

Concessions in Corporate Bond Issuance Magnitude, Determinants, and Post-Issuance Dynamics

- A key feature of the issuance process in the corporate bond market is the 'concession' or the difference in spreads between a newly issued bond and otherwise similar outstanding bonds.
- Using a unique database of bond concessions from Barclays U.S. Syndicate, we study the determinants of concessions accounting for both demand and supply side factors, and document that for investment grade corporate bonds, the median concession over the last decade was 7-23bp. However, the magnitude of concessions is fairly predictable, with only a few factors accounting for more than 60% of the variation across issues.
- Looking at the dynamics of concessions post-issuance reveals that the discount is mostly eliminated on the first trading day, and within a week the pricing of the newly issued bond is no different than that of its corresponding secondary market peers.
- Newly issued bonds become part of Barclays' Corporate Index (and hence investors' benchmark) only on the last day of the month at which they were issued. As a result, concessions offer investors a source of 'alpha' that is not reflected in the pricing of the index constituents. We find that concessions represent an important source of outperformance and constitute about half the alpha a 'typical' credit investor can hope to generate by employing various active strategies.

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Bond Issuance in the Corporate Market

The volume of corporate bond issuance in recent years reached record level as firms took advantage of the attractive interest rate environment and low spreads in the market. In 2013 alone, for example, corporations issued more than one trillion dollars of investment grade bonds. The issuance was met with high demand from investors, partly due to the relatively low liquidity in the secondary market.¹

A key feature of the issuance process is the price (i.e., ‘spread’) at which the new bonds are offered to investors. To entice investors’ demand, the bonds are typically offered at a spread that is wider than that of similar bonds from the same issuer. The ‘concession’ or the difference in spreads between the newly issued bond and otherwise similar outstanding bonds is a key factor in determining the level of investors’ participation in any individual offering and its dynamics at the aggregate level affects both the primary and secondary markets.

Using a unique database of bond concessions from the Barclays U.S. Syndicate desk, we study the determinants of concessions accounting for both demand and supply side factors. We find that the magnitude of concessions is fairly predictable with only a few factors accounting for over 60% of the variation across issues. Next, we investigate the dynamics of concessions post-issuance, and show that the typical discount relative to the secondary market is eliminated within a week on average. We conclude with an analysis that highlights the importance of concessions as a source of alpha for investors. Specifically, the newly issued bonds become part of Barclays’ Corporate Index (and hence investors’ benchmark) only on the last day of the month in which they were issued. As a result, concessions offer investors a source of ‘alpha’ that is not reflected in the pricing of the index constituents. We find that concessions represent a very important source of outperformance and constitute about half the alpha a ‘typical’ credit investor can hope to generate by employing various active strategies.

Data and Methodology

Concessions – Overview and Definition

The issuance process for a corporate bond starts typically with an announcement of the planned deal prior to market opening on that day, and includes “initial price thoughts,” a spread range within which the deal is likely to be priced. The spread range is based on market conditions at the time and is set relative to a Treasury bond within the same maturity bucket. The difference between the spreads at which the new bond is offered and that of its ‘benchmark bond’ (a corresponding bond with similar characteristics typically issued by the same issuer) is known as the ‘concession.’ In most cases, the concession is positive (i.e., the issued bond’s spread is wider than the benchmark bond’s spread) in order to entice demand from investors.

Throughout the day, the syndicate tries to narrow the spread range as it gains a better understanding of the potential demand from investors. At the same time, prospective investors may revise their demand based on the updated range. At some point, a final “indicative price range” is communicated to investors, and investors’ demand becomes “firm.” The deal is priced near market close, with the final spread typically falling in the communicated indicative spread range, although it can be materially different. Investors therefore bear pricing uncertainty as well as uncertainty regarding the fulfilment of their requested allocation.

¹ Konstantinovskiy and Phelps (2012) document the decline in U.S. corporate bond market liquidity as dealers inventories have fallen since 2008 in response to various regulatory changes. They estimate that the inventory decline led to an 18% drop in illiquidity, which translates to approximately 13bp/year in additional transactions cost for a portfolio with 100% yearly turnover.

To analyze concessions' dynamics we employ two separate data sources. Our primary source is the Barclays U.S. Investment Grade Syndicate desk, which maintains a comprehensive dataset of bond issuance data, irrespective of whether Barclays is part of the underwriting syndicate. For each new bond, the dataset includes information on the issue date, issuing entity, size, use of proceeds, and magnitude of the concession as well as a detailed list of bond-specific attributes (e.g., maturity, coupon, rating, seniority, callability features). The concession is calculated as the difference between the (ask) spread of the newly issued bond on the offer day and the prior day (bid) spread of its benchmark bond. The benchmark bond is selected out of the issuer's outstanding bonds based on various considerations such as maturity, seniority, size and liquidity.²

Concession data in the syndicate database is not available prior to 2008, which limits our ability to study its behaviour over time in different market regimes. In addition, the identity of the benchmark bond is not specified, and cannot be inferred since the selection process is not fully rule-based.³ As a result, we cannot observe the dynamics of the concession in the days immediately following the offer date, nor examine whether the spread gap between the newly issued bond and the benchmark bond is eliminated and over what period.

To address these issues, we construct a second concession dataset by combining (ask) spreads of new issues available from Bloomberg with (bid) spread data for the benchmark bond from POINT (henceforth the 'B/P database'). This allows us to extend our historical coverage of new issuance further back to the year 2000, and increase the overall sample population from 1,218 bonds to 3,334 bonds (representing 876 and 2,643 issuance events, respectively). In addition, unlike in the syndicate dataset, in the B/P dataset the benchmark bond selection process is completely rule-based.⁴ This allows us to study the behaviour of concession following the issue date.

Figure 1 reviews the concession calculation process used in both datasets and reveals at least three additional differences. First, the concession in the syndicate database is adjusted for the maturity difference between the newly issued bond and the benchmark bond, whereas in the B/P database, the concession is simply the difference between the two.⁵ Since the maturity of the benchmark bond is typically somewhat shorter, adjusting for it should typically lower the concessions in the B/P database as spread curves are usually upward sloping. Second, the (bid) spread of the benchmark bond in the B/P database is as of the market close on the day of the offer (day t), unlike in the syndicate case, where it is based on the previous day. This difference is not likely, however, to introduce any systematic bias as overall market spread is equally likely to widen or tighten. Another reason the (bid) spread of the benchmark bond may vary is that the B/P data reflects only Barclays' quotes, while the syndicate relied on multiple pricing sources.

In light of these differences, Figure 2 compares various statistics related to the distribution of individual concessions in both databases. To allow for a proper comparison, the table also reports the figures separately for a subset of bonds in the B/P dataset that are also included in the syndicate dataset (shown in the rightmost column).

² Notice that the calculation of concession in this way represents the profit or loss (after being converted into price space) from a trade that substitutes a secondary bond (short) with the newly issued bond (long).

³ The selection of the benchmark bond takes into account considerations such as 'liquidity', which are not defined using a rules-based approach.

⁴ The benchmark bond is defined as a bond issued by the same issuer, having the same credit notch rating and callability features that is closest in maturity to the newly issued bond.

⁵ The issue-specific Bloomberg yield analysis calculator was used to adjust the maturity difference between the new issue and the secondary.

FIGURE 1
Comparison of Concession Databases

	Barclays Syndicate	Bloomberg / POINT (B/P)
Sample start	2008	2000
# of Issues (bonds)	1,218	3,334
Benchmark bond selection is rule-based?	No	Yes
Identity of benchmark bond	Unknown	Known
Adj. for maturity diff. between new Issue and benchmark bond?	Yes	No
Concession Definition	$\text{ask}_t - \text{bid}_{t-1}$	$\text{ask}_t - \text{bid}_t$
Benchmark bond pricing source	Multiple	Point

Source: Barclays Research, Bloomberg

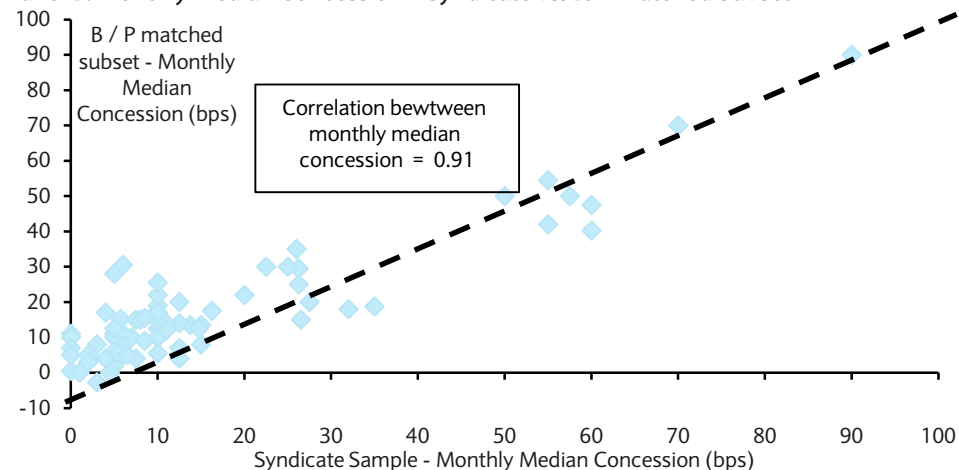
The median value in the Syndicate sample (9bp) is 3bp lower compared with the corresponding figure in the matched B/P subset, consistent with the lack of maturity gap adjustment in the B/P dataset.⁶ In addition, its standard deviation is almost 50% higher than that of the Syndicate sample. Notice also that 24% of the issues in the matched B/P subset were characterised by negative concessions vs. only 12% in the Syndicate sample. However, while the bond-level pairwise correlation of concessions between the datasets is only 53%, the correlation on a monthly basis (of median values) increases to 91% as shown in Panel B of Figure 2.

Overall, these results suggest that the concession calculation in the B/P dataset resulted in a larger degree of ‘noise’ or measurement errors compared with the data collected by Barclays syndicate. However, once the concession data are aggregated, most of the ‘noise’ gets cancelled out, and the two datasets are very similar. Hence, we use the syndicate dataset for studying the bond level variation in issuer concessions, and the B/P dataset with its longer history and broader coverage to analyze the concessions post-issuance dynamics.

FIGURE 2
Panel A: Descriptive Statistics for Concession Datasets

	B / P		
	Barclays Syndicate	Full Dataset	Subset matched to Syndicate sample
P ₂₅ (bp)	0	-2	0
Median (bp)	9	9	12
P ₇₅ (bp)	18	22	26
Avg. (bp)	13.28	9.97	12.86
Std. (bp)	20.98	30.57	30.26
% of Neg. values	12%	27%	24%
Corr. with B/P subset	0.53		

⁶ The average concession in both datasets is higher than the median indicating positive skewness (i.e., the existence of outliers).

Panel B: Monthly Median Concession – Syndicate vs. B/P Matched Subset

Note: The rightmost column contains the subset of bonds in the B/P dataset that are also included in the syndicate dataset. Source: Barclays Research

Determinants of Concessions

The pricing process of new corporate bond issues determines the magnitude of concession as a result of the balance of supply and demand for the new issue. We therefore divide the possible factors affecting concessions into three broad categories: supply-side, aggregate/systematic demand, and issuer-/issue-specific demand. We present the rational and definition of each factor and then estimate a multivariate regression to assess its statistical and economic importance via several scenarios.

Supply-Side Drivers

Perhaps the most obvious measure of supply is the issuance size. Intuitively, if demand for a good is downward-sloping, larger supply will result in a lower equilibrium price (i.e., larger concession). However, how should an issue size be measured is not immediately clear. Using the absolute dollar value is an obvious choice, but this measure also suffers from several drawbacks. First, the typical issue size has increased over time as issuers' nominal balance sheet increased. Hence, a \$1bn issue may have been very large in the past but not in today's market. Second, a few very large deals may have a disproportional effect on the results, and distort the overall pattern. Third, intuitively, a \$1bn issue for a company with a \$15bn of debt outstanding is not equivalent to a case where a company with only \$1bn in debt outstanding would issue that amount. Thus, in addition to the absolute dollar value (in log terms), we measure issue size as the percentage of issuers' outstanding debt ('relative size').⁷

Beyond current supply (represented by both measures of issuance size), the concession may also be affected by past issuance as higher overall supply may necessitate a higher concession. Even the possibility of future issuance may affect concession at present since investors will need a larger incentive (i.e., concession) to buy the current issue rather than wait and participate in the next bond offering from the same issuer. To represent the past supply of an issuer, we use the dollar amount issued by the issuer in the trailing 12-month period. To capture the likelihood of additional supply, we use a dummy variable that equals one if the issuer is a "frequent issuer" and zero otherwise, where a frequent issuer is defined as one with four or more issuance events during the trailing 12-months period.

⁷ Defining absolute issue size in log terms reduces the positive skew (right tail) caused by the largest issues (this is important since OLS regression assumes that the errors [residuals] are normally distributed). In addition, the estimated coefficient would represent percentage change. Hence, an increase of \$1bn in issue size would have a different effect if it is from \$2bn to \$3bn or from \$14bn to \$15bn.

FIGURE 3
Supply Side Drivers of Concessions

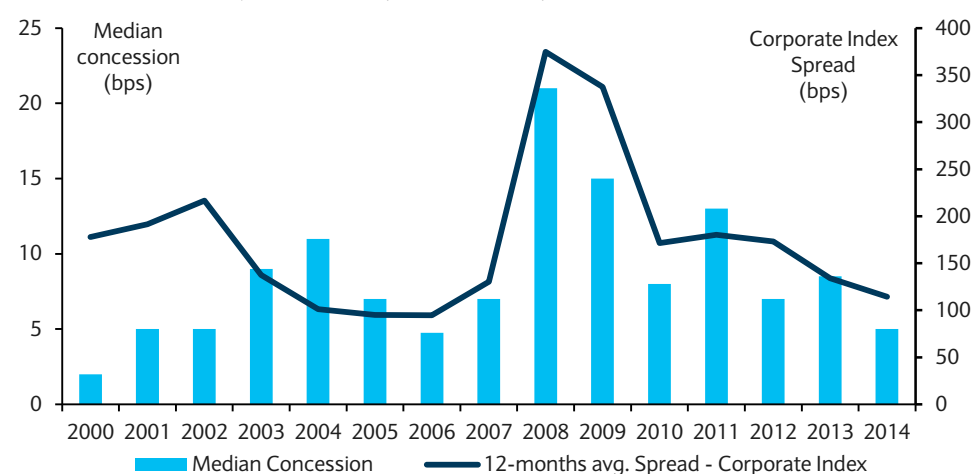
Factor	Reason for Inclusion	Variable Definition	Predicted Effect on Concession
Absolute Deal Size	Direct measure of supply in dollar term	Log of total issuance size	+
Relative Deal Size	Measure of supply relative to issuer's outstanding debts, which proxies for passive demand (i.e., index fund)	Ratio of total issuance size to outstanding debt	+
Past Supply	less supply shortage	Debt issued during the trailing 12 months	+
Frequent Issuer	Higher likelihood of future supply	Dummy variable that equals one if issuer had four or more issuance events during the trailing 12 months, zero otherwise	+

Source: Barclays Research

Demand-Side Drivers

Figure 4 plots the median concession by year since 2000 (based on the B/P dataset) alongside the average spread of the Barclays Corporate Index. The chart reveals a clear association between the magnitude of the typical concession and the level of spreads with a correlation of 0.72.⁸ Prior to the 2008 financial crisis, the median concession ranged between 5 and 10bp, increased to over 20bp during the crisis and has declined consistently since then. This relationship is fully consistent with our work on DTS (Duration Times Spread), in which we found that spread risk (represented by spread volatility) is proportional to spread level.⁹ Since market uncertainty tends to increase with risk, and is likely to result in lower demand for new issues (and lead to larger concessions), we should expect to see the positive association observed in the chart. Hence, we employ the spread of the Corporate Index as a proxy for market uncertainty.

FIGURE 4
Median Concession by Year vs. Corporate Index Spread



Source: Barclays Research

⁸ At a monthly frequency, the correlation between spread level and concession size was even higher (0.89).

⁹ See Ben Dor, A., L. Dynkin, P. Houweling, J. Hyman, E. Leeuwen, and O. Penninga, 2007. "DTS (Duration Times Spread): A New Measure of Spread Exposure in Credit Portfolios", *Journal of Portfolio Management*, 33(2), pp. 77-100.

Not only the level but also the direction of spreads is important when trying to capture market uncertainty/sentiment. To measure the sentiment in the overall market, we use the change in spread of the Corporate Index over the month prior to the pricing date, with spread tightening representing improved sentiment. In addition, we also try to reflect sentiment toward the issuer's particular sector by looking at sentiment to his peer issuers in a similar way (the change in spread experienced by peer issuers over the previous month).

Another factor that can affect demand for new issues is liquidity in the secondary market, through a substitution effect. When the secondary market liquidity is poor, investors seeking exposure to a certain 'name' may do so more efficiently in the primary market. Hence, lower liquidity should lead to higher demand and consequently lower concessions. As a proxy for market liquidity, we use LCS (liquidity cost score) – our measure of liquidity in fixed income markets based on traders' quoted bid-ask spreads, which we introduced several years ago.¹⁰ Specifically, we use the aggregate LCS of the Corporate Index.

An additional determinant of the demand for new issues is the amount of cash available to investors. Higher levels of cash may lead to higher demand (or alternatively more competition among investors for a given supply) and hence lower concessions. We use data on in/outflows to/from investment grade mutual funds collected by Lipper to measure the level of cash in the hands of investors, and separately account for the total amount of debt that matured or was called in the month preceding the issue date.

FIGURE 5
Demand Side Drivers of Concessions

Factor	Reason for Inclusion	Variable Definition	Predicted Effect on Concession
Market Wide			
Market uncertainty	Uncertainty (spread vol.) is proportional to spread (DTS paradigm). Higher the uncertainty should lead to lower demand	Corporate Index spread one day prior to the pricing date	+
Market sentiment	Positive market sentiment should lead to higher demand	Corporate Index spread change in the month prior to the pricing date	+
Sentiment to peers	Positive sentiment to issuer's peers may lead to higher demand	Peer spread change over previous three-months	-
Secondary market liquidity	New bonds are substitutes to outstanding bonds. Worse secondary market liquidity should increase demand for new issues	LCS in the month prior to the pricing date	-
Cash available to Investors	Demand may increase with the level of cash available to investors	Bond redemption (redeemed or called) and flows to IG funds	-
Issue/Issuer Specific			
Use of proceeds	Some issues may require tighter concession to entice investors	Dummy variables for MA, Financing, and Capex (Base case - GCP)	?
Issuer characteristics (rating, industry and maturity)	Investors may prefer/dislike certain characteristics	Dummy variables for rating, industry and maturity buckets	?
Issuer Spread	Issuer-specific uncertainty like market-wide uncertainty may affect demand	Issuer spread 15 business days prior the pricing date	+

Note: Flows to investment grade funds are based on the average flows (as a percentage of total fund assets) over the 4-week period prior to the issue date from Lipper. Data on the planned use of proceeds is available from Dealogic and is classified into four broad categories: Merger and Acquisition, Financing, Capital Expenditure and GCP (General Corporate Purposes). Source: Barclays Research, Dealogic, Lipper.

¹⁰ See Dastidar, S., and Phelps B., "Introducing LCS: Liquidity Cost Scores for US Credit Bonds", Barclays Research, October 6, 2009.

Beyond market-wide factors, the demand for a new issue may vary as a function of issue/issuer specific characteristics. First is the intended use of the proceeds from the sale of the new bonds. Using the proceeds for a corporate action (LBO for example) is likely to result in a larger concession compared with financing a business expansion. Second, the issuer's credit rating and industry group may play a role if investors have certain preferences (for example avoiding financial issuers after the 2008 financial crisis). Similarly, concessions may also vary as a function of the bond maturity as different parts of the spread curve may have specific investors.

The last driver we consider is the spread of the issuer, which reflects issuer-specific uncertainty. However, unlike aggregate market spreads, which can be considered as largely exogenous, the issuer's spread immediately prior to the pricing date can be endogenous as it may already incorporate expectations of the new issue concession. To avoid the problem associated with the endogeneity in our regression analysis we use the spread of the issuer measured fifteen business days prior to the pricing date.

Analyzing the Determinants of Concessions

Figure 6 reports the average and median concession by key issuance characteristics, such as credit rating, industry, use of proceed, and issuance size. The table suggests that issuance size was positively related to the magnitude of concessions. The median concession in the smallest issuance size quintile (less than \$400mn) was 6bp, less than half the median concession in the largest issuance size quintile (greater than \$2,000mn). The difference between the two groups was both statistically and economically significant. Except issuance size, the relation between issuance characteristics and concessions were less clear, sometimes counter-intuitive. For example, the median concession of bonds rated as AA or above was higher than bonds with lower ratings, although the difference was small (1-2bp) and statistically insignificant. This likely reflects the fact that the typical issue size of highly rated issuers was much larger than that of lower-rated issuers. Hence, this pattern reflects the effect of issuance size, and not rating.

To understand the marginal effect of each of the supply and demand factors we identified, we employ a multivariable regression approach in which the size of the concession in each issue is regressed against the complete set of factors we listed earlier. The regression results are reported in Figure 7, while Figure 8 illustrates the economic significance of the results using several scenarios.

FIGURE 6

Concession Size by Issuance Characteristic

	# of Issues	Avg.	Median
Credit Rating			
AA and above	470	11.54	10.0
A	1492	10.04	8.0
BAA	1372	9.35	9.0
Industry Group			
Financials	979	8.00	8.0
Industrials	1862	11.28*	10.0
Utilities	493	8.91	7.0
Use of Proceeds			
GCP	1771	9.89	8.0
Financing	810	10.15	8.0
MA	152	12.39	12.0
CapEx	88	2.04*	5.0

	# of Issues	Avg.	Median
Size Quintile			
1 (< 400mm)	696	7.30	6.0
2 (400mm - 675mm)	609	8.46	6.5
3 (675mm - 1,000mm)	710	8.51	7.0
4 (1,000mm - 2,000mm)	740	11.75*	10.0
5 (>2,000mm)	579	14.28*	13.0

Note: GCP – general corporate purpose; Financing – repay debt and refinancing; MA – merger and acquisition; CapEx – capital expenditure. * denotes that the difference from the first group is statistically significant.

Source: Bloomberg, Dealogic, Barclays Research

As can be seen in Figure 7, the combined set of factors explained more than 60% of the total variation in concessions, with most coefficients having the expected signs, and many of them being highly significant. Of the supply factors we listed, issuance size (both absolute and in relative terms), had the largest effect. The estimated coefficients of the absolute and relative issuance size were 5.21 and 3.19, respectively, with t-statistics of 9.05 and 3.00.¹¹ To see the economic significance of these results, consider scenario 1 in Figure 8, in which an issuer with \$1bn of outstanding debt plans to increase new issuance from \$1bn to \$2bn. This on average would result in concessions increasing by 7bp, of which 4bp are attributed to the increase in absolute issuance size. Past supply and the likelihood of a future issue also affected concessions as frequent issuers (four or more issuance events in the prior 12 months) offered concessions that were 2.4bp higher on average.

FIGURE 7

Estimated Regression Coefficients for Drivers of Issuer Concessions

Jan.2008 - Feb.2014	Syndicate Concession	
Driver	Coef.	t-Stat
Intercept	-73.46	-8.13***
Supply Factors		
Abs. Issue size (log)	5.21	9.05***
Ratio of issue size to debt outstanding	3.19	3.00***
Frequent Issuer?	2.37	1.88*
Past Issuance Size (log)	0.12	1.72*
Demand Factors - Market Specific		
Corporate Index OAS _{d,t-1}	0.16	10.68***
Corporate Index OAS Change _{t-1,t}	0.12	5.87***
LCS _{t-1}	-0.15	-4.54***
3-month Peer Spread Diff.	0.01	0.93
Bond redemption (prior month in log)	-2.83	-1.29
Flows to IG funds (4wk avg., % of total assets)	-5.65	-1.87*
Demand Factors - Issue/Issuer Specific		
<i>Use of Proceeds Dummies</i>		
MA deal?	-2.95	-1.67*
Financing deal?	-4.38	-4.33***
Capex deal?	-2.52	-0.69
<i>Maturity Dummies</i>		
Less than or equal to 5yr	0.41	0.35

¹¹ The value of the t-statistic represents the likelihood (probability) that the estimated coefficient is different from zero. Under the normal distribution t-statistic above 3 imply a probability of less than 0.001 that the coefficient is no different from zero.

Jan.2008 - Feb.2014	Syndicate Concession	
Driver	Coef.	t-Stat
Greater than or equal 15yr	2.07	1.85*
Industry Dummies		
Financials?	2.15	1.88*
Utilities?	1.43	1.09
Rating Dummies		
AA or Above?	-0.92	-0.59
A?	-1.16	-1.09
Issuer Spread (-15d)	0.02	3.41***
# of Obs.		1218
Adj. R ²		61%

Note: The regression is estimated using Barclays syndicate concessions dataset over the period January 2008 – February 2014. *, **, *** represent statistical significance at the 10 and 5, and 1 percent levels.

Source: Dealogic, Lipper, Barclays Research

With respect to market-wide demand factors, market uncertainty and sentiment had the largest effect on concessions both economically and statistically with t-statistics of 10.68 and 5.87, respectively. For example, in a case where the spread of the corporate index widens from 100bp a month ago to 120bp on the day just prior to the pricing date, an issuer would need to offer 5.5bp more in concessions compared with the previous month. However, as spread widening is often associated with deteriorating liquidity in the secondary market, part of the increase in concessions (3bp) would be offset.¹² The two proxies for the cash available to investors had the expected sign as more cash in hand led to lower concessions. However, the estimated coefficients were neither economically nor statistically insignificant. For example, the estimated coefficient for flows into investment grade funds was statistically significant but a 10% inflow, which is very large by historical standard, would only reduce concession by 0.6bp.

Compared with the market-wide demand factors, issue/issuer-specific factors explained less of the variation in concessions. Out of the ten variables used, only four were statistically significant at the 10% level, in contrast to seven out of the ten market-wide demand factors. Furthermore, the issuer's spread, while significant, had a much smaller effect on concessions than that of the market spread. Its estimated coefficient was only 0.02, one-eighth of the estimated coefficient of market spread. Issues classified as financing deals offered concessions lower by 4.4bp compared with otherwise similar GCP (general corporate purpose) issues (the difference is statistically significant) since most financing deals did not increase or even lower the issuer leverage. However, issues classified as Merger and Acquisitions also offered lower concessions, although they typically result in higher leverage. Notice, however, that these results lack power (insignificant t-stats) due to the limited number of Merger and Acquisitions issues in the sample relative to other types of issues. In terms of industry, financial issuers offered 2.2bp more in concessions compared with industrial or utility issuers. This result may be attributed to the relatively short period spanned by our sample and the dominance of the 2008-2009 crisis years.

¹² The LCS coefficient (-0.15 with a t-statistic of -4.54) indicates that a 20bp increase would lead to a decline in concession on average.

FIGURE 8
Economic Significance of Concession Drivers

Factors	Change in factors	Estimated Coef.	Predicted Effect on concession
Scenario 1: An issuer with \$1bn debt outstanding plans to increase its issuance size from \$1bn to \$2bn			
Issuance size (log)	0.69	5.21	3.63
Issuance to secondary ratio	1	3.19	3.17
Total effect (bp)			6.79
Scenario 2: Corporate Index spread widens from 100bps a month before the issue to 120bp the day prior			
IG spread level (bp)	20	0.16	3.13
IG spread change (bp)	20	0.12	2.4
Total effect (bp)			5.53
Scenario 3: Secondary market illiquidity increases (LCS increases 10bp)			
LCS level	+10bp	-0.15	-1.52
Total effect (bp)			-1.52

Source: Barclays Research

How useful is our regression model when it comes to explaining (or predicting) the concession in specific issues? Figure 9 presents two such examples, the GE Capital 1.5% 3y issued on 7/9/2013 (cusip 36962G6Z), and the Verizon 6.55% 30y issued on 09/11/2013 (cusip 92343VBT). The table displays their key characteristics, the model imputed concession value and the realized concession.

In the case of the GE bond (A-rated), the model imputed value was very similar to the concession observed in practice (14.7 vs. 15.0bp, respectively). For the Baa-rated Verizon bond, the difference is much larger (68bp vs. 90bp, respectively). However, the Verizon issue was the largest ever and included multiple bonds. If one were to calculate the size-weighted concession for the entire issue, the concession was 74bp, more in line with our model prediction.¹³ The remaining difference can be attributed to the unusual size of the issue that in effect required the model to extrapolate beyond the range of the data used for estimating the coefficients, although the issue was part of our dataset.

FIGURE 9
Predicting Concessions Using the Regression Coefficients

Issue	Total Size (\$, bn)	Ratio of Issue Size to Debt Outstanding	Freq. Issuer?	Use of Proceeds	Debt issued over trailing 12-months (\$, bn)	Market spread prior to Issue date (bp)	Market spread change over month prior to issue date (bp)	Previous month LCS (bp)	Concession (bps)	
									Predicted	Realized
GE Capital 1.5% 3y issued 7/9/2013	1.25	0.01	Yes	GCP	17.8	148	+9.7	93	14.7	15
Verizon 6.55% 30y issued 09/11/2013	45	1.34	No	M&A	4.5	142	+4.6	90	68	90

Source: Barclays Research

¹³ Notice that our regression model is estimated at a bond level and not the overall issue level.

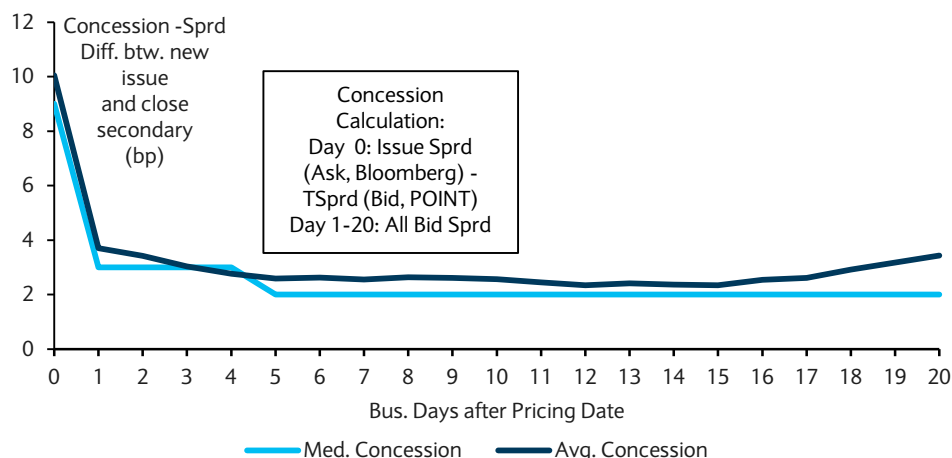
Post-Issuance Dynamics, Secondary Bonds, and Alpha

The findings on the average size of concessions reported in the previous section bring up several questions: what are the dynamics of issuer concession post-issuance? Do they disappear on the day following the issue date, or do they still trade cheap compared with the benchmark bond for some time? Second, does primary issuance affect an issuer's outstanding (i.e., secondary) bonds? Finally, do concessions represent an important source of alpha for investors?

Post-Issuance Concession Dynamics

Figure 10 plots the dynamics of concessions over the twenty trading days post-issuance using the B/P dataset. The figure indicates that the median concession tightened from 9bp on the pricing date to 3bp at the end of the first trading date, and to 2bp after a week, but did not decline any further.

FIGURE 10
Post-Issuance Concession Dynamics

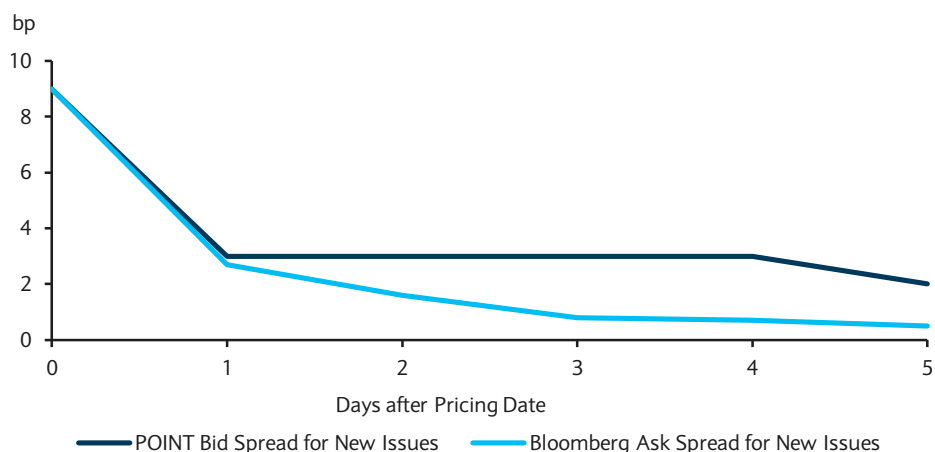


Source: Barclays Research

To understand why the concession did not converge to zero recall that the newly issued bonds typically had a slightly longer maturity than their benchmark bonds, and the concession calculation did not adjust for the maturity gap. In addition, the data used to compute the concession (or spread difference) after the issue date came from POINT, which only reports bid quotes. Hence, unlike the concession figures used so far, which were based on (ask) spread of new bond minus (bid) spread of the benchmark, the post-issuance concession was calculated as bid spread minus bid spread.

To see the effect of the transition from ask spread to bid spread for the new issue, Figure 11 plots the same post-issuance concession dynamics for a subset of the new issues for which we can find ask spread data on Bloomberg. The chart presents both the POINT concession (bid minus bid) and a new concession value based on the ask spread obtained from Bloomberg for the new issue. Not surprisingly, the new concession is lower than the concession figure based on the POINT data. Unlike in Figure 10, the concession (based on the Bloomberg data) keeps declining after day one to as low as 0.5bp one week after the pricing date. Given the maturity gap is still affecting our calculations, these results suggest that the relative 'cheapness' of the new issue almost completely disappeared on the first day of trading.

FIGURE 11
Effect of Bid/Ask Spread on Convergence of Concessions



Note: The benchmark bond spread is based on bid data from POINT. The new issue spread after the issue date is either ask spread from Bloomberg or bid spread from POINT. Source: Bloomberg, Barclays Research

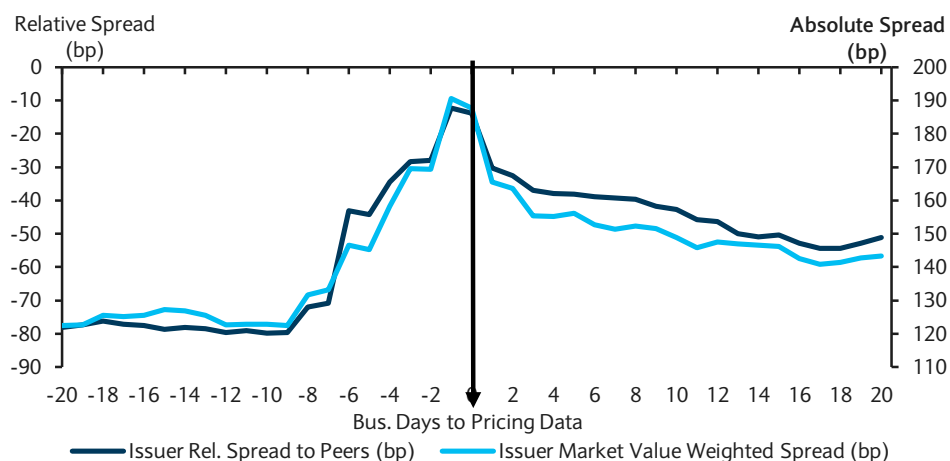
Spread Behavior of Secondary Bonds

The size of the primary issuance may not only affect the magnitude of concessions demanded by investors, but also cause the spread of the issuer's outstanding bonds at the time of the issue (i.e., secondary bonds) to widen via two channels. First, even if the issuer's credit rating is unchanged, the market may view the issue's leverage as increasing (depending on the intended use of the proceeds, for example), leading to a higher spread. Second, there may also be a transient liquidity effect due to the imbalance between supply and investor demand. In such a case, the spread widening would be reversed within a short time after the issue date.

A good example of the latter dynamic could be observed in the Verizon \$45bn issue that took place in September 2013. Figure 12 shows the aggregate (market-weighted) absolute spread of Verizon outstanding bonds at the time of the issue and relative to peer bonds during a 40-day window centered on the issue date.¹⁴ The chart indicates that the spread of Verizon bonds started to widen nine days prior to the issue, reaching 190bp just before the issue day. The close resemblance between the absolute and relative spread series indicates that the widening was not market driven but specific to Verizon. Overall, its bonds widened by about 80bp in just eight days. However, notice that relative spreads started to tighten immediately following the offer, declining by a total of 40bp, roughly half the magnitude of the initial widening. This reversal pattern highlights the large but transient nature of the demand/supply imbalance in this issue.

¹⁴ The relative spread was calculated for each Verizon bond using all Industrial bonds with the same rating (Baa) in its maturity bucket (<5y, 5-10y, >10y) and then aggregated based on market value.

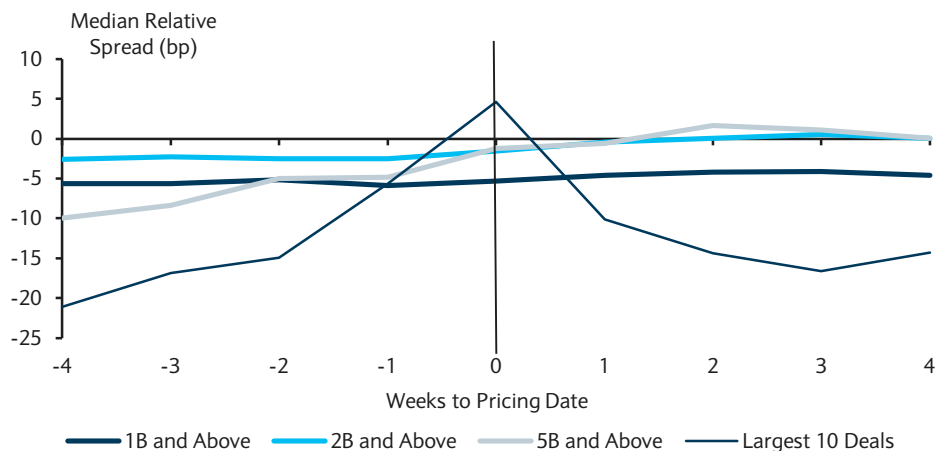
FIGURE 12

Spread of Verizon Outstanding Bonds during the September 2013 Issue

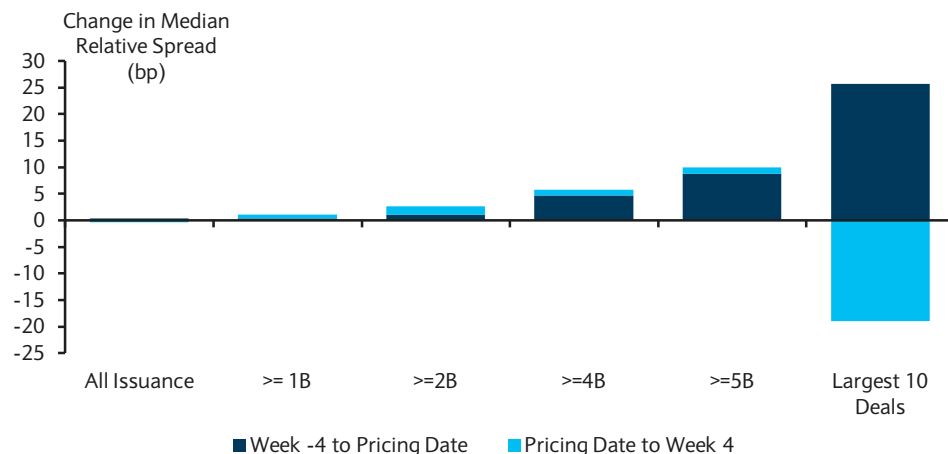
Source: Barclays Research

The results shown in Figure 12 are not typical, however. Panel A of Figure 13 plots the median relative spread as a function of issue size during a longer window of eight weeks centered on the issue date. The plot suggests that the mean-reversion pattern was limited to the largest ten issues in our sample ($> \$9\text{bn}$). In all other issues, secondary spreads continued to widen after the pricing date, suggesting that the market underreacted prior to the pricing date. In fact, the underreaction was smaller (in % of total spread increase) for the larger issues (Figure 13 – Panel B).

FIGURE 13

Dynamic of Issuers' Secondary Bond Spread by Size**Panel A**

Panel B



Source: Barclays Research

Concessions as a Source of Alpha

The magnitude of concessions (and their post issuance dynamics) and the fact that the newly issued bonds become part of Barclays Corporate Index only on the last day of the month in which they were issued implies that concessions may represent a valuable source of alpha for credit portfolio managers. To understand the magnitude of ‘alpha’ they offer in comparison to typical strategies employed by credit managers, we need to first quantify the magnitude of alpha offered by concessions.

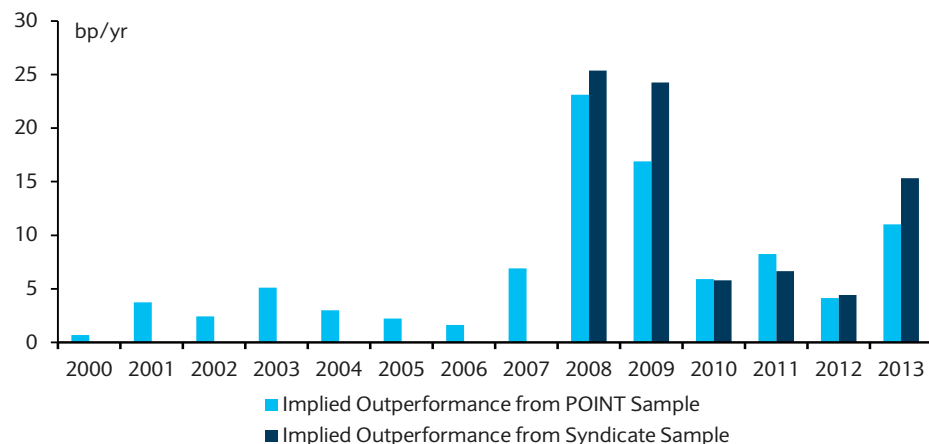
Consider an investor who holds a portfolio mimicking the Barclays Corporate index and replaces secondary bonds with new issues monthly. What would the outperformance, “alpha”, be relative to the Corporate index? The alpha offered by a single issue i is equal to:

$$\text{Alpha of new issue } i \cong \text{Concession} \times \text{spread duration}_i \times \text{MV}_i / \text{MV of Corporate index}$$

Assuming our manager is allocated bonds in proportion to the portfolio (i.e., the market) weights, alpha will equal the cumulative alpha offered by concessions.

Figure 14 shows that concession constituted an important alpha source with an average of 14bp/year since 2008. In particular, in 2008 and 2009, the “alpha” generated by concessions were above 20bp.

FIGURE 14
Estimated “Outperformance” due to Concessions



Source: Barclays Research

Next, we compare these figures to estimates of alpha generated by common credit strategies employed by portfolio managers. In a recent study, Desclee, Dynkin, Hyman, Maitra and Polbennikov (2014) examined the time dynamics of credit active returns focusing on three specific strategies: Market timing, sector rotation, and issuer selection.¹⁵

Figure 15, which is taken from their study, reports the average alpha, volatility and information ratio for these strategies for different time-periods, assuming ‘typical’ levels of skill. The table shows that since 2000, the magnitude of alpha generated by concession was comparable to that generated by market timing and sector rotation. Issuer selection generated much higher alpha due to the fact that the ‘breadth’ of the strategy is much larger than the other two. Hence, the results in Figure 15 suggest that concession indeed serves as an important source of alpha for portfolio managers, which because of the current index rules does not require ‘skill’ in the sense it is needed for the other strategies. However, being able to take advantage of this source of alpha does require access to the primary market, which may not be equally available to all portfolio managers.

FIGURE 15
Simulated Alpha with Skill

		Issuer selection (5% skill – 20 issuers)	Sector rotation (10% skill)	Market timing (10% skill – 10% of index)
1996 to 2013	Avg Alpha (bp/yr)	37.1	12.6	9.6
	Volatility (bp/yr)	96.4	67.8	47.8
	Information Ratio	0.38	0.19	0.2
2000 to 2003	Avg α (bp/yr)			
	(Avg Index OAS : 164bp)	48.5	16	8
2004 to 2007	Avg α (bp/yr)			
	(Avg OAS : 94bp)	15.1	3.5	2.7
2007 to 2010	Avg α (bp/yr)			
	(Avg OAS : 296bp)	80	28.9	25
2010 to 2013	Avg α (bp/yr)			
	(Avg OAS : 163bp)	31.4	12.8	11

Note: The table is taken from Desclee, A., L. Dynkin, J. Hyman, A. Maitra, and S. Polbennikov, “Time Dynamics of Credit Active Returns”, Barclays Research, May 27, 2014, Figure 14. Source: Barclays Research

Conclusion

The results in this study have important implications for both investors and issuers. Not only can issuers predict to a large extent the cost (i.e., concession) of new issuance, but by changing the timing and some of its characteristics, they may also reduce their expected cost. For investors, concessions offer an important source of alpha that requires mostly access to the allocation process, unlike active strategies, which require investment skill.

¹⁵ Desclee et. Al. (2014) use the notion of imperfect foresight to represent skill. Foresight means that the manager exhibits skill at anticipating market direction. For example, a 10% skill means that the probability of overweighting credit exposure in a month with positive excess return is 55%, and the probability of incorrect positioning is 45%. An unskilled manager has a 50% probability of correctly anticipating market direction. Market timing is implemented by setting the strategy’s active position to a constant 10% of the index market value. This means that they assume that the portfolio’s active weight to credit will be either +10% or -10% in market value terms, depending on the directional view of the skilled manager. The sector rotation strategy is formulated as over/underweighting to one out of the three main industry sectors (Financial, Industrial and Utility) versus the other two. The strategy is DTS neutral to avoid directionality on overall market performance and shifts pre-defined amounts of DTS contribution across the three sectors. The issuer selection strategy invests in a pre-determined number of issuers with skewed probability of picking winners. Imperfect foresight is reflected in the probability of selecting issuers with positive idiosyncratic excess returns. The strategy samples from the largest 200 index issuers and allocates an equal DTS contribution to each selected issuer, while matching the overall corporate index DTS. The results for this strategy are based on 1000 simulations every month to obtain cross-sectional distributions of issuer-selection strategy returns.

References

Ben Dor, A., L. Dynkin, P. Houweling, J. Hyman, E. Leeuwen, and O. Penninga, 2007. “DTS (Duration Times Spread): A New Measure of Spread Exposure in Credit Portfolios”, *Journal of Portfolio Management*, 33(2), pp. 77-100.

Dastidar, S., and B. Phelps, “*Introducing LCS: Liquidity Cost Scores for US Credit Bonds*”, Barclays Research, October 6, 2009

Desclee, A., L. Dynkin, J. Hyman, A. Maitra, and S. Polbennikov, “*Time dynamics of credit active returns*”, Barclays Research, May 27, 2014.

Konstantinovskiy, V., and B. Phelps, “*Implications of Constrained Broker/Dealer Inventories for Corporate Market Liquidity*”, Barclays Research, May 10, 2012.

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