

Threat or opportunity? Is there value in fallen angels?

- Fallen angels are cheapest immediately after the downgrade
- We believe our value factor is able to select fallen angels that will outperform
- Multi-factor credit strategies allocate to attractive fallen angels

We breached the previous annual record of fallen angels by May this year, and the number has continued to grow since then. The unprecedented surge in the number of bonds downgraded from an investment grade rating to high yield is owing to the coronavirus pandemic and the subsequent demand crisis that slashed profits and cash balances for a wide range of companies. For a corporate bond investor, the implication of such a downgrade into junk status depends on the perspective. An investment grade investor would consider fallen angels a threat, while a high yield investor would typically view them as an opportunity. In this article we investigate the performance of fallen angels before and after the downgrade event, and show how we believe we are able to distinguish between fallen angels that will subsequently recover and those that will remain weak.

Market segmentation

Many market participants treat investment grade bonds (those issued by companies with high creditworthiness) and high yield bonds (low creditworthiness) as distinct asset classes. Investors often make separate allocations to investment grade and high yield, asset managers typically create products that distinguish between the two, and index providers construct separate indexes. Regulators even prohibit certain investors from holding

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high yield-rated bonds. Distinguishing companies based on their creditworthiness can help investors and asset managers to manage their risk, can aid index providers in creating representative benchmarks and guides regulators in setting policies. But dividing the market on the grounds of creditworthiness can also create market frictions. Due to the segmentation between investment grade and high yield, prices are negatively impacted when bonds are downgraded from investment grade to high yield and selling pressure increases. This ‘fallen angel’ phenomenon has been documented in the academic literature¹ and we will show updated evidence later in this article.

Rating migrations

Rating agencies continually evaluate ratings, potentially leading to an upgrade (downgrade) of a company’s rating, for example when its balance sheet strengthens (weakens), cash reserves increase (decrease), or the outlook for the industry improves (deteriorates). Table 1 shows long-term average, one-year rating transition probabilities from Standard & Poor’s. In investment grade, ratings do not change much over a one-year period, as the probability of an unchanged rating is over 90%. Rating migrations are more common in high yield, especially for the lowest ratings. When bonds are rerated, the change typically is only a one-notch move on the rating scale; a bond starting the year with an A rating might get upgraded to AA (1.8%) or downgraded to BBB (5.6%), but an upgrade to AAA or a downgrade to BB is not very likely (<0.5%). Lower ratings are also associated with higher default probabilities, especially for ratings CCC and below.

Table 1 | One-year credit rating transition probabilities

From/to	AAA	AA	A	BBB	BB	B	CCC-C	Default
AAA	90.2%	9.0%	0.6%					
AA	0.5%	90.9%	7.8%	0.6%				
A		1.8%	91.9%	5.6%				
BBB			3.7%	91.3%	3.9%	0.6%		
BB				5.3%	84.8%	8.2%	0.6%	0.8%
B					5.1%	85.2%	5.2%	4.1%
CCC-C					0.8%	13.9%	51.2%	33.7%

Source: Standard & Poor’s. One-year credit rating transition probabilities, averaged over the period 1981-2018. Ratings on the left are start-of-year ratings and ratings at the top are end-of-year ratings. All probabilities below 0.5% are left out for conciseness.

The price impact directly after an upgrade or downgrade is usually small, because the change in creditworthiness is priced in beforehand.² The exception is a rating change that moves a bond from investment grade to high yield, or from high yield to investment grade, because constrained investors are forced to quickly sell their positions. For fallen angels, this mechanism can even lead to serious market inefficiencies, because the supply of fallen angels from the investment grade market is often too large to be efficiently absorbed by the smaller high yield market.

¹ See e.g. Ambastha, Ben Dor, Dynkin, Hyman, Konstantinovsky, 2010, “Empirical Duration of Corporate Bonds and Credit Market Segmentation”, *The Journal of Fixed Income*, and Chen, Lookman, Schürhoff, Seppi, 2014, “Rating-Based Investment Practices and Bond Market Segmentation”, *Review of Asset Pricing Studies*.

² See e.g. Norden, Weber, 2014, “Informational Efficiency of Credit Default Swap and Stock Markets: The Impact of Credit Rating Announcements”, *Journal of Banking & Finance*

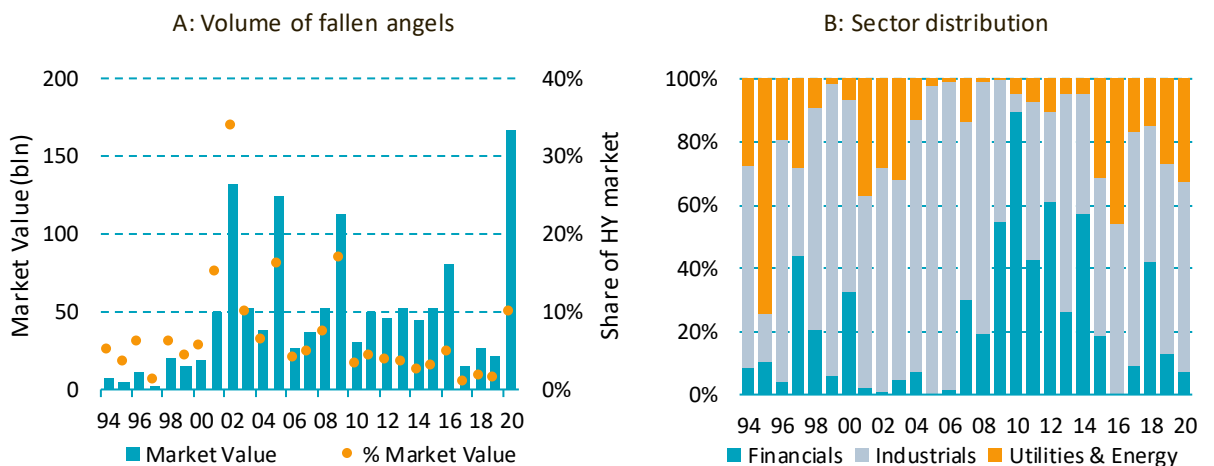
Fallen angels

Panel A in Figure 1 shows the total volume of fallen angels per calendar year over the period from January 1994 to June 2020. Over the full period, the total number of fallen angels is 2,747, which means that on average there are about 100 fallen angel events per year. The total yearly volume of fallen angels spikes around periods of high market distress and anticipated economic downturn, e.g. the burst of the dot-com bubble (2001-2003), the global financial crisis (2008-2009) and, most recently, the Covid-19 pandemic (2020), and stays lower during benign economic periods. On average, fallen angels add about 7% to the total market value of the high yield market per year. In peak years, this can be as high as 15 to 35%, illustrating the relevance of fallen angels to investors in the high yield market.

Following a relatively calm decade in terms of fallen angel volumes, there has been a record flow so far in 2020, with USD 160bln of new fallen angels in the first six months alone. The unprecedented surge is a result of the Covid-19 pandemic and the subsequent demand crisis that slashed profits and cash balances for a wide range of companies. Companies that have recently been downgraded to high yield include Ford Motor, the US automaker with USD 37bln in debt outstanding, Occidental Petroleum, a company in the oil and gas industry with USD 27bln in debt, and the food company Kraft Heinz, which has USD 21bln in debt. At the end of 2019, these companies had market-value weights in the investment grade index ranging from 25 to 50 bps, but they now are the three largest issuers in the high yield index, with market-value weights of 1.4 to 3.0%.

Panel B in Figure 1 shows the sector distribution of the fallen angels in each year. There are periods of increased downgrade risk visible for all sectors. Some of the clearest examples are the period around the global financial crisis, which mostly hit the financial sector, and the recent period of lower oil prices and the increasing focus on sustainable energy, which has been especially harsh on utilities and other energy-related companies.

Figure 1 | Fallen angels characteristics over time



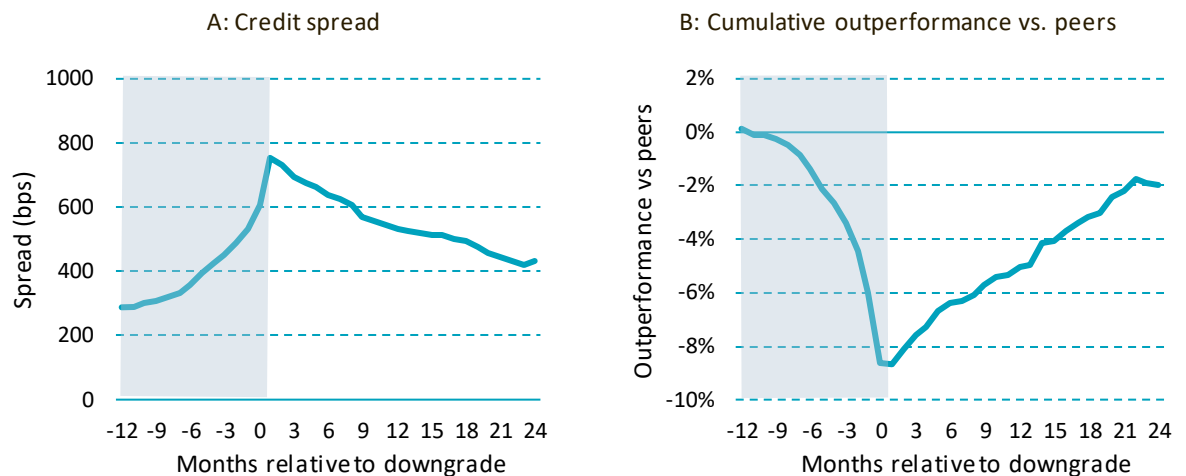
Source: Robeco, Barclays Bloomberg. 2020 results are for the first six months of the year.

Price patterns of fallen angels analyzed

To assess the price pattern of fallen angels, we perform an event study on a 36-month window around the downgrade date, where the window starts 12 months before the downgrade and ends 24 months thereafter. Month 0 marks the point where the bond is downgraded (intra-month) and from month 1 onwards the bond is part of the high yield universe. Figure 2 shows the results of the event study, averaged over all events in the January 1994 to June 2020 period. The credit spread of a fallen angel in Panel A shows a three-phase pattern: first,

the credit spread widens, then there is an inflection point, and finally the credit spread tightens again; the inflection point is just around the time where the bond gets downgraded. Most of the spread widening is retraced in the period after the downgrade; there is not a full recovery, though, owing to the higher risk associated with the acquired high yield rating.

Figure 2 | Fallen angel performance in the period around the downgrade



Source: Robeco, Barclays Bloomberg.

It is likely that movements in market spreads influence the credit spread pattern, particularly since the number of fallen angel events is considerably higher in periods of market-wide increases in credit risk. Hence, to more accurately evaluate the impact of the downgrade, we next compare the returns of fallen angels to peers in terms of credit rating, sector and maturity.³ The cumulative outperformance of fallen angels after the downgrade is shown in Panel B of Figure 2. The event window outperformance shows the same three-phase pattern as Panel A, but inverted (as returns and spreads move in opposite directions). Fallen angels underperform their peers a few quarters before the event; especially in the last quarter, and most strongly in the month of the downgrade, when the forced selling of constrained investors pushes the price down even further. Thereafter, relative performance turns positive and stays positive for up to 24 months after the downgrade, as high yield investors start buying the fallen angels and the downgraded companies start taking measures to repair their creditworthiness. This performance pattern indicates that selling a bond directly after the downgrade is likely to be the worst possible moment to do so.

Enhanced fallen angel investing with the Value factor

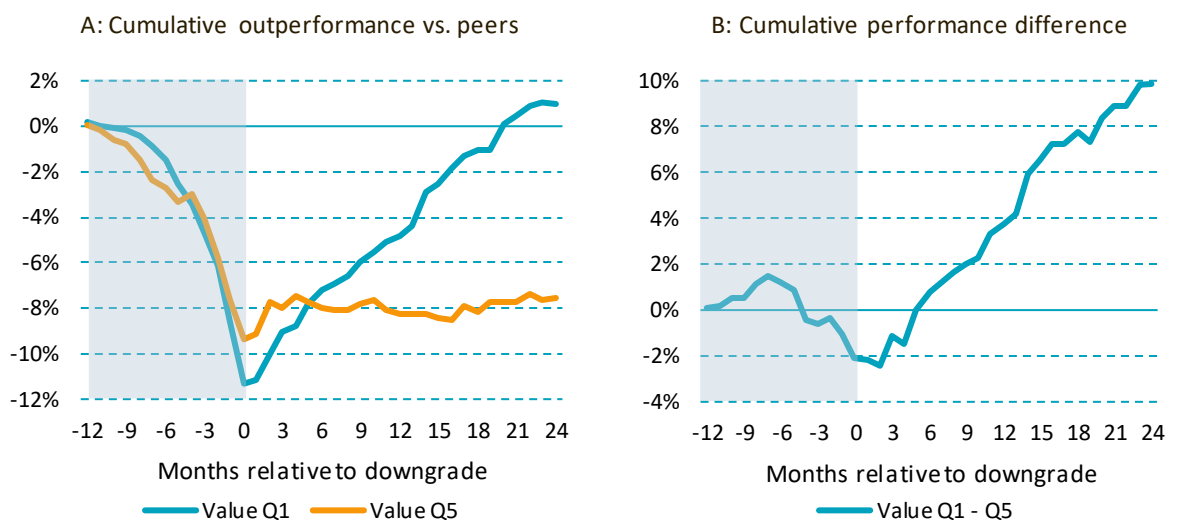
Given the above results, the question arises whether an investor should simply buy all fallen angels, since on average they tend to outperform their peers for up to 24 months. Such an approach might seem appealing, but it would mean that the investor would also end up buying less attractive fallen angels. For instance, bonds that experienced only modest selling pressure, for which the potential for a price reversal and outperformance are limited; or bonds that will not see their prices revert, because of a continued deterioration in the creditworthiness

³ To construct the peer groups, we use the methodology of Ben Dor and Xu, 2011, "Fallen Angels: Characteristics, Performance, and Implications for Investors", *Journal of Fixed Income*; peer groups are defined based on industry (financials, industrials, and utilities) and credit quality (A and higher, BBB, BB, B, and CCC and lower); in addition, with the exception of the lowest credit-quality category, separate buckets are constructed for short/intermediate and long maturity bonds (up to ten years and above ten years, respectively), resulting in a total of 27 peer groups.

of the issuer. So, for each fallen angel we need to determine whether there is an actual mispricing, i.e. an abnormally high spread in relation to the risk of the bond.

This is where our extensive experience with the value factor comes into play, as it is used to identify the attractiveness of corporate bonds given their risk: by comparing the credit spread of a bond to peers that are similarly risky across a number of risk dimensions, the value factor assesses whether a bond is attractively priced ('cheap'), or not ('expensive').⁴ To test the ability of the value factor to select the 'right' fallen angels, we compare the performance of fallen angels with high value scores in the month after the downgrade (top quintile, 'Q1') to the performance of fallen angels with low value scores (bottom quintile, 'Q5'). Panel A in Figure 3 shows the cumulative outperformance against peers for these cheap and expensive fallen angels, according to our value factor; Panel B shows the performance difference between the two groups. The cheap fallen angels (Value Q1, blue line) underperform more until the downgrade, after which they start to considerably outperform the more expensive fallen angels (Value Q5, orange line). In fact, the cheap fallen angels perform so well after the downgrade that the event window-return turns positive. The expensive fallen angels, on the other hand, do not experience much of a reversal at all. So instead of buying all fallen angels indiscriminately, by using our value factor, we can discern outperforming from underperforming fallen angels. The research period covers years with high and low volumes of fallen angels coming into the high yield market. Therefore, we are confident that the results are robust and that, in the absence of significant changes to market dynamics, the results should hold into the future.

Figure 3 | Fallen angel performance breakdown by Value factor score



These results are for the period January 1994 to June 2018.
Source: Robeco, Barclays Bloomberg.

Fallen angels in Multi-Factor Credits and Multi-Factor High Yield

Multi-Factor Credits, our factor-based investment grade strategy, can invest up to 10% in BB-rated bonds, which yields two key benefits in the context of fallen angels. First, the strategy can hold on to fallen angels in the portfolio and forego having to sell immediately after the downgrade, which, as we have seen, is likely to be the worst possible moment to do so. Second, it can actively buy BB-rated fallen angels to take advantage of

⁴ See our 2016 white paper "Smart Credit Investing: The Value Factor".

mispricings resulting from forced selling by constrained investors. Multi-Factor High Yield, our factor-based high yield strategy, is allowed to invest in all fallen angels after they enter the high yield investment universe.

Both strategies invest in fallen angels based on bottom-up bond selection by our multi-factor model. Fallen angels will only be selected if they are attractive from the model's perspective: cheap according to the value factor, but also outperforming according to the momentum factor, and high creditworthiness according to the low-risk/quality factor.

Conclusion

In this article we showed that the impact of fallen angels for a corporate bond investor depends on one's perspective: for an investment grade investor, fallen angels are a threat, as they tend to underperform their investment grade peers; for a high yield investor, fallen angels typically pose an opportunity, as they tend to outperform their high yield peers. Further, we demonstrated that not all fallen angels behave the same, since not all fallen angels will experience strong spread reversal in the period after their downgrade. Finally, we demonstrated that our value factor is able to successfully select fallen angels that are expected to outperform their peers.

Our Multi-Factor Credits and Multi-Factor High Yield strategies invest in fallen angels based on their attractiveness from a factor perspective. This research reinforces our belief that the bottom-up approach to investing in our multi-factor credit strategies is warranted.

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