# What are the long-term expected returns for the different asset classes?

15 October 2020



# IN A WORD:

More than ever, asset allocation depends on the risk-return trade-off. COVID-19 has been a game changer and will lead to low rates and yields for quite a long time. Guidance from central banks also points in that direction. It also implies lower expected returns on many fixed-income assets over our 10-year forecast horizon. Risk premiums are expected to be broadly in line with historical averages. There have also been some structural effects on employment markets that will take quite some time to normalize and this should lead to lower economic growth on average over the period. This has led us to revise our growth rates for dividends and/or the potential for so-called re-rating effects (higher Price-to-earnings ratios). Consequently expected returns for equity markets have been revised down.

It is the first time in history that expected returns have been so low, especially in real terms, as inflation should remain positive in both the United States and Europe.

Investors have two options today:

- Either to prefer a low-risk long-term return that is below inflation in the fixed-income investment universe,
- Or to take on more risk and allocate more to equities and alternative investments in the broader sense.

Our strategic asset allocation decisions continue to favour:



- long-term investments (increased duration)

- assets with a higher risk return profile (equity markets and real assets, such as real estate, commodities, etc.).





#### 10-year expected returns vs. volatility (2015)

Source: BNP Paribas WM, Bloomberg





Source: BNP Paribas WM, Bloomberg





Source: BNP Paribas WM, Bloomberg



#### Conclusions from these three charts:

- 1) The first remark is visual: expected returns are more 'out of step' in 2020 than in 2019 and 2015, moving away from the regression line.
- 2) The decline in yields in the bond universe has continued and has led to an average downward revision of -0.5% for the expected returns of fixed-income assets. The fall in US dollar yields over recent months has been somewhat larger than for euro-denominated bonds. The revisions in expected returns for USD- denominated fixed-income assets are thus somewhat bigger.
- 3) Expected returns on equity investments are around -0.75% lower today than they were in our exercise last year. That is linked to lower dividend yields, dividend growth and/or less potential for re-rating.
- 4) To adapt to this environment, investors should focus mainly on the long term and should:
- extend the horizon of their investments;
- accept more risk in their investments in fixed-income assets (Corporate bonds while remaining diversified);
- increase the pocket of equity markets which generate higher dividends than bond yields; and
- diversify into real and alternative assets.

## Conclusion

We recommend keeping a long-term strategy that works well: take advantage of price declines when they occur, in order to strengthen investments in risky assets.

This helps to make the link between the long-term view explained in this paper and the more practical decisions which must be taken on a daily basis.



|              | 2020                           | 2020 10-year<br>Expected Returns<br>(in euro) | 2019 10-year<br>Expected Returns<br>(in euro) | Change<br>2019/2020 | Volatility |
|--------------|--------------------------------|---|---|---------------------|------------|
| Fixed Income | Euro cash                      | 0,00%   | 0,00%   |                     | -          |
|              | USD cash                       | 0,75%   | 1,50%   | -0,75%              | -          |
|              | Government bonds Eurozone      | 0,25%   | 0,50%   | -0,25%              | 5,1        |
|              | Government bonds U.S.          | 1,00%   | 1,75%   | -0,75%              | 13,1       |
|              | Corporate High Grade Europe    | 0,75%   | 1,00%   | -0,25%              | 5,7        |
|              | Corporate High Grade U.S.      | 1,50%   | 2,25%   | -0,75%              | 10,3       |
|              | High Yield Bonds Europe        | 3,75%   | 4,00%   | -0,25%              | 7,7        |
|              | High Yield Bonds United-States | 4,00%   | 4,50%   | -0,50%              | 9,9        |
|              | Emerging Hard Currency bonds   |   |   |                     |            |
|              | (USD)                          | 3,50%   | 4,00%   | -0,50%              | 11,3       |
| Equities     | Equities Eurozone              | 5,00%   | 6,00%   | -1,00%              | 10,8       |
|              | Equities U.S.                  | 5,00%   | 5,50%   | -0,50%              | 9          |
|              | Equities U.K.                  | 5,00%   | 6,00%   | -1,00%              | 10         |
|              | Equities Japan                 | 4,75%   | 5,00%   | -0,25%              | 11,7       |
|              | Equities Emerging Markets      | 7,00%   | 8,00%   | -1,00%              | 13,3       |
| Alternatives | Alternative UCITs              | 3,00%   | 3,50%   | -0,50%              | 7,8        |
|              | Real Estate                    | 5,50%   | 6,00%   | -0,50%              | 13         |
|              | Private Equity                 | 8,00%   | 9,00%   | -1,00%              | -          |
|              | Commodities                    | 2,00%   | 2,50%   | -0,50%              | 15,1       |
|              | Gold                           | 2,25%   | 3,00%   | -0,75%              | 17,2       |

Source: BNP Paribas WM, Bloomberg

Source: BNP Paribas - Refinitiv

NB: Annualised historical volatilities: calculated as the standard deviation of the annual total returns of this asset measured monthly over ten years. There is a difficulty in calculating the risk of private equity as measured by volatility. This reflects the fact that private equity funds are typically valued on a quarterly basis. Since they are illiquid, there is no daily or monthly market price or objective data series on the volatility of the returns of a private equity fund (see section on private equity).

# 1. Expected return on Cash and Bonds

Expected returns on cash and fixed-income assets are closely linked to expectations of central bank target rates. Indeed, cash remuneration is generally close to the target rate, while expected returns on bonds are linked to the sequence of expected short-term rates over a given period.

Under certain assumptions one can assume that:

- it will be the equivalent of holding a 2-year bond or a 1-year bond and buying another 1-year bond after 1 year.
- long-term bonds ought to provide greater returns than short-term bonds. Investors prefer to avoid too much uncertainty and price fluctuations. And they are willing to sacrifice some amount of yield.



# Expected return on Cash

The Taylor rule (J. Taylor, 1998) is the most popular one for estimating the average policy rate of a central bank. It suggests that "the central bank target rate should be consistent with the central bank's long-term targets for inflation and output", and the long-term equilibrium rate should be adjusted either when inflation deviates from the central bank inflation target or when economic activity deviates from the so-called potential economic growth (the highest economic growth rate that is compatible with stable inflation).

Following J. Williams (2017) we use an estimate for the long-term or equilibrium 'real' interest rate (adjusted for inflation):

- 0% for the eurozone
- 0.5% for the US

Using the assumption of a long-term inflation rate of 2% in the eurozone and in the US, we obtain a nominal long-term or equilibrium rate of 2% in the eurozone and 2.5% in the US.

The next step is to adjust the equilibrium interest rate for the expected inflation gap (difference between inflation and target inflation) and the output gap (the difference between expected economic growth and potential growth). Following the results of recent studies such as Hofmann and Bogdanova (2012), we thus use estimates that are much lower than those in the original Taylor rule.

Based on these assumptions we estimate the expected average rate paid on cash at 0% in the eurozone and 0.75% in the US (1.5% for our estimate last year).

# Expected return on Government Bonds

The expected return of 10-year government bonds can be simply estimated by the average yield to maturity of a government bond with a 10-year maturity, the risk being that such measure can fluctuate quite a bit in the short term and can be subject to short-term speculations or hedging strategies. This is probably the case today, especially in the eurozone.

For the eurozone, we use an average yield to maturity of a government bond index including most member countries (with an average maturity of nearly 10 years). Yields have fallen quite sharply in recent months again, prompting us to adjust this return even more. We use an estimate somewhat above the current level as we assume that there are some distortions linked to the huge demand for safe long-term bonds. This is mainly linked to central bank bond purchases, general risk aversion and regulatory changes for banks, insurance companies and pension funds. We estimate the expected return to be 0.25% for the eurozone and 1% for the US. Compared with our estimates last year, this is a -0.25% revision for the eurozone and a -0.75% revision for the US.

# Expected return on Corporate High Grade Bonds

Another major risk that shall naturally lead to differences within the bonds asset class is the risk of default, which is the failure to meet the terms of an agreement, such as interest payments. The higher the probability of default, the more additional yield investors seek, compared with similar government bonds (especially in terms of maturity), which generally have a lower probability of default. Among Corporate bonds, we distinguish between Investment Grade and High Yield Corporate bonds. Investment Grade Corporate bonds (those rated BBB- and above by the rating agency Standard & Poor's or Baa3 and above by Moody's



Investors Service) are about as sensitive to economic variables as US and European government bonds. However, they are also subject to a certain level of default risk. In the event of an economic upturn leading to a rating upgrade or an improved performance of the issuing company, corporate bonds may also appreciate in price, adding to the total return. The opposite is also true.

To estimate the expected return on Corporate bonds, we use our estimate of the government bond to which we add an historical risk premium ("credit spread") and adjust for the expected effects of some companies defaulting over the time period. K. Giesecke, F. Longstaff, S. Schaefer, and I Strebulaev (2010) find an average credit spread of about 0.80% over govies. The average default rate over the period was 0.9% with a recovery rate of 50%. We also factor in that the average rating in the benchmark has fallen in the last few years.

Based on these assumptions, <u>we estimate the expected return on Corporate bonds at 0.75%</u> for the eurozone and 1.5% for the US. As we revised down our expected returns for government bonds, while keeping our other assumptions unchanged, we also needed to revise the expected returns for Corporate bonds. Compared with our estimates last year, this is a - 0.25% revision for the eurozone and a -0.75% revision for the US.

# Expected return on High Yield Bonds

High Yield bonds include both Corporate High Yield and Emerging Market bonds. Corporate High Yield bonds are rated below BBB- by Standard & Poor's (S&P) and below Baa3 by Moody's, while bonds issued by governments of emerging countries are also lower rated bonds. Compared with Investment Grade Corporate bonds, they are more sensitive and carry a higher risk. However, they can add to diversification in a broad investment portfolio and are often less sensitive to interest rate increases. In a well-diversified portfolio of High Yield bonds, fluctuations in returns are mainly linked to the sensitivity to default risks via the economic cycle. Emerging-market High Yield government bonds are historically riskier, even against US High Yield Corporate bonds. We only consider Emerging Market bonds in US dollars.

To estimate the expected return on High Yield Corporate bonds, we use our estimate of the government bond to which we add a historical risk premium and adjust for the expected effects of some companies defaulting during the period under review. We use a spread over government bonds for Corporate High Yield bonds of 500bp, an expected default rate of 3.3% in the US and 1.9% in Europe, and a recovery rate of 40%. These figures are based on an article by F. Reilly, D. Wright and J. Gentry (2009) and on the "2016 Annual Global Corporate Default Study" by S&P.

Based on these assumptions and using our revised expected returns for government bonds, we estimate the expected return on High Yield Corporate bonds at 3.75% for the eurozone and 4% for the US. Compared with our estimates last year, this is a -0.25% revision for the eurozone and a -0.50% revision for the US.

For Emerging Market bonds, we use a similar approach. The historical long-term spread over US government bonds for the JP Morgan index (EMBI+ JP Morgan index) is approximately 400bp, which we adjust for the expected default and recovery rate. This is based on the JP Morgan study on "EM Corporate Default Monitor". <u>Using these assumptions, and given our - 0.50% downward revision in the expected return of US government bonds, we estimate the expected return on Emerging Market bonds in USD at 3.5%.</u>

# 2. Expected return on Equities



The value of a stock depends on the future income it is expected to generate. There are two possible income sources: the current dividend and the future price increases (capital gains). The most common theoretical approach is the so-called 'dividend discount model'. Based on the 'Gordon equation', the present value of equities is equal to the discounted value of expected income (dividend) of the company. In the basic version of the dividend discount model, dividends are assumed to grow at a constant annual rate. If one assumes no valuation change (constant price-to-earnings ratio), the long-term 'real' (after inflation) return on equities should be equal to the sum of the dividend yield and the 'real' growth rate dividend. For more details, see Ilmanen, Antti. (2011).

|                  | Expected<br>Return | Assumptions  |
|------------------|--------------------|--|
| Europe           | 5%                 | We use the assumption of a 2.75% dividend yield and a 0.25% real growth of dividends and a no re-rating effect. This suggests a 'real' expected return of 3%. Using the assumption of 2% long-term inflation, we achieve 5%. |
| US               | 5%                 | Same approach except that we assume a 2% dividend yield, 1% real growth of dividends and no re-rating effect. This suggests a 'real' expected return of 3%. Using the assumption of 2% long-term inflation, we get to 5%.    |
| ик               | 5%                 | A 3% dividend yield, 0% real growth of dividends, no re-rating effect and 2% long-term inflation.  |
| Japan            | 4.75%              | A 2.75% dividend yield, 0.5% real growth of dividends, no re-rating effect and 1.5% long-term inflation.   |
| Emerging Markets | 7%                 | A 2.5% dividend yield, 2.5% real growth of dividends, no re-rating effect and 2% long-term inflation.  |

## Summary of the expected return on Equities

## 3. Expected return on Alternative Investments

We are constantly seeking solutions that improve the risk-return trade-off. Alternative investments enable us to improve the relationship between risk and return.

## Alternative UCITs

Given the diversity and complexity of strategies, we use academic research papers based on historical data that take into account measurement biases, to estimate expected returns. The main reference is Ibbotson, Chen and Zhu (2011). Based on this article, we use the assumption of an excess return on cash of 2.5%. This premium is added to the expected average return on cash in euros and US dollars (approx. 0.5% instead of 1% in previous calculations). We estimate the average expected return on alternative UCITs at 3% instead of 3.5% before. Compared with our estimates last year, this is a -0.5% revision.

## Expected return on Real Estate

We assume a dividend yield of approximately 3% with the assumption of a 2.5% nominal dividend growth (including inflation). <u>This gives an expected return on real estate of 5.5% instead of 6% before.</u>



# Expected return on Private Equity

R. Harris, T. Jenkinson and S. Kaplan (2014) find that for private equity, "the outperformance versus the S&P 500 averages 20% to 27% over the total life of the fund and more than 3% per year." We thus target an additional 3% return above the expected average return on public equity markets (5% in the US and 5% in the eurozone). Illmanen, Chandra and McQuinn (2019) find very similar results. We thus estimate the expected return on private equity at 8% instead of 9% before. The premium can be seen as an "illiquidity premium" and is justified by the fact that the capital invested in a private equity fund is generally "locked" for a typical period of 5 to 10 years. Ang (2014) offers more details on this.

There is however a difficulty in calculating the risk of private equity as measured by volatility. This reflects the fact that private equity funds are typically valued on a quarterly basis. Since they are illiquid, there is no daily or monthly market price or objective data series on the volatility of the returns of a private equity fund. Illmanen, Chandra and McQuinn (2019) argue that "the reported volatility and equity beta of private assets tend to be understated unless one desmooths their returns". There is not one methodology to do that and opinions diverge. Interestingly, they calculate a volatility of a "desmoothed" series that still implies a higher "risk-adjusted" return (based on the Sharp ratio) than for the S&P500.

# Expected return on Gold

Estimating an expected return on gold is quite difficult as there is no future income that can be discounted. Our expected excess return on cash in USD at 1.5%. This is also calibrated to have an excess return that broadly compensates for the historical risk (volatility). <u>We thus</u> use an expected return of 2.25% instead of 3% before (our expected return on cash in USD is 0.75%).

## **Expected return on Commodities**

Hong and Yogo (2010) show that "the mean excess return of an aggregate commodity futures portfolio between 1965 and 2008 was 7% per year, roughly half of which came from spot price growth and half from roll gains". Assuming that expected roll gains are zero on average, this would suggest an excess return of approximately 3.5%. However, this seems excessive and we prefer to use the assumption of 1.25% on cash in USD. This is calibrated to have an excess return that partially compensates for the historical risk (volatility). We thus use 2% instead of 2.5% before.



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