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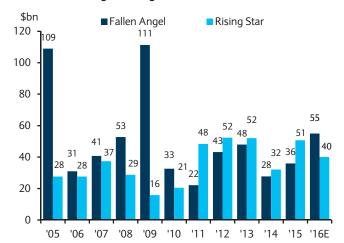
Angels More Energetic than Stars

Despite the volatility-driven sell-offs in high yield and investment grade credit this year, rising stars continued their recent trend of outpacing falling angels in 2015, at \$51bn and \$36bn, respectively. We expect this trend to reverse next year, as commodity credits continue to be pressured by low price levels. Overall, we forecast \$55bn of fallen angels in 2016, the majority of which will come from the energy sector, and \$40bn in rising star volume. Current levels of energy and metals fallen angels candidates are tight to comparable BBs, which suggests potential widening if a downgrade occurs. Conversely, rising star candidate spreads suggest limited upside, with most already trading near BBB levels.

Despite this year's market volatility, fallen angel and rising star volumes have been largely contained. That said, they have both rebounded somewhat from last year's low levels; roughly \$50bn of high yield debt has been upgraded to investment grade so far this year, and more than \$35bn of debt has moved from investment grade to high yield (Figure 1). Rising star volumes have been driven by consumer cyclicals, with the upgrade of General Motors alone accounting for \$19bn. Meanwhile, fallen angel activity has been characterized by two competing trends: 1) a rise in commodity-related downgrades and 2) a decline in non-commodity and financial downgrades. These two offsetting effects have kept downgrade volumes low relative to 2012 and 2013, but indicate that downgrades from investment grade to high yield could accelerate in 2016 if oil and metals prices remain low.

Indeed, a closer look at ratings migration patterns across credit suggests that fundamental deterioration is beginning to translate into rating agency notch downgrades (although not yet necessarily into fallen angel volumes). Figure 2 shows that notch-level downgrades by Moody's and S&P have crept up steadily in 2015, with the ratio of downgrades to upgrades increasing to nearly 1.3x in 3Q15. In our view, this reflects the fundamental deterioration that has occurred in certain segments of the market in 2015, as low commodity prices continue to pressure energy and metals & mining companies and as M&A activity has encouraged leveraging in other pockets of the market.

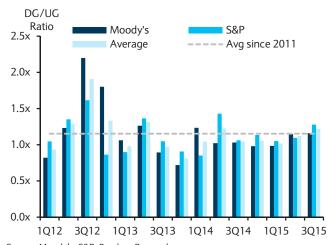




Note: 2016 numbers are Barclays projections; 2015 are volumes year-to-date. Source: Barclays Research

FIGURE 2

Quarterly Downgrade/Upgrade Ratios



Source: Moody's, S&P, Barclays Research

In 2016, we believe that continued fundamental pressure in commodities, along with an increase in M&A activity, will drive a significant increase in fallen angel volumes. This deterioration, particularly in metals & mining, should also keep rising star volumes low relative to the past three years. In our base case, we project that \$50-55bn of debt will fall from high grade to high yield in 2016 and that \$40bn will be upgraded to investment grade (Figure 1). Below, we examine fallen angel/rising star dynamics in more detail.

Fallen Angels Will Be Driven by Commodities

Although total fallen angel volumes have recovered somewhat from last year's lows, most of the increase has been driven by downgrades in commodity-related sectors, a trend that we expect to continue next year. Indeed, the combined par amount of basic material and energy debt that has moved to high yield has increased to \$26bn this year (more than 70% of all downgrades), from \$13bn in 2014 and \$0bn in 2013 (Figure 3). That said, it is not surprising that commodity-based names have come under pressure given the sharp move lower in oil and metals prices over the past year; the low level of non-commodity industrial downgrades (to high yield) has been more unexpected. Year-to-date, only about \$10bn of non-commodity securities have been downgraded to high yield, \$5bn below the post-crisis lows of last year. This has occurred despite this year's sharp increase in M&A activity, which has driven some leveraging activity in retail, food & beverage, pharmaceuticals, and healthcare.

On an issuer level, downgrade volumes have been driven by a few relatively large issuers. Out of the 15 issuers downgraded to high yield this year, Transocean (\$7.8bn), Teck Resources (\$6.9bn), Weatherford International (\$5.9bn), DCP Midstream (\$4.1bn), and Yum! Brands (\$2.2bn) account for nearly 75% of total downgraded par outstanding (Figure 4). This mirrors last year's trend, when the top four issuers (out of 18) accounted for about two-thirds of the fallen angel volume. These large fallen angel issuers are likely to change the landscape of the high yield market. Transocean, for example, which fell into the US Corporate High Yield Index this year, is the second-largest issuer in high yield energy (4%), and the twenty-second largest in the index overall.

Furthermore, fallen angel performance this year has largely been in line with historical averages (Figure 5), returning to normal following a brief deviation in 2014. Generally, fallen angels tend to underperform the index in the months leading to a downgrade, in part as a result of poor fundamental performance leading up to the event, as well as by forced buying and selling by benchmarked managers at the time of the event. Following the downgrade,



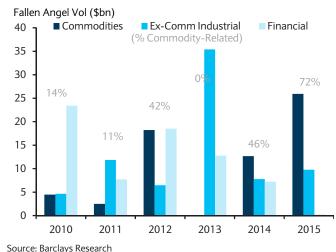
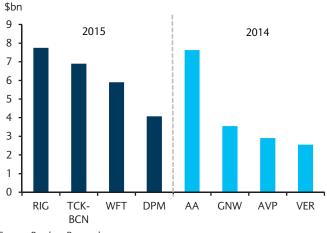


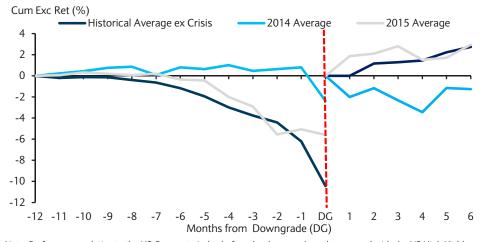
FIGURE 4
Biggest Fallen Angel Issuers in 2015 and 2014



Source: Barclays Research

fallen angels tend to outperform high yield, likely an indication that the technical selling ultimately takes the credits to levels that overstate fundamental issues. In 2014, there was minimal underperformance before downgrades (likely because of the sharp, technical-driven outperformance of higher beta securities in the first half of year) and *underperformance* after the event, reflecting that valuations had not fully priced in fundamental deterioration before the downgrades. That said, the longer-term performance of 2014 fallen angels was actually in line with historical patterns, as they ultimately underperformed by about 5% cumulatively. In 2015, there has been about 6-7% of underperformance in the six months leading up downgrades on average, followed by about 2% of outperformance relative to high yield after the fact, broadly in line with historical averages.

FIGURE 5
Historical Fallen Angel Performance around Downgrade Event



Note: Performance relative to the US Corporate Index before the downgrade and compared with the US High Yield Index following the downgrade. Source: Barclays Research

2016 Fallen Angel Outlook

We forecast about \$55bn of fallen angel volumes in 2016, which would be the highest total since 2009. Figures 7 and 8 highlight some of the most likely fallen angel candidates for next year, including comments on the factors that could drive a downgrade to high yield. In our view, fallen angel activity will be driven by three key themes:

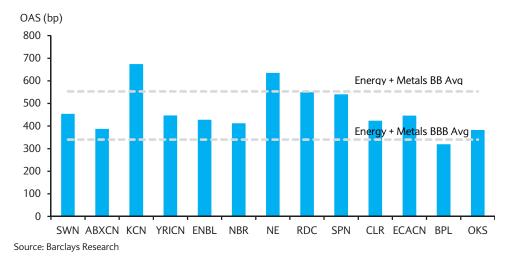
- We expect fallen angels to remain heavily skewed toward energy and metal & mining companies (Figure 7). Fundamental energy and metals & mining analyst Harry Mateer sees nearly \$70bn of notional at risk of being downgraded to high yield by 2017 and potentially as much as \$50bn in 2016, especially if commodity prices settle around current levels. As a result, we anticipate that commodity downgrades will represent the majority of fallen angel volumes next year.
- Robust M&A activity should also put pressure on ratings for non-commodity-related companies, especially those that choose to increase leverage to complete transactions. We anticipate that M&A volumes will increase next year (see this week's Investment Grade section, At the Top for M&A, for more detail), and potential credit quality deterioration should drive an increase in industrial downgrades, excluding energy. Combined with weaker growth abroad, especially in emerging markets, we project that this will drive an increase from the recent low volumes of non-commodity fallen angels to roughly \$15-20bn in 2016.
- Finally, financial downgrades should be minimal, given continued fundamental improvement in the sector. Although methodological changes at the ratings agencies

may drive notch-level downgrades for some banks in the near term, they should not drive any financial issuers to high yield.

We expect downgrades from investment grade to high yield to remain one of the clearest causes of underperformance for US Corporate Index issuers. In general, we expect the underperformance of fallen angel candidates to fall closely in line with historical averages, as was the case this year, especially for non-commodity sectors. That said, we do see the potential for commodity-related downgrades to exhibit even sharper underperformance than average in 2016. Indeed, while some of the downgrade risk has already been priced into commodity securities, there is still significant room for widening from current spreads; as Figure 6 shows, many of the fallen angel candidates trade 100-200bp tight of BB levels, implying significant widening in the case of a downgrade to high yield. Moreover, avoiding a significant shift to high yield will likely involve a recovery in underlying commodity prices, given current market and rating agency expectations. If prices stabilize at these lower levels, or perhaps move even lower, this will likely involve a re-pricing of market expectations, meaning that any sell-off in commodity names as they move to high yield could be even more pronounced than implied by current BB valuations. In other words, conditional on there being a large number of commodity-related downgrades, we are likely to have realized a market scenario in which commodity prices are significantly worse than current market expectations.

In addition, we continue to expect technical dynamics to be a significant driver of spreads in 2016. We forecast that investment grade supply will remain high in 2016 (but slightly lower than this year), given our expectation that M&A-related issuance will continue to increase next year (2016 Investment Grade Issuance Forecast, November 6, 2015). With liquidity in the market still challenged, any negative single-name news could cause exaggerated sell-offs at the time of the event and sharper rallies afterward as valuations move to match fundamentals.

FIGURE 6
Energy and Metal Fallen Angel Candidate Current Spreads



13 November 2015

Energy and Metals & Mining Fallen Angel Candidates

FIGURE 7
2016 and 2017 Potential Energy and Metals Fallen Angel Candidates

Ticker	Issuer Name	Amt Out Current OAS (\$mn) (bp)		Moody's	S&P	Fitch	Sector			
2016 Fallen Angel Candidates										
SWN	Southwestern Energy	3,800	454	BAA3	BBB-	BBB-	Independent E&P			
ABXCN	Barrick Gold Corp	8,850	387	BAA3	BBB-	NR	Metals & Mining			
KCN	Kinross Gold Corp	1,250	674	BA1 (Neg)	BBB- (Neg)	BBB-	Metals & Mining			
YRICN	Yamana Gold Inc	499	447	BAA3	BB+	BBB-	Metals & Mining			
ENBL	Enable Midstream Partners	1,650	428	BAA3	BBB-	BBB	Midstream			
NBR	Nabors Industries Inc	2,983	412	BAA2	BBB	BBB (Neg)	Oil Field Services			
NE	Noble Holding Intl	4,000	635	BAA3 (Neg)	BBB	NR	Oil Field Services			
RDC	Rowan Companies Inc	2,800	550	BAA3 (Neg)	BBB- (Neg)	NR	Oil Field Services			
SPN	SESI LLC	1,298	540	BAA3	BBB-	NR	Oil Field Services			
Probably Not in 2016, but Potentially in 2017										
CLR	Continental Resources Inc	5,600	424	BAA3	BBB-	NR	Independent E&P			
ECACN	Encana Corp	4,700	446	BAA2 (Neg)	BBB	NR	Independent E&P			
BPL	Buckeye Partners	3,125	320	BAA3	BBB- (Neg)	BBB-	Midstream			
OKS	ONEOK Partners Lp	5,700	383	BAA2 (Neg)	BBB (Neg)	NR	Midstream			

Source: Barclays Research

Independent E&P

Crude oil and natural gas prices are likely to be the main driver of downgrades to high yield for the E&P sector as higher priced hedges, where applicable, fully expire and the ability of management teams to reduce operating costs diminishes. We expect debt metrics to deteriorate further in 2016 despite further tightening of capital expenditures as weak commodity prices weigh on cash flow. Although companies such as Continental Resources (CLR) and Southwestern (SWN) will try to keep capital expenditures to a minimum, we believe it will be difficult for them to deleverage without asset sales or an equity raise at this stage. Our third candidate, Encana, has weaker full-cycle margins, in our view, than both CLR and SWN, and although its leverage profile will benefit from pending asset sales, we think its relatively weak cost structure and dry gas exposure could lead to a negative rating action in 2017.

Oil Field Services

We expect activity and pricing to remain pressured in both the offshore and onshore parts of the sector, driven by restraints on upstream capital expenditures and exploration spending. Regarding onshore, NBR has shown resilience in its recent financial performance, driven by the international market, but we expect further deterioration as operators exploit additional operating efficiencies and legacy contracts roll to spot pricing. In the offshore market, exploration spending is expected to drop significantly in 2016, and given the current supply imbalance of deepwater vessels, a recovery is unlikely until 2018, in our view. We believe that Rowan and Noble Corp have sufficient liquidity to weather the downturn but that cash flow metrics will ultimately deteriorate below rating agency thresholds as leading-edge dayrates continue to decline and strain operating margins.

Metals & Mining

Waning demand from China's economic slowdown and a stronger US dollar are having significant effects on metals prices, with particular weakness felt by gold, copper, and iron ore producers. Compared with shorter-cycle industries, reducing operating costs for mining operations can be difficult (beyond currency and energy savings), and longer project lead

times lead to a trade-off between spending flexibility and future production. Although cash costs have benefited from the depreciation of key currencies, particularly in the gold market, we see limited scope for cash margins to improve. We would expect Barrick to maintain its investment grade rating in a \$1,100/oz gold price environment, but see risk to the downside given a looming Federal Reserve rate hike and spot prices that are already below this threshold, absent additional deleveraging measures. In addition, although Yamana and Kinross appear to have credit metrics in line with agency requirements, we believe downgrades are possible given their relatively small asset bases and weaker geographical diversification.

Other Fallen Angel Candidates

FIGURE 8 Non-Energy and Non-Metals 2016 Fallen Angel Candidates

Issuer	Ticker	Sector	Par (\$mn)	OAS (bp)	Index Rating	Research Commentary	Analyst Rating
Conagra Inc	CAG	Food & Beverage	5,707	205	BAA3	ConAgra remains on watch developing and negative watch at Moody's and S&P, respectively, after announcing the sale of its private label business to TreeHouse for \$2.7bn. While management has noted that most of the proceeds will be used for debt paydown, which is credit supportive, uncertainty remains because of activist involvement and possible further strategic actions. In addition, newly appointed CEO Connolly has, in the past, demonstrated a willingness to take companies under his management (Hillshire) to high yield to make an acquisition (Pinnacle), which we view as a credit negative.	UW
Gap Inc	GPS	Retail	1,250	278	BAA3	Weak fundamentals continue to weigh on the company, as it recently posted a comp-store sales decline of 3%, versus consensus estimates for a flat performance in October. S&P recently revised the company's outlook to negative because of increasing uncertainty about its operating performance, particularly after the departure of the head of its best-performing brand. The agency thinks it could downgrade Gap to high yield if operating trends deteriorate. We also believe that if negative operating trends continue and the company continues to use incremental borrowings to support share repurchase activity (GPS put a \$400mn term loan in place in mid-October), metrics could deteriorate past Fitch's mid-3x threshold for downgrade, pointing to the possibility of two high yield ratings by the end of next year.	UW
Jabil Circuit Inc	JBL	Technology	1,300	273	BAA3	As this point, Jabil's risk of a downgrade to high yield depends largely on S&P's outlook for the credit, since it already has a high yield rating at Moody's. The potential for a downgrade at S&P essentially hinges on Jabils' financial policy, business fundamentals, and leverage, with potential risks coming from share repurchases or weak operating performance that could take leverage above 3x (currently around 2.3x, S&P adjusted).	NR
Motorola Inc	MSI	Technology	3,097	343	BAA3	Motorola's risk of downgrade to high yield stems from its recent announcement of an incremental \$2bn in share buybacks, funded partly by \$1bn of convertible issuance, representing an aggressive policy that Moody's views as uncharacteristic of an investment grade company. Moody's adjusted leverage of 4.8x is also an outlier for triple-B companies, which could present a risk to MSI's investment grade status. To be excluded from the Investment Grade Index, another agency would need to downgrade MSI. The company is currently rated BBB-/outlook stable at S&P, which believes an aggressive financial policy and incremental increases in leverage would be needed for a further downgrade (S&P adjusted leverage for MSI is currently mid-3x).	NR

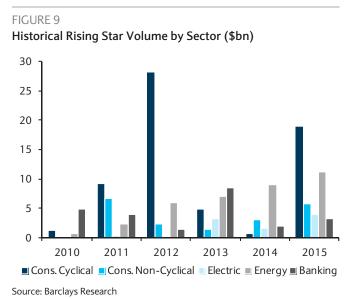
Source: Barclays Research

Rising Stars Set for Subdued Levels

While fallen angels from the energy sector have unsurprisingly increased this year, a parallel decrease in energy rising stars has not been evident. As seen in Figure 9, energy rising star volume has increased moderately y/y, from \$9bn to \$11bn. That said, there have been no energy rising stars since May, and most of the upgrade volume came from the midstream sector. Energy analyst Gary Stromberg anticipates that only one energy credit, MarkWest Energy Partners, is likely to be upgraded to investment grade in 2016 (see Figure 13 for details). Meanwhile, the consumer cyclical sector has been the largest source of rising stars this year, representing 37% of the volume. Most of the total is attributable to General Motors, which had about \$19bn of bonds upgraded this year in several stages. GM makes up nearly 40% of total rising star volume so far in 2015.

Figure 10 shows the broad opportunity set of rising stars for next year, divided by sector and defined as bonds with an index rating of BB+ at the end of October. The total amount of BB+ bonds has increased by 19% y/y, to \$182bn, exceeding the overall market growth rate of 2%. Basic industry is the most represented sector at \$33bn. However, we forecast moderate rising star volume among industrial credits next year, as the fundamental concerns weighing on the metals & mining sector make significant credit improvement unlikely in the near term.

The performance of rising stars in 2015 has been similar to that of previous rising star cohorts. Typically, credits outperform the High Yield Index significantly in the months leading up to the upgrade as investors anticipate the transition and levels respond to the credit improvement. This year's rising star set notched an average 3.9% cumulative outperformance in the year preceding the upgrade (Figure 11). However, the return benefit does not endure into the post-upgrade months, as the credits go on to underperform the Investment Grade Index modestly. Credits upgraded in 2015 have underperformed by an average of 0.6% in the first six months of their investment grade status.



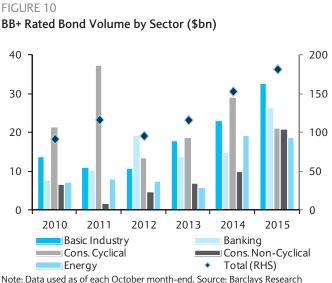
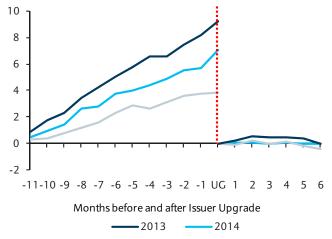


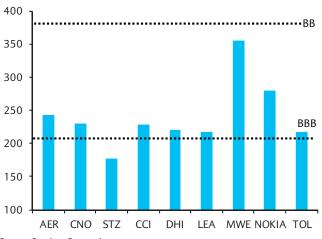
FIGURE 11

Average Cumulative Monthly Total Returns of Rising Stars
Relative to High Yield and Investment Grade (%)



Note: Monthly cumulative returns calculated for two distinct periods before and after the downgrade month. High yield returns used as baseline for period before upgrade and investment grade returns used after. Source: Barclays Research

FIGURE 12
Average OAS of Rising Star Candidates (bp)



Source: Barclays Research

The opportunity for spread compression appears limited among likely rising stars in 2016, with most credits already trading well within the average BB spread. As seen in Figure 12, the bonds of seven of the nine profiled credits are trading under 250bp, which suggests that most of the pre-upgrade outperformance has already occurred. Meanwhile, both MarkWest, the lone energy representative, and Nokia have the potential to tighten significantly in the event of a ratings upgrade. In collaboration with the fundamental analyst team, we provide details in Figure 13, which spans the next two pages, on each of the likely rising star candidates. The sector distribution is mixed overall, with consumer cyclicals leading the way with three representatives, including two housing credits.

FIGURE 13 Rising Star Candidates in 2016

Issuer	Ticker	Sector	Par (\$mn)	% of US HY	Index Rating	OAS (bp)	Fundamental Analyst Comments	Analyst Rating*
AerCap	AER	Finance	13,350	1.0%	BA1	244	We believe AerCap has the clearest path to investment grade among the large high yield finance companies. Since announcing the acquisition of ILFC, AerCap has consistently described a path to 3.0x leverage and investment grade ratings. The company is nearly at its goal, with adjusted debt to adjusted equity of 3.1x as of 3Q15. We expect AER's demonstrated ability to deleverage to result in an upgrade from S&P before the end of year. Fitch changed AER's outlook to positive in August, ahead of our expectation, and indicated that it could upgrade the company over the next one to two years, even before leverage reaches its 3x investment grade threshold. This increases the likelihood that AER will transition to the Investment Grade Index in 3Q16 following an upgrade from Fitch. Please see the report 3Q15 Earnings: Nearing the Lower Leverage Goal; Upgrade to Overweight for details.	OW
CNO Financial	CNO	Insurance	825	0.1%	BA1	230	We view CNO Financial's credit metrics as investment grade as measured by holding company leverage, operating risk-based capital (RBC), and GAAP interest coverage, as well as cash flow coverage. In our view, if the company maintains its operating performance at current levels over the next year, it should translate into investment grade status. Financial leverage at the parent level has been in the high teens in the past few years and is 20.2% as of 3Q15, clearly investment grade. Operating stability has led to consistency and strength in capital metrics. At the operating level, the company's RBC ratio has risen above its 425% target, to 440% as of 3Q15, placing the company on par with investment grade peers.	OW
Constellation	STZ	Cons. Non- Cyclical	3,650	0.3%	BA1	179	We think Constellation is the most likely upgrade candidate for 2016 and 2017 in the consumer, retail, and food & beverage sectors. With expected leverage of less than 4x at year-end, we think there is a fairly good chance the company will reach the 3.5x leverage target that has been telegraphed as the key metric for upgrade among ratings agencies. However, the timeline could be delayed to 2017 given STZ's need to build another brewery ahead of schedule in addition to the Nava facility.	OW
Crown Castle	CCI	Communi- cations	2,500	0.2%	BA1	229	Crown Castle is currently rated Ba1/BB+/BBB- at Moody's/S&P/Fitch. S&P placed its BB+ corporate rating on Watch Positive on September 24 following a sector review that resulted in an increased leverage threshold for BBB- rated tower companies (6.5x, versus 6.0x previously). The agency cited current leverage in the mid-6x area (S&P defined) and noted that it could upgrade the corporate rating by the end of December if the company is committed to reducing leverage below 6.5x on a sustained basis. Crown Castle has consistently stated that it is focused on achieving investment grade ratings.	NR
D.R. Horton	DHI	Cons. Cyclical	2,800	0.2%	BA1	222	While D.R. Horton's exposure to first-time buyers could create headwinds as we move to a more restrictive monetary policy cycle, we remain constructive on the credit's balance sheet, scale (#1 market share), pivot to positive cash flow, debt reduction plans, and strong operating execution relative to many peers. The company continues to outpace industry volume growth amid the mix shift toward Express Homes, a higher-absorption entry-level product with lower price points and quicker inventory turns. Due largely to this launch, order growth is being driven primarily by absorption rates rather than community count expansion, which remains an anomaly relative to peers. After burning cash since 2011, D.R. Horton just posted a full year of positive free cash flow, generating \$700mn of operating cash flow in FY15. For 2016, management expects to generate operating cash of \$300-500mn, which will be allocated toward the \$543mn of near-term debt maturities (\$170mn of 5.625% notes due January and \$373mn of 6.5% notes due April).	MW

Issuer	Ticker	Sector	Par (\$mn)	% of US HY	Index Rating	OAS (bp)	Fundamental Analyst Comments	Analyst Rating*
Lear Corp.	LEA	Cons. Cyclical	1,475	0.1%	BA2	217	Through the first nine months of 2015, Lear has generated \$358mn in free cash flow, compared with \$131mn for the same period in 2014. Net leverage increased to 0.9x in the first quarter as a result of the company's \$850mn acquisition of automotive leather supplier Eagle Ottawa, but was down to 0.7x at the end of 3Q. 3Q consolidated EBIT margins were 7% (a 170bp y/y improvement), in light of Electrical's 13.6% segment margin and twenty-fourth consecutive quarter of y/y margin improvement. In November, S&P upgraded LEA to BBB- from BB, and we expect the other agencies to take similar action in 2016.	MW
MarkWest	MWE	Energy	4,100	0.3%	BA3	357	In July, MarkWest Energy Partners and MPLX announced an agreement to merge. The merger is expected to close in early December 2015. Moody's placed MarkWest on review for an upgrade after the news, pointing to the investment grade credit quality of MPLX. We believe that MarkWest notes could receive a three-notch upgrade to Baa3 if its senior notes, currently BB/Ba3, are guaranteed by MPLX, which we think is likely. MPLX has reaffirmed its commitment to maintaining investment credit ratings.	
Nokia	NOKIA	Tech	1,500	0.1%	BA2	280	With combined revenues of EUR27bn and EBITDA of EUR3.4bn presynergies, the stock merger of Alcatel-Lucent and Nokia creates a global leading telecom (wireless and wireline) equipment vendor. Nokia targets achieving investment grade ratings post-closing. With estimated gross leverage of 1.9x and a net cash position of around EUR7bn, we believe the pro forma company has investment grade-like credit statistics and should migrate to investment grade over the intermediate term.	MW/ OW
Toll Brothers	TOL	Cons. Cyclical	2,420	0.2%	BA1	218	Over the course of the housing cycle, Toll Brothers' exposure to a luxury-weighted buyer base could be a source of relative strength compared with entry level-focused competitors, particularly as the market shifts to a more restrictive monetary policy environment. We continue to view the City Living segment as a key diversifier relative to pure-play homebuilding peers. In our view, the combination of City Living and attractive California assets is a uniquely positive mix factor that should support margins through the cycle. While City Living remains small relative to the core single-family detached homebuilding business (only 9% of LTM homebuilding revenue and 5% of LTM closings), the segment carries premium margins (approximately 10pts higher than traditional homebuilding) and should be an incremental source of profits as high-rise projects are delivered in the New York City metro area later in 2015 and into 2016. We continue to believe that a reduction to pre-Shapell leverage (34% net homebuilding debt/capitalization) will be critical for the credit to reach investment grade status.	MW/ OW

Note: Analyst rating split if fundamental analyst has different ratings depending on bond issue within the capital structure. Source: Barclays Research

Analyst Certification

We, Anthony Bakshi and Bruno Velloso, hereby certify (1) that the views expressed in this research report accurately reflect our personal views about any or all of the subject securities or issuers referred to in this research report and (2) no part of our compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

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Explanation of the Barclays Research Sector Rating System

Overweight (OW):

For sectors rated against the Barclays U.S. Credit Index, the Barclays Pan-European Credit Index, the Barclays EM Asia USD High Grade Credit Index or the Barclays EM USD Corporate and Quasi-Sovereign Index, the analyst expects the six-month excess return of the sector to exceed the six-month excess return of the relevant index.

For sectors rated against the Barclays U.S. High Yield 2% Issuer Capped Credit Index, the Barclays Pan-European High Yield 3% Issuer Capped Credit Index excluding Financials, the Barclays Pan-European High Yield Finance Index or the Barclays EM Asia USD High Yield Corporate Credit Index, the analyst expects the six-month total return of the sector to exceed the six-month total return of the relevant index.

Market Weight (MW):

For sectors rated against the Barclays U.S. Credit Index, the Barclays Pan-European Credit Index, the Barclays EM Asia USD High Grade Credit Index or the Barclays EM USD Corporate and Quasi-Sovereign Index, the analyst expects the six-month excess return of the sector to be in line with the six-month excess return of the relevant index.

For sectors rated against the Barclays U.S. High Yield 2% Issuer Capped Credit Index, the Barclays Pan-European High Yield 3% Issuer Capped Credit Index excluding Financials, the Barclays Pan-European High Yield Finance Index or the Barclays EM Asia USD High Yield Corporate Credit Index, the analyst expects the six-month total return of the sector to be in line with the six-month total return of the relevant index.

Underweight (UW):

For sectors rated against the Barclays U.S. Credit Index, the Barclays Pan-European Credit Index, the Barclays EM Asia USD High Grade Credit Index or the Barclays EM USD Corporate and Quasi-Sovereign Index, the analyst expects the six-month excess return of the sector to be less than the six-month excess

return of the relevant index.

For sectors rated against the Barclays U.S. High Yield 2% Issuer Capped Credit Index, the Barclays Pan-European High Yield 3% Issuer Capped Credit Index excluding Financials, the Barclays Pan-European High Yield Finance Index or the Barclays EM Asia USD High Yield Corporate Credit Index, the analyst expects the six-month total return of the sector to be less than the six-month total return of the relevant index.

Sector definitions:

Sectors in U.S. High Grade Research are defined using the sector definitions of the Barclays U.S. Credit Index and are rated against the Barclays U.S. Credit Index

Sectors in U.S. High Yield Research are defined using the sector definitions of the Barclays U.S. High Yield 2% Issuer Capped Credit Index and are rated against the Barclays U.S. High Yield 2% Issuer Capped Credit Index.

Sectors in European High Grade Research are defined using the sector definitions of the Barclays Pan-European Credit Index and are rated against the Barclays Pan-European Credit Index.

Sectors in Industrials and Utilities in European High Yield Research are defined using the sector definitions of the Barclays Pan-European High Yield 3% Issuer Capped Credit Index excluding Financials and are rated against the Barclays Pan-European High Yield 3% Issuer Capped Credit Index excluding Financials. Sectors in Financials in European High Yield Research are defined using the sector definitions of the Barclays Pan-European High Yield Finance Index and are rated against the Barclays Pan-European High Yield Finance Index.

Sectors in Asia High Grade Research are defined on Barclays Live and are rated against the Barclays EM Asia USD High Grade Credit Index. Sectors in Asia High Yield Research are defined on Barclays Live and are rated against the Barclays EM Asia USD High Yield Corporate Credit Index.

Sectors in EEMEA and Latin America Research are defined on Barclays Live and are rated against the Barclays EM USD Corporate and Quasi Sovereign Index. These sectors may contain both High Grade and High Yield issuers.

To view sector definitions and monthly sector returns for Asia, EEMEA and Latin America Research, go to https://live.barcap.com/go/RSL/servlets/dv.search?pubType=4511&contentType=latest on Barclays Live.

Explanation of the Barclays Research Credit Rating System

For all High Grade issuers covered in the US, Europe or Asia, and for all issuers in Latin America and EEMEA (excluding South Africa), the credit rating system is based on the analyst's view of the expected excess return over a six-month period of the issuer's index-eligible corporate debt securities* relative to the expected excess return of the relevant sector, as specified on the report.

Overweight (OW): The analyst expects the six-month excess return of the issuer's index-eligible corporate debt securities to exceed the six-month expected excess return of the relevant sector.

Market Weight (MW): The analyst expects the six-month excess return of the issuer's index-eligible corporate debt securities to be in line with the six-month expected excess return of the relevant sector.

Underweight (UW): The analyst expects the six-month excess return of the issuer's index-eligible corporate debt securities to be less than the six-month expected excess return of the relevant sector.

Rating Suspended (RS): The rating has been suspended temporarily due to market events that make coverage impracticable or to comply with applicable regulations and/or firm policies in certain circumstances including where the Investment Bank of Barclays Bank PLC is acting in an advisory capacity in a merger or strategic transaction involving the company.

Coverage Suspended (CS): Coverage of this issuer has been temporarily suspended.

Not Covered (NC): Barclays' fundamental credit research team does not provide formal, continuous coverage of this issuer and has not assigned a rating to the issuer or its debt securities. Any analysis, opinion or trade recommendation provided on a Not Covered issuer or its debt securities is valid only as of the publication date of this report and there should be no expectation that additional reports relating to the Not Covered issuer or its debt securities will be published thereafter.

For all High Yield issuers (excluding those covered in EEMEA or Latin America), the credit rating system is based on the analyst's view of the expected total returns over a six-month period of the rated debt security relative to the expected total return of the relevant sector, as specified on the report.

Overweight (OW): The analyst expects the six-month total return of the debt security subject to this rating to exceed the six-month expected total return of the relevant sector.

Market Weight (MW): The analyst expects the six-month total return of the debt security subject to this rating to be in line with the six-month expected total return of the relevant sector.

Underweight (UW): The analyst expects the six-month total return of the rated debt security subject to this rating to be less than the six-month expected total return of the relevant sector.

Rating Suspended (RS): The rating has been suspended temporarily due to market events that make coverage impracticable or to comply with applicable regulations and/or firm policies in certain circumstances including where the Investment Bank of Barclays Bank PLC is acting in an advisory capacity in a merger or strategic transaction involving the company.

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For all issuers in South Africa, the credit rating system is based on the analyst's view of the expected total return over a six-month period of the issuer's rand-denominated fixed rate notes or floating rate notes (as applicable) relative to the South African Credit Fixed Market Index (CFIX95) or the South African

Credit Floating Market Index (CFL020), respectively.

Overweight (OW): The analyst expects the six-month total returns of the issuer's rand-denominated fixed rate notes or floating rate notes (as applicable) to exceed the six-month expected total returns the South African Credit Fixed Market Index (CFIX95) or the South African Credit Floating Market Index (CFL020), respectively.

Market Weight (MW): The analyst expects the six-month total returns of the issuer's rand-denominated fixed rate notes or floating rate notes (as applicable) to be in line with the six-month expected total returns the South African Credit Fixed Market Index (CFIX95) or the South African Credit Floating Market Index (CFL020), respectively...

Underweight (UW): The analyst expects the six-month total returns of the issuer's rand-denominated fixed rate notes or floating rate notes (as applicable) to be below the six-month expected total returns the South African Credit Fixed Market Index (CFIX95) or the South African Credit Floating Market Index (CFL020), respectively...

Rating Suspended (RS): The rating has been suspended temporarily due to market events that make coverage impracticable or to comply with applicable regulations and/or firm policies in certain circumstances including where the Investment Bank of Barclays Bank PLC is acting in an advisory capacity in a merger or strategic transaction involving the company.

Coverage Suspended (CS): Coverage of this issuer has been temporarily suspended.

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