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Equity Momentum in GBP Credit

- In this report, we analyse the performance of the Equity Momentum (EMC) Strategy in GBP credit. The EMC quantitative scorecard performed well: portfolios of issuers with top EMC scores have outperformed the Bloomberg Barclays Sterling IG Corporate index by 2.28%/year with information ratios over 1 since 2001.
- We find that EMC performed well in subsets of the sterling market based on rating categories and on broad industry sectors. EMC can also provide valuable signals for sector allocation.
- Momentum investing according to EMC tends to be contra-cyclical as Top EMC portfolios generally outperformed the sterling corporate bond index and their Bottom EMC peers in credit down-cycles.
- EMC signals remain informative over relatively long horizons, as static Top EMC portfolios continued to outperform their Bottom EMC peers on horizons of up to 12 months.
- Despite the relatively concentrated market, our results in GBP credit remain consistent with our previous findings in the USD- and EUR-denominated markets.
- We have expanded coverage of the EMC scorecard to include IG and HY sterling credit markets. Issuer-level EMC scores are now available monthly on BarclaysLive, while the monthly EMC performance bulletin includes a section dedicated to the sterling market.

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Introduction

Systematic strategies are now commonly utilized in equity markets and are becoming popular in credit markets. Relative Value and Momentum arguably represent two of the most prominent strategies in the two asset classes.

To implement systematic strategies, investors need a tool to attribute systematic investment styles to individual securities. For example, a portfolio manager might want to know how a particular bond scores on relative value, or how a given issuer compares with peers in terms of momentum. Indeed, for a portfolio to implement a certain systematic style, it is necessary to know how individual securities embody that style. Characterizing individual bonds through a quantitative scorecard therefore provides a way to systematically and objectively measure style attributes for a broad universe of securities. Quantitative scorecards can also be used to build strategy portfolios[1].

We have previously shown that equity price momentum represents an informative signal for corporate bond investors.[2] To assist portfolio managers systematically assess the equity momentum characteristics of a broad set of issuers, we launched a quantitative scorecard called Equity Momentum in Credit (EMC), which initially covered bonds in the USD and EUR-denominated credit markets.

Having expanded EMC coverage to the sterling market, we now include sterling-denominated bonds[3] in our monthly performance update of the EMC scorecard[4] and distribute issuer-level scores on a monthly basis.

In this report, we describe the performance and broad characteristics of the EMC strategy in the sterling market. This universe is significantly more concentrated than the US and Euro Corporate market, with relatively few public issuers, especially in HY. Indeed, Panel B of Figure 1 shows the number of issuers in the Bloomberg Barclays HY Sterling index varied between 30 and 110, with public issuers representing roughly half of the universe. Panel A of Figure 1 shows that the number of issuers in the Bloomberg Barclays Sterling Corporate IG index increased from 120 to almost 300 between 2001 and 2019, with public issuers accounting for roughly 70 percent of the universe. Given the relatively small size of the sterling market, applicability of the EMC signal becomes a legitimate empirical question.

In this analysis, we design historical simulations to assess the performance and risk characteristics of long-only and of long-short portfolios based on EMC scores. Our analysis covers issuers with publicly traded stocks in the entire sterling corporate market as well as in rating and industry subsectors. We discuss performance of the strategy in credit down-cycles and on time horizons of varying lengths.

1 We discuss implementation issues in *Integrating Value and Momentum Strategies into Credit Portfolios*, Barclays Research, 14 August 2019.

2 See *Equity Momentum in Credit*, Barclays Research, 18 August 2017

3 Our study universe is the Bloomberg Barclays Sterling IG and HY corporate Bond Indices.

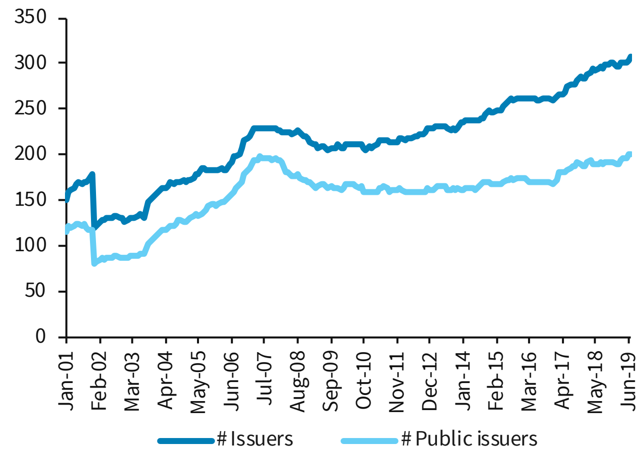
4 See, for example, *Equity Momentum in Credit (EMC) Scorecard - August 2019*.

FIGURE 1

Number of issuers in Bloomberg Barclays Sterling Corporate Bond Indices

PANEL A

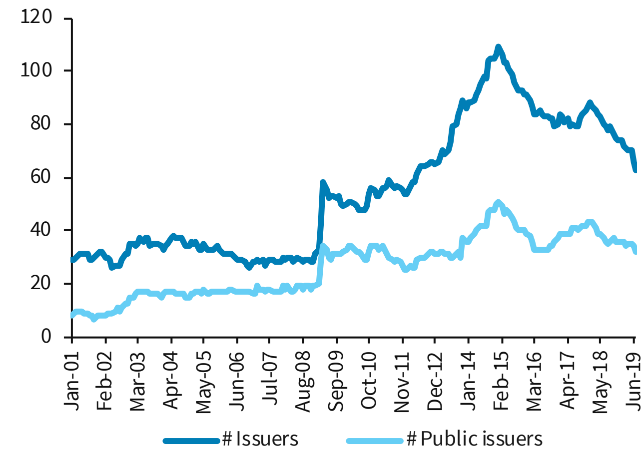
GBP IG



Source: Bloomberg, Barclays Research

PANEL B

GBP HY



Source: Bloomberg, Barclays Research

Performance of EMC in the Sterling Corporate Bond Market

EMC scores are calculated in the same way in the sterling market as they are in the dollar and euro markets: index issuers are ranked according to their recent equity price returns and then grouped according to their rank. EMC scores range between 1 and 10 and represent the relative equity momentum rank of an issuer. Issuers with an EMC score of 1 typically have very negative equity momentum, while issuers with an EMC score of 10 usually have a strongly positive equity momentum.

The scorecard combines equity returns over different horizons: returns of corporate issuers over the most recent one, three, and six months, are averaged, while normalizing for the different lengths of their formation periods[5]. Using multiple horizons in signal formation helps distinguish between issuers with trending and fluctuating stock prices.

To illustrate the potential value of equity momentum as a credit signal, we form equally weighted portfolios of sterling issuers[6] aggregated by EMC score at the beginning of each month, and record their subsequent excess returns[7]. Portfolios are rebalanced monthly based on updated EMC scores.

Figure 2 reports average excess returns of corporate bond portfolios grouped by EMC scores. The bottom portfolio includes issuers with EMC scores of 1, which corresponds to the worst equity price momentum. The average excess return of that portfolio is very negative – below -5%/year; while its volatility is the highest of all – over 10%/year. Average returns of decile portfolios increase monotonically with EMC scores. However, their volatilities remain relatively stable, at around 5%/year which is comparable to the volatility of the Sterling IG index. Figure 2 clearly indicates that strong equity momentum led to

[5] Equity returns measured at 1, 3, and 6 month horizons have different magnitudes, with 6-month returns likely to be larger in absolute terms. In order to put different period returns on an equal footing, we normalise them by the square root of period lengths over which they are measured.

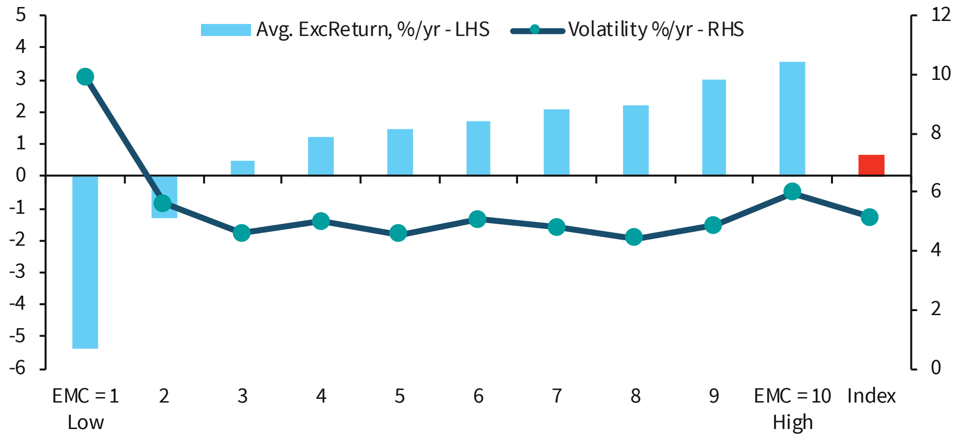
[6] We first aggregate corporate bonds at the issuer level using market-capitalization weights and then form strategy portfolios by applying equal weights to individual issuers.

[7] In this analysis, all sterling corporate bond returns are *excess returns* over duration-matched Gilt portfolios, as published by the index provider. Excess returns isolate the credit component of a bond return from the part associated with changes in government bond yields. The duration exposure of a corporate bond portfolio can be managed separately using overlays of government bond futures or interest rate swaps.

higher subsequent credit returns, while deeply negative momentum resulted in significant underperformance and elevated risk.

FIGURE 2

Average excess returns and volatilities of equally-weighted portfolios of sterling IG issuers sorted by EMC score, February 2001 – August 2019



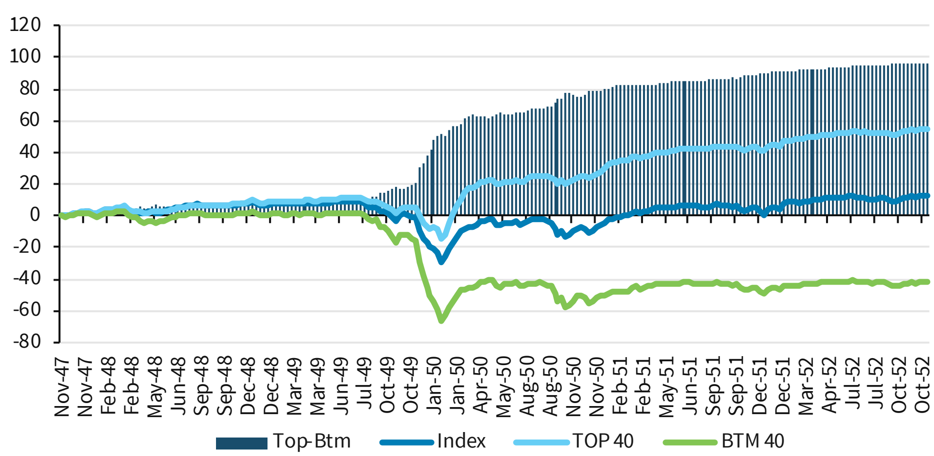
Source: Barclays Research; individual bonds are aggregated at the issuer level, using market weights; issuers in top and bottom portfolios are equally weighted; transaction costs are excluded

A more dynamic representation of the performance of the sterling EMC scorecard is provided in Figure 3, which compares the cumulative returns of equally-weighted portfolios invested into the top 40 and bottom 40 issuers sorted on EMC scores. The figure reports returns of the Top and Bottom EMC portfolios and of the Sterling Corporate IG index since 2001. The bars show cumulative outperformance of Top over Bottom EMC portfolios.

Top EMC sterling portfolios consistently outperformed their bottom peers, with a period of large outperformance around the financial crisis of 2008. The index cumulative excess returns are roughly half-way between those of the Top and Bottom EMC portfolios.

FIGURE 3

Cumulative excess returns of EMC portfolios in the sterling investment-grade market



Source: Barclays Research; individual bonds are aggregated at the issuer level, using market weights; issuers in top and bottom portfolios are equally weighted; transaction costs are excluded

Figure 4 reports the performance of the same EMC portfolios and of the index over the entire period, starting in 2001, and over two sub-periods. The Top portfolio exhibited substantially higher average returns than the index but its volatility is slightly lower:

4.82%/y vs 5.13%/y. The information ratios of the Top EMC portfolio over the index are above 1 in all three periods considered.

The Bottom EMC portfolios have lower returns and higher realised volatilities than the Top EMC portfolio or the index in all three periods. As a result, the long-short EMC strategy (Top 40 – Bottom 40) delivers highly positive returns with information ratios in excess of 1.3.

FIGURE 4

Average excess returns of EMC portfolios in the sterling IG market

	£ Corp IG Index	Top 40	Bottom 40	EMC Strategy Top-Bottom	Top - Index
			February 2001 - August 2019		
Avg. Exc. Return, %/yr	0.66	2.94	-2.26	5.20	2.28
Volatility, %/yr	5.13	4.82	6.73	3.86	2.04
Information Ratio	0.13	0.61	-0.34	1.35	1.12
			February 2001 - December 2009		
Avg. Exc. Return, %/yr	-0.60	2.15	-4.96	7.11	2.76
Volatility, %/yr	5.80	5.93	8.31	5.03	2.57
Information Ratio	-0.10	0.36	-0.60	1.41	1.07
			January 2010 - August 2019		
Avg. Exc. Return, %/yr	1.83	3.66	0.22	3.44	1.84
Volatility, %/yr	4.43	3.51	4.76	2.22	1.38
Information Ratio	0.41	1.04	0.05	1.55	1.33

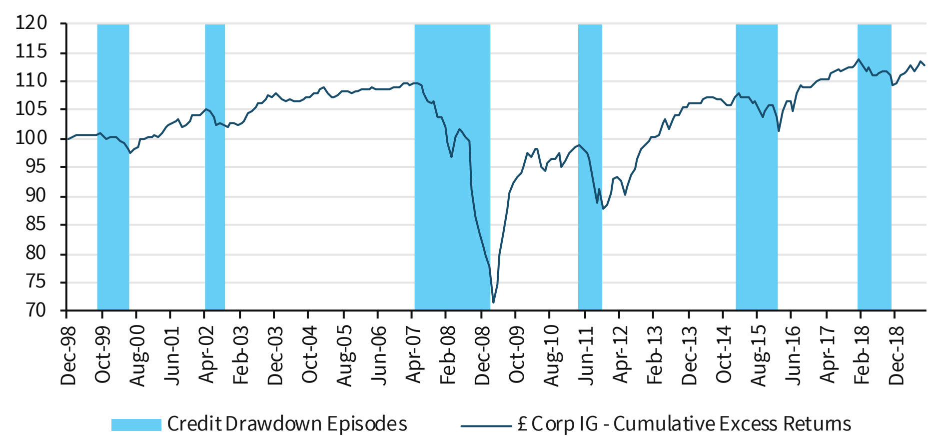
Source: Bloomberg, Barclays Research; individual bonds are aggregated at the issuer level, using market weights; issuers in top and bottom portfolios are equally weighted; transaction costs are excluded

How does the EMC strategy perform in times of credit drawdowns, when spreads widen and the index experiences negative excess returns?

We define a credit down-cycle as a significant decline (top-to-through) in cumulative returns of the Sterling Corporate IG index in a 12-month rolling window. Figure 5 identifies six such episodes between 1998 and 2019. They are associated with well-known market events such as the 1998 Asian crisis, the 2002 telecom crisis, the 2008 financial crisis, the 2011 EU sovereign crisis, the 2015 energy crisis, and the market decline of 2018.

FIGURE 5

Cumulative excess returns of the sterling corporate IG index and down-cycle episodes



Source: Barclays Research

Figure 6 reports annualised excess returns of the index as well as of the Top and Bottom EMC portfolios during the five most recent market down-cycles. While average excess returns of all portfolios are negative during the down-cycle episodes, as shown in the first three columns, portfolios of issuers with strong equity momentum (Top EMC) do significantly better than their bottom peers. The last two columns of the table report relative performance of Top over the Bottom EMC portfolios and over the index, respectively. They show that the Top EMC portfolios outperform in each of the five recent down-cycles episodes except for 2002. The performance of the EMC strategy tends to be contra-cyclical, which is consistent with the behavior of momentum strategies in other asset classes.

FIGURE 6

Performance of the EMC-based portfolios in five sterling credit market down-cycles

Drawdown Episodes	£ Corp IG Index	Top 40	Bottom 40	Top-Bottom	Top-Index
April 2002 - October 2002	-5.1	-7.5	-11.4	4.0	-2.4
May 2007 - March 2009	-19.8	-13.4	-35.5	22.1	6.5
April 2011 - November 2011	-16.1	-7.1	-21.6	14.5	9.0
February 2015 - February 2016	-5.3	-2.4	-6.5	4.2	3.0
January 2018 - November 2018	-3.6	-1.7	-3.4	1.7	1.9
Entire Period: Feb 2001 - Aug 2019	**0.66**	**2.94**	**-2.26**	**5.20**	**2.28**

Source: Bloomberg, Barclays Research; individual bonds are aggregated at the issuer level, using market weights; issuers in top and bottom portfolios are equally weighted; transaction costs are excluded

How do EMC long-short portfolios perform across major credit rating categories of the sterling market? To answer this question, we repeat the analysis presented in Figure 4 for three rating buckets: A & better, Baa and HY. Given the high concentration of the sterling credit market and the relatively limited universe of issuers for which we have equity data, the Top and Bottom portfolios within different rating categories cannot include many bonds: we choose to include 20 issuers per leg in each of the two IG categories but only 5 in HY. Despite this higher concentration, the long-short strategy that contrasts Top and Bottom EMC portfolios performed well, with highly positive excess returns and high information ratios across all rating categories in all periods, as shown in Figure 7.

FIGURE 7

Performance of EMC strategy by credit quality in the IG sterling market

	Feb 2001 - Aug 2019			Feb 2001 - Dec 2009			Jan 2010 - Aug 2019		
Aaa-A-Rated Bonds	**Top 20**	**Btm 20**	**Top - Btm**	**Top 20**	**Btm 20**	**Top - Btm**	**Top 20**	**Btm 20**	**Top - Btm**
Avg. Exc. Return, %/yr	2.75	-2.85	5.60	2.57	-5.38	7.95	2.91	-0.52	3.43
Volatility, %/yr	4.40	6.92	4.42	5.33	8.50	5.62	3.36	4.98	2.79
Information Ratio	0.62	-0.41	1.27	0.48	-0.63	1.41	0.87	-0.10	1.23
Baa-Rated Bonds	**Top 20**	**Btm 20**	**Top - Btm**	**Top 20**	**Btm 20**	**Top - Btm**	**Top 20**	**Btm 20**	**Top - Btm**
Avg. Exc. Return, %/yr	3.05	-1.54	4.59	1.67	-4.18	5.85	4.32	0.90	3.42
Volatility, %/yr	6.20	6.71	4.35	8.09	8.31	5.80	3.67	4.71	2.32
Information Ratio	0.49	-0.23	1.05	0.21	-0.50	1.01	1.18	0.19	1.48
HY Bonds	**Top 5**	**Btm 5**	**Top - Btm**	**Top 5**	**Btm 5**	**Top - Btm**	**Top 5**	**Btm 5**	**Top - Btm**
Avg. Exc. Return, %/yr	14.92	1.97	12.95	15.62	4.38	11.24	14.28	-0.25	14.53
Volatility, %/yr	11.72	17.65	15.75	14.69	21.29	19.42	8.13	13.51	11.44
Information Ratio	1.27	0.11	0.82	1.06	0.21	0.58	1.76	-0.02	1.27

Source: Bloomberg, Barclays Research; individual bonds are aggregated at the issuer level, using market weights; issuers in top and bottom portfolios are equally weighted; transaction costs are excluded

While EMC appears attractive in the entire sterling credit market as well as within broad rating categories, does its performance also persist within industry sectors? We split the sterling investment-grade market into four major industry groups and analyse the historical performance of a long-short strategy within each sector. The long leg of the strategy includes the top 10 issuers sorted by EMC score, while the short leg of the strategy includes the bottom 10. As before, issuers are equally-weighted and portfolios are rebalanced monthly.

The first four columns of Figure 8 report the performance within each sector since 2001 and for two sub-periods. All information ratios are positive, in all periods, but the performance is weaker in the Banking & Brokerage and Other Financials sectors, which had relatively low risk-adjusted returns during the financial crisis. In the recent 2010-2019 period, information ratios are above 0.8 in all four sectors.

When combining the four sector-specific portfolios into an equally-weighted portfolio of 40 issuers (fifth column of Figure 8), we obtain substantially higher information ratios as risk is reduced due to better diversification of issuer-specific risk. This illustrates the value of EMC for issuer selection on a crudely sector-neutral basis.

The average returns of the sector-neutral EMC strategy are lower than the ones of the original (not sector-neutral) strategy introduced earlier and for which results are repeated in the sixth column of Figure 8. Implementing EMC long-short portfolios on a sector-neutral basis significantly reduces volatility of strategy returns. The return differences between the original and the sector neutral strategies represent the performance contribution of sector allocation.

The EMC value as a sector allocation signal has been substantial in all periods considered, although lower than for issuer selection. The information ratio associated with sector allocation was 1.05 in the early period, which includes the 2008 financial crisis, and 0.45 in the recent period. Portfolio managers can use EMC as a signal not only for issuer selection, but also for sector allocation, by aggregating individual EMC scores within sectors and then comparing average sector scores [8].

FIGURE 8

Performance of the EMC strategy in GBP Credit by Sector and the Effect of Sector Allocation Timing

	Cyclicals	Non-Cyclicals	Banks & Brokerage	Financial Other	All Sectors	Overall in £IG	Sector Alloc.
# Issuers in Top/Btm Portf.	10	10	10	10	40	40	40
Feb 2001 - Aug 2019							
Avg. ExcRet, %/yr	3.38	3.12	6.33	1.92	3.71	5.20	1.49
Volatility, %/yr	3.02	2.91	8.63	3.78	2.79	3.86	1.90
Inf. Ratio	1.12	1.07	0.73	0.51	1.33	1.35	0.79
Feb 2001- Dec 2009							
Avg. ExcRet, %/yr	3.83	3.71	9.77	0.79	4.56	7.11	2.54
Volatility, %/yr	3.96	3.51	11.81	3.92	3.63	5.03	2.42
Inf. Ratio	0.97	1.06	0.83	0.20	1.26	1.41	1.05
Jan 2010 - Aug 2019							
Avg. ExcRet, %/yr	2.96	2.57	3.16	2.97	2.91	3.44	0.53
Volatility, %/yr	1.76	2.23	3.68	3.63	1.65	2.22	1.17
Inf. Ratio	1.68	1.15	0.86	0.82	1.77	1.55	0.45

Source: Bloomberg, Barclays Research; individual bonds are aggregated at the issuer level, using market weights; issuers in top and bottom portfolios are equally weighted; transaction costs are excluded

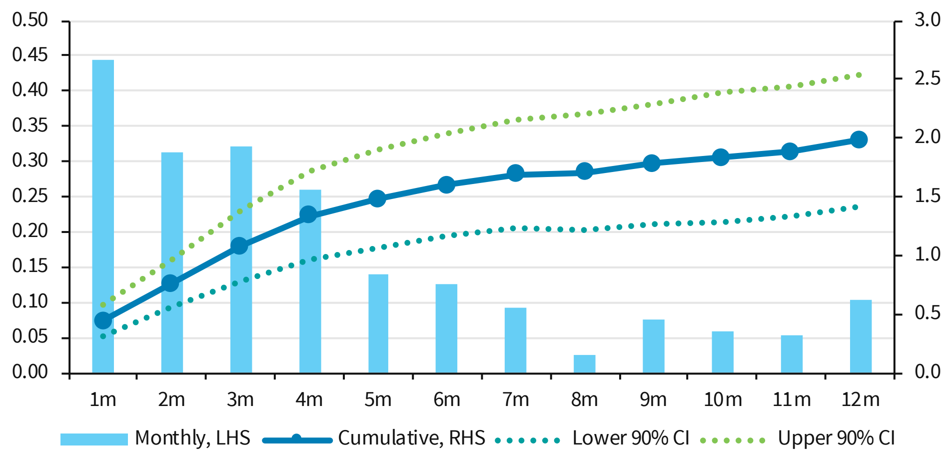
[8] A detailed analysis of the usefulness of EMC as a sector allocation signal in the US and EUR markets is provided in *Corporate Sector Timing Using Equity Momentum, Barclays Research*, November 2017

Do equity momentum signals remain informative over long horizons? The results shown so far are based on portfolios rebalanced monthly as EMC signals are recalculated every month-end. Most credit investors, however, aim to keep positions for much longer than a month given transient liquidity and potentially high transaction costs of corporate bonds. In that context, we investigate whether EMC adds value on longer horizons by measuring the simulated performance of long-short EMC portfolios kept static at horizons varying from one to twelve months. Results for investment-grade portfolios of 40 equally-weighted issuers are shown in Figure 9. The cumulative average performance of the EMC strategy keeps increasing as the horizon is extended, although incremental returns become low for horizons longer than four months. Figure 9 also shows the confidence intervals (in dotted lines) around the average cumulative outperformance. As expected, it widens for longer time horizons, but, at the same time, both lower and upper confidence limits keep increasing with the horizon.

The results shown in Figure 9 indicate that the EMC strategy adds value even if rebalancing is implemented less frequently than monthly.

FIGURE 9

Average excess returns (%/y) of Top 40 over Bottom 40 EMC static portfolios at different time horizons, February 2001 – August 2019



Source: Barclays Research; individual bonds are aggregated at the issuer level, using market weights; issuers in top and bottom portfolios are equally weighted; transaction costs are excluded

Conclusion

We find that equity momentum can provide useful signals to investors in GBP-denominated corporate bonds. Long-only portfolios or long-short strategies based on our EMC scorecard have delivered attractive performance in the overall sterling market as well as in subsets based on rating or broad industry categories.

While most of our historical simulations assume monthly rebalancing, it appears that the EMC signal remains informative at longer horizons.

We also find that EMC can be useful for sector allocation timing, as well as for issuer selection within sectors. Sterling market results are comparable to our previous findings in USD and EUR-denominated credit markets despite the relatively small number of GBP issuers with publicly quoted equities.

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