

Degroof | Institutional Petercam | Asset Management

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Sommaire

08

11

Edito

Monetary Policy and Risk-Taking

> Market efficiency

Inflation-linked bonds: an intuitive introduction to their mechanics and role in a portfolio

From emerging to submerging markets and back... to a new normal

15

19

Volkswagen: can ESG information still be trusted?

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Edito

Dear Reader

It is our great pleasure to present to you the new edition of Ascent. In the new group Degroof Petercam, we will continue in the same vein as we did before: providing you with insightful articles about our management and research expertise.

In this edition, we firstly tackle monetary policy and risk taking. Understanding the channels through which monetary policy affects the economy is important and has long been a key research topic in macroeconomics. The literature describes many transmission channels and there is still disagreement on their relative importance. Moreover, the current environment of exceptionally low nominal interest rates raises discussions on the effectiveness of monetary policy.

Secondly, we look into the situation on the high yield bond market. The summer of 2015 was quite eventful for major high-risk financial assets, and days of significant gains were followed by days of heavy losses. This nervousness on financial markets did not only stem from disappointing macro-economic figures in China and the United States and profit warnings by some companies, but also from investors worrying about future monetary policy in the United States. In the absence of clear indications about recessions and hence wealth destruction, there is one fundamental question which is worth asking: are markets still efficient?

Thirdly, also in the fixed income sphere, we look into the mechanism of inflation-linked bonds. They prove to be an interesting diversification tool in any portfolio.

Finally, against the backdrop of the Volkswagen scandal, Ophélie Mortier looks at whether ESG information can still be trusted.

We do hope you will enjoy this edition.

Please do not hesitate to pass on your feedback. It is very valuable to us.

We also have an interesting contribution by Senior Economist Hans Bevers on the state of the emerging markets, which have not done very well this year.

Sincerely,



Jan Longeval Co-CEO Institutional Asset Management



Hugo Lasat Co-CEO Institutional Asset Management

Monetary policy

Monetary Policy and Risk-Taking

Understanding the channels through which monetary policy affects the economy is important and has long been a key research topic in macroeconomics. The literature describes many transmission channels and there is still disagreement on their relative importance. Moreover, the current environment of exceptionally low nominal interest rates raises discussions on the effectiveness of monetary policy. Quant Research - Client Solutions



Frederiek Van Holle

Asserting the potential impact on transmission channels is not only important for the conduct of monetary policy, as recent research indicates that monetary policy has an important impact on stock-bond correlations. Accommodating monetary policy seems to be a driving factor of low to negative stock-bond correlations and this, in turn, has important implications for portfolio management. A view on how the relative importance of monetary policy channels is impacted by the zerolower-bound on nominal interest rates could provide insight into the conditional correlation between stocks and bonds and on diversification within mixed investment portfolios.

Although most economist would agree that monetary policy can significantly influence the real economy and inflation, there is less agreement on how the initial action taken by a central bank propagates to the real economy. Asserting the relative importance of the different channels appears difficult since money is endogenous. After all, changes in the money supply influence aggregate output, which in turn influences money supply. Isolating the "pure" impact of monetary policy actions seems challenging and most empirical research is inconclusive on which channel is the most important.

There is extensive literature on the transmission of monetary policy. Five important transmission channels have been identified. First, there is the traditional interest rate channel where the monetary authority changes some kind of monetary aggregate in order to influence the short-term real rate. Second, we have the equity price channel, where the investing and spending behaviour of firms and households is influenced by the impact on the relative cost of capital or wealth effects. Third, by influencing the exchange rate, a central bank can influence net exports. Fourth, in the credit channel, the external finance premium, which is caused by market imperfections, changes as a function of the monetary stance. This changing external finance premium either influences bank lending behaviour or changes agents' balance sheets directly. Finally, via a risk-taking channel, typically for periods of low interest rates, investors are pushed towards higher yielding, riskier investments when monetary policy is accommodating.

Risk-taking channel

The recent financial crisis surprised many observers because of its global scope and long duration. In this context, activity in the real economy and inflation were severely impacted by the collapse of the financial system. Specifically, investors (including banks), rating agencies and regulators underestimated the risk of off-balance sheet mortgage-backed securities. In addition, the tranching of these securities typically left the most risky "equity" tranche on the banks' balance sheets opening the gate for low probability, high impact events such as those in recent years. Financial innovation, despite all its virtues, also appeared to be one of the drivers of the crisis. Events like this raise the question on how risk perception and pricing change over the economic cycle and how they might impact the transmission of monetary policy. Similarly, how does the monetary policy stance influence risk-taking? Recent academic research has focused on this so-called "risk taking channel". This transmission channel suggests that monetary policy affects risk premia via economic agents' willingness to take risk. This channel can be considered as having an amplifying effect on the traditional (balance sheet) credit channel and may operate in different ways.

First, through its impact on valuations, incomes and cash flows (Borio and Zhu (2012)), the wealth effect can increase risk tolerance.

¹ The 2007-2008 credit problems made it clear that risk perception by financial market participants is crucial to banks' ability to raise funds

Second, financial sector innovation and the appearance of pro-cyclical intermediaries can increase real fluctuations (Rajan (2006)). Life insurance companies, for example, which typically have fixed, long-term liabilities, might take more risk as market yields start falling below their fixed liability. In the current environment of extremely low yields, increased demand for emerging market assets and high-yield bonds could be an indication of this search for yields. Also, financial incentive plans could conceivably push investors towards riskier assets when yields are low. Third, the way monetary policy is conducted can also impact risk tolerance. Monetary policy has evolved from a monetary-policy-by-surprise approach to increased forward guidance and rate changes have become more persistent (read more predictable). As a result, risk premia can fall due to lower uncertainty attributable to this higher central bank transparency (Borio and Zhu (2012) call this the "transparency effect").

Moreover, a credible central bank also provides an "insurance effect" (Borio and Zhu (2012)) and causes moral hazard issues because it will stimulate the economy when a severe downside event occurs. Söderlind (2008) develops a standard general equilibrium model with sticky wages and extends the model by adding money demand shocks and a central bank that pursues a certain policy objective. This model shows that the impact on risk premia is conditional on the policy rule used by the central bank.

Empirical research seems to confirm the existence of a risk-taking channel. Amato (2005) and Bekaert et al. (2013), for example, establish a link between risk aversion and monetary policy. The former decompose the CDS spread on US investment grade bonds between 2002-2005 into an expected loss component (risk premium) and a risk aversion component (price of risk) and use regression analysis to estimate the relationship between these components and (among other variables) monetary policy. Their analysis suggests that expansionary monetary policy reduces default risk aversion and generates lower risk premia in the corporate bond market. The latter decompose the VIX index into a risk aversion component and uncertainty component and find that expansionary monetary policy decreases both. Manganelli and Wolswijk (2007) analyse the euro government bond market using fixed-effect panel regressions and find that the government bond spread (relative to the German bund) is driven by the level of short-term interest rates.

Recent research finds a link between bank risk-taking and monetary policy. Altunbas et al. (2010) use a large sample of European banks to show that, besides liquidity, size and capital, bank risk is an important driver of bank loan supply. Low-risk banks' loan supply is less affected following monetary tightening because they have easier access to external funding. When monetary policy is accommodating,



high-risk bank loan portfolios are less exposed to monetary policy shocks, which is consistent with lower market perception of risk during expansionary monetary policy phases. In their subsequent paper, Altunbas et al. (2012) consider how realised bank risk during the recent financial crisis relates to a range of pre-crisis individual bank characteristics and monetary policy for an international sample of banks operating in Europe and the US. They find that well-capitalised and liquid banks suffered a lower level of solvency erosion during the 2007-2009 financial crisis. However, the "protection" afforded by having high capital and liquidity buffers prior to the crisis is lower for countries that had lower interest rates prior to the crisis. The first conclusion confirms a balance sheet (credit) effect, while the second confirms the existence of the risk-taking channel.

Delis and Kouretas (2011) take a more nuanced approach to the relation between interest rates and bank risk. They are interested in the (low) level of interest rates and not necessarily monetary policy because expansionary monetary policy can still imply relatively high interest rates. They use a large dataset of euro-area banks over the 2001-2008 period and apply a dynamic unbalanced panel regression analysis. They find a very strong negative relationship between the level of interest rates and bank risk-taking (measured by the ratio of risk assets to total assets) confirming the Borio and Zhu (2012) and Rajan (2006) considerations. Well-capitalised banks are less affected, while banks with more off-balance sheet items are more impacted, thereby confirming the market risk perception argument. By regressing the changes in interest rates on the changes in bank risk taking (and some control variables) they confirm the negative relationship between interest rates and bank-risk taking and hence find a risk-taking channel in the euro area (see also Dell'Ariccia et al. (2013), who provide a theoretical foundation for the claim that, following a decrease in interest rates, well-capitalised banks increase risk).

² The Volatility Index (VIX) reflects a market estimate of future volatility based on the weighted average of the implied volatilities of a basket of out-of-themoney put and call options for the S&P 500.

³ Here bank riskiness is measured by a dummy related to the one yearahead probability of default (EDF) computed by Moody's.

* They focus on five major institution-specific characteristics likely to influence risk: liquidity, capital, size, securitisation intensity and traditional lending activity.

Monetary policy



Montes et al. (2014) study the Brazilian market and assess how bank loan-loss provisions are impacted by monetary policy (reserve requirements and the interest rate), the macroeconomic environment (output gap, spread, credit gap, stock market valuation) and central bank credibility. They find a positive relation between an accommodating monetary policy and the size of loan-loss provisions. Loose monetary policy lowers risk aversion (and vice-versa), hence confirming the risk-taking channel for Brazilian banks. Interestingly, these authors provide evidence of the so-called "paradox of credibility". Their findings denote that higher central bank credibility increases risk-taking by banks. This paradox comes from, on the one hand, the benefits of price stability and, on the other hand, the greater risk appetite (and pro-cyclicality) of banks when central bank credibility increases.

Brissimis and Delis (2010) are more concerned with whether changes in monetary policy cause a differential response on the part of banks towards their lending and risk-taking decisions on the basis of internal bank characteristics such as bank liquidity and capitalisation (which are typical variables in the bank lending channel literature) and a novel characteristic: market power. How can market power impact monetary transmission? When banks engage in higher risk-taking after monetary easing to increase the yield on their portfolios, higher market power might mute this risk-taking effect because these banks already earn an extra rent. If they have market power in raising uninsured finance, they will probably be less sensitive to monetary tightening. They confirm the bank lending channel for US and euro area banks: high capitalisation, liquidity and market power shield the bank loan supply from monetary policy changes. They also identify a risk-taking channel for the average bank, yet also suggest that the reaction from individual banks can differ substantially (and even switch sign). Although the results suggest that firms with high market power do not change their attitude towards credit risk, the results also suggest a highly

heterogeneous reaction of banks towards risk-taking in general.

Valentina and Shin (2015) add an international dimension to the (bank) risk-taking channel. They develop a theoretical model indicating that the risk-taking channel is reinforced in an international environment through a currency effect caused by cross-border capital flows in the banking sector. In a first step, the traditional risk-taking channel is at work, causing increased risk-taking by global banks following monetary easing by the central bank. The local bank (which is in fact a foreign branch of a global bank) uses the initial lower dollar funding costs available via its US parent bank to increase lending (in USD) to domestic households and corporates. The domestic borrowers lend in foreign currency (USD) and invest in local currency. As a result, in a second step, the increased demand for local currency causes a local currency appreciation (against USD), creating positive wealth effects and improving the default probability of potential borrowers which, in turn, leads to even higher lending. The impulse response functions of a VAR seem to confirm the model's predictions. The authors also include the VIX index in the system and suggest (in line with Bekaert et al. (2013)) that a lower monetary policy rate in the US is accompanied by lower risk perception. The results suggest that the risk-taking channel operates through bank leverage in such a way that an accommodating monetary shock leads to a lower price of risk (VIX), which in turn allows banks to increase leverage (and generate the capital flows described earlier).

Angeloni et al. (2015) develop a model that includes a banking sector which on the funding side is exposed to endogenous bank runs while on the lending side allows for a traditional credit (bank lending) channel. As a result, their model encompasses both the firm balance sheet channel and the bank risk-taking channel. In addition, using a VAR approach they allow for an endogenous response from monetary policy. Finally, the model considers risk-taking on the asset and funding side of the bank's balance sheet. Their evidence suggests a significant drop in bank overall risk and bank funding risk following a monetary contraction. Surprisingly, the asset risk measure seems to be insignificant. As a result, the risk-taking channel operates through the funding of the banks, in contrast with the theoretical model that indicates that (Angeloni et al. (2015), p. 35) "risks on the asset and liability side of banks tend to move together and reinforce each other."

Buch et al. (2014) use the theoretical setup of Dell'Ariccia et al. (2013). They use a factor-augmented vector autoregressive model (FAVAR) for the US and find that, following an expansionary monetary policy shock, small domestic banks increase their exposure to risk while large domestic banks do not change their risk exposure. The authors provide evidence that small banks are typically more capitalised, face higher

⁵ According to Borio (Borio (2014)), "For its part, the establishment of regimes yielding low and stable inflation, underpinned by central bank credibility, can make it less likely that signs of unsustainable economic expansion show up first in rising inflation and more likely that they emerge first as unsustainable increases in credit and asset prices (the "paradox of credibility"). After all, stable expectations make prices and wages less sensitive to economic slack: this is precisely what policymakers and economists have expected all along.



decreases in line with the degree of capitalisation. Using micro data on Spanish banks, Jiménez et al. (2014) succeed in overcoming the endogeneity problem typical to the above-mentioned research. They analyse the impact of monetary policy on the level of credit risk of individual bank loans and on lending standards while controlling for bank, firm and loan characteristics. They find that lower short-term interest rates prior to loan origination result in banks granting more risky new loans and at the same time reduce the credit risk of existing loans . As a result, banks' credit risk is maximised when short-term interest rates are low prior to loan origination and are higher after origination (deteriorating the credit risk of the loan). Their results add an interesting time dimension to the risk channel. Moreover, their analysis suggests that low interest rates increase bank risk-taking and initially reduce credit risk, but increase it in the medium term. Contrary to Delis and Kouretas (2011), who find a risk-taking effect for short-term (3-month) and long-term (10-year) rates, the risk-taking channel does not seem to work for longer interest rates in Spain.

Finally, the risk-taking channel depends on a bank's characteristics. Small banks and savings or cooperative banks take on more risk when interest rates are low. Ioannidou et al. (2015) use micro data on the Bolivian market and find very similar results. Accommodating monetary policy leads to more bank risk-taking and apparently banks don't price the risk correctly since they reduce the loan rate spreads of more risky borrowers relative to less-risky borrowers. Lending standards become less stringent after a round of monetary expansion.

To conclude, monetary policy transmission is a complex matter and the different channels interact dynamically with each other. Central bank credibility is key to shaping market expectations, but credibility also seems to lead to higher risk-taking. The risk-taking channel affects households and firms as well as banks and its importance will probably vary over time. Financial innovation, interest rate cycles, changes in capital requirement rules and more market-value-based valuations have probably made this channel more important through the increased importance of the perception and pricing of risk.

The figure above summarises the main elements of the risk-taking channel.

⁶ By selling the borrowed USD and by buying their local currency. Note that there is quite some interaction between the monetary policy shock, bank leverage and risk perception. See, for example, Adrian and Shin (2010), who find that pro-cyclical leverage affects the price of risk.

⁸ As opposed to Dell'Ariccia et al. (2013), where interest rates are exogenous.

9 And hence use more collateral as a substitute to control for risk, which in turn mitigates the added riskiness.

¹⁰ They grant more loans with higher credit risk and they lower credit standards.

11 This is because refinancing costs are lower

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High yield bond market

Market efficiency

The summer of 2015 was quite eventful for major high-risk financial assets, and days of significant gains were followed by days of heavy losses. This nervousness on financial markets did not only stem from disappointing macroeconomic figures in China and the United States and profit warnings by some companies, but also from investors worrying about future monetary policy in the United States. In the absence of clear indications about recessions and hence wealth destruction, there is one fundamental question which is worth asking: are markets still efficient?

Head of High Yield Bonds



Bernard Lalière

The concept of market efficiency has been a subject of discussion for many years among academics, and it clearly constitutes one of the major foundations of modern finance.

An efficient market is defined as a market in which the pricing of a financial asset at any time reflects all relevant information that is available. In such a market, prices instantaneously reflect the consequences of past events and reflect all anticipations about future events. Here, only a new piece information could change the value of financial assets. In other words, although it is normal that the publication of disappointing macro-economic figures triggers a knee-jerk reaction on financial markets, falling stock prices or the widening of credit spreads and the volatility which are observed the days after cannot be explained by these elements alone.

Overall, the concept of market efficiency becomes more realistic as the cost of carrying out transactions is lower. Following the publication of a new piece of information, transaction costs should not be an obstacle to rapidly establishing a new equilibrium. The liberalisation of financial markets and the end of the monopoly of the so-called 'stockbrokers in Belgium in the 1990s were primarily aimed at reducing transaction costs and achieving this efficiency objective.

Moreover, market efficiency improves as markets become more liquid, meaning that if a security is widely traded the information will be rapidly integrated into its price. Conversely, securities which are not widely traded will reflect the available information with some delay.

Finally, market efficiency also assumes that investors are rational. Rational investors are economic actors using the information they receive in a coherent way. Logically, following the publishing of an unexpected piece of good news, an investor will purchase a financial asset and will not sell it. An investor will continue to be rational if he makes his decisions to buy or sell assets based on a decision by someone who is better informed than him. Hence, an investor will display guite rational behaviour by selling his stocks if company executives sell them as well. In the same vein, in terms of financial theory, an investor will be considered rational if he acts on the basis of the expected behaviour of other market participants. As such, the behaviour of an investor deciding to sell off all his risky assets because he believes that the VW scandal will lead to market unrest is considered to be rational. In this case, expectations are not exclusively based on fundamental information but also on other pieces of relevant information, such as the behaviour of other market participants.

This aspect tends to be ignored by financial market analysis and it is incorrectly presumed that an efficient market is a market that only integrates so-called fundamental data in its pricing mechanism, so in other words data which are directly related to the financial results of the company or the budget of a country.

Hence, it is perfectly possible to have a financial market that is dragged into a negative spiral. The herd-like behaviour of some investors often creates this chain reaction, and such an attitude is often called rational mimetism.

For investors, this mimetic attitude involves closely following the recommendations of strategists, financial analysts and other financial prophets. It implies that investors will no longer take investment decisions based on their own convictions



and instead take bullish or bearish views based on the opinions and behaviour of these 'opinion leaders'. The consequences are quite logical: if the majority of investors decide to buy the same assets at the same time, the power of the consensus will have a devastating influence, leading to rising prices during times of euphoria, and plummeting prices during times of bearishness on financial markets.

During crisis times, it may therefore be detrimental to speak of irrationality and market inefficiency. An efficient market does not rule out that there may be an important gap between what the price of a security should be based on its fundamental value, and the market price. Specifically, investors may distance themselves from a view that is only based on the fundamentals and instead first and foremost focus on the behaviour of their peers. This attitude has its own rationality and sometimes explains the important market swings which may be seen from one day to another in the absence of new information. This behaviour is a far cry from an ideal that exists on financial markets and which supposes that the price observed equals a security's fundamental value.

Moreover, the growing pressure on financial professionals to follow a reference index (benchmark) stricto sensu or a risk scale (for example the ratings provided by rating agencies) may represent a risk to the efficiency of financial markets. When the vast majority of market participants are subject to these constraints and when transactions are impacted accordingly, market balance may be put on the line because there is no longer sufficient active competition between a large number of participants having different strategies and expectations. This observation leads us to ask ourselves another key question in the context of managing high-yield portfolios, namely whether active management of a bond portfolio is able to profit from these elements.

Active management of a high-yield bond portfolio

The fact that in efficient and rational markets the market price of a financial asset may diverge from its fundamental value undoubtedly creates various opportunities active investors may exploit.

The first opportunity for investors is to find recourse to the tenet that over time the price of a financial asset will evolve towards its fundamental value. For a high-yield company, a first step will be to objectively analyse its capacity to generate cash flow, to lower its debt level and to assess its liquidity. This process undeniably includes key elements to separate the wheat from the chaff. Furthermore, one must analyse whether the credit spread or the 'risk premium' sufficiently compensate investors for the risks they will take.

The second opportunity consists of looking at the smaller companies with an issue size that is lower than the big bond issues, which often surpass €500 million. These smaller companies offer a credit and liquidity premium which is sometimes interesting due to the lack of interest displayed by big investors regarding smaller issues, despite the better credit fundamentals smaller companies sometimes provide.

The third opportunity to benefit from the observations made above involves choosing a management style, namely active or passive.

High yield bond market

In the framework of passive management, the portfolio will have a structure which is very similar to that of the market, represented by a reference index. In this set-up, the fundamentals of the company are not the main focus of the management approach. Overall, passive high-yield funds will tend to hold bonds which make up the index, regardless of their own credit characteristics and especially of the expected evolution of the company's fundamentals. When the risks of a default rise substantially, a passively managed fund will tend to hold the bond. The portfolio will not sell the position before this bond has defaulted and has been removed from the reference index.

Conversely, in the framework of active management the portfolio will be positioned based on the current economic and financial environment and the asset manager's expectations. The active manager will invest in companies whose bond prices do not reflect his expectations, and will refrain from investing in companies with an expected negative outlook. Specifically, the portfolios managed by Petercam IAM have never invested in construction and engineering companies such as Abengoa or Isolux because, apart from an opaque financial structure, their geographic (strong presence on emerging markets) and sectoral (exposure to the energy sector) breakdown seem to be extremely risky and not correctly reflected in their bondprice. On the contrary, our exposures to the automobile sector have been maintained despite recent credit spread widening triggered by the news about Volkswagen manipulating emissions tests. As a matter of fact, we



believe that over time automobile parts manufacturers will benefit from increased demand by car manufacturers for high-tech solutions.

Finally, portfolio construction will play a key role in seizing identified opportunities. On this level, it boils down to using the right ingredients (being bonds) in the right amount (namely with the right weighting) in order to prepare a dish which is neither too spicy (being an overly risky portfolio) nor tasteless (namely an active portfolio which does not provide any value compared to passive management).

Against this backdrop, it is sometimes incorrectly presumed that in order to build a balanced portfolio in terms of high-yield bonds it is necessary to diversify risk over a large number of issuers so as to limit the risk of losses. However, this way of thinking does not take into account that the distribution of risk for high-yield bonds is very wide and that increasing the number of positions in a portfolio only increases its default risk probability. In essence, active management in the high-yield segment is more concentrated as it considers that there are limits to diversification and that it is simply a good idea to hold a limited number of bonds, which makes it possible to eliminate non-systemic risk. However, above this threshold, holding too many securities in a portfolio does not add value. Our experience shows that a portfolio containing 45 to 65 high-yield bonds allows us to achieve sufficient diversification meeting the objectives of our highyield strategies.

Conclusion

As discussed, there are various factors explaining a possible gap between a security's equilibrium market price and its fundamental value. This observation has a very specific impact on managing a portfolio exposed to high yield debt. While still taking into account investors' constraints, a rigorous selection process and appropriate portfolio construction can allow an active manager to take advantage of market opportunities. Given the current high level of risk premiums, we believe that such opportunities exist at this point in time.

Inflation-linked bonds

Inflation-linked bonds: an intuitive introduction to their mechanics and role in a portfolio

Most bonds are rather simple instruments. They pay a regular coupon and return the principal amount to investors on a given maturity date. The coupon is determined by the return investors require when the bond is issued. This required return has four principal components.

The first is compensation for credit risk. The investor demands a premium for the risk that the issuer (the borrower) may not pay the coupon or principal when due. This risk is typically very low for quality government issuers, and therefore this compensation is low for issuers such as Germany, France, the United States or even Belgium.

The second is inflation compensation. The capital you invest today may not have the same purchasing power at maturity. This difference is broadly measured by inflation. Future inflation depends, among others, on macroeconomic, political and fiscal developments. Central banks typically try to manage this path for inflation but deviations can be significant, as current inflation is significantly below most central banks' targets. Given the uncertainty of future inflation, and the fact that the coupon is fixed at inception, the investor typically also wants to be compensated for inflation uncertainty.

A third return factor is the term premium. When you invest in a bond, you lock the principal up until a given maturity. In other words, you defer present consumption for future consumption and should be rewarded for that. We refer to this as the term premium, which is typically higher for longer-term bonds.

A fourth return factor is the real return. The previous return components have not made the investor any wealthier; they are mere compensations for other factors and risks. The real return provides an increase in purchasing power for the investor. The required real return for a government bond is often closely linked to the expected real growth of the economy. Needless to say that, in the current lowgrowth environment, real returns are low, and sometimes even negative.

There are a number of other risks that require compensation, including liquidity risk, etc., but this would lead us too far astray in this brief introduction.

Inflation-linked bonds

Given that government bonds are often used as a risk-free asset, it does make sense to avoid unnecessary risk factors. The obvious one is credit risk. Another is inflation risk. Inflation uncertainty is a risk factor in the construction of a normal fixed coupon bond because the expected inflation levels are determined at inception through the fixed coupon. Senior Portfolio Managers



Vereecke, CFA

Renna

If we were to make the bond pay-out dependent on the actual inflation, we would eliminate this uncertainty. The purchasing power of capital would be preserved independently from the path of inflation.

This is exactly what an inflation-linked bond does: the notional of the bond is adjusted with the change in inflation. For this bond, the coupon does not need to compensate for expected inflation or inflation uncertainty as the principal moves gradually up (or down) with inflation. However, the coupon still reflects the other return components (credit risk, term premium and, primarily, the real return). The coupon is paid on the inflation adjusted notional, and at maturity this inflation adjusted notional is paid back to the investors. As an added bonus, most inflation-linked bonds pay at least the initial principal, even if cumulative inflation turns out to be negative. This adds an extra layer of inflation downside protection in case of a deflationary environment.

Because they protect the real value of the investment better and reduce inflation uncertainty, inflation-linked bonds can be viewed as a better approximation of a long-term capital preservation instrument; they can therefore be seen as presenting a lower risk level than nominal bonds. This underpins their role as a core building block in a diversified investment portfolio.

How to invest?

The global inflation-linked market is 2.5 trillion euros. This is a relatively large market, equivalent to one-eighth of the global treasury market, and slightly bigger than European credit. The diagram in Figure 1 below gives an overview of how the inflation linked market compares to the nominal bond market.

There are many reasons why countries issue inflation-linked bonds, but there are probably 3 main reasons. Firstly, government revenues are often inflation-linked (taxes). Secondly, many

Inflation-linked bonds

investors have inflation-linked liabilities and therefore like inflation-linked assets. Lastly, it diversifies the pool of investors for government debt, which typically reduces the cost of debt.

Most developed and many emerging countries issue inflation-linked bonds in pretty much the same manner as they issue traditional bonds. As such, it is straightforward for investors to build a portfolio of inflation-linked bonds which 'mirrors' their traditional nominal government bond portfolio. There are, however, a few caveats.

Firstly, not all countries issue linkers. Notable exceptions include Austria, Belgium and the Netherlands, which do not emit benchmark-size inflation-linked bonds. Typically, these smaller countries consider that there is not enough demand to create a liquid linker programme. Nonetheless, some other smaller economies, such as Sweden and New Zealand, have decided to start a linker programme and are still actively issuing. The fact that a small group of countries does not issue linkers complicates the replication of a nominal bond portfolio with inflation-linked bonds. We call this a country bias.

Secondly, not all countries issue the same amount of debt as linkers. For example, the UK emits about a quarter of its public debt as inflation-linked bonds, whereas Germany only does 6.5% via linkers. This means that the linker market in the UK is approximately 4 times larger than the German market when compared to their respective nominal markets. We call this the linker-proportion bias. (Source: UK Debt Management Office, Deutsche Finanzagentur).

Global Nominal and Inflation Linked Government Bond Markets



Figure 1: The relative sizes of the Investment Grade Nominal Government Bond Market (20.76 trillion euros), versus the Investment Grade Inflation-Linked Bond Market (2.55 trillion euros). Source: Barclays POINT.

Thirdly, for some issuers the duration of their linker market is significantly different from their nominal market. This is often because some insurance companies or pension funds have long-term inflation-linked liabilities and have therefore an appetite for long-term inflation-linked bonds (e.g. in the UK). We refer to this as the duration bias.

Finally, there is an issue which is affecting traditional and inflation-linked bonds in the same way: the more a country is indebted, the larger its bond market. So if you invest following the size of a market, you will be allocating relatively more assets to over-indebted countries. We call this the debt bias.

It turns out that most countries with a long duration bias have either a high linker-proportion bias or a debt bias. So by addressing the latter two, we typically address most of the duration issue.

A way to address these biases is to not use market valuation as a guide for your country allocation. Market value allocation is typically used for most traditional bond indices and is an allocation method based on the total market value of all the relevant bonds for each market. Countries with more debt get a larger allocation.

Due to the above 4 biases, for inflationlinked bonds a market value based portfolio results in a very unbalanced portfolio with strong and unnaturally high weights, both in market value and duration, in specific countries (for example the UK).

Instead, if you allocate to the different countries based on the size of their economy, as measured by their GDP, you address most of the above biases in a very satisfactory way and obtain a much more diversified portfolio. The only issue you will never be able to address is the country bias: the fact that a few countries do not issue linkers; but these are typically smaller countries so the impact on the overall portfolio is limited.

To understand the impact of using GDP-based weights, take a look at the pie charts below. The pie chart on the left shows the weights of the different countries when you allocate based on the market value (in euros) of the inflation-linked bond market in each country. Look at the huge size of the UK and small size of Germany. A GDP-based country allocation based on their relative gross domestic products yields a much more balanced allocation (chart on the right).

The contrast is even starker when you look at how interest rate risk is distributed (as expressed by modified duration). First of all, the modified duration of the market value weighted universe is 11.5, whereas the modified duration of the GDP weighted universe is 8.5. This shorter duration is much more in line with the duration of nominal treasuries. For example, the duration of European nominal bonds is about 7.2, whereas global treasuries have a modified duration of about 7.5. Not only do we reduce the modified duration of the universe from 11.5 to 8.5,



Figure 2: Country weights of inflation-linked bonds: using market value based weighting (left) versus Gross Domestic Product based weighting (right). The UK shrinks significantly, whereas Germany and other developed markets get a bigger slice of the pie. Source: Barclays POINT

we also rebalance the contribution of each country in a much more sensible way by using a GDP allocation. Consider the next set of pie charts below. The one on the left shows the breakdown of each country's contribution to modified duration in the market value weighted universe (the standard approach). On the right you find the modified duration distribution if we allocated to each country based on its GDP. You can observe three things. Firstly, in the standard view (left), the UK and the US contribute almost 75% of the risk. This provides a very concentrated universe. GDP weighting not only reduces the overall duration but also greatly reduces the concentration of the universe (see pie chart on the right). Secondly, Germany now gets an allocation in line with what you would expect in a global portfolio. Lastly, many countries get a reasonably balanced allocation which leads to a nicely diversified interest rate risk distribution. (Source: Modified duration based on Barclays POINT, JP Morgan Indices).

In conclusion, by using a GDP-based country weighting an investor gets a much more balanced

Country Risk Contribution of Inflation

⁴ The biggest risk factor in a global treasuries portfolio is currency risk. To isolate the portfolio from this risk, it should be currency hedged.



Figure 3: Interest rate risk breakdown: modified duration breakdown per country using market weighting (left) versus Gross Domestic Productbased weighting (right). The US and UK move from accounting for 73% of rate risk to less than half. Source: Barclays POINT. One should be cautious when comparing the modified duration of the nominal and inflation linked bonds. These concepts are similar but not necessarily identical.

I3 Ascent

Country Risk Contribution of Inflation Linked Bonds using Market Value Weighting

Inflation-linked bonds

exposure to inflation-linked bonds since we address most of the above-mentioned biases of the inflation-linked market. Meanwhile, the resulting duration is much more in line with the traditional treasuries universe.

Are inflation-linked bonds currently cheap?

Now that we have determined a role for inflation-linked bonds in a portfolio and established a good way to invest, the remaining question is how they are priced versus other asset classes, in particular nominal bonds. Clearly, relative valuations are temporary and will fluctuate over time.

One of the best ways to measure relative valuations between linkers and nominal bonds is by looking at the so-called inflation break-even levels. The real yield of an inflation linked bond is compared with the nominal yield of a traditional bond of the same maturity and from the same issuer. For example, you can compare the real yield of the 10-year US Treasury Inflation Protected Security ("TIPS") with the nominal yield of a 10-year US treasury. The difference gives an indication of the expected inflation for the next 10 years: the 10-year inflation break-even level (or "break-even"). Even more interesting is looking at the trend of these break-even levels.

The graph below shows the 10-year break-even for the US market over the past 10 years. You can clearly see how these break-even levels have been relatively stable for a large part of that period. This is because the market probably believed that the US Federal Reserve (the "FED") would be successful in maintaining a stable inflation policy over the next 10 years. Two things are clear: during the 2008/0g crisis break-evens dropped significantly when markets where in disarray ("Who expects inflation if financial markets might collapse tomorrow?"). The second notable issue is the current downtrend in break-evens. The recent weakness in emerging markets, reduced resilience in global growth and the resulting weakness in commodities (including an OPEC price war as regards oil) have led to a serious downpricing of inflation expectations, with lower break-evens as a result.

The question is why some of these potential temporary issues are affecting 10-year inflation expectations in such a dramatic way. For example, the drop in oil prices could be a one-off effect: if the price of oil does not drop further, its impact will be neutral on inflation going forward. But one could wonder if the market is starting to question whether the central banks have lost their grip on inflation: their multiple QE programmes did not bring inflation back to 2% (roughly the target of most central banks). Or could it be that markets just overreacted and inflation-linked bonds are currently cheap in relation to nominal bonds?

Our current view at the time of writing (early October 2015) is that it is probably a combination of the latter two: the market is doubting whether or not the central banks still have a firm grip on inflation and, given the weak growth outlook, market players are not very optimistic about the inflation outlook. In other words, inflation expectations may have "de-anchored" and are being priced at lower levels. Whereas we would agree with that repricing trend, we still think that break-even inflation is priced rather cheaply in many countries. In other words, this is another reason for adding inflation-linked bonds to your portfolio, with this final argument being more tactical.



Figure 4: The historical 10-year US inflation break-even level: how the market has historically priced inflation for the next 10 years. Source: Bloomberg

Macro economy

From emerging to submerging markets and back... to a new normal

Economic news coming out of emerging markets (EMs) is making headlines, though not in a positive way. This is unlikely to change anytime soon. The relatively strong USD, the prospect of gradually tighter global financial conditions and low commodity prices, coupled with weaker balance sheets and domestic political crises in certain cases, will continue to put downward pressure on economic sentiment for now. EMs are going through a rough patch, but there are several elements that should prevent them from experiencing a full-blown economic and financial crisis. It can be expected that the significant currency depreciation seen over the last two years, along with forthcoming economic and political reforms, will eventually help EMs to get back on track, but this will take time.

Senior Economist



Hans Bevers

The slowdown witnessed over the last few years stems from several factors, such as the impact of lower commodity prices, tighter external financial conditions linked to the prospect of the first rate hike in the US, the economic rebalancing in China, structural bottlenecks, and distress related to (geo)political factors. Economic growth in EMs has now slipped below the average over the past 35 years, and on top of this Brazil and Russia are struggling with recession. Several observers are now arguing that EMs are in fact submerging. Although this seems exaggerated, it is hard to overlook the big difference with the spectacular growth seen during the last decade. In its July update on the world economy, the IMF projects that growth in EMs will slow to 4.2% this year, as compared to 4.6% in 2014. The latter already marks a clear slowdown from the 6.1% growth figure seen between 2000 and 2012. A key



Macro economy

element here is that recent financial market volatility, taking place amid increasing fears of a faster-than-expected slowdown in China, clearly risks taking this year's projection lower still.

Broadly speaking, EMs passed the test of the 2008-200g financial crisis with flying colours. Not only were most EMs resilient to the huge financial shock, but they also returned to high growth rates relatively quickly. Specifically, in 2010 and 2011 economic activity in several EMs grew only a touch slower than at the peak of their success in 2006 and 2007. In short, EMs had come a long way from the troubles witnessed before the turn of the century: the Latin American debt crises in the 1980s, the Tequila crisis in Mexico in the mid-1990s, the Asian financial crisis of 1997-1998, and crises in Russia (1998), Brazil (1998-99) and Argentina (2000-01).

This resilience suggested something fundamental had changed. Admittedly, many EMs were hit hard initially, especially in Central and Eastern Europe. Moreover, several were able to freeride on China's decision to implement bold stimulus measures (around 30% of GDP). Despite this, however, their initial post-crisis success was still impressive. To a large extent this was attributable to improvements in the balance of payments position in the form of lower current account deficits, and to robust amounts of international reserves in general. Moreover, in most EMs, financial institutions were better capitalised than before and external debt was lower. All this followed on from policy responses to the crises of the 1980s and 1990s.

Yet this is not the full story. The fact that EMs largely escaped the credit booms seen before 2008 was largely because a big group of DMs (US, UK and the eurozone periphery, most notably) embraced them. What's more, the credit boom was not confined to DMs. In actual fact, not all EMs showed the same degree of resilience when the 2008 crisis hit. As mentioned earlier, against the backdrop of large negative current account balances caused by domestic credit booms, several countries in Central and Eastern Europe (see graph) proved particularly vulnerable and experienced a sudden stop of capital inflows, similar to what was seen in the eurozone periphery. Not only did this result in a sharp economic slowdown, it also showed that EMs still face many challenges and that, despite their overall positive performance, countries depending on foreign capital remain highly vulnerable to the risks of an abrupt stop in funding.

In the aftermath of the 2008-2009 crisis, several EMs (including China, Turkey, Thailand and Brazil) did indeed see a significant acceleration in private credit growth, the widening of current account deficits, and real exchange rate appreciation. All this made EMs more vulnerable to changes in global risk appetite. The latter first became visible in May 2013, when former Fed Chair Ben Bernanke first cited the possibility of tapering the Fed's quantitative easing programme. Despite the fact that this didn't happen until December of that year and also that liquidity provision was still expanding, EM investors started to sell EM assets across the board.





Brazil, South Africa, India, Indonesia and Turkey became known as the fragile 5 countries in the first stage of the sell-off. More recently, not many countries have been able to escape the turmoil. From a general perspective, economic literature finds that rapid real exchange rate appreciation and credit growth make countries more prone to crisis situations.

China definitely falls in the category of countries that have seen both rapid real exchange rate appreciation and credit growth over the last 7 years. Nevertheless, because of the economy's fairly closed character (and low external debt levels), a traditional EM sudden-stop crisis does not appear to be a serious threat. This does not mean, however, that everything is fine. For example, it is telling that several indicators already suggest performances that are significantly lower than those in official estimates. That having been said, the combination of monetary and fiscal stimulus measures now being taken by Chinese policymakers should soon start to have a positive effect and prevent a hard-landing scenario in the near term. Clearly, these may come at the expense of even larger future risks with regard







Macro economy



to a credit overhang and capital misallocation. In any case, looking forward, China's rebalancing efforts and ageing population will ensure that growth continues to shrink in the years to come.

China's rebalancing and slowdown is already having significant growth implications for other EMs through its impact on trade and commodity prices. It seems wrong, however, to state that China is the only reason why global commodity prices have fallen back substantially. Specifically, excess supply in the oil sector and the stronger USD are also putting downward pressure on global commodity prices.

Although the Fed's path to higher interest rates is likely to prove a very gradual one, the uncertainty surrounding it looks set to keep global appetite for EM bonds and equities rather low for the time being. This, in turn, implies that capital flows to EMs will stay modest at best. As a result, despite the fact that economic activity is subdued, several EMs will probably have less scope to ease monetary policy. What's more, some of these countries (South Africa and Turkey) will probably be forced to tighten monetary policy in an attempt to stop capital outflows.

EM weakness is likely to persist. Some observers are drawing parallels between the situation in the late 1990s and today. Back then, several key Asian countries slipped into a severe recession. While its certainly true that private credit growth has accelerated significantly in the post-2008 period and that current accounts deficits have widened in a handful of EMs, there are also important differences making a full-blown EM crisis less likely: (1) more flexible exchange rates (overcoming the "fear of floating"), (2) less pro-cyclical fiscal policies allowing larger budget deficits in times of crisis, (3) less debt in foreign currency (the original sin), avoiding a currency and maturity mismatch between domestic revenues and foreign liabilities, and (4) significantly more international reserves that can be run down to mitigate currency depreciation. The latter is important because, for heavily indebted countries with debts in foreign currency, FX depreciation can be contractionary instead of expansionary.

More flexible exchange rates, lower levels of external debt and large amounts of international reserves should protect most EMs against a fullblown financial crisis. Moreover, China's stimulus measures are likely to ensure that fears of an imminent hard landing will soon start to fade. Finally, the currency depreciation seen in many EMs since 2013 should eventually materialise into improved competitiveness when combined with further productivity-enhancing reforms. To be clear, as mentioned earlier, current financial and economic conditions as well as structural issues suggest that downward risks still prevail. In any case, EMs are not up for a rapid recovery. What's more, any recovery will look modest when compared to last decade's boom period.

VW scandal

Volkswagen: can ESG information still be trusted?

The German car manufacturer used to be included in the Dow Jones Sustainability Index, and has recently been removed following the scandal. Being a signatory to the Carbon Disclosure Project, there was a widespread consensus among extra-financial analysts about the high quality of the environmental data provided by Volkswagen. In addition, VW was recognised as the most sustainable company of its sector in 2013.

It was therefore hard to highlight the issues the company is now facing regarding erroneous CO2 emissions and to anticipate the allegations which made the company's stock price plunge.

As far as fraud is concerned, few have the means to avoid being trapped. However, the VW case highlights the importance of ESG standards and audit. Indeed, extra-financial information is complementary to traditional financial metrics. However, standardisation and expertise need to be enhanced. Qualified audits conducted by welltrained and qualified auditors are required to gain insight into the data provided by companies. There is still room for improvement on this front. Over time, auditors and supervisory institutions will acquire the same level of qualification, knowledge and expertise as they have for financial metrics, which have been used for much longer.

Although the fraud regarding CO2 emissions of US diesel vehicles was revealed rather haphazardly, VW governance has been weak for a while. It once again stresses the importance of impeccable corporate governance for the sustainability of a company. Responsible Investment Coordinator



Ophélie Mortier

Indeed, VW's corporate governance has lacked independency. Firstly, at the level of the Management Board but also at the level of the audit committee. Secondly, the company has close ties with the political world, having two representatives of the Lower Saxony region in the Board to ensure the State's interests. Indeed, the carmaker is an important job provider as well as a substantial taxpayer.

Given the size of the scandal and fraud, there is little doubt regarding the top management's involvement.

Nowadays, there is increasing demand for the publication of CO2 footprint of portfolios, the ESG impact of investments, etc. On the one hand, caution should be exercised as all these metrics are quite recent and need to be duly tested and standardised. On the other hand, without resorting to excessive reporting, such initiatives reach out to investors and increase their awareness regarding their responsibility as responsible actors and stakeholders in this interconnected world.



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