started to increase, which is not surprising. It has been shown that when individual stocks are added to an index, their correlation with other stocks in the index suddenly increases, despite there being no change in the fundamental economic relationship between the constituent companies.[6] Even though correlations between China A-shares and international equity markets may be higher going forward than they have been in the past, there are diversification benefits to investing in assets with a different economic profile.

6. See Barberis, Shleifer and Wurgler (2005).

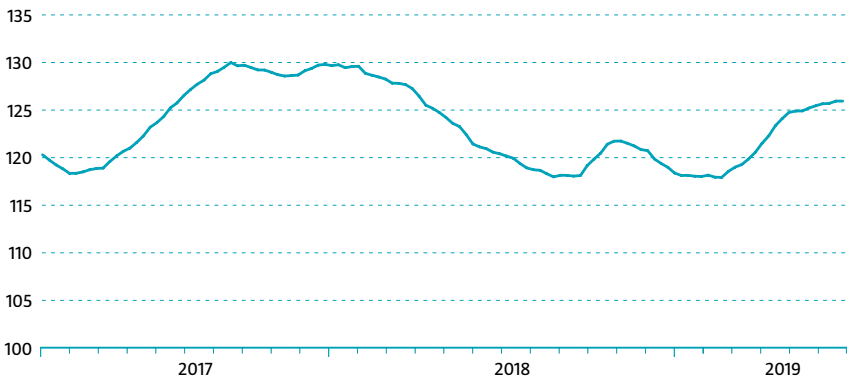
Generally, academics find a positive long-term effect for the inclusion of emerging markets in indices.[7] However, can we expect this to hold for China as well? Our view is that caution is warranted, since the price effect observed for the inclusion of Chinese domestic assets might be lower compared to previous research. One particular reason for this is that index inclusion is discussed and announced well in advance and executed in relatively small steps on each rebalancing date. In such a process, index inclusion provides little new information on the company, so we should not expect positive long-term effects.

7. See, for example, Burnham, Gakidis, and Wurgler (2018) and Hacibedel and van Bommel (2007)

However, one reason to expect a positive long-term effect is that international investors are willing to accept lower returns than domestic investors. Where domestic investors are restricted to investing in only in the domestic market, they cannot benefit from international diversification. In contrast, international investors can benefit from this diversification and therefore may be willing to pay a higher price, as their total risk will be lower than that of domestic investors. As investors in China fall into the former category, one would expect China A-shares to trade at a discount (i.e. investors demand a higher return). In practice, we have witnessed the opposite. China A-shares that are also listed in Hong Kong have tended to trade at a premium in the domestic market, as shown in Figure 5. The Hang Seng Stock Connect China AH Index Series measures the absolute price premium (or discount) of A shares over H shares for the largest and most liquid mainland Chinese companies with both A-share and H-share listings.[8]

8. See, https://www.hsi.com.hk/eng/indexes/all-indexes/ahpremium

Figure 5: Hang Seng Stock Connect China AH Premium Index (10-week moving average)



Source: Bloomberg, Hang Seng Stock Connect

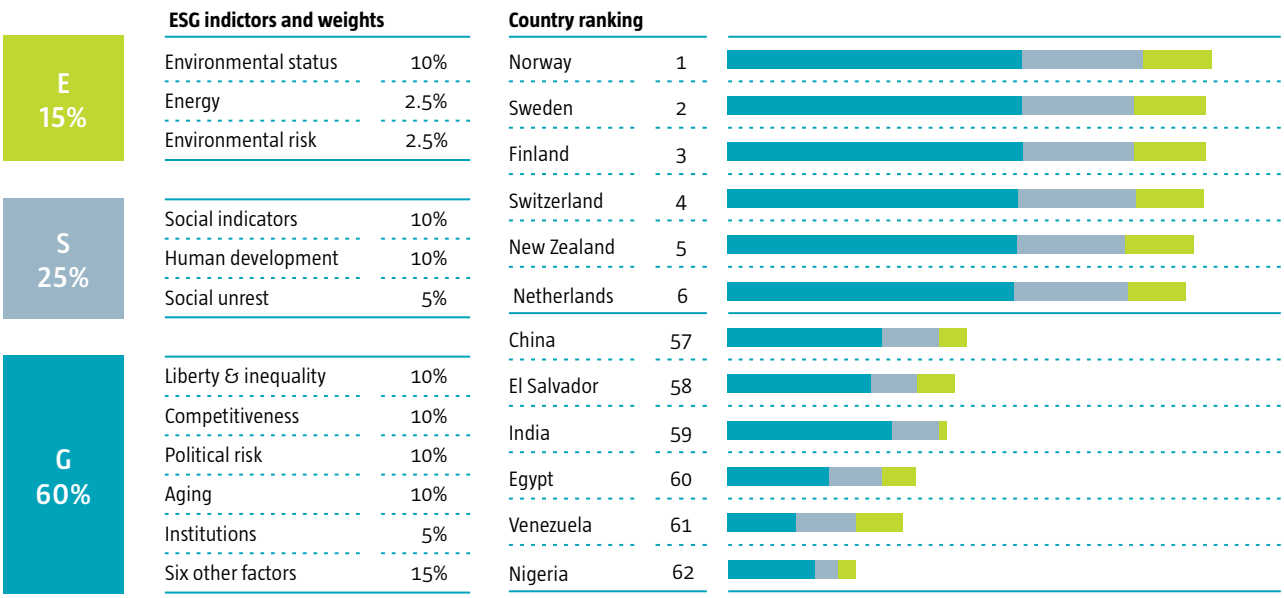
Other consequences of further inclusion

Like other emerging market countries, China's sustainability score is relatively low compared to developed markets. Figure 6 shows part of RobecoSAM's country sustainability ranking, which is based on 17 indicators: three environmental with a weight of 15%, three social with a weight of 25% and 11 governance with a weight of 60%. The score ranges from 1 to 10, 1 being the lowest and 10 the highest. The country sustainability ranking shown here is used to provide investors in government bonds with relevant ESG information. China's score is at the bottom of the table. It is low but the same is true for the other BRIC countries. The key difference with other emerging markets is the size of China's financial markets. When sustainability risks are country-specific, they can be diversified away in global portfolios. However, for large financial markets, country-specific risks can only be partially reduced by international diversification. So, government bond investors that have an ESG policy are likely to face stumbling blocks as China's ESG challenges become too big to ignore.

The sustainability ranking is primarily of interest to government bond investors. However, China's political and institutional risks may also affect equity and corporate bond investors. China's recent policy has been to open up its financial markets to foreigners. Yet this could reverse in the future and, given the country's relatively high political risks and relatively weak institutions with respect to shareholder protection, how sure can investors be that they will be allowed to sell their assets when they want?

To prevent large idiosyncratic default risks, fixed income indices typically cap the weight of individual issuers, which could be a prudent course of action for Chinese government bonds as well. Setting a cap for the country weight of China might also be a solution in the case of equities and corporate bonds – to take into account the political and institutional risks also affecting these asset classes.

Figure 6: How does China score on country sustainability?



Source: RobecoSAM, https://www.robeco.com/en/key-strengths/sustainability-investing/country-ranking/

Giving China its rightful share?

We believe that the global market portfolio is a good starting point for investors as it still holds a relatively small weight for China that is likely to grow going forward. Should investors act on this expected growth? Our analysis contains some of our thoughts on the answer. In particular, we looked at compelling arguments to give China a larger share in portfolios. We believe that the arguments do not hold, or that they are disputable. Furthermore, a significant larger allocation to China would likely be detrimental to the ESG profile of most portfolios. In our view, the best approach would be to gradually increase allocation to China as the country continues to improve its governance and market reforms. It is important to set your own pace and keep an eye on valuations; as most index providers adopt a similar inclusion approach, investors run the risk of a reversal of the short-term positive price effect following index inclusion. Fortunately, China A-shares currently still represent only a modest part of global equity market indices, so investors have time to make up their minds about the benefits and challenges of increasing their allocation.

BLACK-LITTERMAN ENHANCEMENT

REFINING THE INCLUSION OF VIEWS IN PORTFOLIO CONSTRUCTION

In this publication, we provide our expected returns for a broad universe of assets. A key use of these forecasts is to build portfolios that are aligned with our predictions in order to achieve the best investment results. As investors often use input from different parties to optimize their portfolios, translating their views on all the respective assets is no mean feat. In particular, one needs to define estimates for each asset class, as well as have confidence in these estimates. For example, does an investor have the same level of confidence in their view on interest rates as they do in their view on stocks? What if they do not have a view on all the assets in the investment universe? And what, for example, would be the best course of action if one asset class were expected to outperform another by a certain degree? In this special, we describe a well-known approach that can be used to deal with all these questions, the Black-Litterman model, and propose enhancements that enable investors to incorporate their views on markets more easily in their portfolios.

The questions we discuss in our introduction are not new and, unsurprisingly, a great deal of work and research has gone into developing toolkits to help answer them. A major breakthrough came in the early 1990s, when Fischer Black and Robert Litterman wrote two papers[1] introducing a methodology for portfolio allocation that explicitly takes into account investors' confidence or uncertainty with respect to their own views of markets. This approach has been recognized by academics and practitioners alike. Below we propose enhancements to their methodology that make it even more accessible to investors. First though, we provide some background on how we arrived where we are today.

1. Black, F. and Litterman, R., 1991. "Asset allocation: combining investor views with market equilibrium", The Journal of Fixed Income, Vol. 1(2), pp. 7-18.

   Black, F. and Litterman, R., 1992. "Global portfolio optimization", Financial Analysts Journal, Vol. 48(5), pp. 28-43.

The Black-Litterman model

The approach is based on the recognition that, unlike in physics, there is no certainty when it comes to the financial markets. For example, to estimate the excess return of equities over the risk-free rate, we can use an historical average. Using a data set from Kenneth French's data library and MSCI data, which starts in 1969, we can work out that the average annual excess return should be around 5.2%. Given the length of the data set, this seems like a good neutral approximation of what to expect in terms of excess return. However, there is always a chance that the average has been calculated using a sample that does not represent the true characteristics. For example, if we were to calculate the expected excess return based only on a period that coincides with the GFC, this would obviously yield a poor estimate and our expected average annual excess might not represent the true mean. The standard error of the mean is 2.5%. Therefore, using basic statistics, we can say that based on historical data, our expected average annual excess return for equities will likely lie between 2.7% and 7.7%. While clearly this is not a point estimate, point estimates are often used in practice. Hence the need to take uncertainty into account. The Black-Litterman model addresses these flaws and tries to improve on them using a three-step approach, which we detail below.

Step 1 – Derive implied views

The first step uses the logical starting point for any portfolio construction approach: the benchmark. For this purpose, we use a simple benchmark, for a US investor, consisting of the following assets: US equities (S&P 500), developed world equities ex US and Canada (MSCI EAFE), emerging markets equities (MSCI EM), commodities (S&P GSCI), listed real estate (FTSE NAREIT) and US investment-grade bonds (Bloomberg Barclays US TSY and Bloomberg Barclays US CORP). Although heavily debated, we assume that the FX risk of international assets for the euro, Japanese yen and British pound is fully hedged in the benchmark.

Table 1: Benchmark portfolio

S&P 500	27.5%
MSCI EAFE	16.5%
MSCI EM	6.0%
S&P GSCI	5.0%
FTSE NAREIT	5.0%
Barclays US TSY	24.0%
Barclays US CORP	16.0%

Source: Robeco

A benchmark should fit an investor's objectives, and often represents the optimal long-term asset allocation. The first step in the Black-Litterman model is to derive the 'implied' views from the benchmark. This might sound strange, but every benchmark represents a certain view on the assets in the benchmark. Based on correlation and risks, and using a small set of assumptions, we can calculate a return per asset class to justify the benchmark weighting. For example, if the equity risk premium is 3.5% and the term premium is 0.75%, historical covariances can be used to determine the following 'implied' return views.

Table 2: Return expectations[2]

	Implied views
S&P 500	3.3%
MSCI EAFE	3.5%
MSCI EM	4.2%
S&P GSCI	2.1%
FTSE NAREIT	3.0%
Barclays US TSY	0.7%
Barclays US CORP	1.2%
EUR to USD	-0.5%
GBP to USD	-0.4%
YEN to USD	0.0%

Source: Robeco

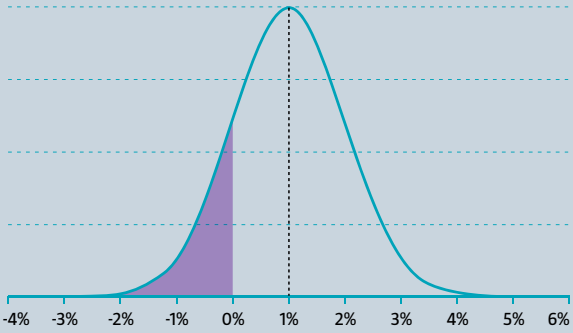
2. The views are shown in excess of the risk-free rate. The views on the currencies are related to the returns of a forward contract, i.e. the hedging costs are taken into account.

The above returns justify the benchmark weighting of each class. If the returns do not match the investor's long-term expectations, this should have consequences for the benchmark. The first step of the Black-Litterman model is in itself quite useful for most investors.

Recognizing uncertainty

In this box we give an example of the effects of uncertainty surrounding expected returns and how combining views works. We show the distribution of the expected returns, based on the assumption that the implied view is 1% and that the 'volatility' of the view, in other words the level of uncertainty with respect to the estimate, is also 1%. The probability that the expected return is between -1% and 3% is 95%. The probability that the 'true' expected mean is negative is almost 16%. This recognition of uncertainty contrasts sharply with more common optimization procedures, where the expected mean is usually set at exactly 1%.

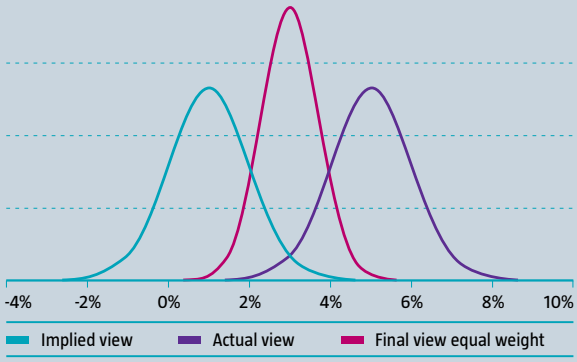
Figure 1: Example of implied views



Source: Robeco

We further assume that we are currently very bullish on this asset: we expect the return to be 5%. The levels of confidence in both the implied views and our actual views are similar. The distributions are depicted in Figure 2. Combining the views produces an expected return of 3% (*final view equal confidence*).

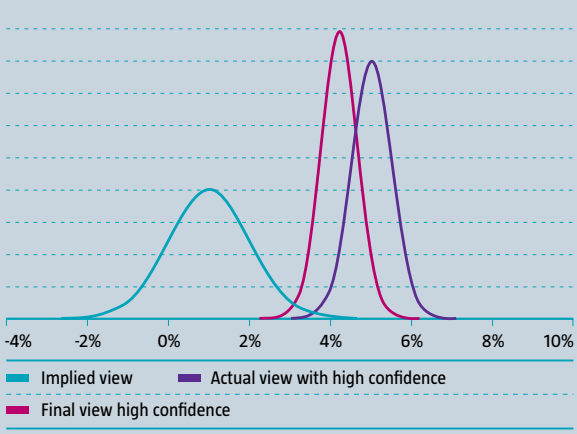
Figure 2: Example of combining implied and actual views



Source: Robeco

If, however, we were to be more certain of our current view, the final expected return would be 4.2% (final view high confidence).

Figure 3: Example of combining implied and actual views where confidence is not equal



Source: Robeco

Step 2 – Input actual views

In the second step, investors give their views on a selection of the assets. Often these views cover a shorter period than the implied views derived from the benchmark. Besides the views, the level of confidence in the views must be input into the model. If confidence in a certain view is low, the view will have a low impact on asset allocation in the portfolio; if it is high, it may have a significant impact.

For portfolio construction, this approach is very appealing as it eliminates the need to input views in a certain format; views can be provided on not only the absolute but also the relative performance of assets. These elements make the approach very applicable and interesting.

Assume, for example, we have the following views:
- The excess return on US treasuries will be -1%
- The risk-adjusted excess return on US corporate bonds will be 1%
- The return on EUR forward contracts will be 1%

Note that we do not define views on the other assets.

Step 3 – Combine the views

Having calculated the views implied by the benchmark and our actual views, we combine them in step 3. For this, we use what is known as a 'Bayesian framework'. This is a statistical toolkit that enables us to determine the return views based on implied views and actual quantitative views. The outcome is shown in Table 3.

Table 3: Return expectations

	Implied views	**Combined views (quantitative)**
S&P 500	3.3%	**3.8%**
MSCI EAFE	3.5%	**3.9%**
MSCI EM	4.2%	**5.4%**
S&P GSCI	2.1%	**2.5%**
FTSE NAREIT	3.0%	**3.2%**
Barclays US TSY	0.7%	**-0.1%**
Barclays US CORP	1.2%	**0.6%**
EUR to USD	-0.5%	**0.3%**
GBP to USD	-0.4%	**-0.2%**
YEN to USD	0.0%	**0.8%**

Source: Robeco

These combined views can then be used as input for portfolio optimization. The optimal allocation is shown in Table 4.

Table 4: Allocations

	Benchmark	**Weighting based on combined views (quantitative)**
S&P 500	**27.5%**	**33.7%**
MSCI EAFE	**16.5%**	**33.5%**
MSCI EM	**6.0%**	**8.1%**
S&P GSCI	**5.0%**	**10.2%**
FTSE NAREIT	**5.0%**	**3.8%**
Barclays US TSY	**24.0%**	**0.0%**
Barclays US CORP	**16.0%**	**10.7%**

Source: Robeco

As Table 4 shows, the allocation to US Treasuries is zero. This is consistent with the negative current view. Furthermore, we observe that the allocation to developed equities outside North America has doubled. This can be explained by the positive return expectations on the EUR hedge. Other results are less intuitive. The allocation to real estate (FTSE NAREIT) is lower, which fits with the view that real estate is more sensitive to interest rate changes than other equity sectors. Despite the positive outlook for excess credit return, the allocation to credits is also lower owing to our negative outlook on US Treasuries.

Enhancements to the model

The Black-Litterman model requires us to input point estimates of our expected returns and the level of confidence assigned to those views. In practice, these requirements can reduce the effectiveness of the approach, especially when there is disagreement on the point estimates. Therefore, we have enhanced the Black-Litterman model to make it more accessible. Often strategists or investment committees first rank assets in relative terms, e.g. 'asset A will outperform asset B', or in absolute terms, e.g. 'rates will increase more than forwards'. Transforming these qualitative views into more quantitative ones, e.g. 'asset A will outperform asset B by 2.5%', and also quantifying the confidence investors have in the views can be challenging. An approach that eliminates the need to translate qualitative views into quantitative ones is therefore desirable.

'An approach that eliminates the need to translate qualitative views into quantitative ones is desirable'

Below we revisit our earlier example to examine the effect of our qualitative views:

- The excess return on US Treasuries will be negative
- The risk-adjusted excess return on US corporate bonds will be positive
- The return on EUR forward contracts will be positive

Here we assume full confidence in these views. But how does this influence portfolio construction? To answer this question, we must make adjustments to our statistical toolkit. Despite being far beyond the scope of this article, intuitively we know that changes are needed to the shape of the distributions. Here, we focus on the outcome. Table 5 shows the combined views derived from the benchmark, implied views and the qualitative views given above.

Table 5: Return expectations

	Implied views	Views based on combined views (quantitative)	**Views based on combined views (qualitative)**
S&P 500	3.3%	3.8%	**3.7%**
MSCI EAFE	3.5%	3.9%	**3.4%**
MSCI EM	4.2%	5.4%	**5.2%**
S&P GSCI	2.1%	2.5%	**2.2%**
FTSE NAREIT	3.0%	3.2%	**2.9%**
Barclays US TSY	0.7%	-0.1%	**-0.4%**
Barclays US CORP	1.2%	0.6%	**0.3%**
EUR to USD	-0.5%	0.3%	**1.3%**
GBP to USD	-0.4%	-0.2%	**0.4%**
YEN to USD	0.0%	0.8%	**1.3%**

Source: Robeco

The new views seem sound. Compared to the views based on our quantitative input, we can see that they are now more explicit. For example, the excess return on US Treasuries is now lower (-0.4% compared to -0.1%), as is the return on the developed world ex North America stocks. This is mainly due to the view on the EUR exchange rate. When fully hedged, the MSCI EAFE's return will however increase. Table 6 shows the allocation that follows from the views. We can see that the allocations to fixed income and real estate are lower than in the previous example; the proceeds are invested in developed stocks.

Table 6: Optimal portfolios

	Benchmark	Black-Litterman Original	**Black-Litterman Qualitative**
S&P 500	27.5%	33.7%	**39.2%**
MSCI EAFE	16.5%	33.5%	**37.1%**
MSCI EM	6.0%	8.1%	**6.6%**
S&P GSCI	5.0%	10.2%	**8.7%**
FTSE NAREIT	5.0%	3.8%	**0.2%**
Barclays US TSY	24.0%	0.0%	**0.0%**
Barclays US CORP	16.0%	10.7%	**8.1%**

Source: Robeco

Conclusion

In this special topic, we have discussed the well-known Black-Litterman model and proposed enhancements to it. The steps of the model we have chosen to focus on involve deriving implied views, identifying uncertainty and combining views, as we believe each of these holds value for investors. The first, deriving implied views from a portfolio benchmark, can yield particularly valuable information and be seen as an important test of whether the benchmark is appropriate. If the implied views do not correspond with your long-term view, it might be wise to take a second look at the benchmark. The second step introduces the concept of uncertainty. Investors should be aware that their expectations for returns are not point estimates and that they surrounded by uncertainty. Explicitly taking this uncertainty into account may be difficult, but of course makes sense.

Instead of giving a quantitative estimate for our views on the performance of, for example, US Treasuries, we have introduced the possibility to incorporate a qualitative assessment: US Treasuries will lag cash return. We believe that this additional step enables investors to better express their views in their asset allocation. Finally, in the third step, we combine the views. In our opinion, even strong views should be combined with other views. While a discussion of the preferred combination might be challenging, the potential benefits make it worthwhile. And although the calculations behind the examples are complex, with the right help they too can be manageable and, most importantly, rewarding.

3

Expected returns 2020-2024

Macro

Claude Shannon, father of the Information Age, once said that information is the resolution of uncertainty. In finance, despite the surge in computational power and the rise of AI, resolving uncertainty remains a daily challenge. However, risk does not equate to uncertainty and today's world certainly is not a laboratory. Economic policy uncertainty, as measured by the Economic Policy Uncertainty Index, has reached its highest level in decades and the five-year moving average is trending up. This matters for the medium-term outlook. As Stanley Baldwin, UK prime minister in the 1930s, once said: "Business can flourish with tariffs. Business can flourish without tariffs. Business cannot flourish where there is uncertainty".[1]

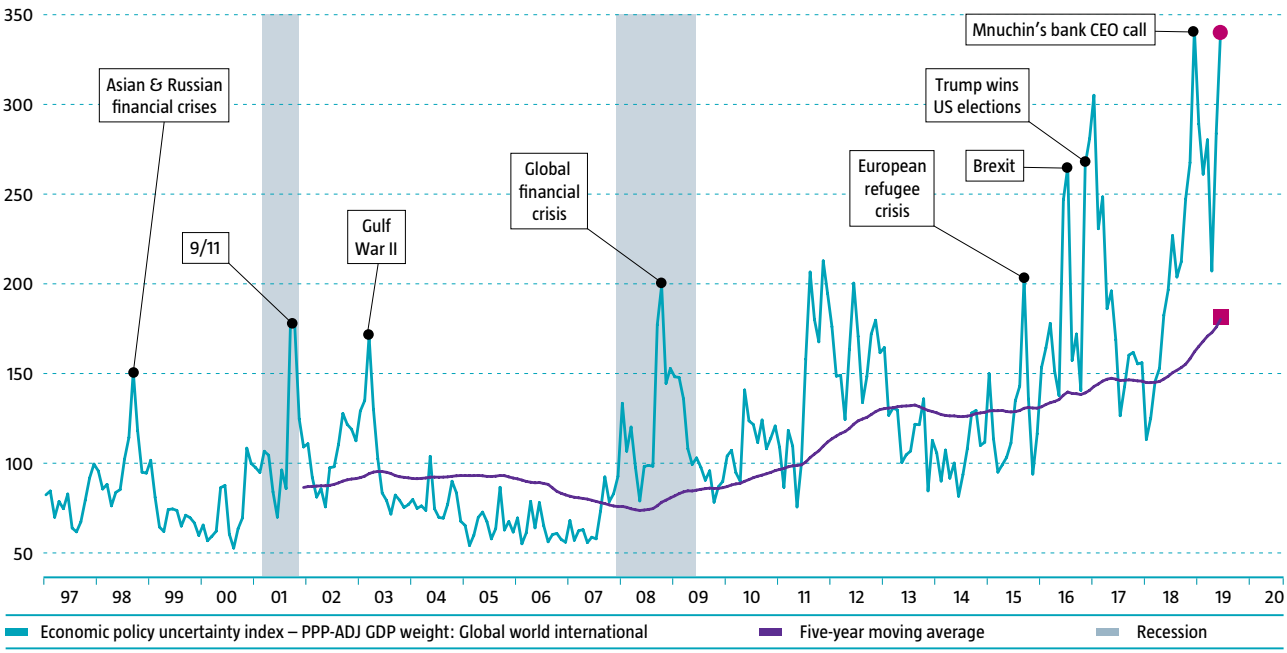
1. Stanley Baldwin quoting Lord Melchett in the Commons sitting of 13 March 1930. https://api.parliament.uk/historic-hansard/commons/1930/mar/13/unemployment-industrial-and-fiscal-policy

More noise, less signal

It is too easy to explain this uptrend in economic policy uncertainty by attributing to Brexit, tensions revolving around US-China trade relations or to assume that it will just mean revert. These issues are examples of deeper societal shifts that investors need to understand. Elevated uncertainty often coincides with an erosion of trust. So, it is unsurprising that the 2019 Edelman Trust Barometer found the world is united in the urge for change, with nearly half the population believing that 'the system' is failing them. This clearly matters for an economic outlook, as there is a strong empirical relationship between trust and economic growth.[2] With populism and protectionism rising in response to a divide in trust in society and increasing economic inequality, we live in an age of transition.

2. See, for instance:
Zak, P. and Knack, S., 2001. "Trust and Growth", *Economic Journal*, Vol. 111, issue 470, pp. 295-321.
or
Baker, S.R., Bloom, N. and Davis, S.J., 2016. "Measuring Economic Policy Uncertainty", *Quarterly Journal of Economics*, Vol. 131(4), pp. 1593-1636.

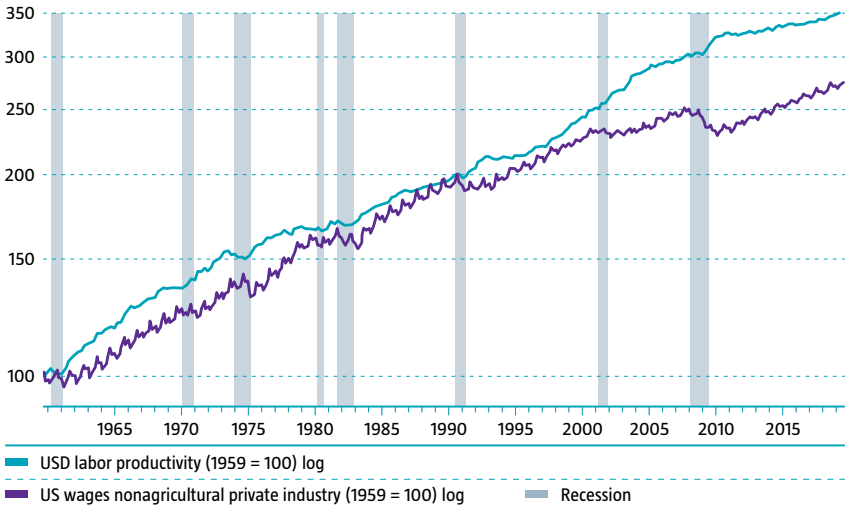
Figure 3.1: Unresolved: global economic policy uncertainty has soared



Source: Refinitiv Datastream, Robeco

The elevated uncertainty about economic policy illustrates the paradox of a technologically interconnected world that is increasingly divided. Democratic systems around the world are being threatened by the rise of populism, with populist party leaders making big promises to shake up society and bring change on contentious topics such as immigration, economic inequality and globalization. One reason people feel they are missing out on economic progress is the increase in corporate market power versus the decline in labor income share in the global economy. The gap that has emerged between US wage growth and US labor productivity since the 1990s shows that workers have been missing out on productivity growth. To restore trust, policymakers have to make tough choices to address global challenges such as growing economic inequality, skills mismatches in the labor market, the impact of increasing automation and climate change. However, this year's key meetings of world leaders, including the G20 and the World Economic Forum, revealed that the typical Davos attendee, looking 'to improve the state of the world', is struggling to reach consensus with peers in the shift from a unipolar to a multipolar world.

Figure 3.2: Fading bargaining power – labor missing out on productivity gains



Source: Refinitiv Datastream, Robeco

Into which state of world will we transition in the next five years? In an era of heightened economic policy uncertainty, the range of possible economic scenarios is growing and the probabilities seem more evenly distributed. In such a low signal-to-noise environment, only aggravated by the surge of fake news, information about which scenario is going to unfold is becoming more valuable – because of its scarcity.[3] In our scenario analysis, we attempt to separate the signal from the noise by defining three scenarios. 'Attempt' being the operative word here, as the complexity of today's world does not allow for pretention. Giant of science Sir Isaac Newton – and, interestingly, a figure studied at length by Keynes – once said that he was just diverting himself in "now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me."[4]

3. Or, as Shannon himself very abstractly put it, "information is the negative reciprocal value of probability". Shannon, C.E., 1948. "A Mathematical Theory of Communication", *The Bell System Technical Journal*, Vol. 27, pp. 379-423.

4. Brewster, D., 1855. "Memoirs of Newton – English mathematician & physicist (1642-1727)".

Marathon expansion

The global expansion has turned into a marathon and, despite the spluttering at the time of writing, is now the longest in recent history. The current US economic expansion, which started in June 2009, surpassed 120 months last June. In doing so, it took first place from the 1991-2001 Clinton era boom as the longest post-WWII period of economic growth without

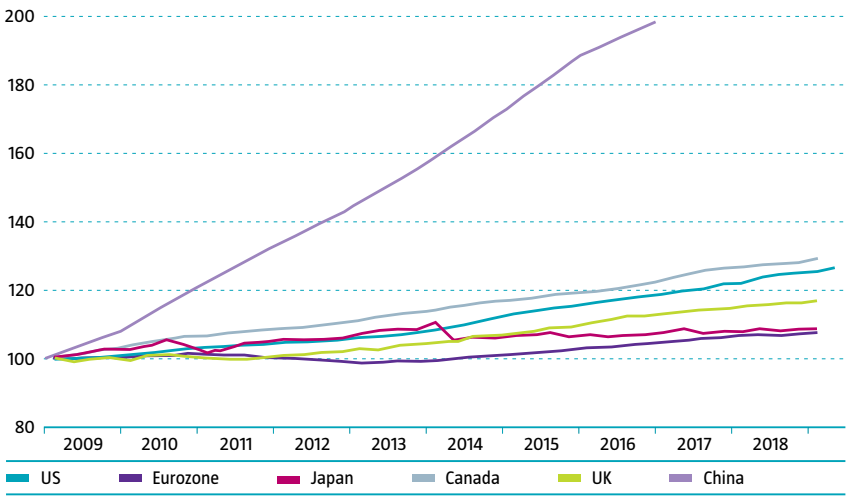
the US entering a recession. It has also been one of the most stable expansions, with low volatility in economic growth, which has contributed enormously to the re-rating of risky assets. Yet the pace of the expansion, and this is echoed globally, has been remarkably slow from a historical perspective, with real US GDP growth running 1.5% below the previous longest expansion (1991-2001) on an annual basis and US consumption even lagging by 2.1%. Part of the reason for sluggish consumption growth is household deleveraging in the wake of the global financial crisis. US household debt outstanding as a percentage of net household disposable income peaked at 133.6% in Q1 2008. It has fallen gradually since then, to just 98.1% in Q1 2019. This subdued consumption is due in part to rising income inequality, with those in the lowest bracket – consumers with the highest marginal propensity to consume – disproportionally lagging in terms of overall wealth creation during the expansion.

A study by Saez (2019)[5] from UC Berkeley finds that by 2017, the bottom 99% of the US income distribution had only recovered about three-quarters of the losses they experienced during the global financial crisis. Another 2019 study by Fisher et al. concludes that if the income from the top 1% of the US income distribution were to be transferred to the bottom 99%, US aggregate annual consumption would be USD 230 billion higher.[6] Consumption elsewhere in advanced economies has been even more lackluster. By contrast, household consumption in China has dwarfed cumulative consumption growth in the developed world, doubling since 2009. Private consumption accounts for around 60% of global economic activity. Pent-up demand from US household deleveraging and the influx of previously discouraged job seekers could keep this marathon expansion going.

5. Saez, E., 2019. "Striking it Richer: The Evolution of Top Incomes in the United States", Retrieved from: https://eml.berkeley.edu/~saez/saez-UStopincomes-2017.pdf

6. Fisher, J., Johnson, D., Smeeding, T.M. and Thompson, J.P., 2019. "Estimating the Marginal Propensity to Consume Using the Distributions of Income, Consumption and Wealth", *FRB of Boston Working Paper* No. 19-4. Available at SSRN: *https://ssrn.com/abstract=3374467.*

Figure 3.3: In the fast lane: China's annual consumption growth has outpaced advantaged economies

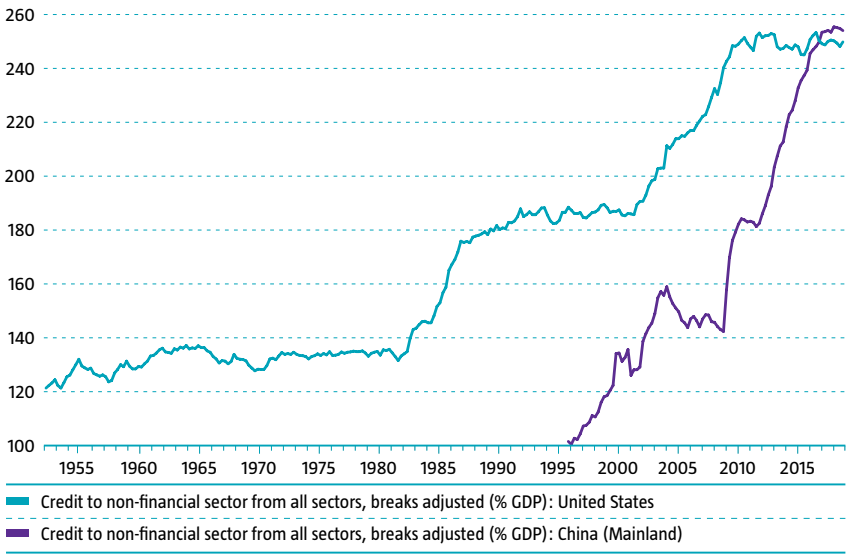


Source: Refinitiv Datastream, Robeco

Expansions do not die of old age. Economies are typically brought to a standstill by excesses that build up during a boom: excessive central bank tightening, excess leverage, irrational exuberance in the financial markets/private sector, or combinations of the above. In this expansion, we have seen the development of pockets of excess leverage in the US economy, i.e. car loans and the non-financial corporate sector. The fact that total credit to the non-financial sector in the US is at 250% of GDP and that China's non-financial debt to GDP has reached 254% make for unsettling reading. Japan, Asia and Spain are just a few examples of economies that have eventually faced turmoil after reaching debt levels in excess of 150% of GDP. Yet, a key feature of this global expansion so far has been a lack of

exuberance among consumers and 'main street', as the legacy of the global financial crisis lingers on. Developed market consumers don't seem to be spending above their means and household debt service is healthy, which bodes well for future resilience if negative income shocks play out. This is evidenced by the current US savings ratio, which is still close to what one would expect based on factors that determine spending; this is in contrast with the excessive dissaving seen in the late 1990s.

Figure 3.4: Heading for trouble: non-financial sector credit to GDP China and the US

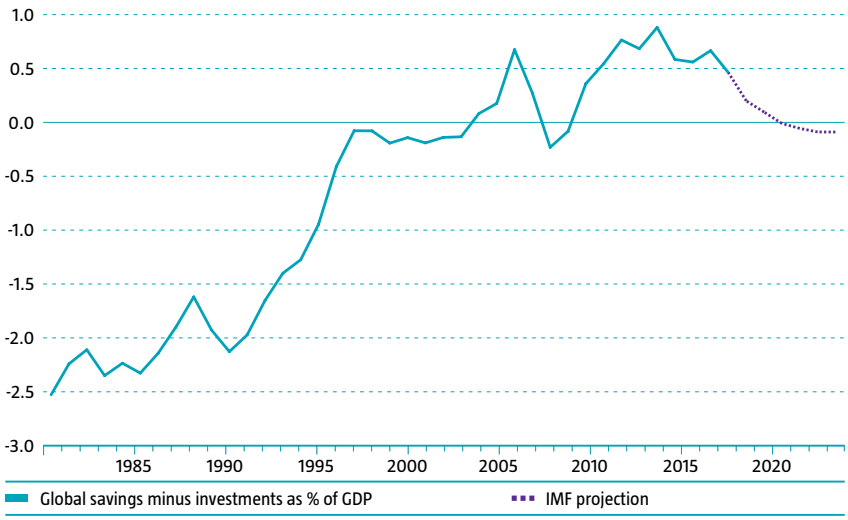


Source: Refinitiv Datastream, Robeco

Neither secular stagnation nor secular expansion

Many observers have diagnosed the global economy as suffering from secular stagnation. But while many symptoms support that diagnosis (sluggish productivity growth, a persistent savings glut, declining prices of investment goods and a debt overhang), we pointed out in recent years that episodes of secular stagnation often prove to be temporary as the economic mismatches (for example, desired savings exceeding planned investments) that underlie the secular stagnation thesis are fundamentally cyclical. China is already running lower current account surpluses, reducing global excess savings. And the IMF has even projected that the global savings glut will disappear by 2024. We agree with the institution's implied view of a declining savings glut over the next five years, but its disappearance by 2024 is – in our view – somewhat optimistic. It is reasonable to assume that the private sector will remain cautious about dissaving following the current period of exceptional political uncertainty, keeping the global paradox of thrift (excess saving leading to a self-fulfilling decline in output) relevant for longer.

Figure 3.5: Is the global savings glut set to disappear in the medium term?



Source: Refinitiv Datastream, Robeco

In the end, secular stagnation may turn out to be the wrong working hypothesis. But this expansion is not secular, either. After the synchronized cyclical upswing of 2017, the business-cycle expansion peaked in 2018, with economic growth now decelerating. Moreover, reliable recession warning signs like an inverted or partially inverted US yield curve have already flashed red. A recession in advanced economies and some emerging markets in the next five years seems almost inevitable. Yet, where are the excesses that trigger a recession and need to unwind?

We agree with Krugman's view that the next downturn could be of the Swedish kind: a smörgåsbord.[7] In other words, the snowballing of smaller pockets of excess in the global economy into something substantial enough to stifle global growth. The mild recession we expect in all of our scenarios would be fairly unproblematic were it not for the lack of ammunition central banks have traditionally had prior to a recession: a healthy 5% by which to cut interest rates. The liquidity trap that thus looms is reminiscent of the Great Depression, when monetary policy became ineffective as interest rates hit zero.[8] So, with central banks already near or at the effective lower bound in the next five years, we think investors should heed the lessons of the Great Depression as the curtains close on the 'Great Expansion'.

7. Krugsman, P., 2018. "A Smorgasbord Recession? (Wonkish)", *The New York Times*. Retrieved from *https://www.nytimes.com/2018/09/19/opinion/a-smorgasbord-recession-wonkish.html.*

8. See for instance Coeure (2015) "How binding is the zero lower bound?" or more recent work done by Brunnermeier and Coby (2019) "The Interest Reversal Rate", where they state, "The reversal interest rate is the rate at which accommodative monetary policy reverses and becomes contractionary for lending." They estimate this reversal rate to be minus (-) 1%.

The conventional 'unconventional' central bank toolkit

Ex-Fed policymaker Narayan Kocherlakota fears we "face a considerable risk that the economy could endure damaging decade-long spells at the Fed's effective lower bound". Clearly not a cheerful prospect for financial markets, with market focus likely to shift to the creativity of central banks in deploying their unconventional monetary toolkit in that situation. While one should not underestimate the willingness and ability of central banks to explore new avenues, this 'unconventional' toolkit has become rather conventional now, with its use now widely anticipated by investors when a downturn hits. The toolbox has been expanded considerably since the global financial crisis, with QE, TLTROs and forward guidance. Given the possibility that central banks will stay at the effective lower bound for longer, furthering the effectiveness of these instruments is crucial for monetary policy.

Nevertheless, cracks have started to appear. First, safe-asset scarcity is increasing, with years of central bank bond buying having distorted bond market pricing. The Bank of Japan, for instance, now holds around 50% of Japanese Government Bonds. And the ECB's government bond purchases have heavily influenced the German Bund market. In recognition of this fact, the ECB in 2016 started accepting cash instead of Bunds as collateral for their securities-lending facility, to prevent the Bund's 'specialness premium' from edging up even higher. If it is the flow of asset purchases rather than the stock of central bank holdings that stimulates the economy and reinvigorates market sentiment, some central banks are going to get themselves in a tangle in the coming years, unless they manage to expand their scope. Not least because the wealth effect that is generated by QE (as envisaged by Ben Bernanke in 2003) only seems to be enjoyed by a limited group of consumers with a lower marginal propensity to spend (those with a large asset base), increasing economic inequality in the meantime.

Second, forward guidance could become less useful if market participants believe central banks are not able to move away from the effective lower bound or that the unconventional toolbox is empty. Expectations about future central bank policy actions are difficult to change if it is obvious central banks are up against hard constraints in executing monetary policy. One resort for central bankers could be to raise the inflation target to circumvent the lower bound on nominal interest rates by lowering real rates enough to kickstart demand. However, this strategy is also far from failsafe: would increasing the inflation target raise the public's inflation expectations by the same measure? Given the weakening Phillips curve trade-off in recent years, it is difficult to see why labor unions would increase nominal wage demands just because inflation targets have shifted. Inflation is increasingly driven by global factors (Forbes 2018).[9] All in all, one should never underestimate the inventiveness of central banks to come up with new tools to achieve their mandate. But it is clear that policymakers are facing serious challenges in that regard.

Lessons from the 1930s

Former Fed President Ben Bernanke once said that "to understand the Great Depression is the Holy Grail of macroeconomics".[10] There are two schools of thought among economists on how we managed to escape the liquidity trap in the Great Depression. One is that the massive fiscal stimulus from the war effort moved the economy to a better equilibrium. The other is that very low real rates did the trick. Unsurprisingly, economic policy research on both strands of thought has surged recently as policymakers feel this expansion is losing momentum.

Central bankers have recently communicated their willingness for a symmetrical inflation overshoot above target, aiming to raise inflation expectations. In turn, this should lower real rates by enough to sustain the expansion or at least kickstart economic growth in the event of a recession. This experiment may well fail. Not because very low real rates fail to spur consumption and investment, but because central banks will have great difficulty reaching this point. If one thing stands out about today's global economy, it is the absence of inflation despite an accommodative stance – rather than the absence of growth.

The problem central banks have faced in achieving their self-imposed inflation targets may be down to credibility: the market rightly does not believe central banks would be irresponsible enough to stay accommodative permanently and allow inflation to overshoot. Central-bank credibility, however, plays a secondary role in explaining the absence of inflation. Supply-side factors have caused financial markets to give up on the

9. Forbes, K., 2019. "Has globalization changed the inflation process?", BIS Working Papers, No 791.

10. Bernanke, B.S., 1995. "The Macroeconomics of the Great Depression: A Comparative Approach", *Journal of Money, Credit and Banking*, Vol. 27, No. 1, pp. 1-28.

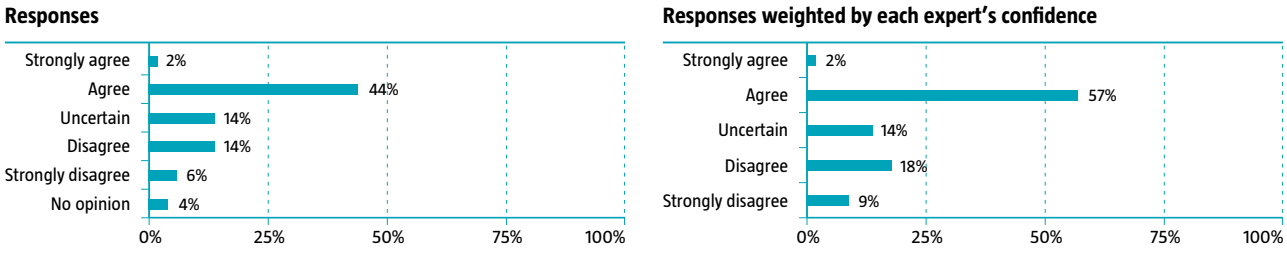
traditional Phillips curve trade-off, with inflation expectations sliding. The decline in unionization, loss of bargaining power for workers and the 'gig' economy are all part of this equation. One supply-side factor that should be highlighted is how the trend in durable goods inflation, one of the most deflationary components in the CPI basket this decade, has coincided with the growth in global trade resulting from globalization. Domestic inflation has increasingly become a globally led phenomenon. As global value chains expand, direct and indirect competition between economies increases, making domestic inflation more sensitive to global output gaps.[11] If global trade goes into reverse, like it did in the 1930s after the introduction of the Smoot-Hawley Tariff Act, durable goods might again turn from being a deflationary force into an inflationary one.

11. See, for instance, Auer, R., Borio, C. and Filardo, A., 2017, BIS Working paper 602; or Forbes (2018).

Central banks today face many challenges and a significant part of the solution to the inflation conundrum is beyond their control. The awareness that monetary policy is not the only game in town will grow. A July 2019 survey among leading economics professors revealed an emerging consensus that monetary policy in the Eurozone is no longer able to increase or even sustain economic growth.

Figure 3.6: European fiscal and monetary policy

Question A: At this point, there is little that the European Central Bank can do to increase or maintain output in the Eurozone.



Source: European IGM Economic Experts Panel

Interestingly, this panel of expert economists shows a high level of confidence in the typical Keynesian view that governments running larger fiscal deficits can boost output in economic slumps, implying the view that fiscal spending multipliers are positive. The view is corroborated by research. Farhi (2012) describes why fiscal stimulus in a liquidity trap can be especially powerful. "The mechanism for this result [positive multiplier] is that government spending promotes inflation. With fixed nominal interest rates, this reduces real interest rates which increases current spending."[12]

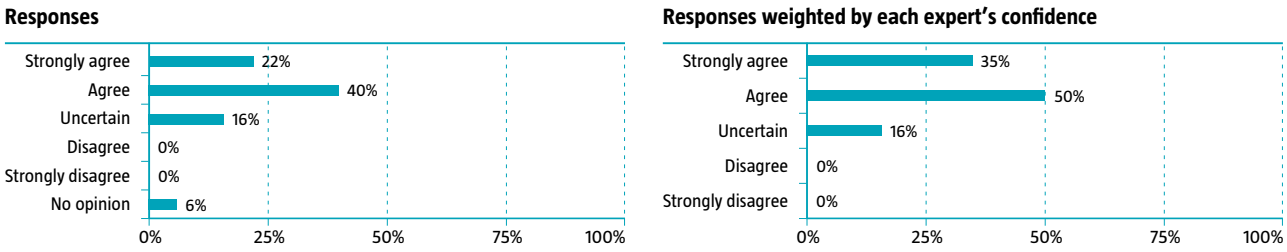
12. Farhi, E. and Werning, I., 2012. "Fiscal Mulipliers: Liquidity Traps and Currency Unions", *MIT Department of Economics Working Paper* No. 12-23. Available at SSRN: *https://ssrn.com/abstract=2142830 or http://dx.doi.org/10.2139/ssrn.2142830.*

Nevertheless, for currency unions like the Eurozone, the study is a warning that putting off fiscal consolidation may delay internal devaluations in countries such as Italy that actually boost long-term spending power. In addition to this warning, there is the issue of Ricardian equivalence: consumers expecting future tax increases as a result of a fiscal stimulus could refrain from spending and keep fiscal multipliers low. According to De Grauwe (2010)[13], in a mild recession (which proxies our smörgåsbord-type of recession for the next five years), this consumer behavior likely plays a role, which makes the effects of fiscal stimulus positive in the short term only. Facing an eventual recession, the technical factors that determine the optimal stimulus program will start coming to the forefront of the public policy debate (size of multiplier, degree of Ricardian equivalence and moral-hazard costs in the form of delayed structural reform).

13. De Grauwe, P., 2010. "Fiscal policies in 'normal' and 'abnormal' recessions", retrieved from *https://voxeu.org/article/fiscal-policies-normal-and-abnormal-recessions.*

Figure 3.7: European fiscal and monetary policy

Question B: When the economy is operating below its potential, larger fiscal deficits are likely to increase demand and output.



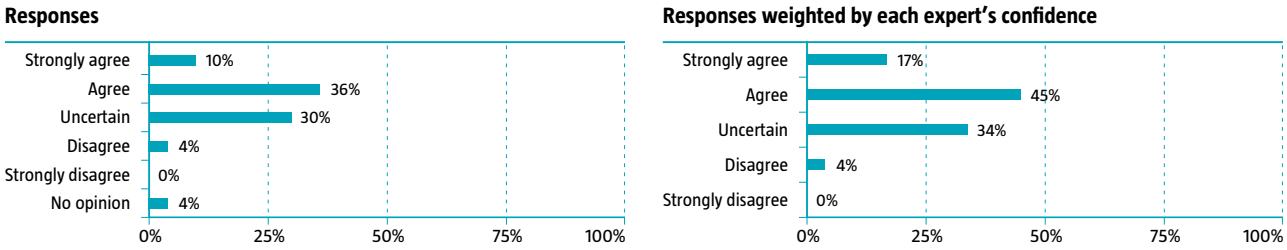
Source: European IGM Economic Experts Panel

The majority of experts agree that fiscal stimulus should pave the way for a recovery if the Eurozone economy contracts. Empirically, this is also confirmed to be the way forward by Romer and Romer (2012). Countries that have fiscal space and are willing to use it in times of economic distress see a much stronger recovery than those without it. Therefore, we believe that fiscal policy will pave the way for economic recovery in the next five years.[14]

14. See our special topic on policy space, which goes into more detail on the growth consequences of policy space – the capacity to spend and/or lower rates without risking fiscal distress.

Figure 3.8: European fiscal and monetary policy

Question C: When the economy is operating below its potential and monetary policy is at the effective lower bound, fiscal policy should prioritize increasing output over decreasing public debt.



Source: European IGM Economic Experts Panel

The irony in economic history

Despite the challenges central bankers face in setting monetary policy today, they are still dancing to the same old beat. Fed President Jerome Powell recently has said that, "an ounce of prevention is worth a pound of cure".[15] But economic history has shown, time and again, that it is hard to prevent a buildup of economic imbalances that ultimately usher in a recession. Not least because the pound of cure, i.e. staying accommodative for too long, proves to be an overdose. Irony has it that "our destiny is frequently met in the very paths we take to avoid it".[16] Eventually, policymakers will have to reach for the pound of cure. Therefore, monetary and fiscal policy space provides the building blocks for the states of world we deem likely and the interplay between these two policy tools serves as the common thread through our scenario thinking. The quest for policy space will remain a common denominator for the next five years.

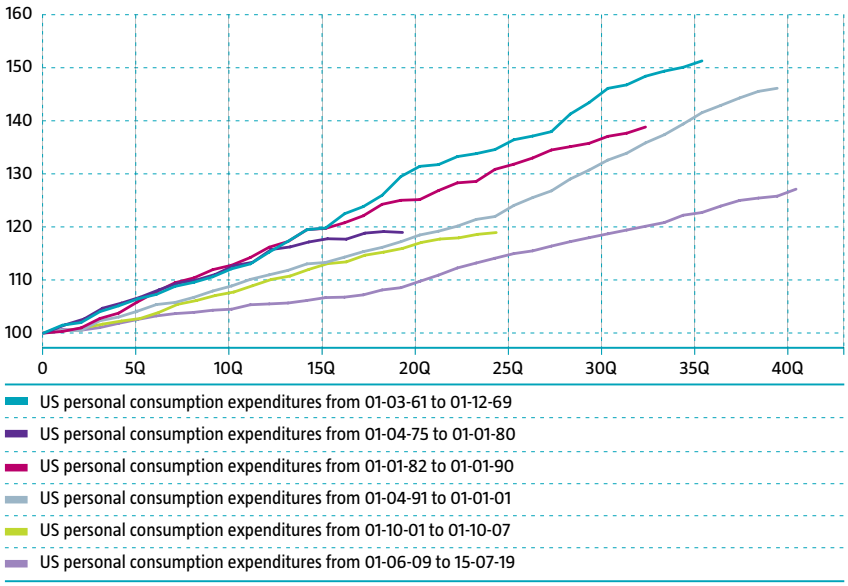
15. Press conference statement 19 June 2019.

16. Attributed to 17th century French poet Jean de La Fontaine.

3.1 Base case: sleepwalking into a hall of mirrors

More than ten years after the global recession, advanced economies are still in a record-setting expansion. Yet, the global business cycle peak is clearly behind us, with US recession fears becoming more acute. The global expansion, which has been characterized by low macroeconomic volatility, becomes less stable and more uneven. From the supply side of the economy, manufacturing activity is in a slump, while services are holding up. In the first years, the expansion was underpinned by US and Chinese consumer expenditures. The US consumer, whose spending accounts for 70% of US GDP, refrained from splurges in the deleveraging phase of the expansion, but the consumer base starts to broaden.

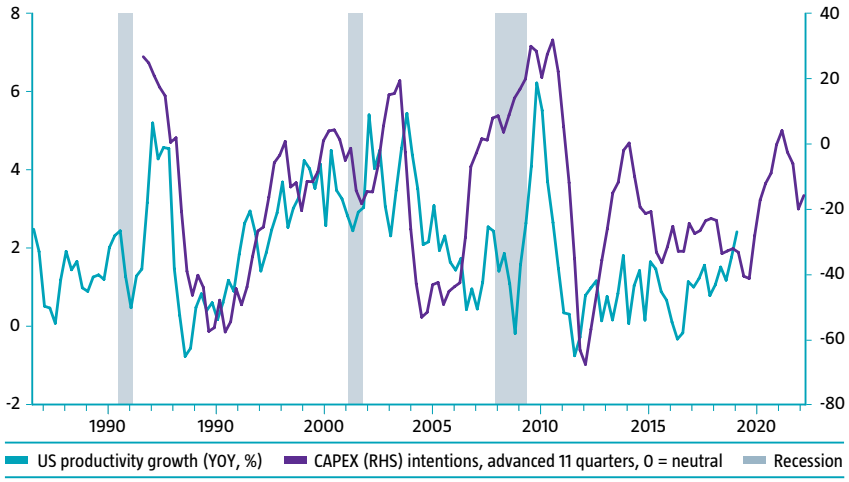
Figure 3.9: Delayed gratification for US consumer in this expansion



Source: Refinitiv Datastream, Robeco

A tight labor market increasingly brings marginally employed people on board; this grouping typically has a higher marginal propensity to spend. This is a success for the Fed, which has been trying to prolong the expansion by pre-emptively cutting rates. Consumer confidence is also upheld globally by China and by the US strategy of containment on trade relations, as the detrimental effects of previous tariff rounds made both countries worse off. However, a hard-won truce has not been the precursor to the great deal Trump had hoped for, leaving the US's relationship with China a simmering volcano. China has stimulated its economy through monetary easing, while remaining cautious about fully unwinding previous deleveraging efforts. Credit spreads remain supportive for financing costs as the cloud of uncertainty lifts. Investment spending and job hiring remain intact and, as a result, the US enjoys a late-cycle boost in productivity growth, which keeps unit labor costs in check.

Figure 3.10: A late-cycle productivity growth spurt in the making?



Source: Refinitiv Datastream, Robeco

Increasingly, real oil prices start to rise due to resilient aggregate demand, while the US labor pool is becoming exhausted. Inflation starts to pick up as wage growth begins to outpace productivity growth. With labor becoming more expensive, firms try to shift further towards a more capital-intensive growth model. Yet, the costs of technology goods are rising and the technology sector is trying to pass on higher input costs caused by tariffs and an increasing regulatory burden. This negative supply-side effect is aggravated by the fact that the Fed stays too accommodative, keeping zombification and excess corporate leverage lingering. By continuing to react to market fears, the Fed – under Powell – eventually finds itself sleepwalking into the 'hall of mirrors' about which former Fed President Ben Bernanke warned of.[17] It is woken rather abruptly as a sustained inflation overshoot unanchors inflation expectations.

17. See speech by former Fed President Ben Bernanke for the Investment Analysts Society of Chicago, 15 April 2004. "What do markets expect about the future course of monetary policy? The question is important to policymakers, not because we are concerned necessarily that we should meet the market's expectations – such a strategy quickly degenerates into a hall of mirrors."

The central bank then embarks on a new tightening cycle. Although very familiar with financial fragilities – i.e. the leveraged loan market – at this stage of the cycle, in an effort to keep inflation expectations in check, the Fed continues to tighten. The US economy slides into a recession in 2021/22 as pockets of excess leverage in the credit market burst. Inflation expectations take a plunge and the Fed starts cutting interest rates and buying government bonds and credit. This policy move is replicated by central banks elsewhere. However, they soon hit the effective lower bound, with nominal policy rates at or significantly below zero in the case of the ECB and BoJ. Meanwhile, QE offers diminishing returns, as the technical implementation of QE extensions grows increasingly complex and the effectiveness of one of its key objectives – the 'wealth effect' – fades.

The reaction function of policymakers at this stage becomes pivotal. In our base case scenario, we argue that policymakers are fully aware of the limited firepower of central banks and take decisive, albeit internationally uncoordinated, action on the fiscal front.

The lesson learnt during the post-GFC push for fiscal austerity was that subsequent fiscal multipliers were negative and larger than expected. The austerity experiment of the Eurozone debt crisis is now put into reverse, with policymakers aiming for fiscal stimulus instead as interest rates have remained below nominal growth rates. Bond markets start pricing in a rebound in growth. With government fiscal deficits pushing aggregate demand in the presence of positive multiplier effects, inflation expectations and the neutral real rate

of interest pick up and the global economy stabilizes. But at a price: the erosion of debt sustainability as a result of government debt issuance.

Also, the fiscal stimulus proves to be partially ineffective as it has crowded out private investment, while the effects prove to be only temporary as consumers limit their spending towards the end of the five-year horizon. The recession has been mild, so they expect governments to waste little time in shifting their focus to rebalancing their budgets by ramping up taxes. In this scenario, the central bank escape route from the failed 'hall of mirrors' strategy is an uncoordinated fiscal response with a neo-Keynesian slant: positive multipliers but only temporarily effective fiscal stimulus, as Ricardian equivalence soon kicks in.

3.2 Bull case: a globalization reboot

After a synchronized cyclical downswing fueled by soaring economic policy uncertainty, Presidents Trump and Xi come under domestic pressure to make a landmark trade deal, as social unrest in China rises and Trump's electorate feels the strain of tariffs. Both get their act together on the international stage and find some common ground. The US shelves its sanctions under the much-feared Section 301 – which authorizes President Trump to take 'appropriate' action against unfair trade practices – and resumes normal diplomatic relations. Global uncertainty declines and consumer and producer confidence improve. The global economy experiences a positive supply-side shock and the IMF's prediction that the global savings glut will disappear proves to be right. Open economies, mostly emerging markets, are the first to profit from reinvigorated global trade volumes and technology spillovers from bolstered investment activity. As the labor market runs hot, the Fed breathes a sigh of relief as it finally sees a decent 4% wage growth. US and Chinese consumers, who have been reluctant to spend during the deleveraging phase of the expansion, get their mojo back. Savings rates decline as precautionary saving is put on a back burner. Inflation expectations start to rise and the yield curve steepens. As the Fed is happy with a symmetrical inflation overshoot, it keeps rates on hold despite inflation tracking around 2.5%.

The conciliatory tone between superpowers China and the US gives global value chains a welcome reboot. As a result, unit labor costs remain under control initially, as productivity growth continues. This is spurred by innovation in AI and machine learning, which start to spread across sectors. The accelerating pervasiveness of technology nonetheless triggers a policy response. Due to data protection, money laundering and privacy issues, governments start interfering in the tech sector and regulate new technologies, like cryptocurrencies. The regulatory burden starts to push up sector costs, which are passed on to end users. Also, real oil prices – boosted by strong global demand – push inflation significantly higher. As market fears of a downturn have eased, central banks are not preoccupied with reacting to market expectations and start a gradual tightening cycle. A reasonably mild earnings recession follows, as credit spreads widen as a result of the deteriorating global profit outlook.

US households have entered the recession with healthy leverage ratios and to a large extent are able to withstand the negative income shock. The Fed recognizes that it has tightened too much and reverses its course, with a combination of interest rate cuts and QE, allowing for a quick recovery in asset prices and the real economy. Other advanced economies soon exhaust their monetary policy space and have to experiment with fiscal stimulus. Luckily, given the resurrection of the 'Davos man' (or woman), an internationally orchestrated fiscal stimulus succeeds in kickstarting aggregate demand. Policymakers are aware of two empirical facts: economic inequality increased further in the run-up to the recession and the marginal propensity to spend is highest among low-income households.

As a result, policymakers direct a fiscal effort at 'hand-to-mouth' citizens as well. This enhances the effectiveness of government expenditures, reduces subsequent budget deficits compared to our base case and lowers the expectation among consumers of future tax increases. Nevertheless, there are larger output gaps in this scenario compared to our base case, as there is more unused capacity post-recession due to prior investment boosts. As a result, inflation near the end of the projection period remains tepid. In a nutshell: central banks stay out of the 'hall of mirrors' quagmire as political uncertainties dissipate, though the zero lower bound problem is still prevalent when the downturn hits. Increased international cooperation makes fiscal stimulus effective, with the marginal propensity to consume out of additional income typically larger than one[18] and multiplier effects from government outlays proving to be strong.[19]

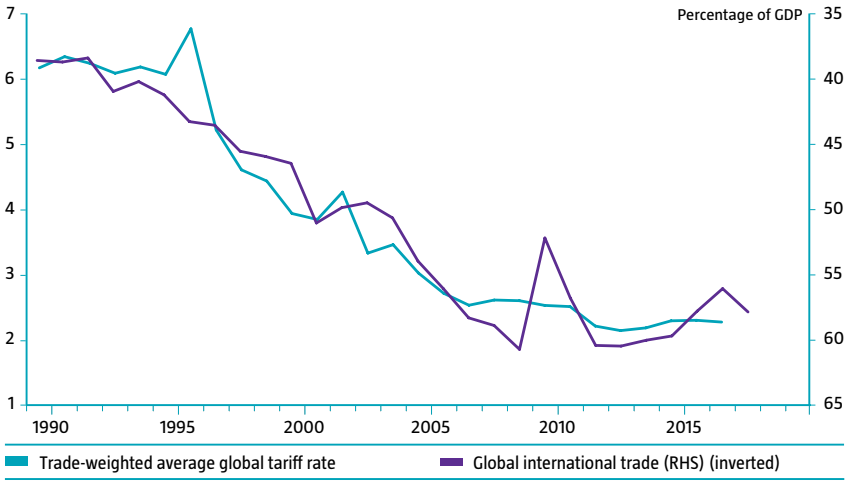
18. Implying one dollar of additional income boosts spending by more than one dollar.

19. This is a fairly optimistic view. Estimating the regression coefficient of US personal spending to personal disposable income, we find a marginal propensity to consume of 0.9, implying it is possible for fiscal stimulus to shift aggregate demand by creating large positive multiplier effects (= 1/(1-0.9) = 10) and thereby escape the liquidity trap.

3.3 Bear case: echoes of the 1970s

Global economic policy uncertainty edges even higher as trade negotiations between China and the US drag on, with China feeling increasingly humiliated by US demands to change Chinese legislation and by the US deliberately frustrating its rise as a global superpower. Despite open talks at the G20, neither powerhouse sees the importance of compromises. Global world order crumbles and the US leaves the WTO. Other countries are dragged down in their wake and globalization is rolled back decades. Global trade as a percentage of GDP falls sharply, as rounds of tariffs spread beyond the US-China trade spat. An age of transition morphs into an age of disruption.

Figure 3.11: Tariffs smother trade



Source: Refinitiv Datastream

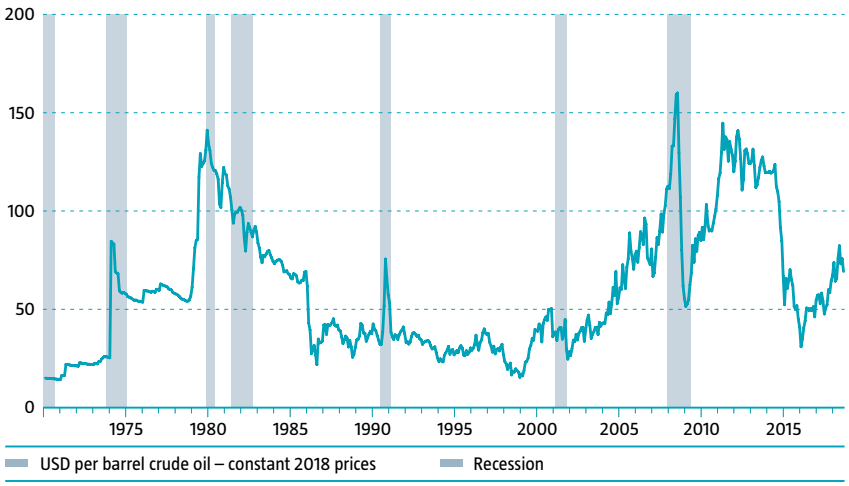
The UK crashes out of the EU in a no-deal Brexit, making tariffs a permanent feature and the country's access to the single market problematic. China dusts off the original Made in China 2025 plan and an increasingly nationalistic Xi, like his predecessor Mao, sets out a 'long march' to achieve China's long-term ambitions. With multinationals recalibrating their global supply chains in response to further tariff rounds, global technology spillovers dwindle, sparking a global surge in techno-nationalism. Politicians become increasingly involved in pushing the technological frontier domestically, particularly in the defense industry.[20] The US and China start to experience bouts of social unrest as new rounds of tit-for-tat tariffs erode consumer purchasing power. China massively ramps up monetary stimulus and industrial investments to mitigate the fall in external and internal demand.

20. Note in this respect the withdrawal of the US from the 1987 nuclear arms control treaty with Russia on 2 August 2019.

It threatens to use its most effective trade weapon: a renminbi devaluation. But, knowing this could backfire, upgrades non-tariff barriers to trade instead. The Chinese authorities aim for full employment by combining monetary and fiscal stimulus, becoming a global exporter of inflation rather than deflation. Other emerging markets feel the pressure to engage in a competitive devaluation, as the pie of global trade volumes shrinks. In the US, the White House keeps the thumb screws on the Fed to cut rates. The central bank is reluctant to cave in initially, in an effort to maintain independence from politicians.

Rising oil prices and resilient employment also prevent the Fed from cutting rates. Oil prices have risen due to supply risks from the Middle East and surging Chinese oil demand and are starting to push up inflation expectations. As recession risk surges on the back of increased policy uncertainty, policymakers in the US embark on major pre-emptive fiscal stimulus aimed at improving infrastructure and boosting the ailing manufacturing sector. This lifts aggregate demand only temporarily, as US households fear higher taxes further down the line. Nevertheless, consumption remains resilient enough to absorb the pass-through of higher corporate input costs. US multinationals see their global supply chains disrupted and start sourcing more domestically to avoid tariffs. The unfunded fiscal push raises US real interest rates and crowds out investment in the most interest rate-sensitive sectors, at a time when import substitution is driving up the level of desired investments. Oil prices get an additional boost from a negative supply shock as leveraged US shale companies default due to rising funding costs. A US recession follows. The Fed belatedly gives in and cuts interest rates. However, inflation stays elevated. The result, albeit milder than in the 1970s, is stagflation.

Figure 3.12: Cyclical highs of real oil prices have preceded every recent US recession



Source: Refinitiv Datastream

The stagflation of the 1970s was caused by a negative oil-supply shock which rippled across the world and by the discounting of higher inflation in wage-setting processes despite rising unemployment. The latter effect would be more limited in a modern-day stagflation scenario, due to the erosion in recent decades of labor unions and a shift in market power from workers to employers. However, the former effect could be aggregated as the implosion of global trade adds to the negative supply shock risk already posed by oil.

As an open economy and net oil importer, Europe reels from the hard Brexit fallout, rising real-oil prices and an ailing export sector, as it is caught in the political crossfire between the US and China and the US and Iran. Since Trump pulled out of Iran's 2015 nuclear deal, relations with Iran have soured and Iranians have continued their uranium enrichment program. This makes passage through the Strait of Hormuz treacherous, affecting both oil prices and shipping costs. For the Eurozone, the deflationary impact from the drop in external demand is fully mitigated by the inflationary impact of negative supply shocks. With the Eurozone export sector in the doldrums, ECB President Christine Lagarde signals early on to markets that the central bank is willing to do whatever it takes. She then starts lobbying for a dual ECB mandate and implements QE, while lowering rates even further into negative territory.

Inflation expectations are also sustained by extended forward guidance. After driving real rates in the Eurozone down to exceptionally low levels, Lagarde uses her crisis-negotiation skills to convince politicians that monetary policy is not the only game in town. She pushes for a new fiscal compact – in effect, an overhaul of the 2012 fiscal compact her predecessor Draghi helped enact – to pursue government spending. The European Commission sees the urgency of the moment and relaxes its fiscal prudence, albeit conditionally. Germany's government starts running a government deficit to mitigate the contraction in the private sector. Fiscal stimulus remains moderate as fiscal hawks at the Eurozone's core prevent a dramatic demand kickstart. Nevertheless, real rates in Europe – versus the US – remain so low that any measures taken on the fiscal side will have a more powerful impact. By and large, international policy coordination has broken down and globalization goes into reverse, causing a negative global supply shock. Stagflation hurts the Eurozone and Japan less than the US and the UK, as the local interplay between fiscal policy and monetary policy is better aligned in the latter two.

4

Expected returns 2020-2024

Asset classes

Our expected returns are for the main asset classes and calculated by connecting the dots between our valuation assessment, scenarios and the macro consequences of these scenarios for each asset class. As we have shown in Chapter 3, the expansion is not secular, and a recession in the next five years seems inevitable. In last year's publication, which was entitled 'Patience is a virtue', we had also penciled in a recession, but advised that, despite looming downside risk, the greater risk would be in doing too much de-risking too soon. With the prices of risky assets up over the year since then, patience has indeed proven to be a virtue. Will it prove to be the best approach for the coming years, too?

Our answers vary per scenario. Risk taking in the current late-cycle environment may be rewarded initially, but we expect it to become more challenging. Table 4.1 gives our summary for the major asset classes, from the perspective of a euro investor.

Table 4.1: Expected Returns 2020-2024 under our base case scenario in EUR and changes in five-year expected returns (arrows)

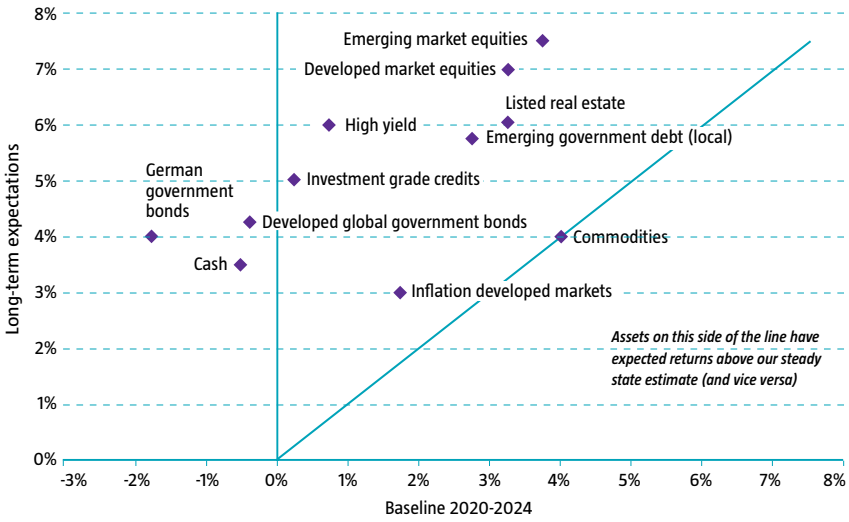
	Returns	Medium-term influences*		Returns	Returns	Sharpe
Bonds	**Long term**	**Macro**	**Valuation**	**2020-2024**	**2019-2023**	
German government bonds	4.00%	-/-	-/-	↓ -1.75%	-1.25%	-29%
Developed global government bonds	4.25%	-/-	-/-	↓ -0.375%	-0.25%	5%
Emerging government debt (local)	5.75%	=	+/+	↓ 2.75%	3.75%	38%
Investment grade credits	5.00%	-/-	=	↓ 0.25%	1.00%	19%
High yield	6.00%	-/-	=	↓ 0.75%	1.50%	18%
Cash	3.50%	-/-		↓ -0.50%	0.50%	
Equity-like						
Developed market equities	7.00%	-/-	-/-	↓ 3.25%	4.00%	33%
Emerging market equities	7.50%	-/-	+/+	↓ 3.75%	4.50%	30%
Listed real estate	6.00%	=	=	= 3.25%	3.25%	31%
Commodities	4.00%	+/+		= 4.00%	4.00%	35%
Consumer prices						
Inflation developed markets	3.00%			= 1.75%	1.75%	

* The medium-term influences correspond with our qualitative assessment of the valuation and macro influences described in Chapters 2 and 4. For equity-like classes, our assessment is relative against 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. Returns are in euros. Bond returns are euro hedged except for emerging market debt (local). The value of your investments may fluctuate and past performance is no guarantee of future results.

Source: Robeco

Over a five-year horizon we expect asset returns to remain below their long-term historical averages. This is also clearly visible in Figure 4.1 where we present the results of Table 4.1 graphically.

Figure 4.1: Expected Returns 2020-2024 vs. steady-state returns



The value of your investments may fluctuate, and past performance is no guarantee of future results.
Source: Robeco

For a euro investor the relative outlook is not negative, though, particularly if the investor's goal is to beat cash. Table 4.1 presents a slightly optimistic outlook for risky asset classes. Expected Sharpe ratios are at or slightly above our steady-state estimates. The main reason for this more optimistic view is the cash return. We judge cash together with euro government bonds as the biggest negative outlier. In a relative sense, other asset classes benefit.

For US investors the absolute return outlook is rosier, based on our expectation that they will profit from an appreciation of foreign currencies. Furthermore, on a currency-hedged basis US investors can benefit from a positive carry due to interest rate differentials. Table 4.2 compares the returns of a euro investor with those of a USD investor.

Table 4.2: Expected Returns 2020-2024 – Perspective matters: EUR vs USD

		5-year annualized return EUR	USD
Bonds	Domestic AAA government bonds	-1.75%	2.50%
	Developed global government bonds (hedged)	-0.375%	2.00%
	Global investment grade credits (hedged)	0.25%	2.75%
	Global corporate high yield (hedged)	0.75%	3.25%
	Emerging government debt (local)	2.75%	4.00%
Cash		-0.50%	1.60%
Equity-like	Developed market equities	3.25%	4.50%
	Emerging market equities	3.75%	5.00%
	Listed real estate	3.25%	4.50%
	Commodities	4.00%	5.25%
Consumer prices	Inflation	1.60%	2.00%

The value of your investments may fluctuate and past performance is no guarantee of future results.
Source: Robeco

In the following sections we present our analysis per asset class.

4.1 Cash

New York Fed President John C. Williams has devoted an important part of his career to researching a phenomenon so elusive that American economist Milton Friedman called it "unobservable":[1] the neutral rate of interest (or 'r-star' in economic jargon). What does this quest for the r-star have to do with the expected returns on cash in the next five years? A lot. The neutral rate of interest is the short-run real interest rate that is expected to prevail when an economy is at full strength and inflation is stable. It is the rate at which the economy neither accelerates nor slows down. Central banks consider it their responsibility to move their policy rates towards the neutral rate of interest. In the US, Fed board members use their own 'dot plot' estimates of this rate to guide their rate-setting decisions. A popular model for estimating the r-star is the Holston-Laubach-Williams (HLW) model. The latest estimate provided by this model for the US neutral real rate of interest is 0.42%, which is 86% below the historical average neutral rate of 2.82% (since 1961). So, what has happened? To quote Williams from a June 2019 speech:

"First, slower population and productivity growth translate directly into slower trend economic growth. Second, an abundance of savings, and a decline in demand for savings resulting from slower trend growth, together lead to lower interest rates. All of these factors combined have contributed to dramatic declines in the longer-term neutral rate of interest, or r-star."[2]

The factors Williams describes are global phenomena that are pushing current r-star estimates for Europe, Japan and UK even lower than estimates for the US. The real interest rate that is consistent with a steady-state Eurozone economy is negative (-0.41%) according to the HLW model.

As things stand today, central banks in advanced economies have little leeway to move real interest rates significantly above zero; if they did, a recession would soon follow. These HLW estimates, if correct, imply that Europe and Japan, in particular, will face a daunting task when confronted with the smörgåsbord recession we expect somewhere in the next five years. With policy rates already at or below zero, lowering rates by the usual 4 to 6% to mitigate the typical recession fallout is no longer an option. Hoarding such a buffer by rapidly raising nominal policy rates to mitigate the risk of a recession would be a self-defeating strategy for central banks. Thus, the gravitational pull of the zero lower bound prevails. Markets are very much aware of this lack of dry powder and have dimmed their inflation expectations. In doing so, they are keeping the negative feedback loop intact and thus further limiting the usefulness of conventional monetary policy.

To be able to adopt an outright accommodative monetary stance in an economic downturn, central banks will need to dig deeper into their unconventional policy toolkit. With nominal interest rates now close to and even below zero, they would have to achieve a real policy rate that is considerably below the already negative neutral real rate. Either nominal policy rates would have to drop much further below zero or inflation (expectations) would have to shift upward. The latter makes the most sense at this juncture, which explains the renewed interest of ECB and Fed policymakers in achieving a symmetrical inflation overshoot. An alternative would be to allow the effective nominal lower bound on central bank policy rates to move further below zero. This approach would, however, be limited as too low interest rates can be contractionary. Brunnermeier and Koby, for example, estimate a lower bound of -1% for the Eurozone.[3]

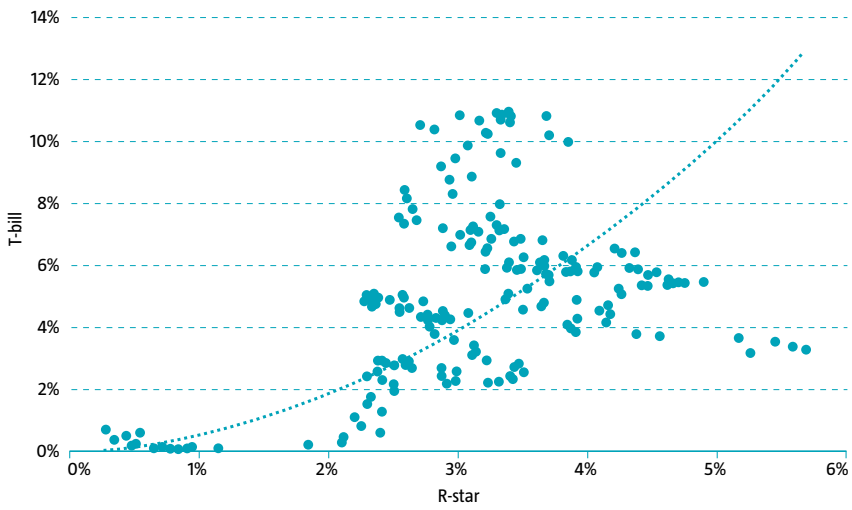
1. Friedman, M., 1968, "The role of monetary policy", The American Economic Review, March 1968.

2. Williams, J.C., 2019, "If We Fail to Prepare, We Prepare to Fail", remarks at Council on Foreign Relations, New York City, Federal Reserve Bank of New York.

3. Brunnermeier, M.K. and Koby, Y., 2018, "The Reversal Interest Rate", NBER Working Paper No. 25406, December 2018.

Again, it is hard to drift away from the zero lower bound. In Figure 4.2, we have plotted the actual HLW estimates for the US real neutral rate since 1961 against the subsequent moving average nominal US T-bill return as a cash proxy. This shows a positive correlation between actual r-star estimates and the subsequent average five-year T-bill rate. When actual neutral rates are low, future cash returns are expected to remain low as well in the following years (and vice versa). But how low?

Figure 4.2: R-star and subsequent 5Y average T-bill return



Source: Refinitiv Datastream, Robeco

Utilizing the 'power function' that best describes the relationship between real neutral rates and subsequent nominal cash rates gives an expected five-year US nominal cash return of 1.3%. This is lower than the cash return at the time of writing.

The actual neutral rate of interest offers a clue about future cash returns, but much of the variation in subsequent cash returns remains unexplained. How central banks respond to changes in economic variables matters. The zero lower bound is not destiny, even in the medium term. First, as we noted in the introduction, the global savings-investment balance could move towards dissaving. With the savings glut becoming less prevalent, especially as the Eurozone leaves the age of austerity, real rates of interest could prove to be higher than currently estimated. Second, as Blanchard (2016) pointed out, historical correlations between non-overlapping five-year per-capita GDP growth rates are close to zero. This means that the recent trend growth track record is not very reliable as a predictor of what will happen in the coming years.[4] Third, in our base case we give central banks some credit and argue an inflation overshoot is achievable as a result of rising wages and negative supply shocks. These reasons make it plausible that short-term rates will be higher at the end of our five-year period than they are today. Nevertheless, we don't expect much action from central banks in our 'hall of mirrors' scenario. In our view, they will remain cautious as they would be willing to tolerate an inflation overshoot. We would expect the ECB and the BoJ to remain on hold. For the US, a modest rate rise is likely, but as the recession takes hold, the Fed will reverse its course. We would expect to see a five-year cash return of 1.6% in US dollar terms. The Eurozone and Japan would show negative returns of 0.5% and -0.1% respectively in local currency terms.

4. Using Madisson GDP per capita data from 1970-2010, we find a correlation between non-overlapping five-year GDP per capita cohorts of 0.13, which is indeed close to zero.

In our 'reboot for globalization' scenario, the wage-setting process becomes a stronger driver of inflation as the global labor market runs hot (we find ourselves in the steepest part of the Phillips curve). As investment activity and aggregate demand are robust, neutral real interest rates move higher and central banks feel comfortable making gradual rate hikes. US cash returns are higher compared to our base case. For Eurozone cash investors, the hurdle rate for risky assets is higher. In local currency terms, we would expect a cash return of 2.3% for the US and 0% for the Eurozone and Japan.

In our 'stagflation' scenario, the global economy faces a severe negative supply shock as global trade is disrupted. Rather than outright deflationary, the surge in protectionism proves to be inflationary. In this scenario, we would expect global cash rates to be deeply negative in real terms as the global economy tilts towards stagflation. Central banks are reluctant to hike rates as growth remains depressed. We would expect a cash return of 1% for the US and -0.25% for the Eurozone and Japan in local currency.

4.2 Government bonds

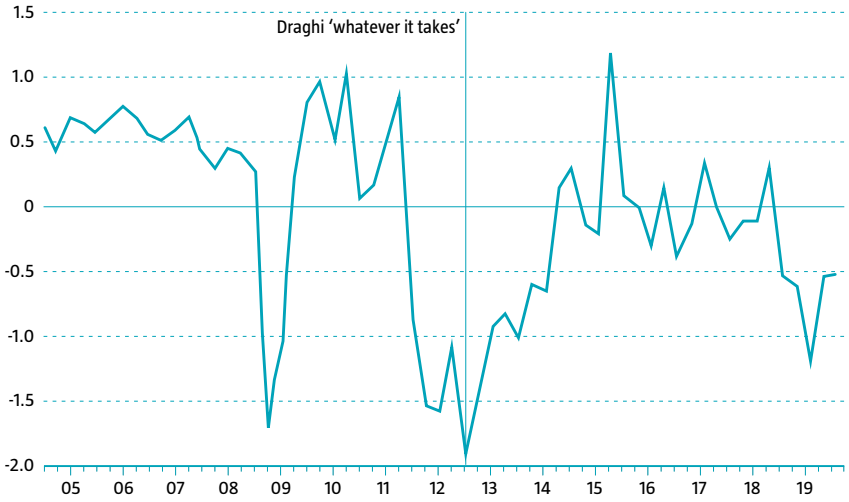
Welcome to a topsy-turvy world. Traditionally, high-rated government bonds have offered investors the guarantee of full capital protection when held to maturity. The current government bond market turns that long-held truism on its head. At USD 12.5 trillion, the amount of global negative-yielding debt outstanding exceeds the levels seen in 2016. Hold-to-maturity investors are thus guaranteed a loss. In theory, long-dated nominal government bonds are riskier than cash because they are exposed to real productivity growth risk and inflation risk. Therefore, investors should demand a term premium as a reward for holding these assets instead of cash. DMS data for 23 countries spanning the period from 1900 to 2016 in fact shows that real government bonds have delivered an average term premium of 1.0% over cash.

As we explained in the valuation section, global government bond term premiums have instead turned negative, leaving investors potentially undercompensated for the macroeconomic risk they are taking. But why would today's bond buyers want to take unrewarded risks? Enter central banks. In recent years, this largely price-insensitive buyer has injected an increasing amount of liquidity into the bond market. In a bid to achieve their inflation targets, central banks pay little heed to the term premium. As a result of QE, therefore, it has dwindled – along with the free float in Eurozone AAA-rated bond markets. With the ECB now cornering the private-sector segment of the market, additional QE purchases are less necessary to keep the term premium at low levels. The second reason is hedging demand and asset scarcity. Investors have lived with QE for a decade and know that central banks will step up government bond buying when the economy turns sour. So, the payment of an insurance-like premium for this safe haven seems logical. Investors are happy to pay for the small amount of AAA-rated debt that still remains. The free float in the Bund market is now sparse (around 20%, though estimates vary) as a result of ECB QE. The third reason is the implied macroeconomic views of market participants. The fact that Bund investors are now willing to pay the German government 0.5% per annum for the next ten years shows that the implied market view is still one of secular stagnation; in other words, a state of the world where a term premium for inflation risk and real growth risk is not deemed necessary as deflationary forces are expected to prevail.

The latter point is also illustrated by the inflation risk premium. This is compensation for the risk that inflation ultimately differs from what consensus expects on the relevant horizon. Using a regression model based on Hördahl (2008),[5] we show that this risk premium has turned negative for Eurozone and US bonds. A negative inflation risk premium is consistent with an implied market view that is tilted towards deflation. This corroborates the negative term premium observed in our valuation section.

5. Hördahl, P., 2008, "The inflation risk premium in the term structure of interest rates", BIS Quarterly Review, September 2008.

Figure 4.3: Eurozone inflation risk premium

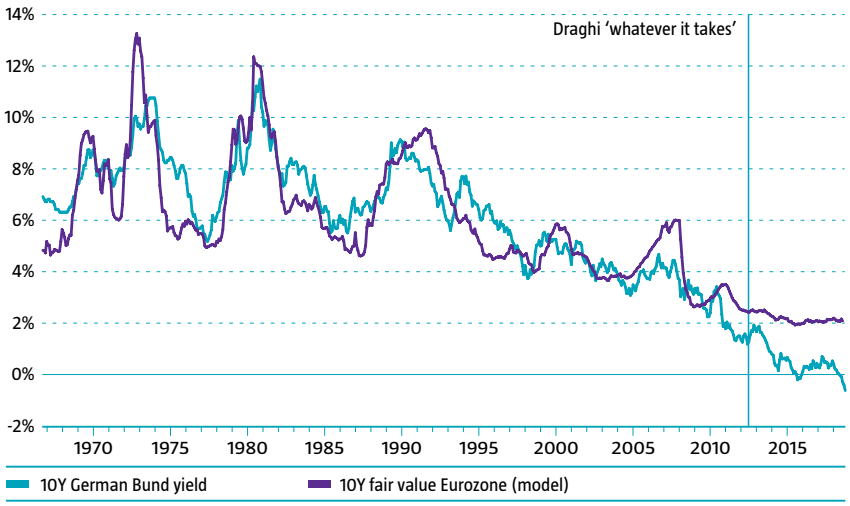


Source: Refinitiv Datastream, Robeco

To the credit of ECB President Mario Draghi, Figure 4.3 does show the effectiveness of the "whatever it takes" approach he vowed to take in a July 2012 speech. The day after this now-famous declaration, the inflation risk premium – compensation demanded to shield investors from unexpected inflation shocks – started to trend up, suggesting that forward guidance can help to re-anchor inflation expectations. Nevertheless, even Draghi was unable to prevent the decline in inflation expectations and inflation risk premiums as recession fears took hold of bond investors later that year. Empirical work by Hördahl (2008) shows that most of the cyclical variation in the inflation risk premium is driven by output gaps.

We live in the era of QE, where the future path of output gaps seems subsidiary to central bank talk on market pricing. The 2% gap between the actual yield and the macro factor-implied yield from a simple 10-year Bund fair value regression remains striking. Ang and Piazzesi (2003) found output and inflation together explain almost 40% of long-term bond yield variance. In today's Bund market, the importance of traditional macro risk factors has shrunk to 14%, with the rest being explained by other factors such as monetary policy.

Figure 4.4: Market vs. model-implied yields



Source: Refinitiv Datastream, Robeco

Table 4.3: Explaining long-term bond yield variance

	Inflation	Output	Other factors (including monetary policy)
Ang and Piazzesi (2003)	32%	6%	62%
Robeco (2019)	14%	<1%	85%

Source: Refinitiv Datastream, Robeco

All in all, the term premium seems artificially low and reflects the 'hall of mirrors' theme that is central to our base case. In this scenario, central banks have deliberately depressed the term premium, but without spurring inflation to levels consistent with medium-term price stability, as proclaimed by monetarist Milton Friedman and former Fed head Ben Bernanke.[6] In this quagmire,[7] central banks increasingly 'take their orders' from risk-averse financial markets, leaving them reacting to market fears instead of steering a data-dependent course. As we stated before, escaping a liquidity trap – where cash and bonds are almost substitutes – would be difficult, and QE would only compound the problem as it fails to reignite inflation.

It may perhaps take another "whatever it takes" speech to break the negative feedback loop. Not from a central banker this time, but from unexpected quarters: the German government, calling for fiscal stimulus. While this certainly sounds like barking up the wrong tree, Germany (or other core Eurozone countries) running budget deficits would increase the supply and free float in AAA-rated bond markets and push term premiums higher. It would also improve the interplay between monetary and fiscal policy as a higher bond supply would alleviate technical constraints to implementing QE, such as the capital key and issuer limits. Given our view that a smörgåsbord recession would move the policy discussion towards fiscal stimulus in the Eurozone, we expect a negative return of 1.5% for high-quality Eurozone government bonds in the next five years in our 'hall of mirrors' scenario. For the US, we expect yields to rise as inflation moves above 2%. With the Fed targeting an inflation overshoot, Treasuries would likely surpass the 3% level. However, as

6. https://www.federalreserve.gov/boardDocs/speeches/2002/20021121/default.htm

7. In a rare moment of self-doubt at the July 2019 ECB press conference, Draghi said, "Are all these instruments going to be effective forever? I think that's a legitimate question to ask."

we expect a recession to take place, this uptrend would likely reverse. US Treasuries would offer investors around 3% in USD, which corresponds with a 1.4% premium over cash, making it one of the most interesting asset classes for the coming five years. That return would likely come with increased volatility and investors should expect negative returns during the period. For Japan, we would expect the return to be just below cash at -0.3% on a five-year annualized basis in yen terms.

Our 'reboot for globalization' is our most bullish scenario. In this situation, we would expect inflation to pick up due to tight labor markets, but likely be modest due to a rebound in globalization. As growth is much stronger in this scenario, we would expect central banks to withdraw some of their QE measures. Furthermore, the IMF's claim that the savings glut will reverse becomes credible. As a result, we should see term premiums turn positive, resulting in higher rates. This would cause the bond markets to tumble, as coupons fail to compensate investors for price losses. However, as reinvestments take place at higher coupons and with yields expected to fall slightly at the end of the five-year period, the outcome for bond investors corresponds with our base case scenario for the US (3% in US dollar terms). It is even better for Eurozone investors, where we would expect an annualized return of -0.5% in euro terms, which is nevertheless still below cash. For Japan, we would expect a return close to 0% in yen terms.

Our 'stagflation' scenario is the least favorable for government bonds. Bond investors would need to balance the inflation outlook against the growth outlook. The former means higher bond yields, while the latter means bond yields remain low for longer. In our view, inflation would ultimately be the most dominant factor for the bond market in this scenario. Growth will remain low, but not low enough to justify low bond yields. As inflation moves up, inflation expectations become anchored at higher levels. Policymakers turn to fiscal policy and central banks keep interest rates low, resulting in very negative short-term real yields and fostering hope that growth will pick up at some point in the future. Bond markets demand compensation for the higher inflation and future growth risk. In local currency terms, we would expect returns to be 2.2% for the US, -1.5% for the Eurozone and -0.6% for Japan.

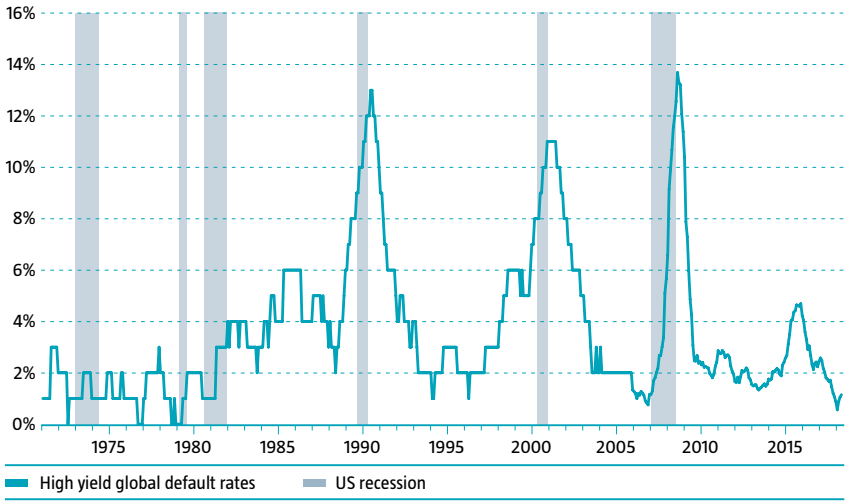
It may be interesting to note that we are quite positive for US Treasuries in all three scenarios. A key reason for this is that we expect a recession in all of them. The biggest risk to our US Treasury prediction is that the recession does not happen. And although we believe the chance of this is small, we cannot completely dismiss it.

4.3 Corporate bonds

The upside-down world of negative yields in developed government bond markets has created an oxymoron in risky bond markets: negative-yielding short-term European high yield. The thrust of ever-lower-trending government bond yields is clearly reverberating around the credit space. Though only a small part of the high yield market is currently affected, Euro-denominated AAA-rated yields first fell into negative territory in 2015. Nevertheless, we expect the number of positive-yielding corporate bonds to increase in the next five years.

Corporate bonds pay investors a premium over government bonds to compensate them for the credit and liquidity risk the former carry. We discuss government bond yields in the previous section. In this section, we focus on the expected excess return for corporate bonds over government bonds. In other words, whether corporate bonds will outperform their government counterparts in the next five years. The outlook is not very positive for corporate bonds in our three scenarios as we expect a recession in all of them and, as can be seen in Figure 4.5, default rates typically soar during such turbulent periods.

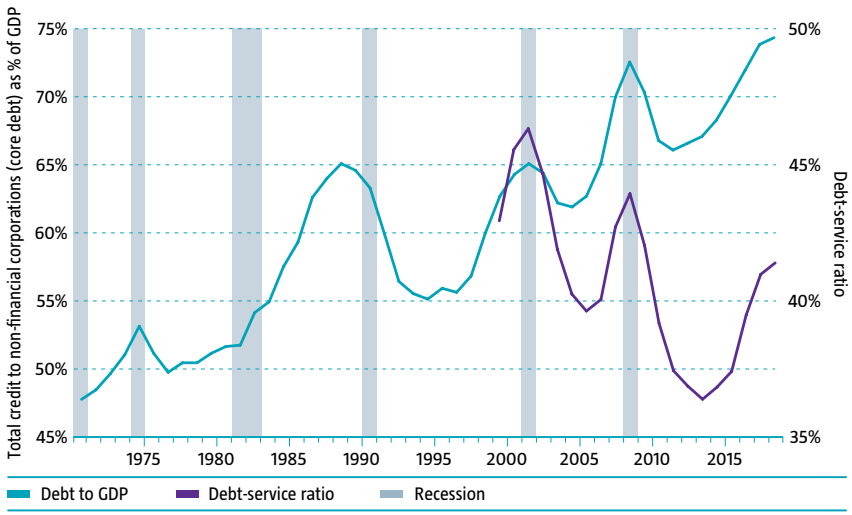
Figure 4.5: Default rates and recession periods



Source: Bank of America, Robeco

So far, the default risk has remained limited during the current expansion as a result of solid earnings and a decline in funding costs. More specifically, global high yield default rates are currently 1.1%, which is well below the average 1.9% that has been seen in previous expansions. The exuberance in financial markets, it seems, has yet to hit the corporate bond market. However, there are signs that point the other way. We have seen bondholder-unfriendly actions, including debt-financed share buybacks and an erosion of covenant quality. The risks that affect covenant quality – such as liens, cash leakage and change of control – are increasing in the US fixed income market. Company leverage has also further increased in the country. As seen on previous occasions, it is our view that the corporate bond market will be hit quite badly in the next downturn.

Figure 4.6: US – Typically debt builds up before a recession[8]



Source: BIS, Robeco, Bloomberg

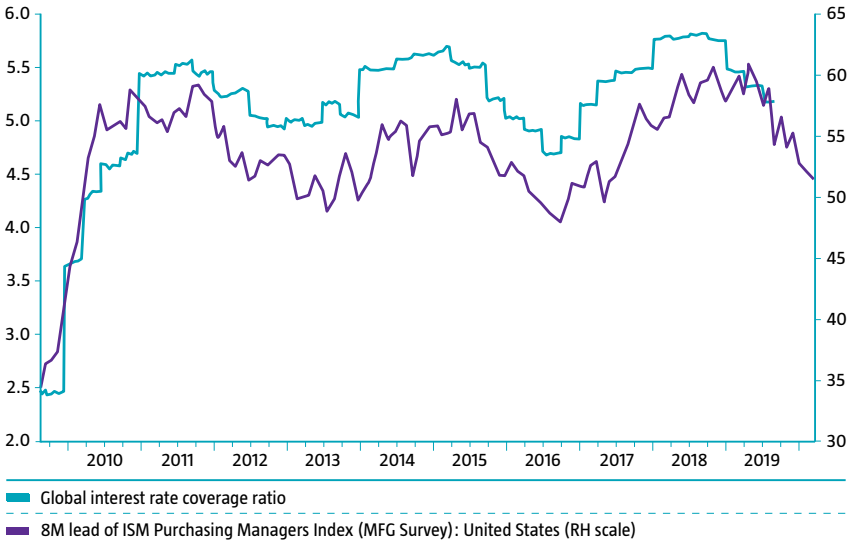
8. The debt service ratio reflects the share of income used to service debt, given interest rates, principal repayments and loan maturities. (Source: BIS)

Yet, the outlook for high yield and investment grade credit in our base case looks benign in the first few years, as inflation is not too high while economic growth is supportive for earnings. As long as the Fed is stuck in the hall of mirrors – in other words, following rather than leading markets – credit spreads will continue to be supported at current levels. The search for yield will go on, while excess liquidity and asset scarcity in the risk-free government bond markets will keep investors further up the risk curve. However, we don't expect spreads to tighten much in this scenario. The markets will remain on their toes as fears of a recession continue to linger. As a result, credit markets will offer investors attractive rewards. However, "the pounds of cure" bestowed on the economy by the Fed to prolong the expansion will backfire in the end. Very low real interest rates conceal zombification. Insolvent companies can continue to exist as they are able to pay the low rates. Investors effectively kick the can down the road, as they expect interest rates to remain low for longer. The credit spread demanded of these companies then becomes more dependent on the risk-free interest rate than the company's ability to repay its debt. This leads to credit spreads that fall short of those implied by the underlying fundamentals.

In the late 1990s, real rates as high as 3.5% couldn't prevent the build-up of an equity bubble (equity risk premiums are highly correlated to credit risk premiums). With current real policy rates at just 0.7% and the Fed seemingly unwilling to upset markets, it's hard to imagine that there won't be melt-ups in the riskier parts of fixed income further down the road. The flipside is that when the Fed decides to escape from the 'hall of mirrors', the consequences could be real. In the late 1990s, a mere 100 basis point rise in real policy rates was enough to bring on a recession and deflate the asset bubble. Yet the start of a new Fed tightening cycle isn't initially a negative, especially for high yield. This asset class tends to outperform investment grade as interest rates move towards cyclical peaks in the real policy rate (implying the Fed tends to hike whenever economic growth is resilient). It is what follows next, the earnings growth fallout from net tightening and stubborn inflation, that hurts the riskiest segment of fixed income the most.

We expect default rates to stay close to the long-term average typically seen in expansions, but eventually to shoot up as interest coverage ratios weaken. The more sizeable the anticipated

Figure 4.7: Interest rate coverage ratios follow economic sentiment with a lag



Source: Refinitiv Datastream, Robeco

downturn in interest coverage ratios (the high yield market sniffs out turning points in the interest coverage cycle three to six months in advance), the lower the excess returns in high yield versus the short-term risk-free rates.

Even during the unremarkable US recessions in 1991 and 2001, high yield default rates spiked at double-digit levels. The smörgåsbord recession in our base case is unlikely to be any different. Furthermore, spreads will widen to reflect the higher default risk and likely deterioration of liquidity. Given that we anticipate a mild recession in our base case scenario, the widening of these spreads will offer investors value going forward. In particular, we are likely to see companies become more bond-market friendly in the aftermath of the recession. Moreover, we expect central banks to start buying credits and, possibly, high yield bonds to fuel a recovery. As a result, spreads may compress significantly at the end of our five-year period. We would expect excess returns for investment grade credits to be 40 basis points and for high yield to be 75 basis points.

In our bull case scenario, 'a reboot for globalization', things run even smoother at the start. Advanced economies manage to maintain above-trend growth for longer and, as a result, corporate profitability remains healthy, keeping interest rate coverage up. As nominal growth outpaces nominal debt-financing costs, leverage decreases. Credit risk premiums have room to compress further in this environment, but the risk-free component that determines credit and high yield returns is higher compared to our base case. In particular, less-risky fixed income alternatives (Treasuries) offer a higher yield and become a valid alternative to credits for investors in their search for yield. Central banks remain data dependent and a tightening cycle is more aggressive compared to the base case. Given their higher exposure to Treasuries, these factors will affect investment grade credits more than high yield. But as the Fed nominal policy rate eventually peaks above 4%, refinancing costs become too high for the zombie companies. Compared to our base case, we would expect lower excess returns over the five-year period for investment grade, for two reasons. First, it is our view that spreads would tighten more in our bull case scenario than in our base case scenario in the run-up to the recession. Although this spread tightening would lead to higher excess returns (due to price appreciation), the reinvestment excess yield would be lower. As the recession hits the market, we would expect a repricing of risk similar to our base case scenario. This would completely reverse the price appreciation effect, leaving only a lower spread buffer. Second, we expect less support from central banks in our bull case scenario than in our base case scenario, as there would be more room for traditional monetary policy. In the former scenario, we would expect excess returns for investment grade credits to be 20 basis points. In contrast, we would expect high yield to do better than in our base scenario. In particular, we think that high yield companies will benefit from the strong run in the first years. As interest rates rise, future debt servicing will be more difficult. Consequently, spreads will not tighten as much as investment grade on a relative basis. Furthermore, we expect high yield companies to become more bond friendly. For high yield, we would expect an excess return of 100 basis points.

In our 'stagflation' scenario, the case for investing in risky fixed income worsens dramatically from the start compared to the other scenarios. Producer and consumer confidence deteriorates as global value chains are disrupted on the back of widespread protectionism. Open economies are expected to suffer most, fixed income issuers from these economies will likely see the largest spread widening. As the US is relatively autarkic, this favors US issuers. However, rolling over debt becomes more cumbersome as credit risk premiums have widened significantly as a result of the negative growth outlook.[9] In this stagflation scenario, default rates are high as earnings drop below trend on the back of increasing funding costs, resulting in a fairly deep earnings recession.

9. The option-adjusted spread (OAS) of BBB-rated corporate bonds widened to 300 bps in the last financial stress events of 2011 and 2016.

Table 4.4: Stagflationary episodes revisited

	Industrial production (=> Q2 of subsequent contraction)	Inflation above historical median (>2.8%)	Bofa ML speculative grade default rate
Q41969-Q21970	-1.2%	4.6%	1.3%
Q41974-Q21975	-4.0%	9.6%	1.2%
Q21980-Q31980	-2.9%	9.1%	1.3%
Q41981-Q41982	-1.8%	6.8%	2%
Q41990-Q11991	-1.7%	4.14%	10.7%

Source: Refinitiv Datastream, BofA ML, Robeco

Eventually, central banks may come to the rescue of the corporate bond market as they broaden their scope by purchasing the riskiest parts of the fixed income market. However, this effort would not be enough to bring spreads down as in the other scenarios. Growth would continue to be lackluster and, as a result, markets will demand a high reward at the end of the five-year period. Therefore, we would expect negative excess returns in this scenario. Investors will be hit by increased defaults and spread widening. We would expect excess returns for investment grade credits to be -50 basis points and for high yield to be -150 basis points.

4.4 Equities

The optimists have triumphed once again. In the last five years, global equities have earned investors a handsome 8.6% (annualized, MSCI World in LC), which is significantly above the 5.5% five-year return prediction we made for the asset class back in 2014. For emerging market equities, however, it was we who proved to be optimistic. Emerging market local currency-denominated equities have returned 5.3% in the past five years on an annualized basis, whereas we expected them to generate 6.75% back in 2014.[10]

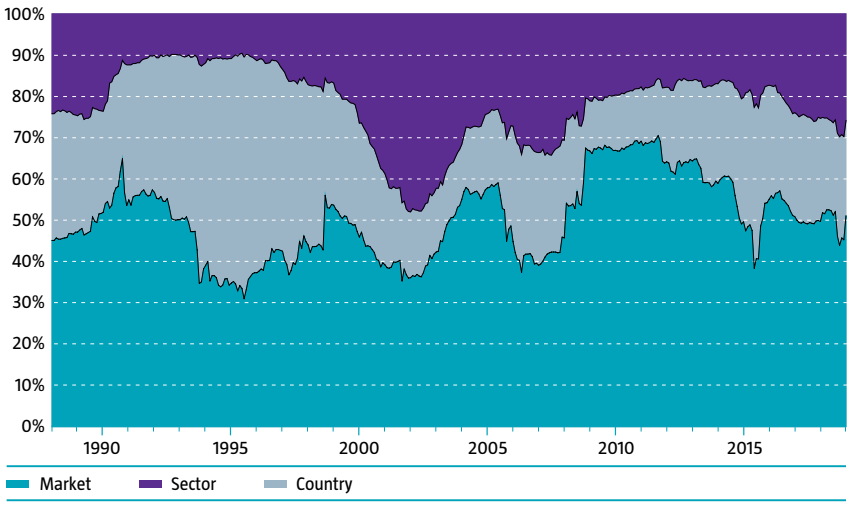
Predicting equity risk premiums is no mean feat, as even the best predictors out there[11] still leave the bulk of return variance in near-efficient markets unexplained. Will the optimists among equity investors triumph for another five years? We think global equities will still be able to beat cash, but the victory will be less easy and more of a triumph of the realists this time around. To understand this, we must ask ourselves what will drive equity markets.

To answer this question, we have to look back in time. Decomposing equity returns into sector, country and market return drivers shows that this aging bull market, which started in March 2009, is becoming less driven by global market factors over time. While factors such as the global central bank monetary easing cycle drove 65% of the global equity portfolio return in the early days of the bull run, they have trended down to 50% in recent years. Instead, local factors have gained importance and now account for 25% of global equity returns – on an even keel with sector exposure (25%). It is interesting to note that despite the success of FAANG stocks, this bull run is not led by exuberance in the US tech sector – unlike the early 2000s, when sector attribution shot up to 50%. Local, country and sector risk matter for the global equity allocation strategy. As alluded to in our valuation section and earlier work, for example, US equities look expensive from a relative equity risk premium perspective. Therefore, we think it would be advisable to diversify away from US equities in the next five years, even if US earnings continue to show resilience versus the rest of the world in the short-to-medium term.

10. See Robeco's Expected Returns 2015-2019, Table 1, p. 6.

11. Shiller CAPE; see the valuation section.

Figure 4.8: What drives the stock market?

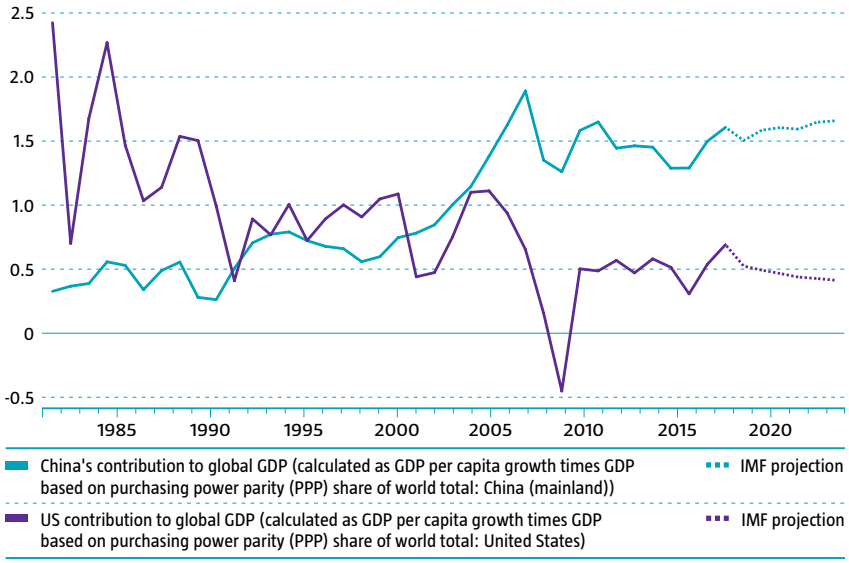


Source: Refinitiv Datastream, Robeco

Sir John Templeton once famously said, "Bull markets are born on pessimism, grow on skepticism, mature on optimism and die on euphoria". In our view, sentiment is just part of the equity cycle story. But in support of the optimists, euphoria is hard to find. Even the US equity market has seen very little exuberance. Despite moving up from the complete tranquility of the 2017 global synchronized upswing, the VIX/CAPE ratio – a measure of market risk, fear and stress – is just below the lowest 25th percentile. As political uncertainty increased and global growth became weaker and more uneven in 2018 and 2019, the fear gauge climbed again and has now reached the mid-cycle levels seen, for instance, during the 1991-2001 expansion. The absence of the retail investor is also notable. The use of margin accounts by US retail investors is still 10% below trend, suggesting a hesitance to rejoin the equity market after the losses of the dotcom crash and the statistically once-in-a-lifetime global financial recession of 2008. It is hard to imagine there being euphoria this time around forthcoming without the retail investor base. Moreover, smart money positioning is far from bullish. CME data shows that funds have adopted increasing net short futures positions in the S&P 500 in recent years. For good or for bad, from a sentiment perspective, we believe that the equity market is stuck in skeptical mode.

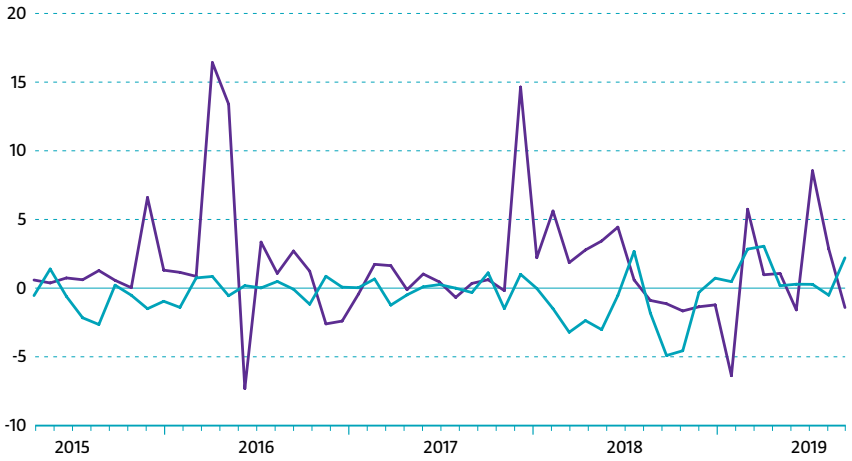
The US equity market now represents 56% of the MSCI global equity market capitalization. Will the fate of US equities seal the fate of the global bull market? Not necessarily. Equity market participants must price in discount rate and cash flow-related news. Increasingly, equity investors are taking their cue from events in China. China's contribution to global economic growth in the next five years will be three times that of the US, according to the IMF. China currently contributes 1.6% to global GDP growth per capita in purchasing power parity (PPP) terms, while the US contributes around 0.5%. Equity markets recognize this ongoing shift in global economic power and, consequently, are giving more weight to growth risk in China relative to growth risks stemming from the US. This is evidenced by larger peaks in equity return sensitivity to Chinese growth risk.

Figure 4.9: Super powers in competition: Chinese vs. US contribution to global productivity growth



Source: Refinitiv Datastream, Robeco

Figure 4.10: Equity market sensitivity to China and US growth risk



Source: Refinitiv Datastream, Robeco

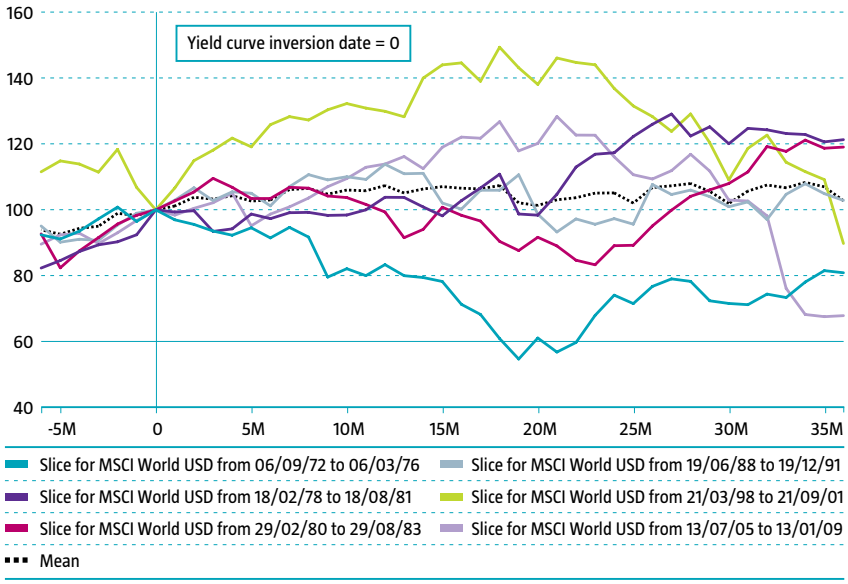
With the risk of a global recession top of mind nowadays, it is important to gauge how shocks to growth-related news from China or the US will affect the markets.

Triumph of the realists

In our 'hall of mirrors' base case, we do expect the PBOC and the Fed to err on the side of caution and leave policy rates below the neutral rate of interest for longer. China is likely to choose a more balanced approach to prevent a full unwinding of past deleveraging efforts. We expect further easing by the Chinese authorities; our Taylor policy rule for China shows actual policy rates are 35 basis points above the warranted policy rate. The Fed's fear of upsetting markets by giving in to pressure and making 'insurance cuts' should, basically, be good news. Cheap funding for longer could sustain healthy buyback activity.

The other part of the story is whether these insurance cuts really provide insurance and prolong the global expansion, thereby reducing risk aversion. As stated before, we expect the US and China to narrowly escape a downturn in the near term, postponing a global recession until 2022. Remember that the lead-lag relationship between a global yield curve inversion is time varying. The average lag between the yield curve inversion and a subsequent recession is 18 months, but the average may not be the message this time around. Lags between inversion and recession were stretched significantly beyond the average in the last two expansions, 1991-2001 and 2002-2008. There was a lag of 29 months between the last inversion and subsequent start of the US recession. Equity markets sniff out a recession three to six months in advance on average. It is interesting to note that the last two bull markets managed to return another 49% (2001) and 28% after the inversion date.

Figure 4.11: Equity returns after US yield curve inversion



Source: Refinitiv Datastream, Robeco

History may rhyme again. With global macroeconomic surprises finally bottoming out later this year and global forward earnings revisions correspondingly moving into net upgrade territory, this will initially bode well for equity re-rating.

There is downside risk present in our base case as well, even if the expansion is prolonged. An inability on the part of the Fed and PBOC to engage in tightening the monetary stance would be bad news for the global earnings outlook, as it signals the global economy is on an weak footing.[12] In our base case, we do expect profit margins to remain elevated in the next few years, helped by a late-cycle boost in productivity growth that keeps unit labor costs in check. However, the lingering wave of protectionism will finally cause global labor markets to start overheating and create a classic wage-price spiral. This is possible because substituting expensive labor with capital as a production factor is less attractive at first, technology spillovers resulting from declining global trade have made automation more expensive and the new Fed tightening cycle raises funding costs. Consequently, earnings peak as the Fed addresses the inflation overshoot and a bear market follows. In the aftermath of the mild recession, policymakers introduce both monetary and fiscal stimulus. The equity market anticipates this policy reaction and prices cross-regional

12. There is a positive and significant relationship between Fed policy rate hikes and global earnings.

markets according to country-specific fiscal and monetary space as the global recession takes hold.[13] Earnings recover, but the impact on overall corporate topline growth is limited because consumers and corporates expect tax rates to eventually go up to keep government finances sustainable. Moreover, the more interest rate-sensitive growth sectors of the economy are hampered in the recovery phase by the increase in the global debt-to-GDP ratio. Recent literature (Croce, Nguyen, Raymond and Schmid 2017) shows that "movements in the cost of capital of innovative firms in response to surges in government debt predict slowdowns in innovative activity and declines in growth prospects at longer horizons."[14] It also found that investors require a premium to hold innovative stocks compared to less R&D-intensive stocks when fiscal stimulus arrives. Thus, the fiscal response to the mild recession we expect in our base case in the next five years could also herald a shift in market leadership from growth (interest, R&D intensive) to value stocks.

13. See our special on fiscal and monetary space, in which we describe how ex ante policy space determines the evolution of the economic recovery as well as equity markets. Belan and Yu (2013) find that "If public sector capital increases the marginal productivity of private inputs, the model predicts a positive relationship between the public sector investment rate and the firm's risk premium, controlling for the private sector investment rate."

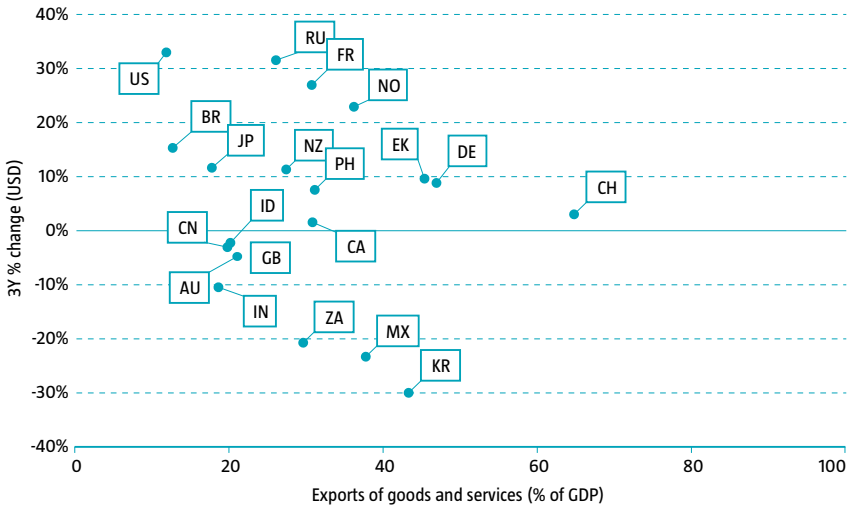
14. Croce, M., Nguyen, T., Raymond, S. and Schmid, L. 2017. "Government Debt and the Returns to Innovation", *Journal of Financial Economics*.

On the whole, the realists remain triumphant as the recession flags have been raised. Once the yield curve inverts, equity markets could advance further. Yet, the overall earnings growth we expect will likely remain close, but below nominal GDP growth for advanced economies as corporate profitability eventually cools. Equity valuations could expand prior to the earnings cycle peak, but face significant deratings afterwards. Dividend yields are initially expected to decline – as payout ratios drop due to a pickup in corporate investment activity in the next few years – but then rise in the ensuing bear market. We would expect developed equity returns of 4.5% in US dollar terms and 3.25% in euro terms, and for emerging market equities to trade at a risk premium of 50 basis points.

The return of exuberance

In our 'reboot for globalization' bull case, the global economy gets a welcome producer-confidence boost as global leaders find common ground on trade and Presidents Xi Jinping and Trump negotiate a truce that brings a halt to most of the tit-for-tat tariffs. As global economic policy uncertainty recedes, corporate investment activity and global trade volumes pick up significantly. Open economies with high exports as a percentage of GDP benefit from increased technology spillovers and the lower risk premiums demanded by investors. Equity markets of relatively open economies benefit the most, experiencing a rerating compared to more closed economies, which have been perceived as safe havens during the trade war episode.

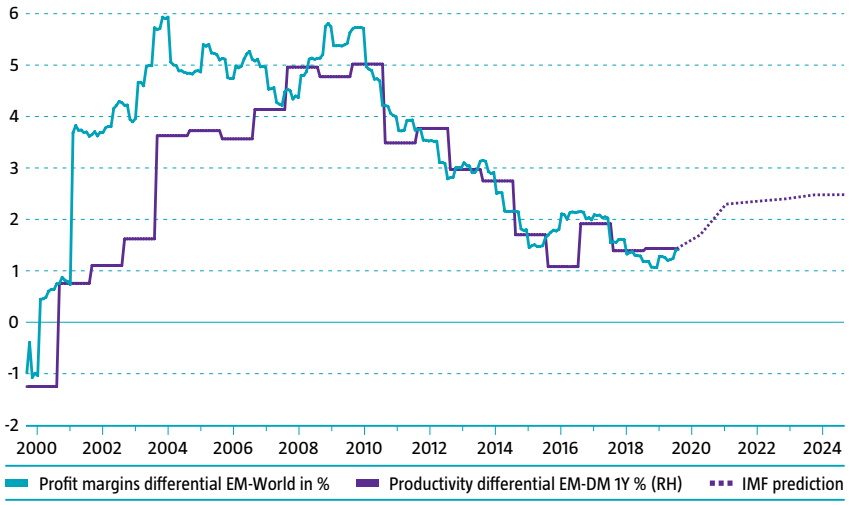
Figure 4.12: International openness vs. 3Y equity returns



Source: Refinitiv Datastream, Robeco

Productivity growth improves and, with the global economy on a stronger footing, the Fed and PBOC decide to embark on a tightening cycle. Other central banks follow suit. This is unproblematic for markets initially as global earnings growth re-accelerates. Emerging market earnings stage a strong comeback as the dollar weakens, global trade volumes move back to trend and productivity growth catch-up improves emerging market profitability.

Figure 4.13: Productivity reboot will support emerging markets vs. developed counterparts



Source: Refinitiv Datastream, Robeco

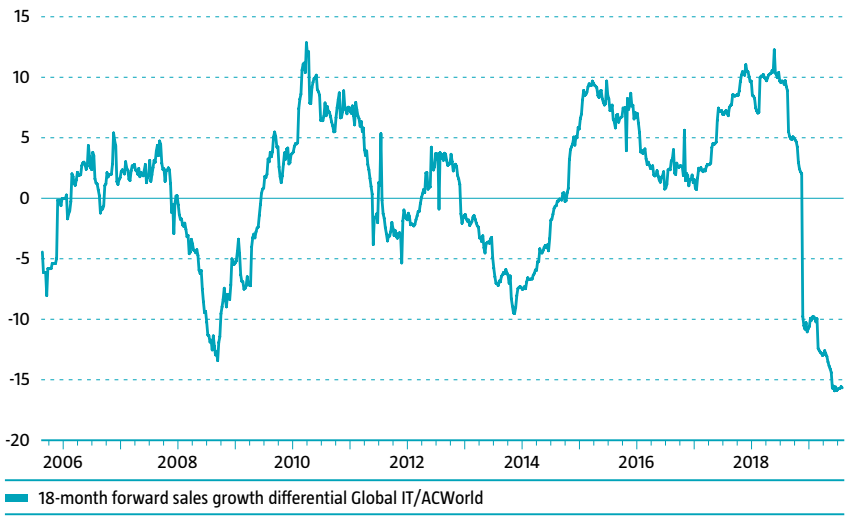
The positive supply shock extends the expansion beyond the period expected in our base case. In contrast to that scenario, animal spirits return and stock market exuberance increases as retail investors join in the late-cycle bull market. Also, the policy response to the mild recession differs: the Fed has been able to build a larger buffer of conventional policy rate cuts, implying that less fiscal stimulus will be needed in the US when the recession hits. Without the prospect of future tax hikes hurting consumption and with less crowding out of corporate investment by the US government, the recovery of US sales growth in the aftermath of the downturn is much stronger. Other regions with less monetary space have to rely more on fiscal stimulus and experience a more subdued equity market recovery than the US and other economies with ample pre-recession monetary policy space. In this scenario, the US can continue to outperform other developed markets. We would expect developed equity returns of 6.25% in US dollar terms and 4.75% in euro terms. Also, for emerging market equities to outperform developed equities and return 7% in euro terms.

Paying the price for disruption

In our bear case, 'echoes of the 1970s', the global system of economic cooperation (IMF, WTO) breaks down on the back of a trade war escalation. Rational self-interest does not prevail as emotions run high in the battle for global hegemony between the US and China. As the vicious circle of tit-for-tat tariffs worsens and political uncertainty deepens, equity markets enter a tailspin and the global recession is brought forward in time compared to the other scenarios. The global economy, notably emerging markets and Europe, suffers from a negative supply shock as global value chains are disrupted. Real oil prices rise and import prices push inflation up. Inefficient import substitution raises domestic cost-push inflation further. Cost-push inflation was already moving up because this phase of global turmoil began with very tight labor markets and low levels of unused capacity. Chinese

stimulus causes China to become a global exporter of inflation (it manages a stable yuan in fear of capital flight). The common denominator of this scenario is stagflation. Historically, equities have beaten inflation comfortably in the long run, but equities have proven to be a bad inflation hedge when inflation accelerates unexpectedly (see Ang, 2014). Facing a prolonged recession, investors start to demand very high risk premiums for exposure to equities, reflecting an age of disruption. Global IT and R&D investments implode. As shown in Figure 4.14, this can already be seen in the latest data, which shows that the recent US-China trade escalation led to a significant analyst downgrade of global IT sales projections versus the overall market.

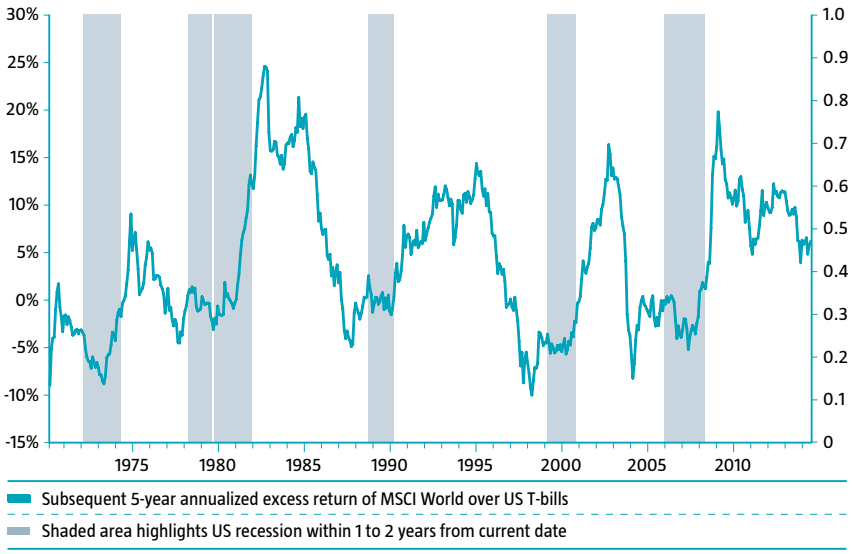
Figure 4.14: Tech vulnerable for protectionism – analysts have slashed forward IT sector sales relative to overall global corporate sales as trade tensions persist



Source: Refinitiv Datastream, Robeco

Two ecosystems rapidly start to develop out of this chaos: one centered around China and one powered by the US. Both superpowers ramp up unfunded fiscal stimulus, benefitting domestic industries. Unsurprisingly, we would expect average equity returns for developed markets to be historically low at -1% in US dollar terms, with emerging markets losing 2.5% annually in US dollars terms over the next five years. While this may seem too bearish, history is a reliable guide here as well. Historically, annualized global excess equity returns over cash have tended to be negative on a five-year horizon when a recession is expected only a year from now.

Figure 4.15: Recessions can have a big impact on equity returns over a 5Y horizon



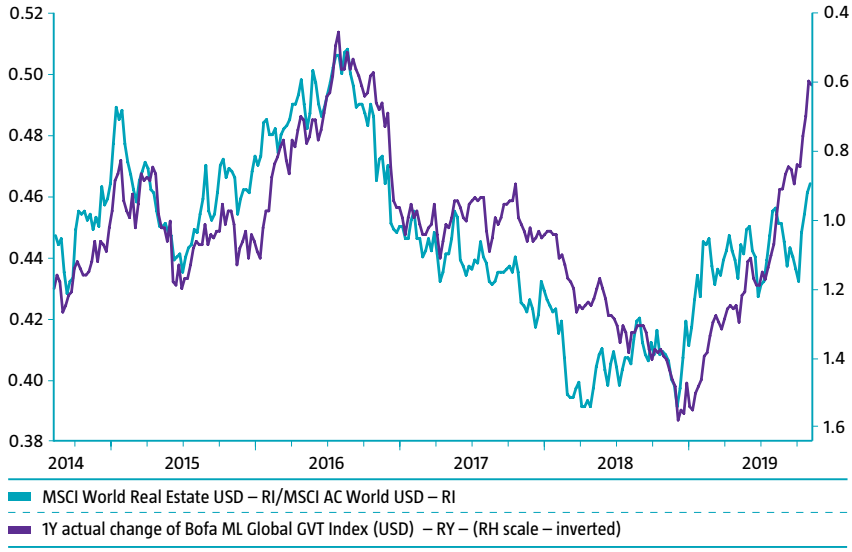
Source: Federal Reserve Bank of St. Louis, NBER based Recession Indicators for the United States, MSCI, Robeco

As we expect the US dollar to weaken in this scenario, we subtract 2% of the US dollar return for euro investors.

4.5 Real estate

Listed real estate performance responds to a range of macroeconomic drivers, including producer confidence, consumer confidence, inflation (expectations) and the availability of leverage, i.e. loan growth and changes in loan standards. Though its influence on listed real estate varies over time, interest rate sensitivity is also an important factor in explaining the performance of listed real estate relative to general equities.

Figure 4.16: Real estate vs. equity total return performance shows correlation with changes in global bond yields

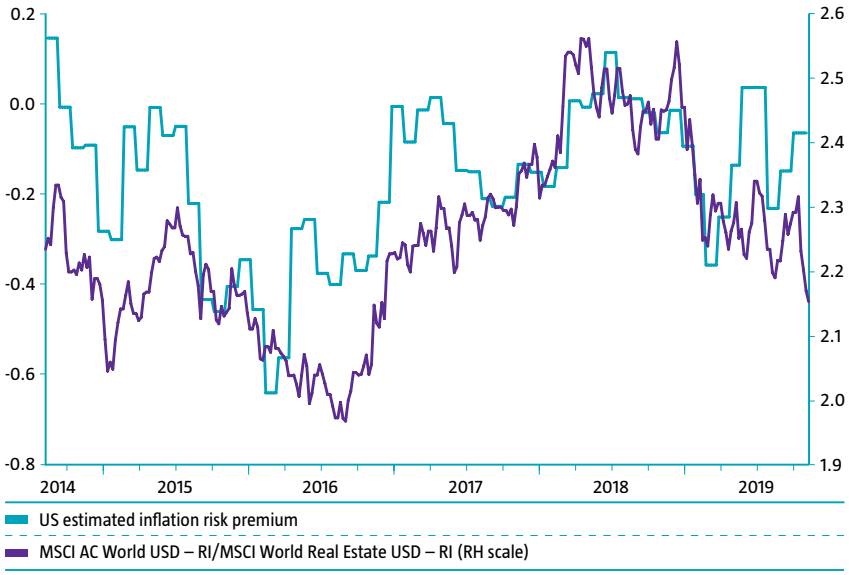


Source: Refinitiv Datastream, Robeco

In our base case scenario, we envisage that the Fed initially will be inclined to concede to market expectations for further easing. This has several implications for investing in real estate. First, by conceding to market worries, central banks risk anchoring the deflationary mindset of bond markets instead of dissolving it, creating a vicious feedback loop. Note that US medium-term breakeven inflation expectations dropped following the July 2019 Fed rate cut. A metric for unexpected inflation, the US inflation risk premium, is currently negative and confirms market expectations are tilted towards negative inflation surprises benefitting real estate performance versus equities. At least for now.

In contrast, reflation seems to benefit equities more relative to real estate, which warrants caution with the Fed aiming for an inflation overshoot in the next five years. We expect the Fed to achieve this aim, not so much as a result of adequate deployment of the central bankers' toolkit, but as a result of exogenous factors largely beyond its control, i.e. rising wage growth and higher corporate input costs on the back of lingering protectionism.

Figure 4.17: The inflation risk premium and real estate vs. equity total return performance

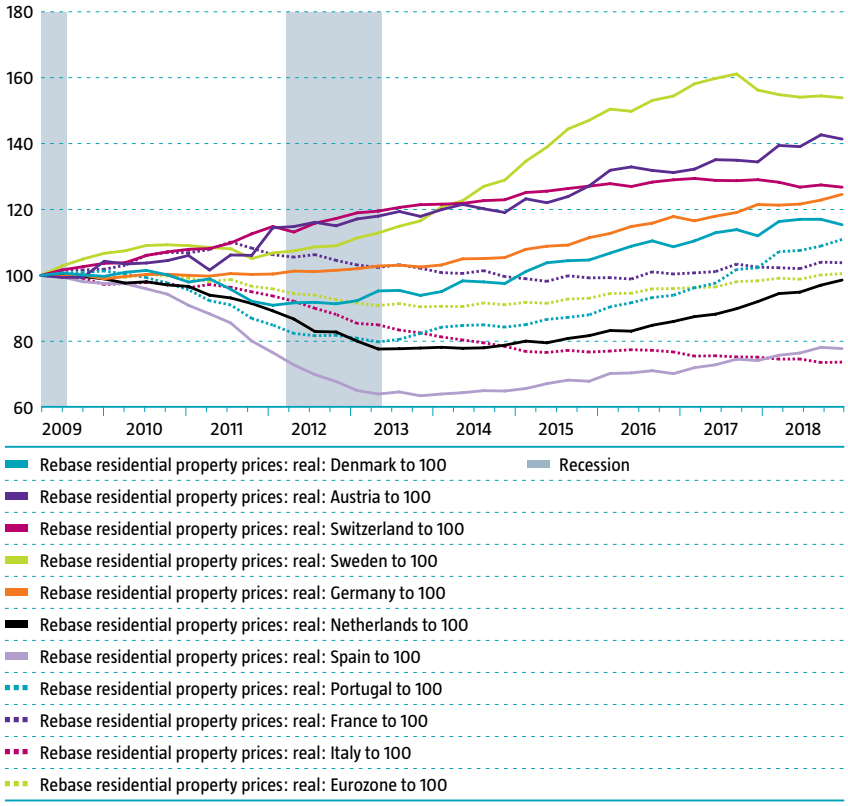


Source: Refinitiv Datastream, Robeco

Forward guidance itself may not be granular enough to convince the market it will be an insurance type of rate cut that lengthens the expansion and reflates the economy rather than an emergency type of rate cut to counter immediate recession risk.

Second, the implication of extended forward guidance and the policy goal of engineering an inflation overshoot is that global policy rates will remain low for longer, especially as a recession enters the scene around 2022. Very low nominal interest rates (and even more so in real terms) for a stretched period of time risks increasing the misallocation of capital as negative yields remove the hurdle rate for efficient decision making about capital allocation. Real estate will unlikely be exempt from the exuberance inspired by low rates. For instance, it is illustrative that Sweden, an early adopter of negative nominal policy rates in 2015, has seen residential real estate prices surge in real terms. Although prices have tapered off recently, there had been a notable increase relative to other European countries since 2014.

Figure 4.18: Real residential house prices in Europe: is Sweden setting the tone?



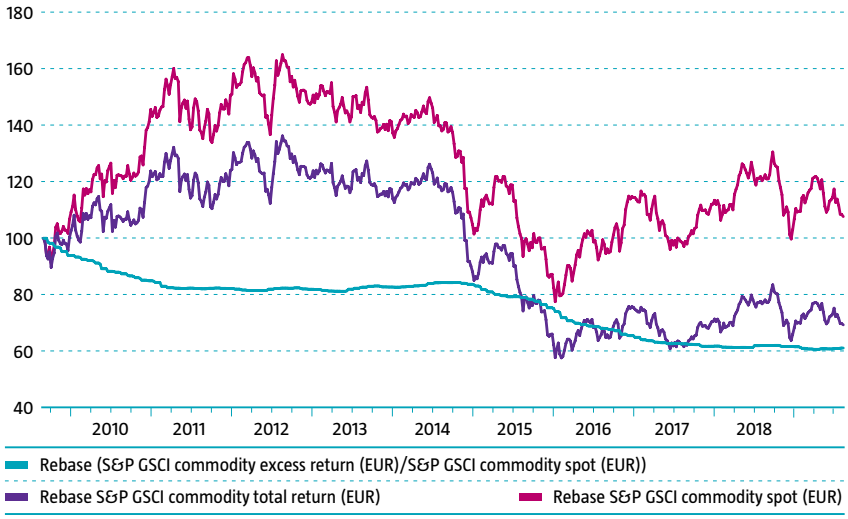
Source: Refinitiv Datastream, Robeco

The first argument suggests that, as long as the inflation overshoot is not achieved, unexpected inflation risks remain low and real estate could perform well versus equities. In addition, listed real estate has a low vol factor tilt[15] and is relatively well positioned to benefit from a 'post-inverted yield curve' type of macroeconomic environment. However, we expect this performance to falter when global wage inflation continues above 3% for longer and durable goods inflation starts to lift, indicating an inflation overshoot is in the making. The second argument, that of low rates for longer, remains a potential tailwind for real estate up to the point where central banks feel the need to react to an inflation overshoot.

15. See MSCI: https://www.msci.com/documents/10199/0dc1184b-e692-418a-a181-5a9b8fcfa2a3

Given the return of (unexpected) inflation in our base case, real estate is likely to lag equities by 0.5% in euro terms, generating an annualized return of 2.75% in the next five years. As the reappearance of inflation is a common denominator in all our scenarios, this headwind for real estate will be difficult to circumvent, except for the post-recession environment in the latter part of the five-year window, as interest rates will be very low and inflation cools. In our bull case, though, the performance gap with equities shrinks owing to a positive supply shock created by a reboot of globalization and the resumption of healthy flow of global trade. In our bear case, 'echoes of the 1970s', the initial hit of unexpected inflation will hurt real estate, but the subsequent very low real interest rates and the fixed income-like return components will render it relatively more attractive compared to equities.

Figure 4.19: S&P GSCI Commodity total return decomposition (EUR)



Source: Refinitiv Datastream, Robeco

4.6 Commodities

If there is one risky asset that has missed out on strong positive returns during this record-long global economic expansion it is commodities. Commodities, as measured by the GSCI commodity index, have yielded a negative total return of almost 30% over the past 10 years, though euro spot returns were up by 10% over this period. It shows the importance of the future roll return as a driving force of total expected commodity return, as the roll return declined by 40% over the past decade.

The roll return is determined as the return obtained from rolling a shorter-dated position in a futures contract into a longer-dated contract. Roll returns have been negative in the recent past as many commodity curves have stayed in contango (i.e. spot prices below futures prices). Only the GSCI Energy subsector has recently seen positive roll returns as the oil futures curve rotated from a very strong contango during the oil supply glut of 2014/15 to backwardation (spot prices above futures prices), thereby allowing long oil future investors to profit from a positive roll yield again. Research (Rouwenhorst et al. 2013) shows that the highest expected returns for commodities are generated in an environment where the spot price is above the futures price, which often happens in a macroeconomic environment where inventory levels decline.[16]

In our base case scenario, we expect the drag of negative roll returns to fade as unprecedented uncertainty in an age of rising protectionism raises future supply risks, tilting the futures curve towards backwardation. Erb and Harvey (2006) warn against a naive extrapolation of historical roll returns; the negative roll returns of the recent past might not be indicative of roll returns over the next five years. They also note a very interesting positive correlation between roll returns and unexpected inflation beta, i.e. the sensitivity of a specific commodity future to changes in unexpected inflation. As stated at many places elsewhere in this publication, we think protectionism in its varying degrees of intensity is inflationary rather than deflationary, leaving markets vulnerable to episodes of unexpected consumer price inflation.[17] In line with the findings of Erb and Harvey, we find that year-on-year changes in the GSCI excess return index (spot plus roll return above risk free rate) are positively correlated with actual changes in US five-year breakeven inflation rates (reflecting market adjustments of expected inflation).

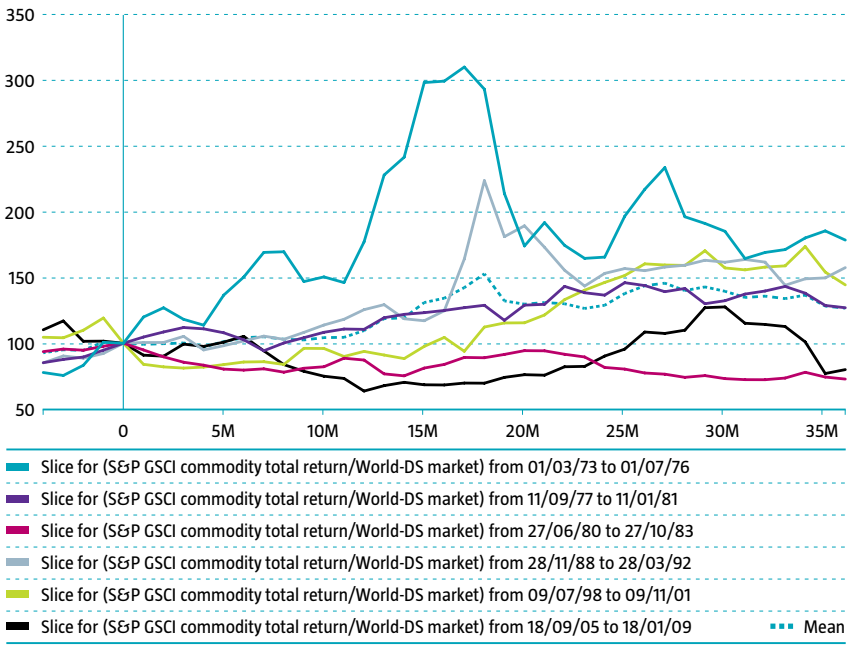
16. Gorton, G., Hayashi, F. and Rouwenhorst, K., 2013. "The Fundamentals of Commodity Futures Returns", Review of Finance, Vol. 17, No. 101, January.

17. See research by Cavallo, Gopinath, Neiman and Tang (2019) using price data from the Bureau of Labor Statistics on imports from China. They find that tariff revenue collected has been borne almost entirely by US importers. There was almost no change in the (ex-tariff) border prices of imports from China, and a sharp jump in the post-tariff import prices matching the magnitude of the tariff.

The most volatile component of total commodity returns is the spot return. We find that spot returns are to a large extent determined by what happens to the China growth story in the next five years, as it is the world's largest commodity user. Historical spot returns remain heavily influenced by China and de facto Chinese monetary and fiscal stimulus. Given prevailing uncertainties in the Chinese macroeconomic and political landscape in the next five years, we think Chinese authorities will adopt a dovish tilt to their policies, preferring to maintain economic traction above pursuing deleveraging by further restraining broad money growth. At the margin this should benefit commodity prices.

Lastly, commodities have attractive late-cycle properties and have historically tended to outperform equities in a pre-recession, post-yield curve inversion environment.

Figure 4.20: Relative performance commodities vs. equities post US yield curve inversion



Source: Refinitiv Datastream, Robeco

All in all, commodities are an unusual asset class in that they reflect an expected euro return of close to or even above the corresponding steady state return of 4%.

4.7 Emerging market debt

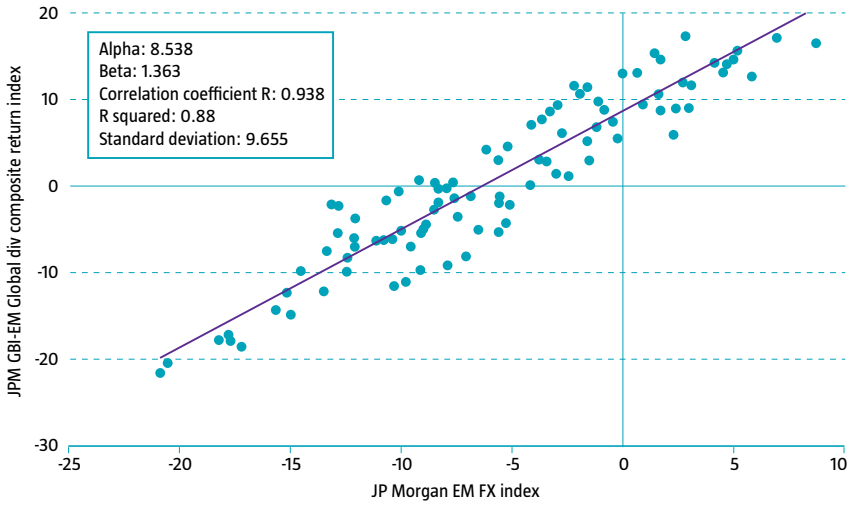
In a world where government bonds are increasingly negative yielding, one class of sovereign bonds still offers yields that tower above the rest: emerging market debt. This, of course, is no secret and emerging market debt in local currency has seen strong investor inflows, pushing the yield on the JP Morgan GBI-EM Broad Diversified Index to 5.4% at the time of writing, within 10 basis points of the all-time low observed just before the 'taper tantrum' of 2013.

But is emerging market debt the dodo of the fixed income market – a rare breed that will be hunted to extinction in the next five years, destined to join the negative-yielding government debt of advanced economies? Highly unlikely.

This message gives both comfort and cause for concern. Comfort because emerging market debt yields may be looking attractive for longer relative to those of advanced economies. Cause for concern because emerging market investors might be harvesting positive yield differentials while in the path of a steamroller.

Long-term fixed income investors should demand compensation for interest rate, inflation, growth and default risks. In addition, emerging market debt in local currency carries significant currency risk. The risk of a future currency depreciation should be reflected in higher actual yields versus the rest of world. History has proven that positive carry differentials could easily be wiped out by strong swings in emerging market currencies, leaving investors with losses on their local currency emerging market debt investments. The FX performance of the JP Morgan GBI-EM Broad Diversified Index is -1.2% on an annual basis over the last 16 years. Thus, the average yield of the JP GBI-EM of 6.7% is there for a reason: to compensate investors for future currency depreciation risk (in trade-weighted terms). The pivotal role for currency risk is also seen in the strong co-movement of the top 10 EMD LC NEER Index we constructed versus the total return of the JP GBI-EM Index.

Figure 4.21: High correlation: Emerging market currency return outlook pivotal for EMD in local currency



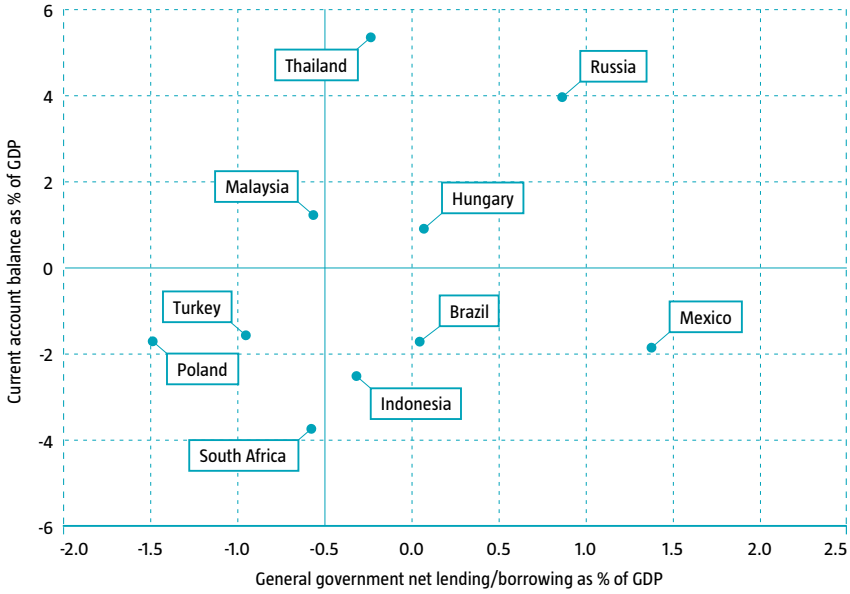
Source: Refinitiv Datastream, Robeco

Therefore, an outlook on emerging market currencies is an essential part of preparing a five-year outlook on local market emerging market debt. The unconditional view would be to look at the current valuation levels of the emerging market debt currency based on a deviation from the long-run trend in real purchasing power parity, as proxied by the deviation from trend in the BIS real effective exchange rate. In an ideal world, currencies should reflect inflation differences, but the law of one price does not hold empirically and currency movements often over and undershoot inflation differentials. Consequently, real exchange rates vary over time. In our 2015 Expected Returns, we showed how currencies that have over or undershot their corresponding inflation differentials often correct this mispricing over a five-year horizon.[18] The current deviation in the weighted real exchange rate for the top ten local currency emerging market debt issuers is 7.7% below trend, suggesting a dollar-based investor could expect an annual 1.5% emerging market currency appreciation tailwind in dollar terms from an unconditional point of view.

18. See also Rogoff (1996) and Astorga (2010), who find a half-life of 2.5 years for deviations in real exchange rates of Latin American countries.

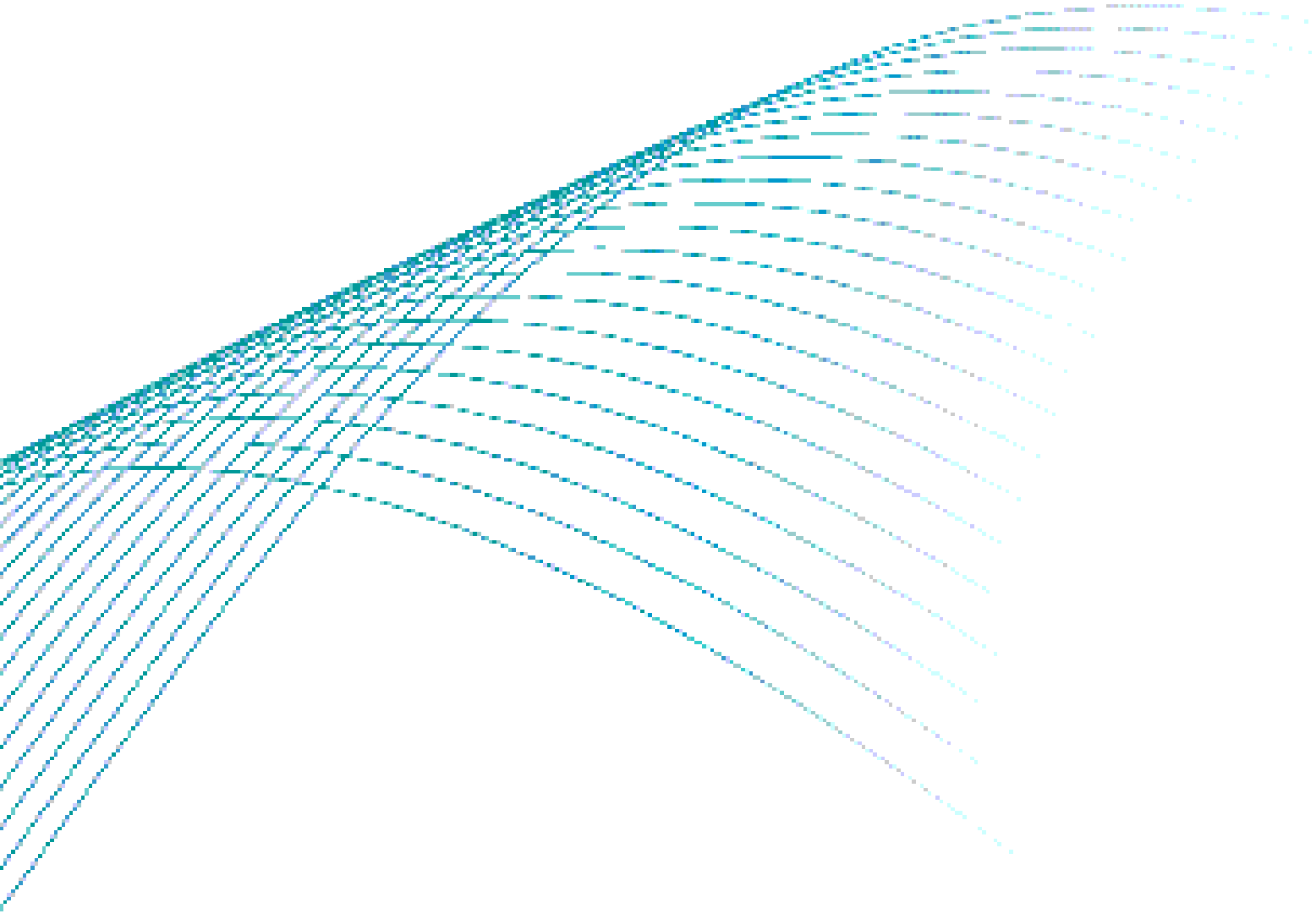
The conditional view is more sobering. In our base case, we initially expect sentiment to be upheld globally owing to China and the US pursuing a strategy of containment regarding trade relations, as the detrimental effects of previous tariff rounds have rendered both worse off. However, a hard-won truce has not resulted, nor has the great deal Trump hoped for; instead, US-Chinese relations can be likened to a simmering volcano. The stimulus effort in China will likely benefit Chinese imports eventually, and indirectly EM suppliers and their currencies. However, given the battle for global hegemony between China and the US and the potential repercussions for trade-dependent economies, the market will continue to demand a decent risk premium for investing in emerging market currencies. That means, from a conditional perspective, that it is not at all certain the current 7.7% discount on PPP basis of emerging market currencies will completely vanish in the next five years, especially as we expect a global recession that will also be felt in emerging markets. In bad times, the dollar usually strengthens as investors look for safe-haven currencies and developing economies rebalance by letting their currencies slip. Real exchange rate appreciations are also reflective of productivity growth catch-up towards advanced economy levels. With lingering global protectionism expected to slow productivity-enhancing technology spillovers, a strong real appreciation in emerging market currencies is not to be expected. The IMF expects current account deficits amongst emerging markets over the coming five years, which is yet another reason to be cautious about forecasting strong emerging market currency appreciation, whether in nominal or in real terms.

Figure 4.22: Internal versus external balance (5Y average IMF projections 2020-2024)



Source: Refinitiv Datastream, Robeco

However, emerging market local debt issuers are a mixed bag. This is illustrated by our 'ability to pay' framework, which shows the IMF's 2020-2024 projection of net borrowing/lending by governments versus the external surplus/deficit. Russia is expected to keep its house in order, according to the IMF, with a projected internal and external surplus. Turkey and Indonesia look more vulnerable when global confidence in high-yielding EM assets recedes amidst a global recession around 2022. Investors will differentiate between markets and different macro-fundamentals likely will translate into varying performance along the road. Overall, we would expect local currency emerging market debt to generate a 2.75% return in euros and 4% for US dollar-based investors. In our bull case, we see much more upside for emerging market currency appreciation as global trade flows rebound, which could result in investors likely seeing 5.5% in euros and 7% return in US dollars. The bear case sees emerging market currencies slip much further, with default risks rising and open developing economies, in particular, bearing the brunt of the implosion in global trade.



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