PGIM FIXED INCOME

CREDIT RESEARCH ROUNDTABLE

APRIL 2019

PGIM Fixed Income's credit research team consists of 108 fundamental analysts located in the U.S., Europe, and Asia. The team covers the universe of industries applicable to the investment grade corporate, high yield corporate, and bank loan sectors, and the Credit Research Roundtable summarizes views on certain, topical industries, including those with a recent change in credit fundamentals.

▼ SECTOR VIEWS (CLICK TITLE TO VIEW) ▼

Aerospace

We expect robust backlogs, improving U.S. defense spending, and heightened global threat levels to continue to support activity in the aerospace/defense subsector. The 2019 defense budget includes 12% growth over 2018, which grew at a 10% rate from the previous year, and preliminary 2020 budget proposals include additional defense spending growth.

Commercial aircraft backlogs remain robust (Boeing represents about seven years of production) and air travel represents a secular growth market. Recent 737 MAX crashes have prompted certification reviews and could result in cancelled orders from global air carriers and lessors—737 MAX comprises 80% of total aircraft in Boeing's backlog. Grounding of the aircraft could extend into the summer months and is likely to cost Boeing billions of dollars, including delivery delays, software upgrades, airline compensation, lawsuits and penalties.

Event risk has re-emerged in the defense space amid several transactions, including Northrup Grumman, General Dynamics, and Boeing (a commercial acquisition). Free cash flow continues to be directed towards share repurchases and is supplemented by debt issuance and declining cash balances. Pension liabilities are still notable in this sector, but companies, including Lockheed Martin, Boeing, and Raytheon, have taken advantage of the change in tax law to make sizeable contributions to their plans.

Autos

While the fundamental health of the U.S. auto industry remains solid, we have changed our industry outlook to negative given the expectation for steadily declining auto sales, the continuation of weak China sales into 2019, and execution risk around restructuring activities.

Fundamentals remain generally stable in North America as lower sales numbers are offset by positive vehicle mix, higher pricing, and new model launches, though cost inflation and increased technology spending have hurt margins and cash flow (click here for further analysis on the U.S. auto sector). General Motors and Ford should benefit from cost-reduction activities, though these will likely erode additional cash in 2019. China's sales declines accelerated into year-end 2018 and did not show signs of recovery during Q1 2019.

U.S. auto sales remained above 17 million units for the fourth consecutive year in 2018, coming in just above 2017's level. Sales of 17.55 million units in 2016 likely represented the peak of the current cycle. Consensus indicates an eroding plateau environment, with U.S. sales remaining in the 16.5-17.0 million-unit band in the near-term, absent a significant move in the economy. Mix trends have remained beneficial with a shift to higher priced trucks, cross-over utility vehicles (CUV) and sport-utility vehicles (SUV). GM and F have also shifted sales mix to more profitable retail outlets away from fleet at the expense of market share.

Chinese retail auto sales fell 6% in 2018 after increasing 1.5% in 2017. Sales grew 16% in 2016 due to a reduction in the purchase tax to 5% from 10%. China increased its tax to 7.5% in 2017 and returned to 10% in 2018. The government is pushing producers to shift to electric vehicle production and is looking to relax joint-venture requirements to allow greater than 50% ownership.

The rapid shift in industry technology adds longer-term risk within the sector as companies invest in multiple areas to try to find the right combination of features. Non-traditional competitors, like

Tesla, Google, and Apple, will likely pressure traditional original equipment manufacturers (OEMs) and could necessitate the partial IPO of autonomous-driving operations to compete for talent. Spending requirements are rising with increasing investment in new products to incorporate additional technology and to address the future of mobility. Margins could be pressured if producers cannot recoup the cost of increasing content and regulatory requirements.

Finance books at Ford and GM remain in good shape, despite an industry trend toward looser credit and longer terms. Increased leasing over the past several years could result in a wave of returned vehicles, which is expected to pressure used car prices. Pressure on residual values will reduce earnings at the captives through higher depreciation expense and will make leasing more expensive to execute. Used car prices have held up extremely well despite expected declines of 5-7% in 2017 and 2018.

In Europe, premium brands are expected to continue showing reputed resilience, but manufacturers are facing idiosyncratic issues, i.e., Brexit, tariffs, heavy capex, and recovery/rightsizing pressure.

Banks

U.S. money center banks are currently operating at or near peak conditions. Asset quality metrics are generally near historic lows, capital levels are declining, but remain in excess positions, and profitability has improved meaningfully and continues to improve. **While the outlook remains favorable, significant balance sheet improvements are less likely.** In Q1, the median capital return to shareholders at money center banks was 99% and we expect share repurchases to continue in 2019.

First quarter 2019 bank results have been generally strong and in line with our expectations. Capital markets and trading revenues rebounded nicely from depressed levels in Q4 2018, but were still down year-over-year after coming off of a historically strong Q1 2018. Thus far in Q1, we saw loan growth and modest net interest margin (NIM) expansion drive revenue growth as banks realized the benefit of the December rate hike. However, the Fed's more dovish tone will pressure NIMs in upcoming periods as deposits continue to reprice upwards, while asset pricing will remain flat. We would expect to see more modest revenue growth in Q2 as loan growth will be offset by lower margins. Asset quality remains stable, and we expect this to continue to be the case for the remainder of 2019. Capital levels remain in excess position, although large shareholder payouts have caused capital to decline from peak levels. We expect that shareholder payouts will continue to cause capital to decline for the remainder of 2019.

While deposit betas have risen, they are still modest. Moving forward, we are likely to see only a limited increase in deposit betas as a result of a more dovish Fed.[1]

The regulatory environment currently supports our thesis that the U.S. money center banks should get regulatory relief around the edges, but massive reform at the G-SIB level remains unlikely.2 Regulatory rollback is likely to continue, but we still regard the underlying framework as supportive of the safety or soundness of the banking system, particularly as the majority of the regulatory tailoring has been directed away from the largest banks. The regulatory landscape could result in less onerous regulations, particularly for banks with <$250B in assets as the Fed's proposed changes in its prudent supervision metrics reduce capital and liquidity requirements for these banks. Note that banks with <$250B in assets will not have to go through the Comprehensive Capital Analysis and Review (CCAR) stress test this year. The current revamp of the Volcker Rule will likely cause regulatory relief, as well as reduced legal and compliance costs.

In Europe, earnings momentum stalled in Q4 2018, although retail banking markedly outperformed investment banking and trading businesses. Credit costs remain low, which has allowed small profitability improvements despite the tough environment. Capital generically improved with a number of French and Spanish banks finally acknowledging that CET1 capital targets need to rise.[2] Asset quality remained solid and liquidity is excellent, although likely to reduce with TLTRO redemptions starting in 2020.[3]

The revenue outlook is clouding with rate expectations once again falling. Euro zone banks are flush with liquidity with €2 trillion of excess deposits at the central bank, which has a deposit policy rate of -40 bps. The ECB may investigate tiering deposit rates, exempting deposits under a certain level from further charges. However, this does not change the backdrop of falling profitability with an increasing portion of lending at lower rates and spreads. The best positioned banks are those with a reliable fee income streams from insurance and broader savings businesses. Guidance on trading income for the main capital markets players is particularly poor although some recovery is anticipated in Q2.

The focus on operating costs has intensified, with several capital market players embarking on fresh rounds of job cuts. However, progress on costs is often masked by the compliance and tech investment needed for at least the next year or so.

On credit costs, as the economic outlook deteriorates, the expected credit loss accounting change introduced just a year ago may amplify provision swings. In Northern Europe, France, and Benelux it is hard to see how asset quality can improve any further and we expect a rise in non-performing loans—albeit well within "safe" levels given relatively conservative corporate leverage on one hand

[1] *Deposit betas measures deposit rate changes relative to market rate changes.*
[2] *CET1 refers to common equity tier 1 capital.*
[3] *TLTRO refers to targeted longer-term refinancing operations.*

and some bubble asset classes (UK and Swedish housing markets, high street retailers) on the other. The banks most exposed to a downturn in credit quality are those with poor pre-provision profitability, particularly German and Italian banks as well as the weaker Spanish. That said, the strides made by Spanish banks (through sales and work-out of NPLs) and by Italian banks (mainly through disposals) has improved their standing. A disorderly Brexit scenario would change the asset-quality landscape in the UK, although this outcome is not our base case.

Overall, the underlying earnings outlook for 2019 is less rosy than as recently as six months ago. As for the big one-off litigation and similar pay-outs that have hit bottom-line in recent years, we had hoped that with U.S. RMBS, sanctions busting, and UK mis-selling cases largely settled or settling, such tail risks would become less of a theme. However, it is now clear that even the banks with the most respected management can be caught by historic failures of anti-money-laundering controls with potential costs that are difficult to scale—though under current legal and regulatory frameworks, we expect these to result in "earnings events" rather than capital events. We expect capital ratios across Europe to remain stable in aggregate with regulators putting pressure on risk weights and some banks being "encouraged" to increase their targets. However, equity investors are increasingly looking for higher pay-outs. Regarding recent merger talks and ideas, we understand that regulators are particularly keen on higher-than-sum-of-the parts capital levels to cover execution risks, which would help contain event risk and rating downside. This may frustrate mega mergers, but consolidation of smaller regional banks is likely.

In terms of upcoming issuance, most banks have now filled their hybrid and subordinated capital buckets and have turned to "senior non-preferred" or "HoldCo senior issuance" ahead of the 2022 deadline to meet total capital and bail-in eligible debt requirements. With a new round of European regulations on the specifications of these buffers to come, we expect a certain lull in the first half of 2019, particularly as the Nordics are awaiting clarity, which includes updates on a deadline push to 2024.

Healthcare

We adjusted our high yield credit fundamental rating to stable as industry participants have shown an ability to manage through the structural changes and headwinds confronting the industry, while maintaining relatively stable credit profiles. We expect inpatient and emergency room volumes to remain pressured, while pricing remains strong as lower acuity volumes shift to lower-cost settings. Negative payor mix shift—due to aging demographics and continued increases in "managed" government penetration rates—will remain a structural headwind to rates. Positively for 2019, Medicare payment rate updates will be the strongest experienced in the past five years. Commercial cost trends are expected to remain consistent year-over-year. A tight labor market continues to pressure salaries, wages, and benefits. We expect continued transactional (not transformative) M&A / asset sale programs for the group. We expect urban operators to continue to outperform non-urban providers.

Our stable outlook within the high yield provider space is based on 2019 management guidance. Results are expected to be more slanted towards the second half of 2019 given seasonality. Looking to Q1 2019 estimates, comparisons could be more challenged based on last year's high incidence of flu.

While talk of expanded Medicare coverage amid the accelerating political cycle has pressured some healthcare spreads recently, we consider that this widening is likely an overreaction, at least over the intermediate term until the presidential election.

Within U.S. high yield pharmaceuticals, we continue to characterize underlying fundamentals for our coverage universe as weak, albeit "less bad" than last year. Our view is based on: (1) elevated scrutiny on branded drug pricing; (2) new branded/generic drug launches are not expected to materially benefit 2019 performance; (3) generic drug pricing deflation has been severe but is showing some signs of deceleration/stabilization (i.e., with mid-single- to high single-digit price declines); (4) loss of exclusivity risk remains high (in credit-specific cases); and (5) legal/litigation risk remains high. Positively, balance sheet repair and leverage reduction remain a primary focus for most high-yield pharmaceutical credits. Management guidance calls for flat to low single-digit decreases in adjusted EBITDA year-over-year, which should translate to flat-to-slightly deteriorating credit metrics for the group, on average. Forward expectations are being negatively impacted by losses of exclusivity on branded and/or generic drugs, generic pricing pressure, and a lack of material new product launches in 2019. **Positively, high yield pharmaceutical management teams continue to actively manage maturity profiles and remain committed to longer-term leverage reduction.**

Paper & Packaging

Containerboard volume growth has become much more muted recently, averaging only 0.8% through February 2019. Further complicating matters is a weak export market with falling volumes and pricing. In 2019, we believe demand should remain positive, but new capacity announcements could push supply growth to ~3%. Companies are taking downtime in an attempt to balance the market, but this will likely add to cost pressures. In 2019, containerboard earnings are expected to show modest deterioration, with lower prices, more muted volumes, and rising cost pressures leading to margin contraction. Nonetheless, we expect most companies will generate positive free cashflow in 2019 despite slightly rising capex. **As a result, we expect a slight deterioration in credit quality in containerboard this year, but believe most companies are well positioned in their current ratings.** Containerboard company stocks have rebounded some in

2019 but have lagged the overall equity market as participants are focused on the impact of coming containerboard supply in 2020 and recent volume weakness. We don't expect major M&A risk.

In Europe, we like the overall stability/defensiveness of the sector, and while some names in the European space are more aggressively levered, leverage levels generally remain modest. The sound European macro back-drop continues to drive volume growth for the majority of players, while pricing trends are broadly positive across the board. In addition, solid free cash flow generation and the ability to pass-through raw material price increases leave us with a constructive fundamental view. Re-leveraging through large scale investment/M&A/ dividends remains the key threat.

Metals & Mining

Metals prices had a tough 2018, but have moved higher thus far in 2019. Iron ore has benefitted from major supply disruptions involving Vale. We remain comfortable with investment grade exposure to the sector for the following reasons: the balance sheets for most companies are very strong, which should allow them to weather modest price weakness; supply and demand are broadly balanced; and the absolute level of prices remains "healthy," in that most companies remain profitable. For now, heightened trade tensions and slowing global growth (including China) have yet to hurt prices. **Our forecasts continue to call for modest price declines in each of the metals we follow, mostly reflecting an expected (but controlled) slowdown in China growth and slowing global growth.**

Obviously, a more acute drop in China's economy would have a strongly negative impact to the sector. While earnings trends did show year-over-year declines in Q4 2018 results, higher prices thus far in 2019 should support earnings. Further, prices remain comfortably above the cost curves, which indicates that companies will be solidly profitable. However, capex spending is increasing and operating costs are moving higher.

Management teams are increasingly talking about input-cost inflation and higher costs from transportation, labor, taxes, and royalties. If prices migrate to our forecasted levels, we think credit quality will weaken marginally in 2019. However, we believe the ratings are stable for most M&M companies in investment grade. Positively, most shareholders are aligned with bondholders in that "value destructive capex and M&A" is not their preferred use of cash flow. They are looking for more steady dividends with excess cash returned to shareholders. Major M&A remains muted and the use of JVs or other partnerships ("syndication") to help with development and/or growth is viewed favorably.

Steel

We are maintaining our stable sector view given expectations for U.S. GDP growth and continued tariff protection, which has kept prices above their five-year average. However, our deteriorating outlook for the sector is primarily due to expectations for lower average prices in 2019 and weaker credit metrics for the steel producers. Prices were recently around $700/ton, in line with the year-to-date average, but down 15% year-over-year. In late February, the market ended a seven-month, 27% downdraft in pricing. However, prices are only up $25/ton (3.7%) from the local trough, despite announced price increases, the Section 232 tariffs remaining in place, and expected seasonal demand in the spring. Although we could see some uplift in pricing over the next few months, we expect earnings to remain pressured by higher raw material prices. In addition, the annual pricing on auto contracts was below expectations as the outlook for autos softens. In addition, the restart of idled capacity by U.S. Steel (X) and JSW Steel (JSW), in addition to several announcements of new capacity builds, is likely to pressure profitability over the medium term—particularly for blast furnace operators. There is a chance that a quota system, which may be more politically acceptable, replaces the tariffs eventually, but we do not think it will be aggressive enough to justify all of the announced capacity. We note that non-residential construction should be a demand tailwind. Potential headwinds include secular impacts from substitution in autos from aluminum.

The U.S. steel capacity utilization rate is currently 82.9%, up 4.6% from the year ago period. Year-to-date utilization is 81.4% (vs. 77.7% in 2018), which exceeds the U.S. target utilization rate of 80%, which has been stated as one goal of the tariffs. The impact of X's restart of the two blast furnaces at its Granite City Works facility and JSW's restart at its Mingo Junction facility appear to have increased utilization. We expect continued medium-term pressure on the integrated steel producers.

The U.S. vs. China hardened carbon differential is currently ~$160/ton, close to the five-year average and down $109/ton since late in Q4 2018. This level of differential is less conducive to imports from China (and elsewhere) due to shipping costs.

According to the World Steel Association, full year 2018 global steel production was +4.6% to 1.8B tons (vs. +4.4% in 2017), with each major region, except Europe (flat year-over-year) and Japan (-0.3% year-over-year), posting positive comps. China's production was +6.6% year-over-year in 2018, to 928M tons. Total North American production was 120.5M tons, +6.2% year-over-year. January 2019 steel production was +1% year-over-year, to 146.7M tons, with China +4.3% and the U.S. +5.8% year-over-year. ArcelorMittal projects +0.5-1% global steel apparent demand in 2019, with China -0.5 to -1.5% and global ex. China +2-3% in most other regions.

U.S. demand indicators are generally solid, but there are pockets of softening. The Architectural Billings Index remained above 50 (55.3) in January 2019, and above the 51 reading in December. The ISM manufacturing PMI was 54.2 in February 2019 but has been below the high 50s (58.4 average 3/31/17 through 11/30/18) for the past three months. U.S. auto SAAR was 16.6M units in February, down from 17M units in February 2018 and 17.2M units in 2017. We continue to expect the environment to be decent for non-residential construction. Total non-residential construction spending increased 4.8% in January 2019 and was +4.1% in 2018. We'd note that the most recent U.S. industrial production data was healthy, at +3.5% year-over-year in February. We project ~15% lower EBITDA for the steel producers year-over-year in 2019 and a +0.3x increase in leverage for the group to 2.3x. The Q1 guidance season has been weak, with both Nucor and Steel Dynamics providing guidance below consensus. Both companies tried to put some positive spin on forward demand and suggested some of the shortfall was weather-related.

Retail

The consumer backdrop has been strong with rising wages and low unemployment. However, going forward further into 2019, if growth slows down as most economists expect, it's hard to see retailers doing great. **Additionally, for retailers that are structurally challenged, the strong consumer environment may have increased their runway, but it doesn't solve their business model issues.**

The fundamental health of the U.S. high yield retail sector has improved following the bankruptcy filings/liquidations of several retailers. While initially disruptive for the industry, the resultant store closures should benefit retail brick and mortar over the longer term.

U.S. consumers remain healthy, and the National Retail Federation (NRF) forecasts that 2019 retail sales will increase between 3.8% and 4.4%. However, retailers are not capturing equal shares of the consumer base, and the high yield universe remains extremely bifurcated. Performance, as well as guidance by subsector, remains varied. Retailers remain challenged by changes in consumer shopping preferences and a highly competitive selling environment. Labor and distribution/fulfillment costs continue to pressure margins. E-commerce growth is expected to continue outpacing brick and mortar growth, resulting in additional margin pressure for most high-yield retail credits. Tariffs and the U.S./China trade war remain potential risks.

Within U.S. high yield retail, we raised our near-term trend rating to stable, from weakening. Broadly speaking, retailers are guiding to a slower rate of organic revenue growth this year, but we expect credit profiles to be relatively stable based on management's 2019 guidance.

U.S. department stores, on average, are guiding to +0.7-0.8% 2019 same-store-sales (SSS) growth (vs. +1.6% reported in 2018). Within the broader department store universe, only JC Penney is guiding to better SSS for 2019 vs. 2018's -3.1%, which was the only negative comparison reported in the department store space last year. Value/Discount Stores, on average, are guiding to +2.3-2.5% 2019 SSS growth (vs. +3.8% reported for 2018). The timing and size of tax refunds, as well as the Easter holiday will likely pressure Q1 year-over-year comparisons for several retailers.

Telecom & Technology

While we maintain our deteriorating outlook on the U.S. wireless industry, it could improve if T-Mobile is successful in its bid to acquire Sprint. Though we expect the acquisition will make T-Mobile a more formidable competitor, we also recognize the complexity of the required integration and the potential for at least a temporary respite in the level of competitive intensity, should the deal receive regulatory clearance.

Competitive activity in the U.S. wireless space remains intense, although pricing has been relatively stable since mid-2017, after the market had time to absorb Verizon's (VZ) re-adoption of unlimited pricing. Aside from promotions around the iPhone launch, recent competitive activity has largely focused on the quality of video streaming (i.e., speed, data throttling) and "free" ad-ins, such as free Netflix and MLB from T-Mobile, free Hulu and discounted Amazon Prime from Sprint, and free HBO and WatchTV from AT&T. We remain cautious on the ability of AT&T and Verizon to materially raise prices given competitive intensity and note the widening pricing gap between AT&T and Verizon, particularly on higher-end unlimited and non-unlimited plans, as well as shared-data bucket plans. Fourth quarter 2018 year-over-year wireless service revenue and EBITDA growth metrics remained positive for both Verizon and AT&T, partly driven by easier comparisons given the two-plus year anniversary of subscriber movement into equipment installment plans.

While our European Telecom outlook remains neutral, we are becoming more cautious given increased competition in certain markets (Spain & Italy), slower GDP growth, potential for significant spectrum auction spending, and the negative impact of regulation in certain markets (UK). While we expect most operators will experience these negative revenue headwinds, we also believe the operators have levers to pull on the cost side in order to maintain margins, as well as the ability to utilize FCF and asset sale proceeds to reduce debt/leverage as needed. Revenue growth in Europe remains elusive with 2019 revenue expected to be flat to up slightly (0-1%) year-over-year, as consumer demand for additional services, particularly high-speed data/fiber services, as well as the addition of content offerings, is expected to slightly offset continued declines in legacy telecom businesses, such as voice and legacy data services.

In U.S. Cable, revenue/EBITDA growth remain solid, and free cash flow remains strong. Video-subscriber metrics continue to face pressure from intense competition as well as changing consumer preferences for skinnier bundles and over-the-top (OTT) offerings. However, product innovation such as the X1 box at Comcast and smaller cable bundles are helping stem subscriber losses. Increased penetration and higher speed offerings for broadband continue to support average revenue per user growth. Programming cost increases remain a challenge, as well as higher affiliate and retransmission fees. Increased cost of sports and other programming expenses remain a challenge.

Competitive pressure remains intense from established satellite and telecom providers, as well as numerous OTT (over-the-top) platforms (e.g., Netflix, Amazon Prime, Hulu), as well as vMVPDs (virtual multi-channel video providers) that offer smaller, lower cost packages of "live television" (e.g., YouTube TV, DirecTV Now, Sling).

European Cable fundamentals remain strong given the solid competitive advantage vs. wireline due to significant historic capex spending on cable network upgrades. In general, cable companies continue to take share and grow the top-line via bundling of traditional TV services via value-added services, such as high-speed broadband (30mpbs+) and fixed-line telephony. Leverage levels across the European industry have been relatively static over the past 12 months (most commonly around 4-5x EBITDA on a total net basis) given shareholder remuneration policies or lack of delevering capability. Recent transaction multiples have been in the 8-12x EBITDA range for performing companies. Capex-adjusted leverage is in the 8-10x+ range. Competition from other technologies has had a limited impact on cable to date in Europe. Satellite communications remain a limited source of competitive risk to European cable (UK excepted) given low penetration and disadvantages in terms of bundling. LTE is not likely to provide a substitute to cable given speed differential, apart from the potential at the low-end of the market (more price sensitive/less requirement for speed).

In technology, we expect U.S. tax reform to stem the rising gross leverage trend at the large-cap tech companies. However, we are closely monitoring first order and second order effects of tariffs and global trade uncertainty. As of February 2019, Gartner is calling for 2019 Global IT spending to be up 3.2% year-over-year. **Growth rates for large tech players remain under pressure as the companies work to manage declines in many of their legacy business lines while simultaneously investing organically and through acquisitions.** Areas of investment include emerging growth areas such as mobile computing, cloud services, big data and analytics, security, artificial intelligence, and social networking. These players are also moving towards more value-added offerings vs. stand-alone hardware sales. Growth rates are further challenged by changes in buying behavior, with a shift in buying from less-price-sensitive Enterprise customers to savvier hyper-scale Cloud Providers, which further increases pricing pressure.

Balance sheets for the most part remain strong, however absolute debt levels remain high for certain tech players. Since the passage of tax reform, Microsoft ($16B) and Cisco ($14B) have been the most proactive about repaying debt. Apple indicated that it will move to a net debt/cash neutral position over time and has paid down $6.5B of maturities since tax reform. Both S&P and Fitch use a net debt rating approach, so the return of material amounts of cash to shareholders could have negative ratings consequences, all else being equal. **We expect the pace of debt issuance to slow materially over the next couple of years. M&A/event risk remains high, partly due to growth rate challenges noted above.**

Utilities

While U.S. credit metrics have weakened from M&A and tax reform, we see metrics improving modestly from here. Several issuers have taken significant actions to bolster their metrics via equity issuance, asset sales, or moderating capex.

M&A remains a moderate risk. Utilities are trading at well over 1.0x rate base, which means acquisitions are expensive. Therefore, successful acquisitions depend on synergies and improved rate treatment, which can be challenging. We would prefer to see utilities invest capex dollars in existing regulated business (as this is done at 1.0x rate base). The only large potential pending M&A deal is the sale of South Carolina municipal Santee Cooper, with NextEra Energy and Duke Energy have confirming that they submitted bids for the company. The state is still deciding if it wants to sell the utility and how the sale would be managed.

In California, we remain attentive to commentary and proposals emerging from the legislature. **The quicker the state can pass wildfire legislation, the quicker PG&E Corp. can emerge from bankruptcy and start paying out wildfire victim claimants.** The primary bill being discussed in the legislature would create a wildfire fund that would be funded by the state, IOU shareholders, and securitization bonds. There are also some ancillary bills regarding more defined procedures on de-energization and vegetation management. While we believe it is likely some form of legislation emerges this year, we would like to see more urgency given the fire season in CA begins in late May.

Continued extreme weather events will be used to justify higher levels of capex to fortify utility systems. This is generally positive for utilities, unless it creates rate fatigue.

The industry continues to face disruptive technologies, with the two most significant disruptors being utility-scale renewables and batteries. The former is cost competitive now and the latter is likely to be competitive in 5-10 years. This creates the risk of stranded costs in the future. We continue to consider the carbon footprint of

the utilities and potential spread differentials between high vs. low coal issuers. In our view, the market is still grappling with how to analyze a utility from an ESG perspective. Until there is a standardized ESG scoring methodology for utilities, there will be ambiguity among which measure is most appropriate to use. We continue to believe that the percentage of company owned generation from coal and carbon intensity will be the most relevant measures over time.

In Europe, the sector is generally stable. We expect further (modest) improvement in business risk profiles, with capex going into predictable businesses (networks and renewables), geographical diversification, and customer services (smart meters, etc). Following a period of significant inorganic deleveraging, management is now committed to a balanced financial policy and ratings stability.

Full-year 2019-20 business outlook points to low-to-mid single-digit EBITDA growth as a result of new renewable capacity coming on-stream, higher realized power prices, better weather/hydro conditions, contributions from add-on acquisitions, etc. Hedging policies mean the 2017-18 rebound in power prices should benefit 2019-20 earnings. Leverage is generally stable (4.0x adjusted ND/EBITDA). Companies are regaining balance sheet flexibility, but this is being used for add-on acquisitions and higher shareholder distributions.

Regulatory risk appears contained in the near term (after the implementation of the retail tariff cap in the UK, recent Italian and Portuguese regulated tariff reviews, etc). Government intervention against the sector remains a risk given a populist government in Italy, yellow vests protests in France, Brexit in the UK, etc., but there is limited evidence of plans being drawn up, at least for now.

Wireline

Secular headwinds persist in U.S. Wirelines, but leverage across the sector space remains manageable in the near term. Near-term free cash flow is still largely positive and we do not anticipate any defaults in the next couple of years. The focus for all players in the near-term is on cost reductions to preserve margin/FCF profile, reducing churn on the consumer side, and attempting to stabilize revenues on the enterprise side. Capital allocation policies continue to be a focus of investors, particularly with regard to capex and dividends. **Credit fundamentals and fundamental trends remain unattractive due to secular challenges.**

Competition, overcapacity, and disruptive technology advancements have resulted in downward sloping price curves for most enterprise business customers. This has made top-line stabilization in this segment difficult. Wireline providers spend between 13-16% of revenues on cap ex annually and have not announced increases in planned expenditures to accelerate network improvements. Carriers also continue to transition from copper to fiber for wireless backhaul, putting pressure on legacy wireline revenue. Top-line headwinds have been muted somewhat by cost containment, acquisitions, related synergies, and CAF-II subsidies.[4] Over the last twelve month period, leverage has ranged from 3.5x-5.0x range compared to TEV/EBITDA multiples in the 5x-10x range.[5] We'd note, more rural-, consumer-focused companies with less fiber are at the low end of this range, while enterprise-focused players with more owned fiber assets at the higher end of the range. Excluding Zayo, TEV/EBITDA multiples for the group are about 5-6x.

Revenue stabilization challenges had driven consolidation in the industry in 2016 and 2017. However, in recent periods the focus for operators has shifted more towards integrating/digesting acquired assets, cost cutting to maintain margin profile/FCF, and liability management to extend maturity profile and limit near-term balance sheet risk.

Since the start of 2017, select companies have suspended dividend payments to bolster liquidity and provide additional cushion to deal with their significant interest burdens and near-term maturities.

In Europe, fragmentation creates opportunities for M&A in the region, although only certain players have the balance sheets to support such activity. Infrastructure funds in the U.S. have bid up the purchase multiples for fiber in certain instances, making the purchases difficult to justify for high yield issuers.

[4] CAFII refers to the Connect America Fund Phase II initiative.

[5] TEV/EBITDA refers to total enterprise value/earnings before interest, taxes, depreciation, and amortization.

IMPORTANT I NFORMATION

Source of data (unless otherwise noted): PGIM Fixed Income as of April 2019

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