

Lessons from COVID-19: European BBB Bonds and Fallen Angels



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Policymakers and commentators have expressed concerns that, with a high percentage of investment grade (IG) bonds rated BBB, a round of COVID-19-linked downgrades to high yield (HY) – ‘fallen angels’ – could trigger forced selling, cliff-edge market shifts, or price dislocation as bonds move between the categories.

While not the first in recent memory, the current wave of downgrades is significant, and the uncertain economic outlook translates into considerable uncertainty over its future path.

In this Policy Spotlight, we give some historical context on composition shifts and downgrade cycles in the European IG and HY market, focusing primarily on the larger Euro (EUR) market, but also considering developments in the Sterling (GBP) market. We consider the relative strength of EUR IG issuers going into the COVID-19 crisis, before comparing the potential size of the COVID-19-related downgrade cycle to those in recent memory: the 2008/09 Global Financial Crisis; the 2011/12 European Sovereign Debt Crisis; and the 2015/16 commodities slump.

With this in mind, we recall the mitigants of cliff-edge effects associated with downgrades. First, **downgrades are a process, not an event** – and examining spread dynamics during both previous and the current downgrade cycles shows price adjustments begin well before the downgrade ‘event’ itself. Second, most investors have both the motivation and ability – through flexibility deliberately built into investment strategies – to stay invested in fallen angels.

This *Policy Spotlight* accompanies a similar piece, [Lessons from COVID-19: US BBB Bonds and Fallen Angels](#), focused on developments in the US market.

The opinions expressed are as of July 2020 and may change as subsequent conditions vary.

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Historical context: composition of investment grade and high yield bond markets

Between end-2014 and end-2019, the volume of EUR IG expanded by nearly €1tn (63%) to reach €2.46tn. This is partly attributable to increased merger & acquisition activity; sectors undergoing structural changes (such as autos and telecoms) that require more capital; and non-European issuers diversifying their liability base with EUR issuance (the proportion of EUR IG accounted for by US-based issuers doubled between 2010 and 2020).

It is often noted that as total IG volume has grown, the ratings structure has shifted to contain proportionally more BBB bonds (which covers issuers that are one to three notches above HY status: BBB-, BBB and BBB+). Indeed, for EUR IG, the proportion has been around 50% for 2-3 years.

Meanwhile, the overall size of the EUR HY market increased between 2009 and 2014, before declining slowly from early 2015 to end-2019 to reach €292bn. Notably, in the euro area, the latter period was marked by the introduction of negative interest rates. The decline in EUR HY over this period is partly attributable to some HY issuers shifting into loans to raise capital instead of bonds; but also to the increased number of ‘rising stars’ moving from HY to IG, partly incentivised by the ECB’s corporate purchase programme, which lowered the cost of financing for IG issuers.

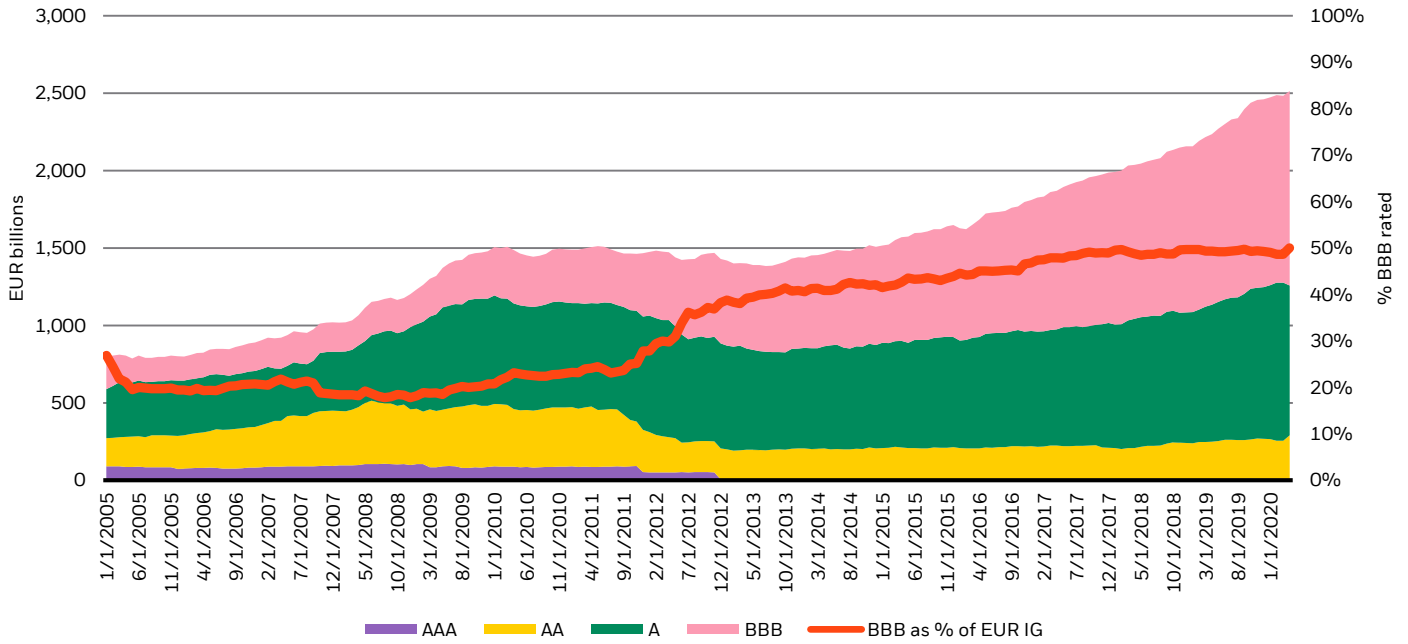
Nevertheless, the size of the HY market relative to the IG market has been growing: at end-2009 IG volume was around thirteen times larger than the HY market; by end-2019 it was only around 8 times larger. And, while the trend in the EUR IG sector has been a drift down in quality, the HY

sector has seen the opposite: the proportion accounted for by BB bonds stood at 50% at end-2009, rising to 68% by end-2019. In part, the volume of BB HY has been driven by the amount of fallen angels moving from IG to HY.

Summary observations

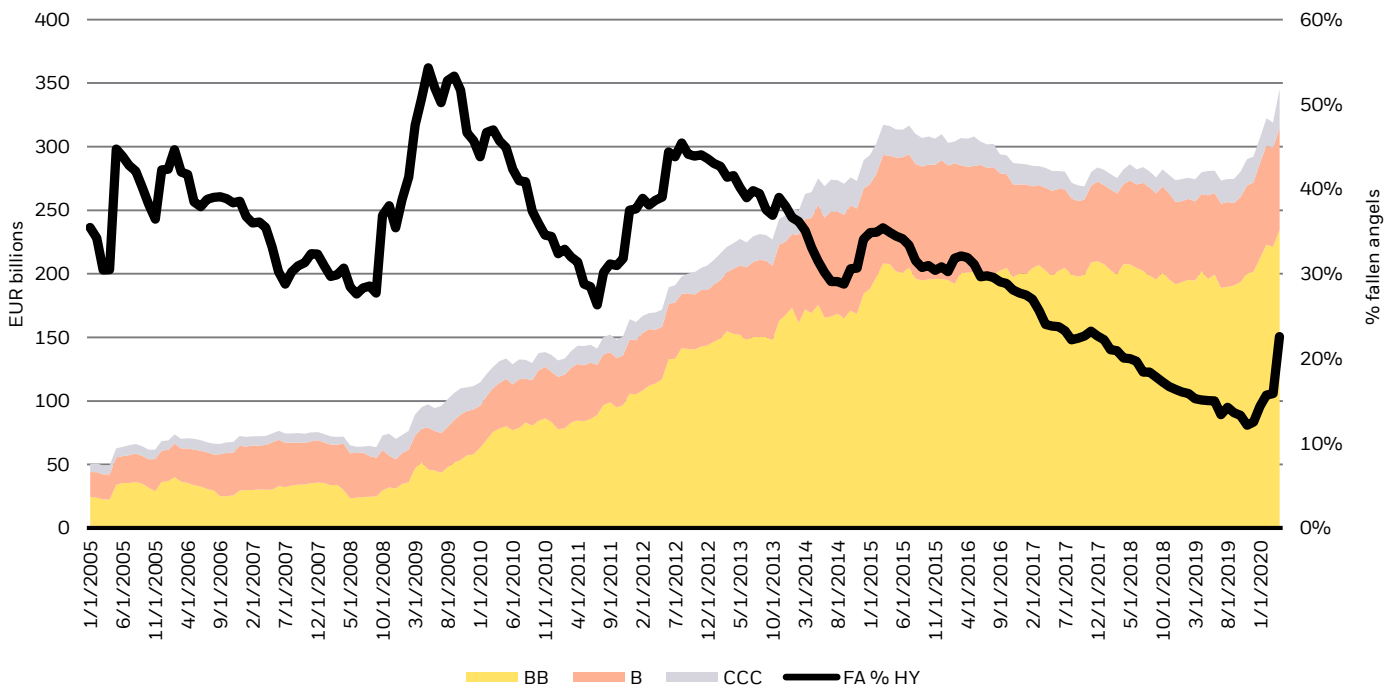
- The EUR IG bond market grew by 66% from end-2009 to reach €2.46tn at end-2019. Meanwhile, the high yield bond market grew by 160% to reach €292bn. Consequently, the size of the HY market relative to the IG market has been growing: **at end-2009 IG volume was around thirteen times larger than the HY market; by end-2019 it was approximately 8 times larger.**
- Over this time, **there has been a migration down in quality in the EUR IG sector; and up in the EUR HY sector.** The proportion of the EUR IG bond market rated BBB (BBB+, BBB, BBB-) reached around 50% in early 2018, where it has remained since. Meanwhile the proportion of the EUR HY bond market accounted for by BB bonds rose from 50% at end-2009 to 68% at end-2019, driven in part by increases in the number of fallen angels.
- **Though the circumstances are exceptional, the present downgrade cycle is not the first in recent memory.** Fallen angels were 54% of EUR high yield in 2009, with increases also seen during the 2011/12 European Sovereign Debt Crisis and the 2015/16 commodities slump.
- Economic shutdown measures have changed the outlook for corporate issuers, resulting in a sharp uptick in the volume of fallen angels year to date. In a more pessimistic scenario, **total new fallen angels across 2020 could reach €100bn (4% to 6% of the IG market), reaching 30–35% of HY by end-2020. This would be the largest ever downgrade cycle in absolute volume terms, but smaller in relative terms than both the Global Financial Crisis (over 50%) and the European Sovereign Debt Crisis (over 45%).**
- **For GBP markets, a pessimistic scenario,** where all £7bn of BBB bonds currently on ‘negative outlook’ or ‘negative watch’ were downgraded in the remainder of 2020, **would put the proportion of fallen angels in HY at around 45%, well below the Global Financial Crisis peak of 90%.**
- The economic and financial impact of the COVID-19 crisis is severe, and concerns about possible short-term volatility associated with the current downgrade cycle are valid. However, **downgrades will not necessarily result in cliff-edge effects, automatic forced selling, or unwarranted volatility over the longer term:**
 - **Different types of investors have different constraints and flexibilities for their investments.** Investment grade mutual funds often have a minimum (typically 70%–80% of AUM) to be held in IG bonds – allowing significant potential exposure to HY bonds. In addition, active mutual funds, index mutual funds, and exchange traded funds often have the flexibility to hold bonds falling outside the investment strategy for a limited period, typically until it is practical to sell.
 - Insurers are a special case: in a period of negative EUR interest rates, some changed their mandates to include non-IG bonds, but others have strict IG criteria. Similarly, some mandates include discretion to hold downgraded bonds for a period of time, while others may require them to be sold immediately. However, any **flexibility for insurers is reduced by capital charges for downgraded bonds applied under the Solvency II Directive.** Where possible, **insurers will seek to avoid any forced selling by pre-empting downgrades** and making portfolio adjustments in advance of the event, ensuring positions are liquidated when sensible to do so.
 - **Downgrading of higher-quality companies into the HY universe presents attractive investment opportunities both for HY-focused investors and IG investors,** who have increased their flexibility to invest outside of IG in the context of low and even (since 2014) negative interest rates.
- **Price adjustment to downgrades is a process, not a real-time event,** and happens gradually as downgrade prospects are priced in before the event itself. Typically, IG bonds are put onto ‘negative outlook’ or ‘negative watch’ before being downgraded to HY. This creates a longer adjustment period for investors.

Figure 1: EUR investment grade bonds by rating, and proportion of BBB



Source: Bloomberg, BlackRock

Figure 2: EUR high yield bonds by rating, and proportion of fallen angels

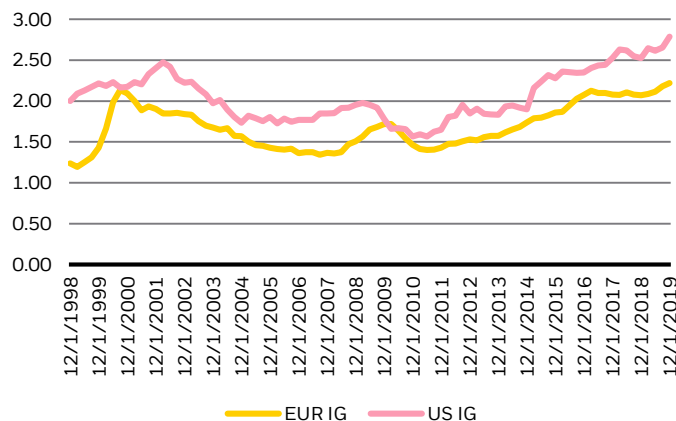


Source: Bloomberg, BlackRock

Comparing European and US investment grade companies

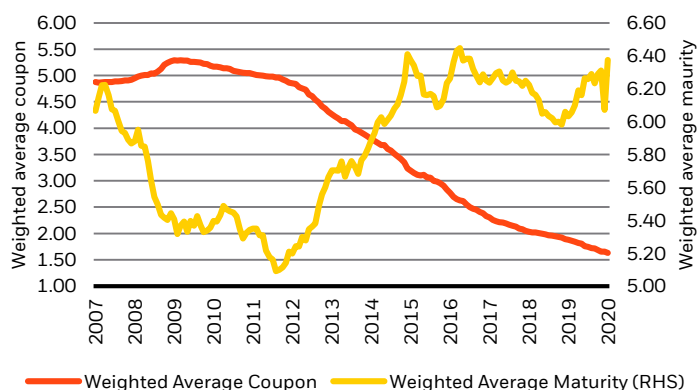
EUR IG companies tend to be – from a fundamental perspective – more conservative than their US peers, and since the 2011/12 Sovereign Debt Crisis have faced a more challenging growth environment. For the past 20 years, EUR IG issuers have consistently been less levered than the US counterparts: median leverage ratios have been around 80% of those seen in comparable US companies. ECB monetary policy over the past five or so years has also driven down the cost of financing for EUR issuers, who have taken advantage and extended the maturity of bonds issued. A combination of lower leverage, lower borrowing costs, and a historically accommodative monetary policy stance gave EUR IG companies a strong base on entering the COVID-19 crisis.

Figure 3: Median leverage ratios, EUR vs USD IG issuers



Source: Bloomberg, BlackRock

Figure 4: EUR IG funding costs and maturity



Source: Bloomberg, BlackRock

Fallen angels in recent downgrade cycles

Nevertheless, given the high percentage of BBB bonds in the IG market and the economic impact of COVID-19, a number of policymakers and commentators have raised concerns about the potential impact of a wave of downgrades from IG to HY (BBB to BB).¹ It is instructive to consider the different crises in the recent past which brought about downgrade cycles.

Europe has seen three major downgrade cycles since 2006: during the 2008/09 Global Financial Crisis; the 2011/12 Eurozone Sovereign Debt Crisis; and the 2015/16 downturn in commodities. The first and last of these were also felt in the USD market.

The differing nature of the events behind each downgrade cycle has been reflected in the types of companies moving from IG to HY. For instance, during the 2011/12 Sovereign Debt Crisis the downgrades were concentrated in banks and peripheral debt; while the 2015/16 commodities slump saw more energy and basic materials companies affected.

These downgrade cycles have caused the proportion of HY accounted for by fallen angels to fluctuate – reaching as high as 54% in EUR markets in 2009 – although since 2013 it has, broadly speaking, been trending downwards to reach 23% at end-2019 (see fig. 2 above). This means many EUR IG and HY investors have been through downgrade cycles before.

Fallen angels in the context of COVID-19

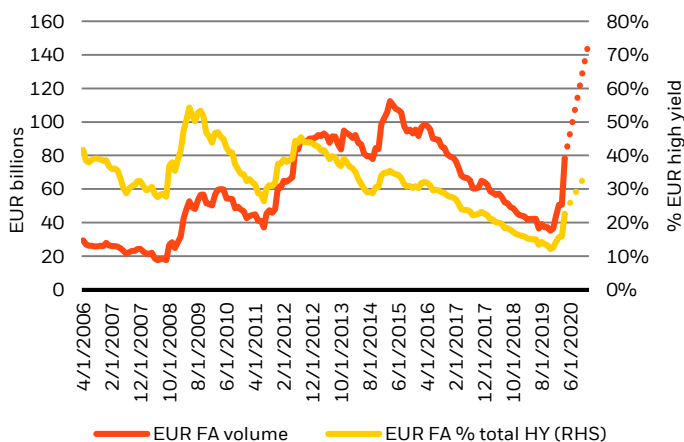
Clearly, the nature of the COVID-19 crisis is very different to the issues that underpinned previous downgrade cycles. The economic impact of the measures taken to contain the health crisis changes the outlook for many corporate issuers, and indeed as the crisis began to take hold, we saw a sharp uptick in the volume of fallen angels. At end-February 2020, the outstanding EUR fallen angel volume stood at €44bn, rising to €51bn by the end-March; and €78bn by end-April.

We expect the volume of fallen angels to increase further into 2020, with the final amount depending largely on how long economic shutdown measures last, and their wider economic impact. The majority of fallen angels will likely come from sectors immediately impacted by COVID-19, with particular focal points in cyclicals – including airlines, autos, and real estate. A conservative scenario for Europe, in the absence of a quick recovery, puts additional fallen angel volume for 2020 at over €100bn, reaching a total of around €140bn by year-end.

To put this in context: assuming the majority of growth in the total volume of EUR HY comes from fallen angels (which we think will be the case given little supply in HY since the beginning of the year), the proportion of HY accounted for by fallen angels could reach between 30% and 35% by end-2020 (see figs. 5 and 6). Put differently, this is anywhere between 4% and 6% of the IG market moving to HY. In absolute terms, this would be larger than the downgrade cycle we saw in 2008/09, although the overall proportion of fallen angels in the HY market would remain lower than previous highs.

It is important to stress that there is a wide range of uncertainty around these scenarios: the volume of the downgrades to come is significant, and – given the nature of the crisis – market participants are in uncharted territory.

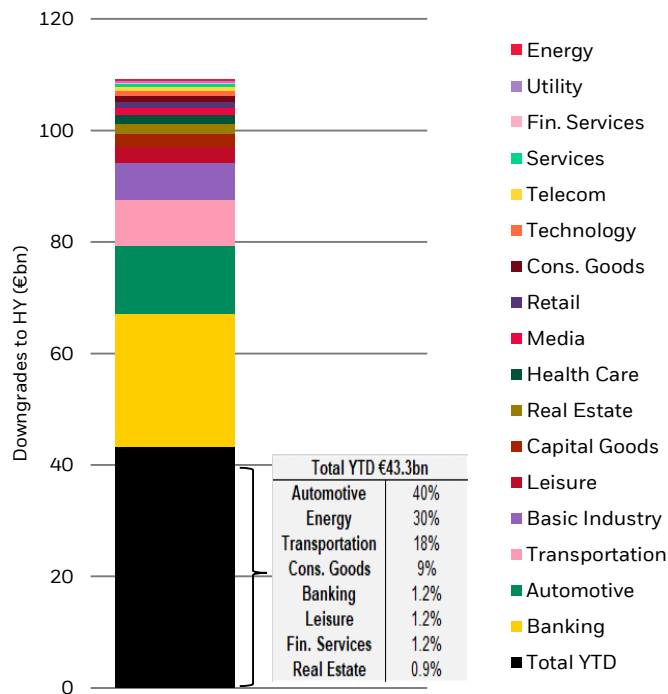
Figure 5: EUR fallen angels and COVID-19 scenario



Source: Bloomberg, BlackRock

There is also considerable uncertainty around what issuers' ultimate rating will be, given the potential for some companies' financial outlook to deteriorate further. For now, we base our scenario on the probabilities rating agencies have attached to the downgrade possibility, expressed through bonds placed on 'negative outlook' or 'negative watch' – see fig. 7.

Figure 6: Composition of expected 2020 downgrades



Source: Bloomberg, BlackRock. As of 30th April 2020.

Figure 7: Year-to-date changes to outlooks across rating buckets (Moody's and S&P)

S&P (€bn)	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB
Negative outlook	0	0	0	23	45	36	53	56	59	8	-	-
Negative watch	0	0	0	11	3	11	41	1	4	2	8	-
Total at risk	0	0	0	34	48	47	93	57	63	11	8	-

Moody's (€bn)	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2
Negative outlook	0	0	20	15	21	7	43	35	18	6	0	12
Negative watch	0	0	0	0	11	32	68	1	3	6	4	8
Total at risk	0	0	20	15	32	39	111	36	21	12	4	19

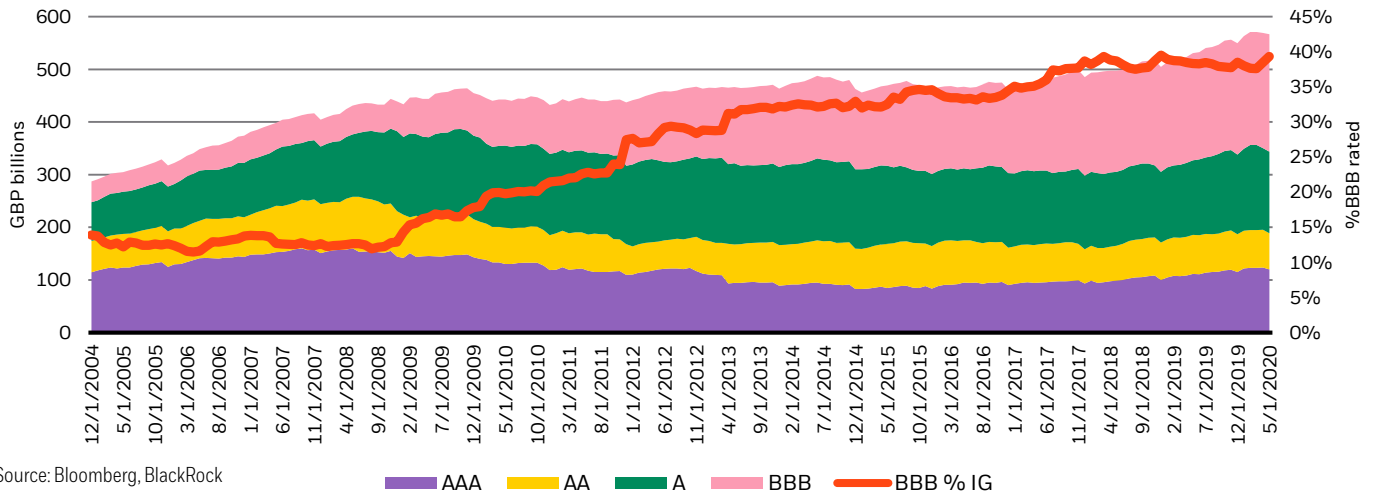
Source: Bloomberg, BlackRock. As of 7th May 2020. Red to green scale indicates largest to smallest numbers of bonds in each category.

Box A: A closer look at the GBP market

The GBP IG and HY markets are smaller than their EUR equivalents. At end-2019, total GBP IG and HY outstanding stood at £550bn and £33bn, respectively. This compares to €2.46tn (£2.08tn) and €292bn (£248bn) in EUR IG and HY, respectively.² However, a look at the data shows similar dynamics in the GBP market.

The proportion of BBB bonds in the GBP IG universe began rising during the Global Financial Crisis, before levelling off at just under 40% from around January 2018 onwards. This is slightly lower than in EUR and USD markets which had both levelled off at approximately 50% in recent years.

Figure A.1: GBP Investment Grade



The GBP HY market has been growing relative to GBP IG over recent years. During the Global Financial Crisis the size of the HY market rose sharply as new fallen angels increased the size of the BBB market, hitting a local peak of £29bn in May 2009. From there the overall size of the HY market began to shrink, up until the beginning of 2011 – at which point it began a steep rise to reach a peak of £49bn in June 2015, before declining again into end-2019. Notably, the overall rise in HY outstanding from 2011 onwards does not seem to have been driven by increasing amounts of fallen angels: from the peak of around 90% in May-June 2009, the proportion of fallen angels in GBP HY has gradually fallen to reach 16% at the end of 2019. The overall increase in the size of the HY market against changes in the size of IG has meant the size of IG relative to HY has generally been shrinking – a pattern consistent with experience with EUR markets.

Figure A.2: GBP High Yield

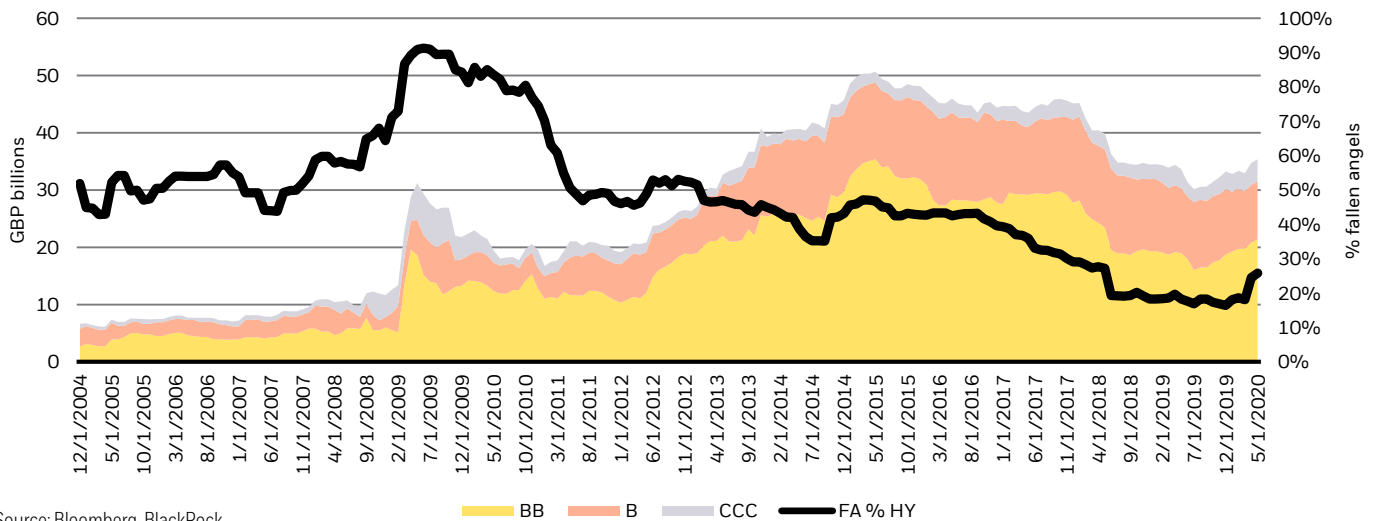
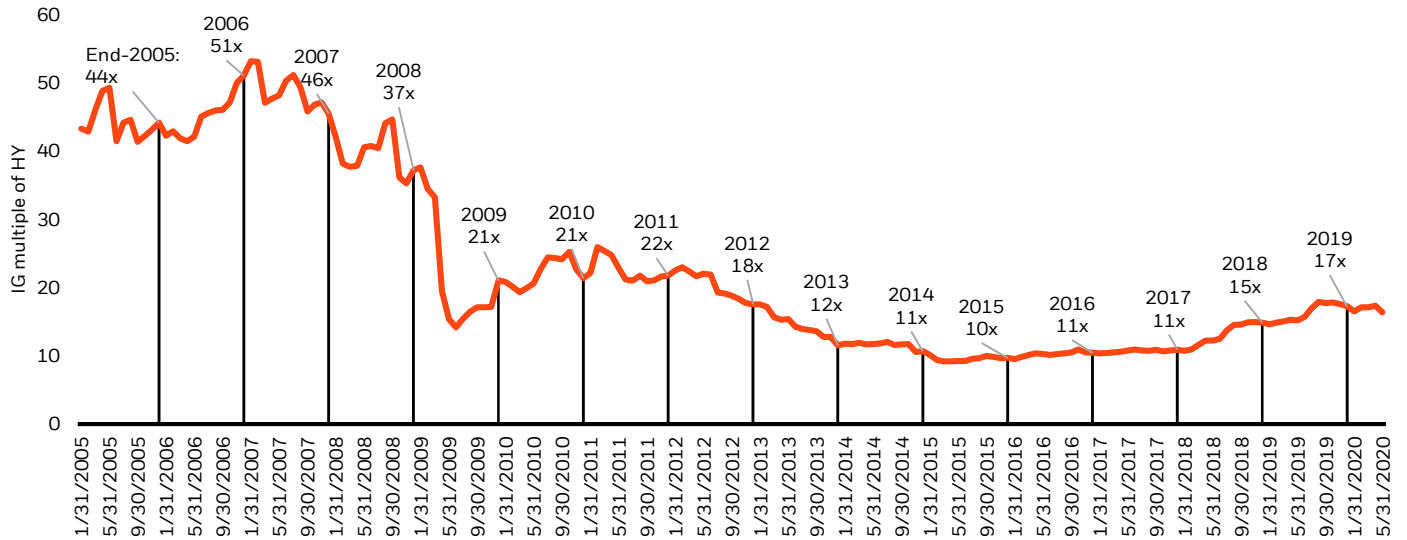


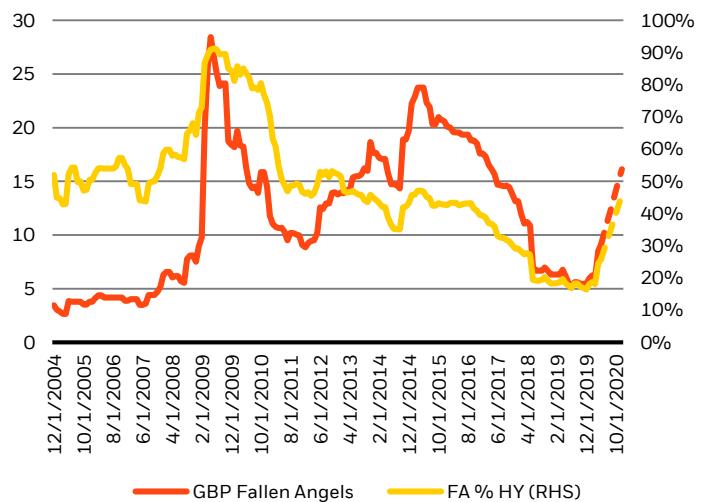
Figure A.3: GBP IG/HY



Source: Bloomberg, BlackRock

As the economic impact of the COVID-19 crisis has set in, a wave of downgrades from IG to HY has occurred in the GBP markets. Around £3.6bn has fallen from IG to HY since end-2019, bringing the total to £9.1bn at the end-May 2020. As with EUR markets, we expect this to increase through the remainder of the year. However, we do not expect to see a downgrade cycle similar to the Global Financial Crisis, where fallen angels reached 90% of the GBP HY market. At the end of May 2020, £7bn of BBB- (one notch above HY) issuance was on negative outlook or negative watch, and possibly at risk of being downgraded to HY. If, in a pessimistic scenario, all £7bn were downgraded within the remainder of 2020, this would put the proportion of fallen angels in HY at around 45%, well below the Global Financial Crisis peak, although the downgrade cycle could well continue into 2021.

Figure A.4: GBP fallen angels and COVID-19 scenario



Source: Bloomberg, BlackRock

Figure A.5: Year-to-date changes to outlooks across rating buckets (Moody's and S&P)

S&P £bn	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB
Negative Outlook	0	0	0	4	11	6	7	17	13	6	0	0
Negative Watch	0	0	0	1	0	0	7	2	1	1	0	0
Total at risk	0	0	0	5	11	6	14	19	14	7	0	0

Moody's £bn	AAA	AA1	AA2	AA3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2
Negative Outlook	0	0	1	2	3	2	15	8	4	2	0	0
Negative Watch	0	0	0	1	0	1	0	0	2	0	0	0
Total at risk	0	0	1	3	3	3	15	8	6	2	0	0

Source: Bloomberg, BlackRock

Impact of the downgrade cycle and mitigants of potential cliff-edge risks

The economic and financial impact of the COVID-19 crisis is severe. Policymakers are right to raise the possibility of short-term volatility and a more persistent widening of spreads associated with the current downgrade cycle. Throughout the year, we expect fallen angels to trade heavily with spreads ultimately settling as we get further clarity on the full impact of COVID-19 (and the extent and duration of lockdown restrictions). The actions taken by central banks – which include direct purchases of fallen angels in the case of the Fed; and accepting fallen angels as collateral in the case of the ECB – are also critical.

That said, for a number of important reasons, bonds being downgraded does not necessarily result in cliff-edge effects, automatic forced selling, or unwarranted volatility over the longer term – for reasons we set out below.

Different types of investors have different constraints and flexibilities for what they can invest in:

Some investors – for example insurers with risk-weighted capital criteria – face strong incentives as to the quality of bonds they can hold. However, as we discuss in our August 2019 *Policy Spotlight: US BBB-Rated Bonds: A Primer*, many have the flexibility to hold both IG and HY bonds in their investment strategies. Others are unconstrained, and are able to take a view on the investment case for bonds irrespective of their quality rating. This flexibility will help fallen angels' spreads from edging up too sharply.

Different investment strategies and vehicles take different approaches to handling downgrades, and typically incorporate an element of discretion and flexibility. Below are examples of the variation in how downgrades are handled depending on where the bonds are held.

- a) **Actively Managed Mutual Funds:** Managers of active mutual funds have discretion in under- or over-weighting securities and sectors relative to benchmarks, and they may include securities not represented in the benchmark. Many IG-focused funds specify in their prospectuses that they allow holdings of anywhere up to 30% of their portfolio in non-IG bonds, incorporating a level of discretion designed precisely to avoid forced sales of downgraded bonds.
- b) **Index Mutual Funds and Exchange-Traded Funds (ETFs):** Index bond fund strategies generally replicate the risk characteristics of the bond index. However, the investment strategy often incorporates flexibility for the

asset manager to review downgraded securities and make the determination to hold or to sell. While we do not expect that downgraded securities that are removed from the benchmark will be held over the long term, most funds have flexibility to hold up to a certain percentage of non-index names. UCITS rules do not make specific requirements regarding credit ratings or removing downgraded assets from a portfolio; and fund guidelines contain provisions to allow asset to be sold when it is reasonable and practical to do so.

- c) **Separate accounts,** or mandates for institutional investors, often prescribe credit rating-based criteria for their portfolios as one approach to managing risk. In our experience many separate account investment guidelines allow flexibility to hold downgraded bonds, and do not necessarily require the whole position to be sold immediately. Moreover, in the Eurozone, investors have contended with negative interest rates since 2014. This makes generating income from higher-quality asset classes more difficult. As such, we have seen more and more IG-focused investors build flexibility to invest in HY into their portfolio guidelines. As we discuss further below, fallen angels can present particularly compelling investment opportunities.
- d) **Other asset owners,** for example family offices, or direct holdings by households, are typically the least constrained among bond holders by investment mandates, reducing the likelihood of forced selling.

European insurers are the exception, as they are subject to capital adequacy rules linked to the types of asset in their portfolios. If, for example, a bond is downgraded from A- to BBB+, or if an insurer holds BBB bonds that are subsequently downgraded to BB, required capital will rise correspondingly. As such, insurers are strongly incentivised to reduce exposure to lower-rated or downgraded bonds. However, there will not necessarily be cliff-edge effects: mandates often include some flexibility, and insurers can pre-empt downgrades and adjust their portfolios accordingly. See Box B below.

High quality companies downgraded to HY present opportunities for HY-focused investors, and a potential source of income for investors focused on (but not constrained to) IG:

Particularly in Europe, fallen angel companies are – by definition – 'higher quality' than the rest of the HY market (by either size, business profile, management, or other factors), and often attempt to regain their IG status by deleveraging and improving their balance sheets. This can make fallen angels compelling for HY-focused investors.

At the same time, in a low or (since 2014) negative interest rate environment, investors who are focused on (but not constrained to) IG can find an attractive source of income in fallen angels, likely with less effort than that required for other HY companies, given the prior knowledge of company profiles and performance when still rated IG. Fig. 8 below shows the outperformance of fallen angels relative to the

wider HY segment of the market from around mid-2012 onwards. Moreover, downgraded EUR issuers have typically been keen to regain their IG status – with many successfully doing so between 2016 and 2020, evidenced by the fall in the fallen angel share of HY from 30% to 14% over this period.

Box B: European insurers

Most insurers' portfolios are concentrated in IG rather than HY bonds. Since 2014, when EUR interest rates went negative, HY bonds have become more compelling for investors seeking income. Consequently, some insurers changed their mandates to include flexibility for non-IG bonds, while others continued to require strict IG criteria. Similarly, some mandates include discretion to hold downgraded bonds for a period of time, while others may require them to be sold immediately.

However, any flexibility built into insurer mandates is likely to be reduced by the incentives generated by the Solvency II Directive. This places capital requirements on insurers that vary with their portfolio holdings. Approaches to capital calculations vary by jurisdiction and by individual insurer, but in general when bonds are downgraded, insurers will need to hold more capital against them. As fig. B.1 shows, increases in capital required could be as steep as 90%. In the UK, downgrades to HY can be more penal as the impact on capital requirements is compounded by a reduction in benefits from the 'Matching Adjustment'.³

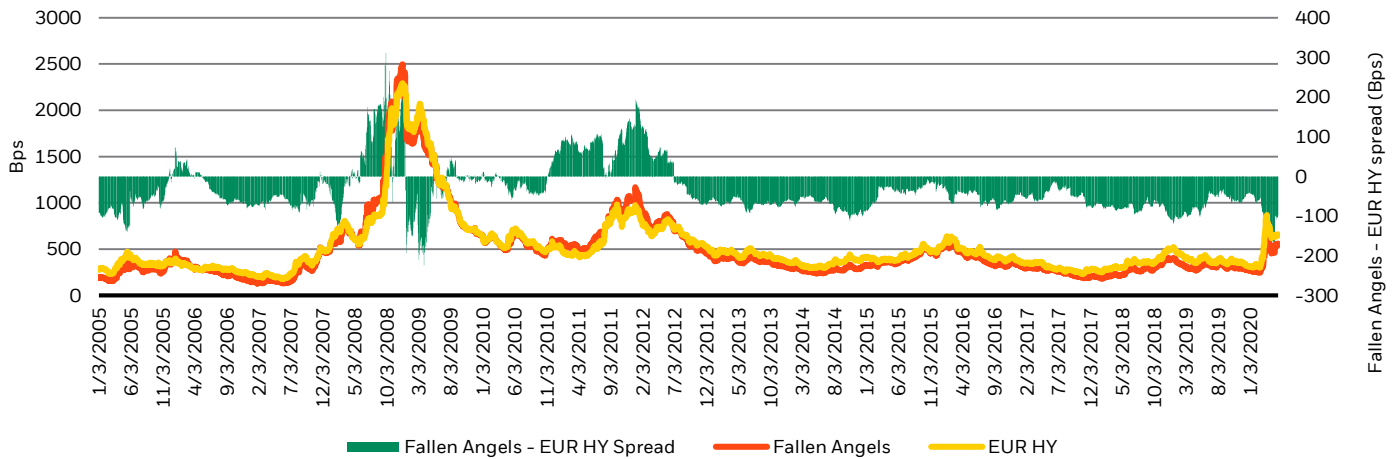
Insurers with stronger balance sheets may decide to hold on to downgraded bonds if the investment case is compelling. However, in many cases insurers will seek to avoid forced selling by pre-empting downgrades and making adjustments in advance of the event. Otherwise, the incentives created by Solvency II mean that many insurers will seek to remove downgraded bonds from their portfolios, ensuring positions are liquidated when it is sensible to do so.⁴ Indeed, fig. 9 below shows that price adjustment for downgrades, although faster during the COVID crisis, began well in advance of actual downgrade 'events'.

Figure B.1: Solvency capital requirements by bond rating and modified duration

	5Y modified duration		10Y modified duration	
	Solvency Capital Requirement	Increase from previous rating	Solvency Capital Requirement	Increase from previous rating
AAA	4.5%	-	7.0%	-
AA	5.5%	22%	8.5%	21%
A	7.0%	27%	10.5%	24%
BBB	12.5%	79%	20.0%	90%
BB	22.5%	88%	35.0%	75%
B or lower	37.5%	67%	58.5%	67%

Source: BlackRock, EIOPA, as of 14 May 2020. Based on the standard solvency capital requirement model.

Figure 8: EUR high yield and fallen angels OAS



Source: Bloomberg, BlackRock

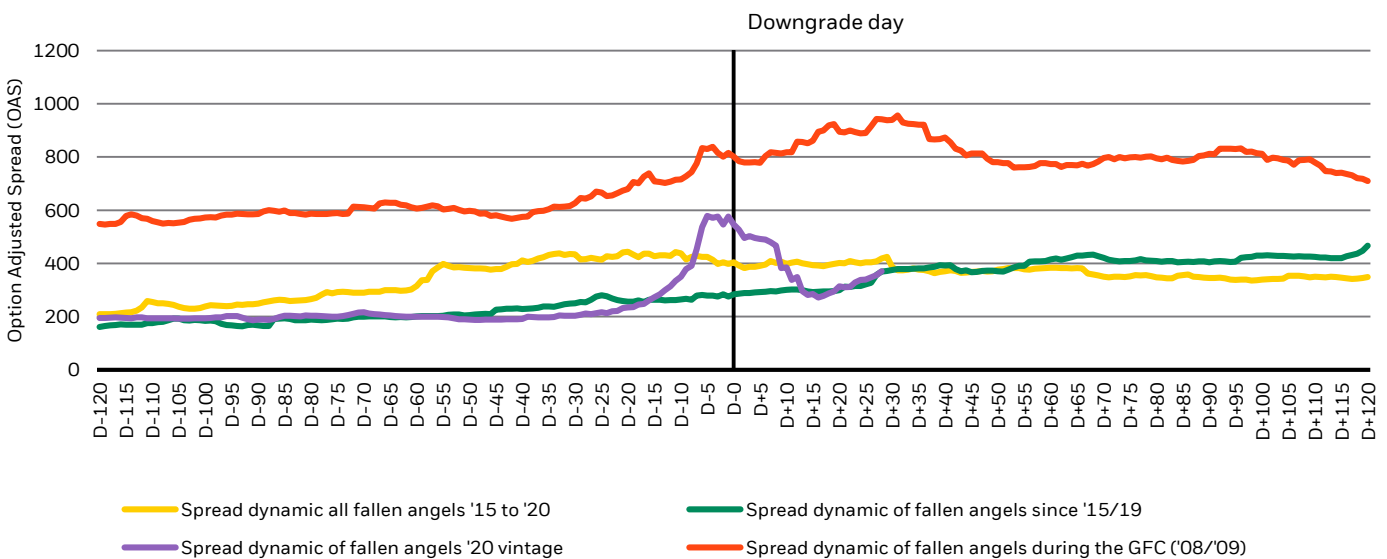
Price adjustment to downgrades is a process, not an event

Downgrades are usually a process rather than an event, meaning price adjustments usually take place gradually rather than suddenly. It is relatively rare for a bond to be instantly downgraded from IG (BBB- or above) to HY (BB+ or below); typically, IG bonds are put onto ‘negative outlook’ (a time horizon of 12 to 24 months) or ‘negative watch’ (3 to 6 months) by credit rating agencies before the downgrade itself takes place. This creates a longer adjustment period for investors anticipating a downgrade. Indeed, looking at how downgraded bond yields have during previous cycles, we see that the downgrade is often priced in before the ‘event’ itself. As the European Central Bank has noted,

in the context of COVID-19, a “significant fraction of the BBB bond market is [as of 18 May 2020] already priced for a downgrade to BB”.⁵

Putting this into a historical context, fig. 9 shows the weighted average spread dynamic for 120 days before and after a bond was downgraded from investment grade to high yield, looking at downgrades in 2008 and 2009 (the Global Financial Crisis); between 2015 and 2019; and since the beginning of 2020. In each scenario, spreads on the bonds began rising prior to ‘downgrade day’, typically following the announcement of either the negative outlook or the negative watch, and generally complemented by market knowledge of deteriorating metrics in companies’ balance sheets.

Figure 9: Spread dynamic of EUR fallen angels '08/'09, '15/'19, '20



Source: BofA Merrill Lynch

Comparing the dynamics for fallen angels in 2008/09 and in 2020 so far, it is notable that in both cases there were no immediate cliff-edge effects. While for 2020 it is clear that spreads for fallen angels rose more sharply over a shorter time period, price adjustments did not take place in one go. This is explained by the quick deterioration in the companies' top-line prospects and shifting macroeconomic expectation caused by the COVID-19-related economic shutdown. Interestingly, and in contrast to '08/'09, spreads for '20 vintage fallen angels tightened just as quickly as they widened following the downgrade event, which can be explained both by some investors viewing this as an attractive opportunity, and by ECB signaling support for fallen angels by incorporating these bonds into their collateral framework.⁶

Bottom line

The volume of downgrades from IG to HY related to COVID-19 is unprecedented, and the uncertain economic outlook translates into considerable uncertainty over the 'final' rating of a downgraded issuer. It is therefore understandable that there are concerns about short-term volatility. However, while current circumstances are exceptional, this downgrade cycle is not the first in recent memory. Experience shows price adjustment to downgrades is a process, not an event, and begins prior to 'downgrade day' as bonds are placed on 'negative outlook' or 'negative watch', and the market absorbs information on company prospects. Cliff-edge effects around the downgrade itself are prevented through flexibility in investors' mandates, and less constrained investors spotting attractive opportunities in downgraded bonds.

Endnotes

1. For example, see European Systemic Risk Board (May 2020) *Note on liquidity in the corporate bond and commercial paper markets, the procyclical impact of downgrades and implications for asset managers and insurers*, pp. 10: "downgrades are particularly problematic for entities that lose their investment grade status, as they can create cliff effects. Their funding costs will increase, be it via market-based finance or via credit institutions. Most of the BBB-rated bonds in Europe are held by investment funds (51%) and insurers (32%) ... Index-tracking funds will need to sell those fallen angels quickly if they are removed from the reference basket. This automaticity creates a cliff effect that has implications on other entities via market losses. Investment funds, insurers, pension funds and banks may decide or be forced to sell, whether because of outflows, risk limits or mandates, to adjust their investment allocation, or to manage their solvency positions".
2. Source: Bloomberg, BlackRock. Using conversion of EUR/GBP=1.180178 as of 31 December 2019.
3. Solvency II ratios are defined as 'own funds' / solvency capital requirements. 'Own funds' are assets less liabilities. UK insurers benefit from a 'Matching Adjustment' which gives an increased discount rate for liabilities linked to the spread on their assets. As bonds are downgraded to high yield, the solvency capital charge (impacting the denominator) increases, and the benefit of the matching adjustment on 'own funds' (the numerator) is reduced.
4. As capital requirements also increase with bond duration, insurers can decide to sell bonds downgraded or at risk of being downgraded, and buy the same duration within investment grade; or they may shorten the duration of their portfolio to preserve capital. In practice, during a period of higher downgrades, a mix takes place and insurers take positions in longer duration and higher quality assets, and shorter duration lower quality assets – meaning downgrades tend to impact longer duration asymmetrically over time.
5. European Central Bank *Financial Stability Review, May 2020*, pp. 46-47.
6. ECB (April 2020) press release: *ECB takes steps to mitigate impact of possible downgrades on collateral availability*.

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