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# LONG-TERM ALLOCATION TO CONVERTIBLE BOND: A WELL-REWARDED RISK

The year 2022 was a rough one for the main asset classes fixed-income and equity. Convertibles have not been able to escape the pressure. However, with a longer time horizon, over the last 20 years, an allocation to convertibles has shown a risk-adjusted performance equivalent or even better than the one generated by the main asset classes: equity and bonds.

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## 2022 THE WORST OF BOTH WORLDS

In 2022, the global economy experienced two inflationary shocks. First, the consumption boom triggered by the end of the pandemic has generated a demand shock. Demand far outstripped supply, causing prices to rise and disrupting most supply chains, which drove inflation. Second, Russia's invasion of Ukraine generated another type of inflationary shock: a supply shock. At the same time, the only weapon central bankers could use to fight this inflationary explosion was raising interest rates. While this tool works well in fighting demand-driven inflation, its effectiveness is questionable for supply-driven inflation. This partly explains why the interest rate hike cycle, which is not yet over, has been the fastest and most robust in history, at least in the US.

In this environment, the three major market risk premia, namely equity risk premium, bond risk premium (rates), and credit risk premium, have all generated strong negative returns. The bond risk premium (i.e. the return that investors earn by investing in longer duration bonds) was one of the main drivers. The longer the duration, the greater the negative performance and, therefore, the contribution. In the second part of the year, credit and equity premiums suffered even more as investors began to fear that rising interest rates would affect companies' credit quality. Global equities lost one-fifth of their value, the most significant decline since 2008 on an annual basis.

In 2022, convertible bonds also came under heavy pressure. The three premiums described above remain the main generators of returns for the convertible bond universe as illustrated in Table 1 below. Other investment premiums contribute to bond performance such as volatility, convexity, cheapness (the difference between the theoretical price and the market price), time value, etc. Some of these factors, namely cheapness, even contributed positively to performance, but the magnitude of the movements in equities, credit and duration could not be offset by these. By way of illustration, the contribution of cheapness was +3.51%. While the credit and bond investment premium contributed almost equally for -10.4% and the equity investment premium for -9.20%.

Regarding the bond premium, the duration of the convertible bond universe stays constantly close to 2 (see Graph 1). Indeed, most convertible bonds have a maturity of 5 years with call/put around three years. As all bond investors experienced in 2022, the consequences of duration are significant even with a relatively low duration. Indeed, it applies uniformly to the entire portfolio or universe.

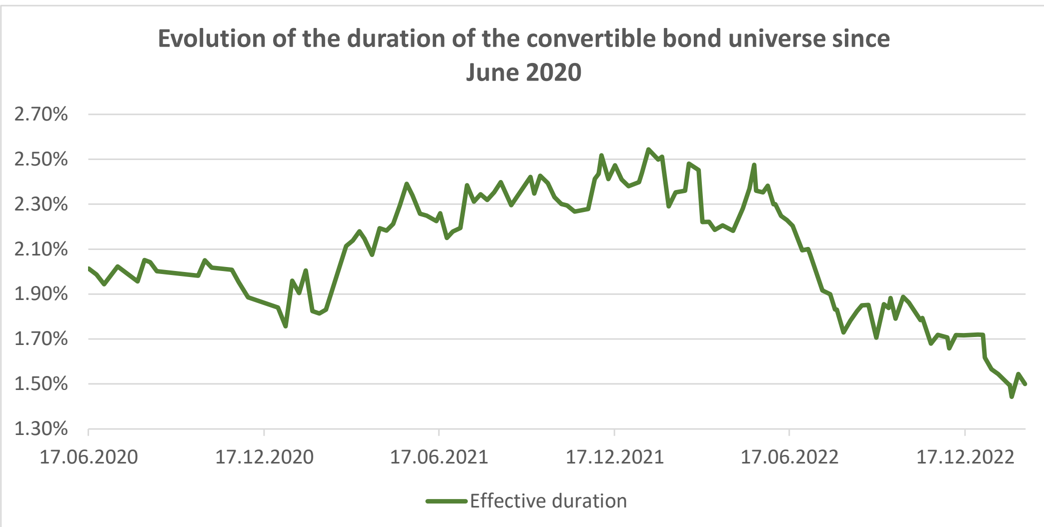
The widening of credit spreads also contributed negatively to performance. This is an exposure that can be managed in an active strategy. By way of illustration, our defensive strategy, which focuses on companies with excellent credit quality, was much less impacted than the universe as a whole.

Equity sensitivity also contributed negatively. However, it should be noted that the underlying shares of convertibles generated a weaker performance than the global equity universe. Indeed, the convertible bond universe provides a higher exposure to growth sectors (like technology, discretionary, and healthcare). Convertible bonds are particularly suitable for innovative companies with strong growth potential.

**Contribution of the major return factors in the convertible bond universe in 2022**

| | Cheapness contribution % | Equity contribution % | Credit & Bond contributions % | Others contributions % | Performance % |
|---|---|---|---|---|---|
| 2022 | 3.51 | - 9.22 | - 10.37 | - 1.76 | - 17.84 |

Table 1: Source MFM, 2022




Graph 1: Source MFM, February 2023

## SHORT AND LONG TERM

Now two questions arise for an asset allocator.

- Is it tactically interesting to allocate to convertible bonds in the short term?
- Are convertible bonds still attractive in a long-term multi-asset allocation?

Let's start with the short term.

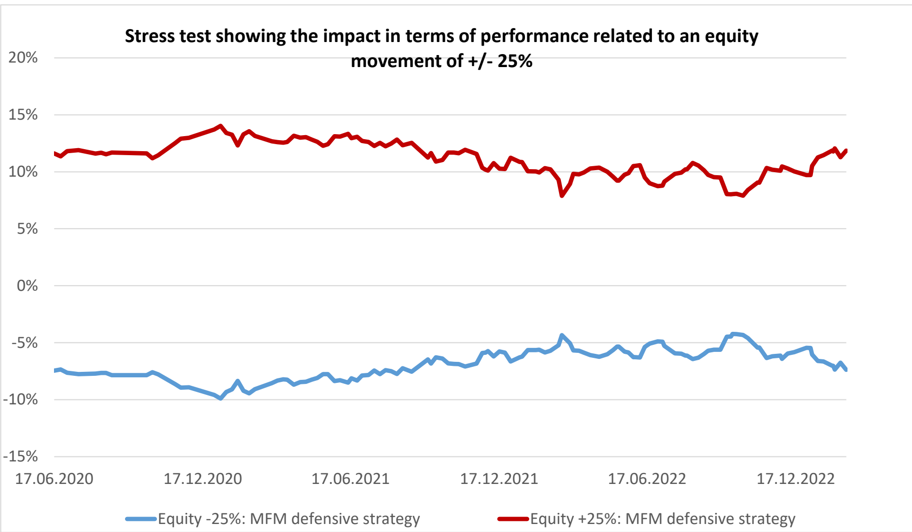
### SHORT TERM 2023 - BACK TO BASICS!

It is challenging to predict future macroeconomic events and anticipate their impacts on the performance of asset classes. Let's review the main variables likely to influence the performance of convertible bonds.

**Equity Sensitivity:** Convertible bonds provide some level of equity performance sensitivity. Today, the equity sensitivity of our defensive approach is around 37%, while for our more dynamic strategy it is 43%.

**Convexity:** equity sensitivity is one of many factors to manage to determine the exposure to equity premium in convertible bonds. Convexity, i.e. how quickly this sensitivity will evolve, is remarkable even if its direct contribution to performance is challenging to measure. As macroeconomic forecasts range from major depression to moderate slowdowns, it generates extreme scenarios for the performance of equities. In this polarized environment, convexity makes it possible to avoid the necessity to "time" these potential highs and lows. Indeed, it acts as an accelerator in bullish markets. Conversely, it mechanically reduces equity sensitivity when equity markets go down.

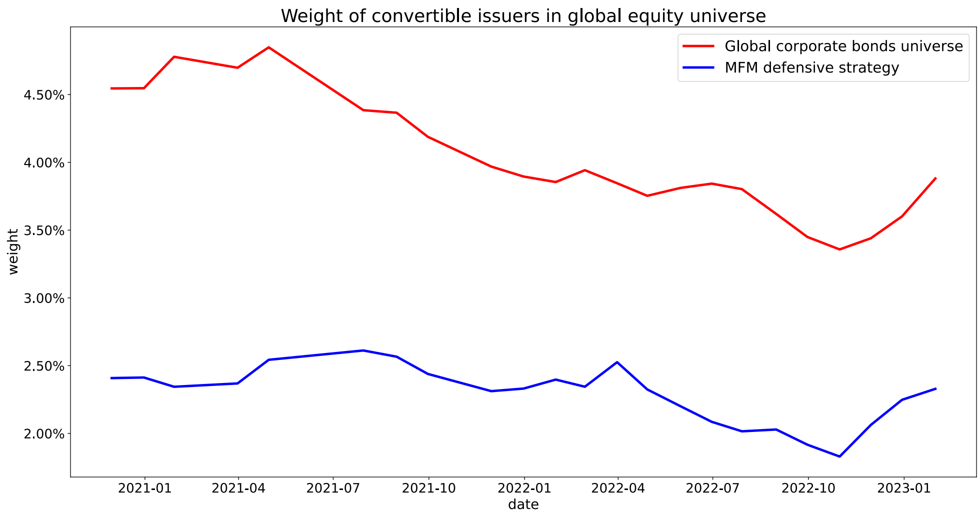
**Asymmetry:** To illustrate the asymmetrical nature of our strategies, if we assume that the equity markets move by 25% both up and down (assuming that the other factors all remain the same), then our defensive strategy would lose -6.6% with an equity market drop of 25%. At the same time, it would gain +11.5% with an equity market jump of 25%. These stress tests are carried out using an in-house database, which covers the universe of convertible bonds since 2003. It contains all the assumptions necessary for the valuation of convertible bonds. This database allows us to analyse the asset class's behaviour and our investment strategies precisely.




Graph 2: Source MFM, February 2023

**Volatility:** As the optional part benefits from an increase in the underlying volatility, the recent drop in equity market volatility makes it a good time to get long convertibles as volatility is cheap.

**Diversification:** the universe of convertibles provides strong diversification compared to global equity universe. Indeed, the underlyings' universe is highly dissimilar regarding sector allocation, and the type of companies present within these sectors. Indeed, the totality of the issuers of convertible bond universe represents only ~4% of the equity universe. All issuers in our defensive strategy represent only ~2.5% of the equity universe.




Graph 3: Source MFM, February 2023

**Exposure to interest rates**: at the bond level, rates will probably continue to rise, but much of the ground has been covered in the last year. Moreover, with higher rates and few new issues last year, the universe of convertibles exhibits a duration of around 1.5%, significantly lower than these historical levels. The negative impact on the performance of interest rates should therefore remain minor.

**Credit exposure**: at the level of credit spreads, exposure remains controlled by our investment process. Indeed, we focus on bonds with high credit quality in our strategies. This makes it possible to dampen movements in credit spreads, mainly if default rates increase in the coming quarters. It should be noted, however, that we increased our exposure to credit following the movement in rates and spreads. Indeed, some convertible bonds now provide excellent yields. To illustrate, our defensive approach to a move in credit spreads of +20% generates a negative contribution of -0.68% for our strategy, while it would be -1.19% for the global convertible bond universe.

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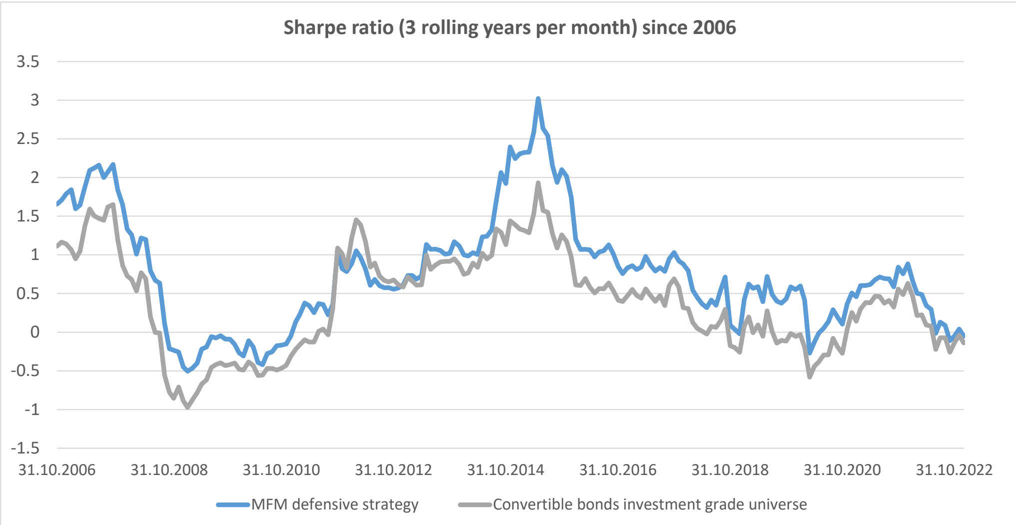
# ALLOCATION TO CONVERTIBLE BONDS OVER THE LONG TERM: A WELL-REWARDED RISK.

In order to judge the added value of our strategy compared to its reference universe, we have measured the Sharpe ratio (a measure of performance adjusted for its risk) over a monthly rolling 3-year horizon since its launch in 2003. A Sharpe ratio is calculated each month based on the previous three years.

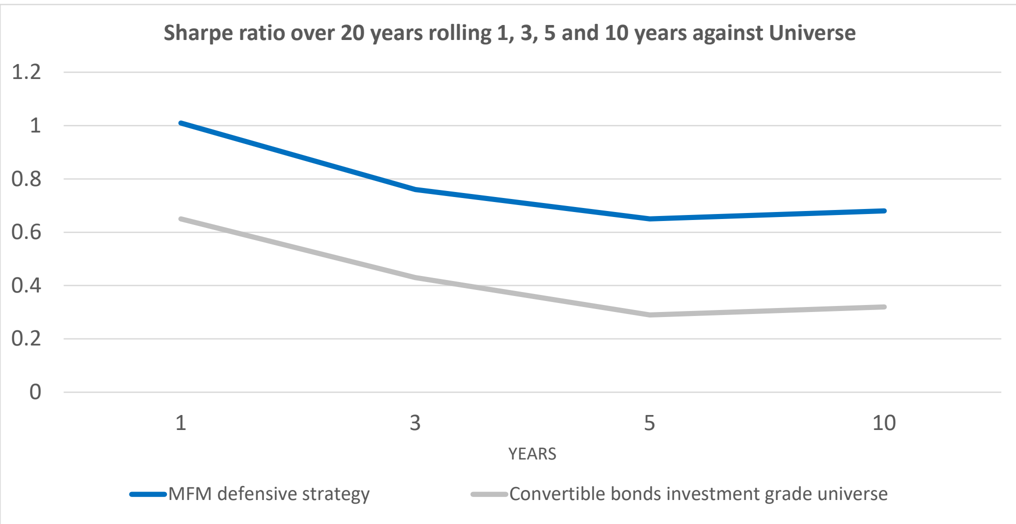



Graph 4: Source MFM, February 2023

Over 20 years, our defensive strategy has consistently delivered a Sharpe ratio superior to its investment universe. This comes from both better annualized performance and lower volatility. It demonstrates the added value of active management in this asset class. Optimization of convexity and asymmetry, line selection and portfolio construction largely explain this result.

As the Sharpe ratio is sensitive to the time horizon, we replicated the experiment by varying them. We have thus calculated the Sharpe ratios over horizons going from 1, 3, 5 and 10 years, still rolling monthly.

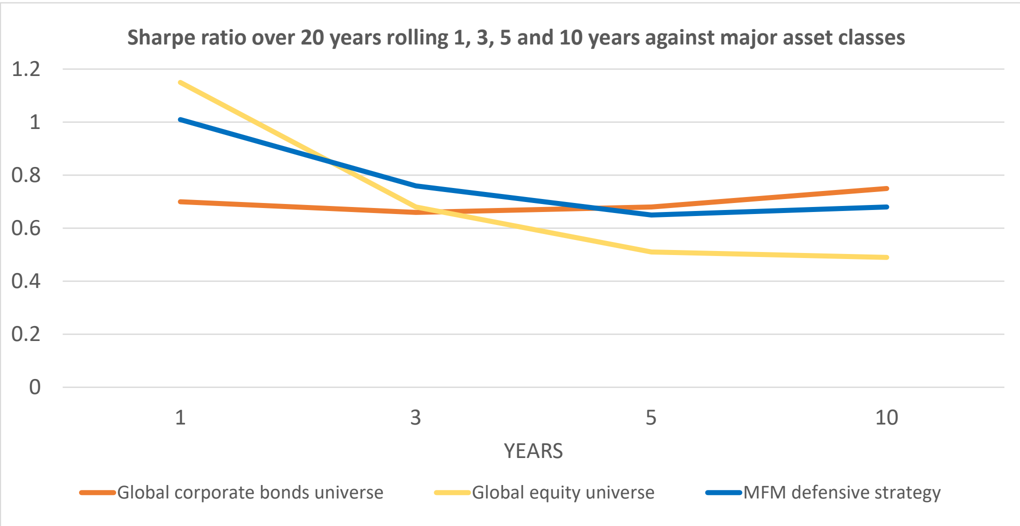
In Graph 5, the abscissa axis indicates the time interval (1, 3, 5, 10 years), and the ordinate provides the average Sharpe ratio achieved over all of these periods over the last 20 years. For the 3 years, the figure given corresponds to the average of the Graph 4.




Graph 5: Source MFM, February 2023

Graph 5 shows that our active investment strategy generates, whatever the time interval, an almost constant added value of plus 0.32 compared to the average Sharpe ratio of the universe.

Using our database, we similarly compared our strategy's Sharpe ratios with global equity universe and global corporate bonds universe. The strategy generates a Sharpe ratio more consistent than the two major asset classes. Over a horizon of one year rolling per month over 20 years, defensive strategy generated an average Sharpe ratio of 1.01, compared to 0.7 for the corporate bond universe and 1.15 for global equities. On the other side of the spectrum, over a 10-year rolling monthly horizon, our defensive strategy generated an average Sharpe ratio of 0.68, compared to 0.75 for the corporate bond universe and 0.49 for equities. Equities display lower Sharpe ratios over longer time horizons, as they always include a major crisis that strongly impacts equity performance.




Graph 6: Source MFM, February 2023

This graph illustrates that whatever the time horizon (between 1 and 10 years), convertible bonds generate an excellent Sharpe ratio compared to the major asset classes. The reason for this robustness comes from many factors. The main ones are certainly the following: (1) the asymmetry of convertible bonds makes it possible to mitigate the negative impact of significant crises; (2) the systematic optimization of convexity in our investment strategies induces a strong reactivity of the strategy during the rebound of the equity markets, this allows us to avoid having to "time the market" by remaining exposed adequately (3) over long time horizons the types of companies that issue convertible bonds are often linked to influential trends and innovations. The universe benefits from this exposure by reducing the impact of sometimes inflated valuations caused by this type of company thanks to the asymmetry and convexity of convertible bonds.

## CONCLUSION

In conclusion, even if 2022 was an "Annus horribilis" for most asset classes, including convertible bonds, we remain convinced that our investment process applied to this asset class will bring substantial added value over the long term. An allocation to convertible bonds through our strategies makes it possible to benefit from exposure to the principal investment premiums by providing strong diversification to equity markets and controlled credit and interest rate risk. Over the long term, our approach has demonstrated its value by strongly rewarding the investor for the risk taken.

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