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9 January 2019

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RATINGS

B3 S.A. - Brasil, Bolsa, Balcao

Outlook	Stable
Issuer Rating	Ba1
Senior Unsecured Rating - Domestic & Foreign	Ba1
National Scale Senior Unsecured Rating	Aaa.br

Source: Moody's Investors Service

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B3 S.A. - Brasil, Bolsa, Balcao

B3 to prosper from economic growth, deeper capital markets given its dominant market position

Latin America's leading regional financial market infrastructure company, B3 S.A. – Brasil, Bolsa, Balcao (B3, Ba1 stable) is fully vertically integrated business and ideally placed to benefit as rising economic activity in Brazil improves the key drivers that underpin its core businesses, thereby supporting its Ba1 issuer rating.

Diverse revenues and strong operating leverage will continue to bolster margins. B3's diversified business model, a result of the 2017 merger between BM&F Bovespa S.A. and Cetip S.A., gives it significant operating leverage, which drove strong financial performance in Brazil's election year, when volatile markets propelled trading volumes to all time highs. EBITDA and pre-tax margins averaged 72% and 42% in the first three quarters of 2018, comparing favorably with most peer exchange operators abroad. We expect B3 to continue posting very strong results and cash flow generation, reducing financial leverage ratios even further.

Economic growth, low interest rates will propel cyclical businesses, while local capital markets deepen. B3 will benefit from higher equity and related derivatives trading volumes, as companies issue more equity in 2019 and flows into equity and multimarket focused asset managers continue to rise. Outstanding credit and vehicle financing will also grow. At the same time, reduced long-term government funding through state-run banks will increase the importance of local debt markets.

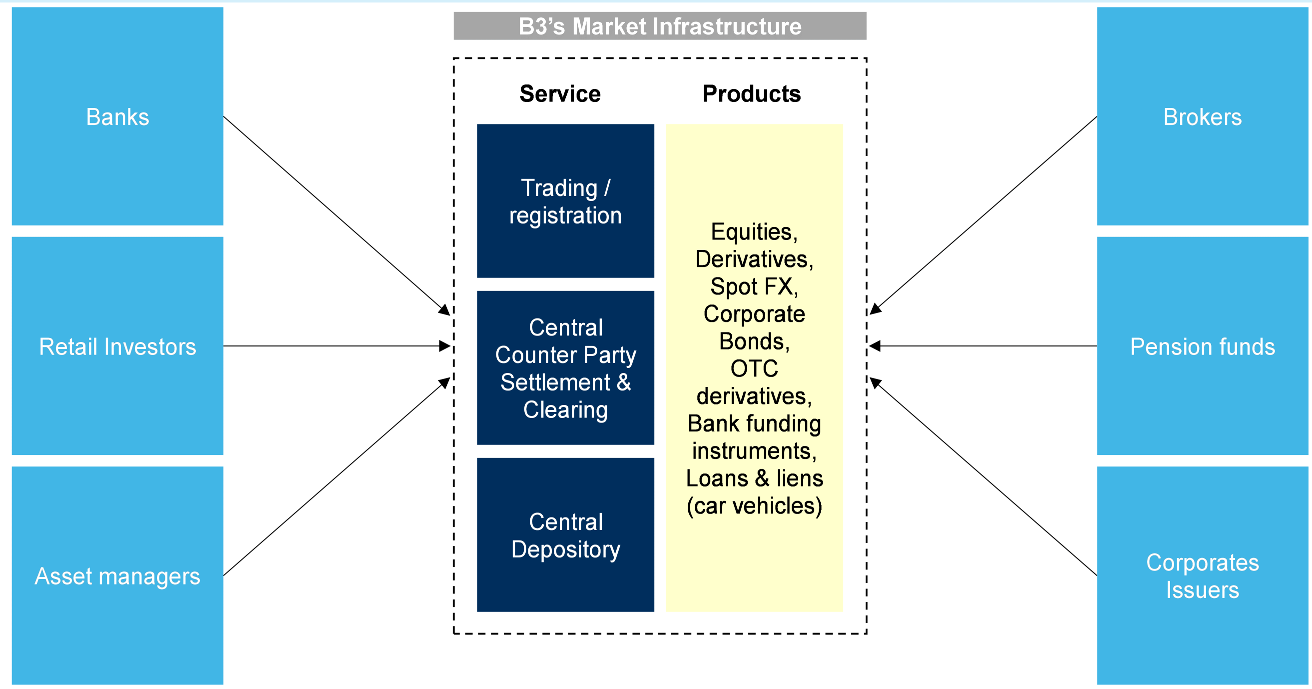
B3 will maintain its edge in the face of domestic competitive threats. As a condition of the Cetip merger, B3 pledged to allow potential competitors to use its infrastructure and unbundled its post trading prices. While competition in cash equities, registration services and other niche B3 businesses could arise, these segments account for a small proportion of total revenue. Internationally, B3 will continue to pursue strategic initiatives with other exchanges, aiming to further diversify revenues.

Effective risk management of clearing business to remain a credit strength. B3 operates Brazil's large and systemically important central counterparty clearing house (CCP) and depositary (CSD) with a risk management framework that has proven to be resilient through volatile economic periods and is in accordance with recognized international principles. B3 can also map risks at the end client level and has layered safeguards that offer strong protection to its own cash set aside for CCP risks.

After the Cetip merger, B3 became Brazil's indispensible market infrastructure provider

On 29 March 2017, the merger between BM&F Bovespa S.A. and Cetip S.A., a Brazilian market infrastructure provider, created a combined entity that provides stock exchange, clearing and depository services in cash equities and derivatives, as well as the registration of over-the-counter derivatives, fixed-income securities, car liens and real estate financing. Rebranded as B3, the merged entity became the preeminent financial market infrastructure company in Brazil and now provides the framework for critical day-to-day business services for key market participants (Exhibit 1).

Exhibit 1
B3 provides a full array of services for Brazil's financial markets



Source: B3, Moody's investors Service

As a result, B3 now has a dominant market position across all of its operating segments which increases B3's revenue stability and enables it to withstand economic downturns, while also positioning it ideally to benefit from economic growth. B3`s more stable counter cyclical businesses that respond to risk aversion include its derivatives (FX and interest rate) businesses as well as its depositary and registration of securities, OTC derivatives and bank funding instruments. Its procyclical businesses that respond to improving economic growth and risk appetite are mainly its cash equities and fixed income securities trading, clearing and settlement as well as its car liens and real estate financing liens businesses. B3 is also an important integral part of the financial system in Brazil because it provides key clearing, settlement and depositary services that underpin the efficient functioning of equity, derivative and corporate bond markets.

Diverse revenues, significant operating leverage will continue to bolster financial performance

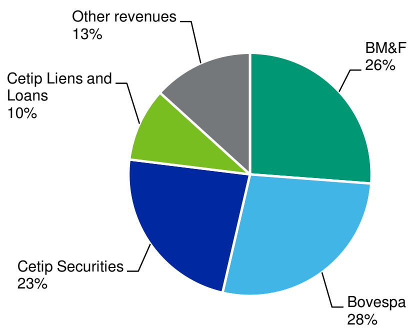
B3's diversified business model and earlier-than-expected savings from the merger have enabled it to post very strong top line growth and boost margins since the merger closed. As a result, its leverage has also fallen back to pre-merger levels. In 2018, the company also benefitted from record-high volumes as a result of market volatility tied to Brazil's October presidential election, driving very strong financial performance and cash flow generation. We expect B3 to continue posting very strong results and cash flow generation as it continues to benefit from its high operating leverage amid recovering economic growth in the low interest rate environment.

B3 operates in five main business segments (1) BM&F - derivatives trading and post trading; (2) Bovespa - equity trading and post trading; (3) Cetip Securities: registration, custody and settlement of private fixed-income securities and OTC derivatives; (4) Cetip Loans & iens - registration and custody of information about vehicles financed in Brazil; and (5) Other - securities lending, depository services, market data, listing, financial intermediation among others. In the year through September 2018, none of these business accounted for more than 30% of total revenue and each grew significantly (see Exhibit 2 and 3).

Exhibit 2

B3's revenue is equally split among three business lines..

Trailing twelve months revenue

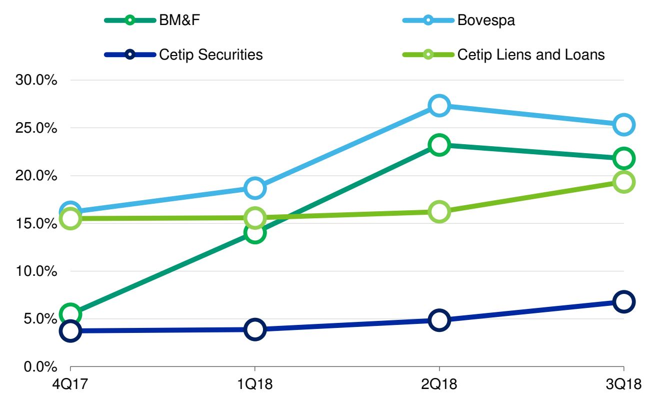


Source: B3, Moody's Investors Service

Exhibit1 3

.. with all business lines posting strong growth

Trailing twelve month annual revenue growth

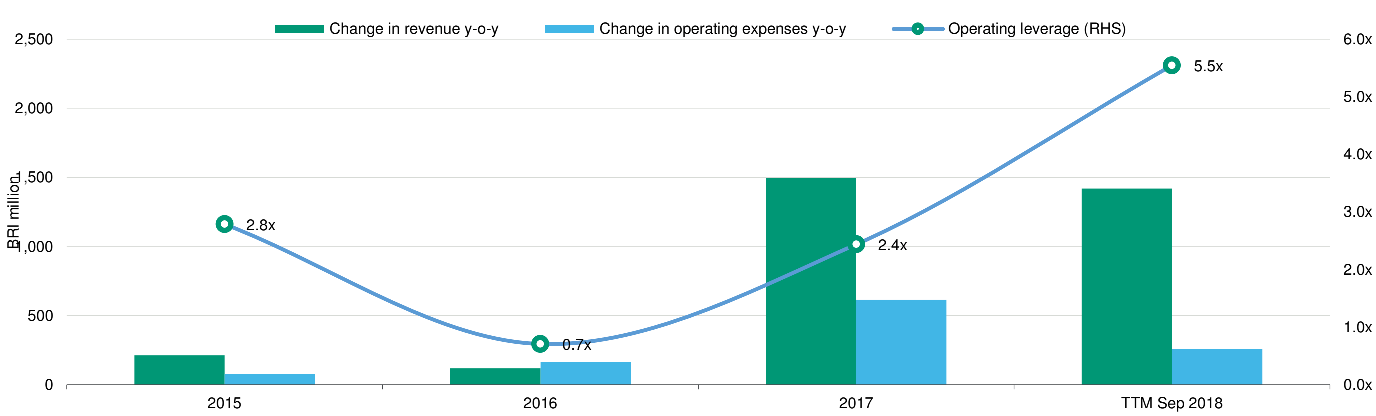


Source: B3, Moody's Investors Service

As with any merger, the combination of two distinct corporate cultures at BM&F Bovespa S.A. and Cetip S.A. required a period of transition and integration, which lead to the rebranding of the combined entity as B3. The merger enabled the combined firm to cut costs, which management estimated would yield BRL100 million ($31.9 million) in annual savings - or about 6% of the companies' combined operating expenses at the time - within three years. However, B3 managed to realize these synergies by the end of 2017, well ahead of its original target. B3 has also completed all required post-merger IT infrastructure investments, including the renovation of its data center and its trading and post trading systems. As a result, B3's financial performance began to benefit from significant operating leverage in 2018, defined by change in revenue to change in operating expenses net of depreciation and amortization, which jumped to 5.5x for the trailing twelve months to September 2018 (Exhibit 4).

Exhibit 4

B3's operating leverage has jumped post merger



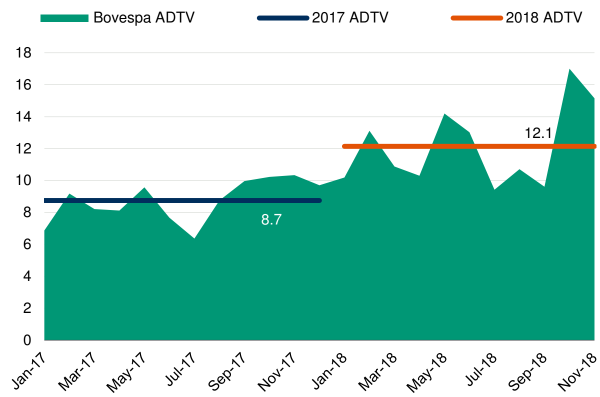
Source: B3, Moody's Investors Service

The extent of B3's operating leverage was very evident in 2018, a year in which uncertainty over Brazil's presidential election elevated volatility in financial markets pushing Bovespa and BM&F segment volumes to record highs (Exhibits 5 and 6). Equity trading volumes, as measured by average daily traded volume, hit a record BRL 17 billion a day in October 2018 and averaged BRL 12.1 billion in 2018, versus BRL 8.7 billion in 2017, a 38.8% increase. Volumes also remained high in November 2018. In the BM&F segment, meanwhile, the average daily volume amount of contracts has also risen substantially, averaging 3.7 million so far in 2018 versus 3.1 million a year before, an increase of 21%.

Exhibit 5

Equity trading volume jumped to record highs in 2018..

Average daily trading volume (ADTV) - BRL billion



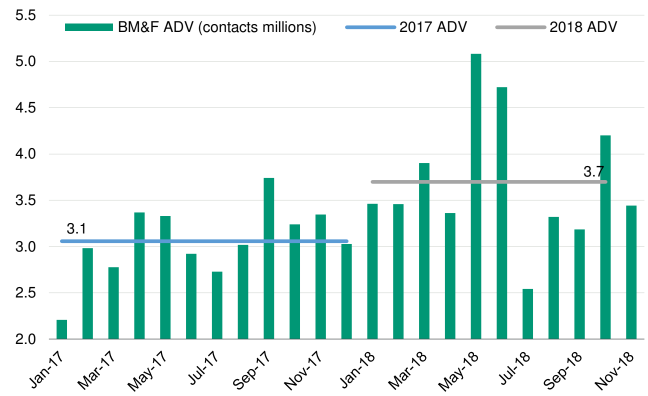
2018 averages are from January to November

Source: B3

Exhibit 6

..with derivatives volume following suit

Average daily volume of contracts (millions)



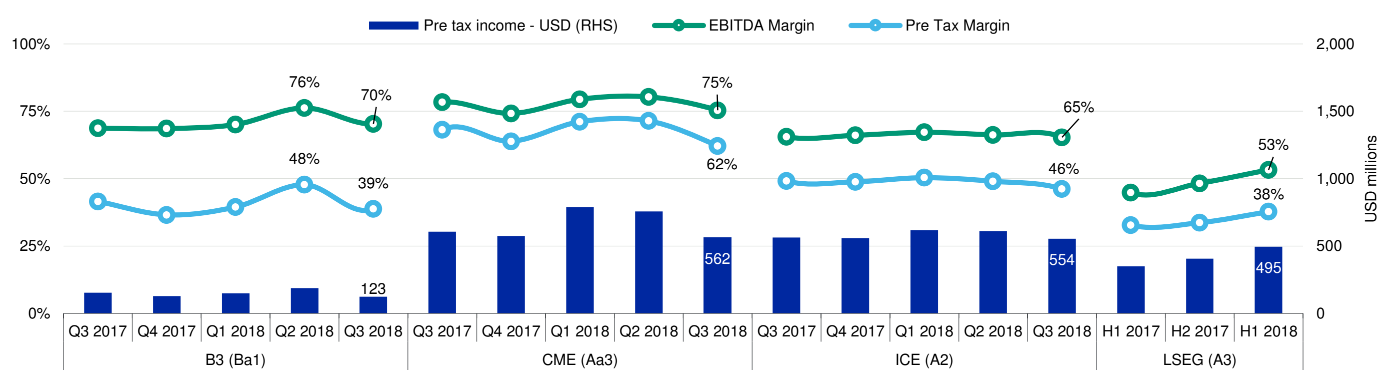
2018 averages are from January to November

Source: B3

Although the benefits of record high market volumes during the election period will be fully reflected in B3's 2018 annual results, B3 has nonetheless posted average quarterly EBITDA margins of 68% since March 2017 when the merger completed, while record trading volumes have boosted average margins to 72% in 2018, reaching a high of 76% in 2Q18. Amongst its peer group that consists of CME Group Inc. (CME, Aa3 stable), Intercontinental Exchange, Inc. (ICE, A2 stable) and London Stock Exchange Group Plc (LSEG, A3, stable), B3's margins rank well, with only CME reporting higher levels. In terms of pre tax margin, B3 has also steadily improved but compared to its peers it lags behind both CME and ICE, a reflection of its higher cost base and relative smaller scale than global peers. B3 is the smallest entity amongst its peers, reporting pre tax income in US dollars which is four times smaller than LSEG and almost five times smaller than CME and ICE (Exhibit 7).

Exhibit 7

B3's EBITDA margin is only bettered by CME, while pre-tax margins rank lower



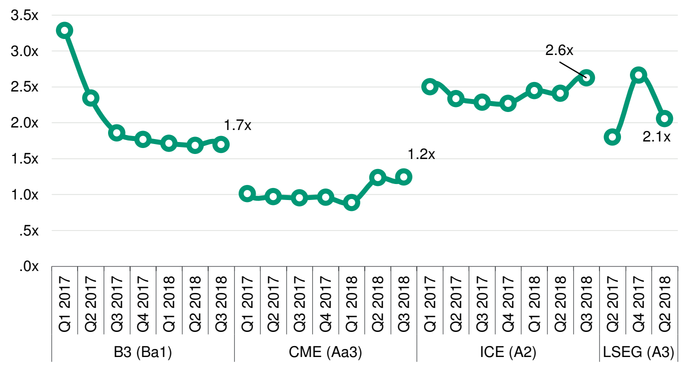
Source: B3, issuer financial statements, Moody's Investors Service

Leverage, defined as total debt divided by trailing twelve months EBITDA, has also fallen steadily from post-merger highs, driven by strong cash flow generation, which allowed the company to pay down debt without affecting minimum cash levels. Leverage has declined from over 3.4x in Q1 2017 to 1.8x as of Q3 2018, a level which is only lower at CME. B3 had BRL 1.5 billion of debt coming due in December 2018, which it paid from existing cash resources, further reducing leverage to 1.3x, in line with CME (Exhibit 8). The expected trajectory of its leverage and in turn improved coverage of its interest costs is a key factor in support of B3`s ratings. B3's strong profitability and cash flow generation also enables it to pay 70-80% of income as dividends while retaining cash after capital expenditures that is over a third of outstanding debt (Exhibit 9). We expect the company to replenish the cash spent on paying down its debt within in the first quarter of 2019.

Exhibit 8

B3's leverage is lower than most peers...

Total debt to trailing twelve months EBITDA

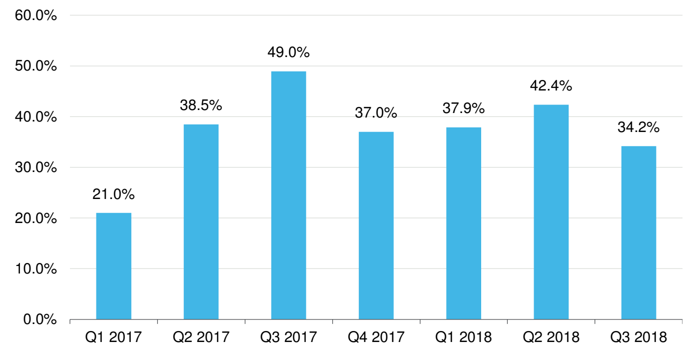


Source: B3, Issuer financial statements, Moody's Investors Service

Exhibit 9

..and it generates sufficient cash flow to meet upcoming debt maturities

(Retained cash flow-capex)/total debt, trailing twelve months



Source: B3, Issuer financial statements, Moody's Investors Service

Volatility benefits B3 but may well be lower in 2019

While record margins may well be hard to maintain in 2019, we expect B3 will continue posting very strong results and cash flow generation as it continues to benefit from its high operating leverage. B3's cash equities and derivatives businesses benefit from volatility in financial markets; yet 2018's volatility, which drove trading volumes to record highs, may not be repeated next year, making it harder to replicate record margins. However, uncertainties related to rising international risk via trade tensions or lower global growth could yet trigger volatility. For Brazil, our central scenario is for some type of reform to pass, which could boost volumes without necessarily inducing significant volatility.

Economic growth and continued low interest rates will boost B3's cyclical business

In 2019, stronger economic growth and low interest rates will bolster B3's procyclical business, leading to more equity issuance and trading, as well as growth in outstanding credit, vehicle financing and derivatives. We expect Brazil's economic growth of 1.8% in 2018 and 2% in 2019, and outstanding credit growth of 3% in 2018 and 7% in 2019 as bank lending rises. B3 will especially benefit from the continued economic recovery and return of risk appetite given the overlap of drivers between its businesses.

Importantly, the benign interest rate horizon[1] will continue into 2019 and beyond, with interest rate futures contracts suggesting rates could remain in the single digits for far longer, with contracts settling on 1 January 2022 at an interest rate of 8.0% as of 8 January 2019. As an asset class, equities are more attractive when rates are low, with increased demand leading to greater trading and settlement activities, in addition to increased equity derivatives trading. Rising outstanding credit benefits B3's interest rate derivatives trading, clearing and settlement, while more vehicle and real estate lending will increase the volume of Cetip's registration, loans and liens businesses. In addition, we expect Brazil's banking system to remain mostly funded by deposit and deposit-like instruments, meaning that credit growth of 7% in 2019 will likely be funded by these instruments, which are also registered in B3's CETIP securities segment.

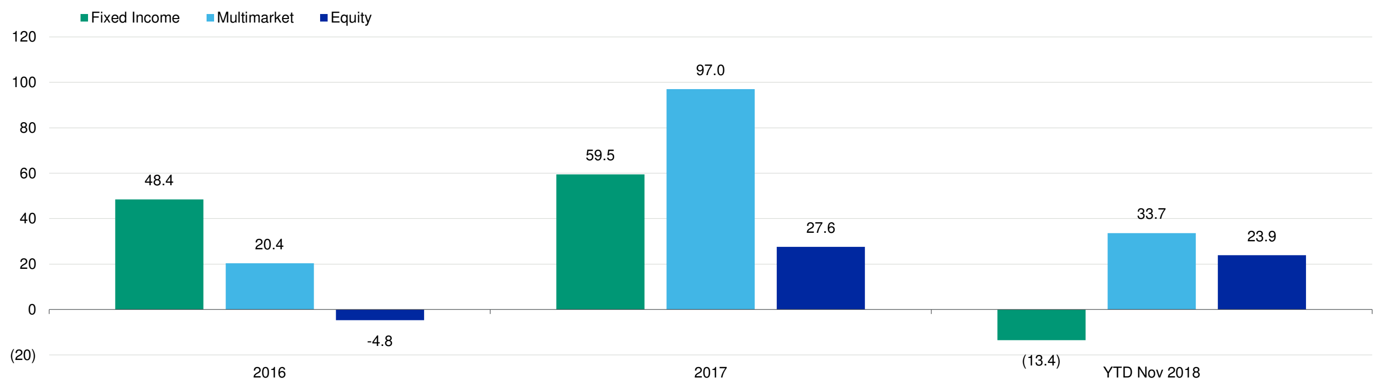
B3 initiatives to deepen equity markets through new products to combine with higher issuance and investor demand

The low interest rates environment has been a key determinant in shifting investor demand within the asset management industry in Brazil, leading to flows out of fixed-income funds and into higher-yielding asset classes, specifically multimarket and equity funds, as well as alternative investments including private equity (Exhibit 10). As a result, since monetary easing began in October 2016, equity fund assets under management have grown by 94% driven mainly by retail and high-net-worth investors. This greater demand for equities will benefit B3 by increasing trading revenues, settling and registration fees. B3`s own data shows that the number of low denomination USD and stock index futures contracts have more than doubled over the last year and the number of individual depositary accounts at B3 is up by almost 25% year over year as of October 2018.

Exhibit 10

Low rates are driving investors into equity and multimarket funds

Net inflows into fixed income, multimarket and equity funds - BRL billion



Source: Associação Brasileira das Entidades dos Mercados Financeiro e de Capitais (ANBIMA)

Since the presidential election, there has also been a healthy filling of initial public offerings (IPOs) at the local regulator, with B3's president expecting around 30 IPOs and follow-on offerings in 2019 versus the six that priced in 2018, increasing the tradable stock of equity assets for which demand is rising. However, one area in which B3 will continue to trail its US peers is in the initial offerings of technology companies. In 2018, the largest IPOs by Brazilian companies were from the technology sector and those were listed in the Nasdaq instead of B3 in Brazil. B3 will continue to find it hard to compete with Nasdaq for technology stocks given the depth of the US market and relatively higher valuations in New York.

B3 is also focusing on expanding its revenue streams by launching new products for the local market. B3 entered into a dialogue with market participants to understand what products and services it can offer for more efficient market functioning and in August 2018 it launched a roadmap for the introduction of a suite of new products by the end of 2019. One particular area with growth and revenue potential would be in securities lending which accounts for modest 2.2% of total revenues, as there is strong demand amongst asset managers and brokers for greater ease of borrowing assets at a lower price to enable filling market orders and short selling. B3 plans to launch a new platform to this end in the first half of 2019.

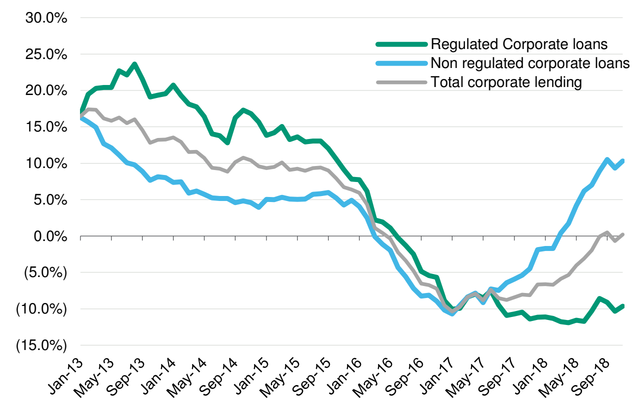
Over the medium-term, B3 is also exploring ways to ease listing requirements for small and mid-cap companies, trying to make listed equity financing a viable funding source for this important market segment. This would follow the steps of other exchanges, particularly London's Alternative Investment market (AIM), where smaller companies hire nominated advisors and brokers who aid them in listing on a market where the cost of issuance is lower not only in terms of the fees paid but also in terms of accounting requirements and management time. Developments in this area would benefit B3, increasing the volume of equities that are traded, settled, cleared and registered in its systems. All of this would raise revenues, increasing scale without necessarily affecting its cost base significantly.

Corporate debt issuance will rise as capital markets fill the void left by state subsidized bank lending

A decline in long-term government funding for companies through Banco Nacional de Desenvolvimento Economico e Social (BNDES, Ba2, stable, ba2), Brazil's state-run development bank, combined with lower bank lending to corporations by other public banks, has and will continue to increase the importance of Brazil's local debt markets. With rates remaining low for longer and corporate activity picking up as the economy recovers, we expect the demand for - and the supply of - corporate debt to remain high. B3 registers, trades and settles corporate bonds, earning depositary fees.

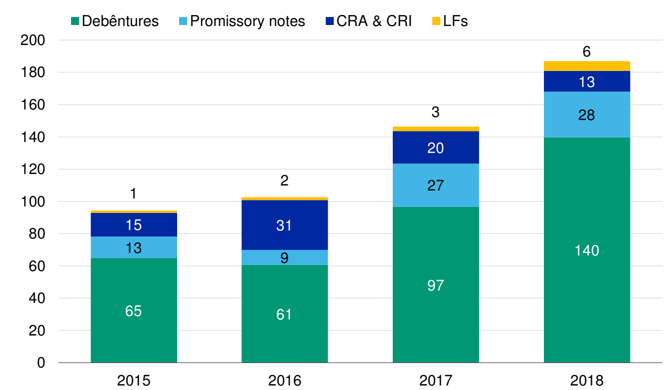
BNDES lending has fallen by almost 70% to BRL65 billion, in the year through June 2018, from BRL190 billion in 2013. Bank lending to corporates has also fallen 16% since peaking at the end of 2015, although it has began a modest recovery in 2018. When considered as a whole, however, total corporate lending has been declining since may 2016 (Exhibit 11). The slack created by this decline has been picked up by local capital markets, where debenture issuance rose by 59% in 2017 and by 45% in 2018, and other instrument issuance has also risen (Exhibit 12). B3 also started registering Brazilian covered bonds (letra imobiliária garantida or LIG), a relatively new instrument with a large potential market size[2] in late 2018, and also registers infrastructure debentures, the issuance of which will also likely rise in 2019.

Exhibit 11
Corporate lending by BNDES and banks has been declining since mid 2016



Source: Brazilian Central Bank

Exhibit 12
In response, debenture issuance has steadily been rising



Source: ANBIMA

Domestic competitive threats will arise but B3 will maintain its edge

As a condition of the Cetip merger, B3 has pledged to allow its competitors to use its infrastructure and obtain the same prices it charges to other financial market infrastructure companies. B3 is committed to ensuring that other financial market infrastructure companies can access its cash equities CCP and CSD services and must provide equal treatment to all participants in the CSD while also being fully transparent about its pricing policy. Additionally, negotiations with any market participant interested in using the CSD cannot exceed 120 days. If an agreement is not reached, an arbitration panel can be triggered to make a final decision. To comply with these requirements, B3 unbundled its post trading price for CCP and CSD services for institutional and other investors.[3]

B3's commitments aim to create a level playing field for potential entrants into cash equities trading. At the time of this report, B3 is the only active cash equity trading platform provider, although there is an ongoing confidential arbitration process with a potential market entrant, the results of which will be released in due course. B3's revenue from cash trading equities accounted for 4.2% of total revenue over the last twelve months, and therefore, even in a case scenario where it lost 50% of its market share in equities trading, total revenue would only fall by 2.1%.

In September 2018, the ABBC - Associação Brasileira de Bancos Comerciais, the Brazilian Association of Small and Midsized Banks, announced that it was working on setting up an entity that would register bank funding instruments and small and midsize bank assets to compete directly with B3. Although the entity has yet to start operations, it would be a competitive threat to B3's registration of bank funding instruments. B3 does not give a breakdown of its revenue streams by type of banking instruments or group of clients, but only a small part of its revenues in the Cetip securities segment comes from funding instruments issued by small and midsize banks, which would be the precise business loss potential to B3.

As the sole market infrastructure provider, B3 is already plugged into the IT systems of Brazilian banks that have day to day operations with the exchange over and beyond registration or just cash equity trading. As a result, there would be costs to be borne by market participants in terms of aligning internal IT systems to those of potential B3 competitors, while still maintaining access to B3 systems, which would entail IT costs and investment, acting as a deterrent to switching to a potential competitor. Also, B3 would do its utmost to improve customer service and avoid losing any clients to potential competitors.

However, the use of decentralized ledger technology, or blockchain, could be applied to the registration of ownership of financial instruments, potentially increasing competition to certain parts of B3's business lines.

International strategy to remain focused on equity stakes and product cross selling

Since 2014, B3 has acquired minority stakes in exchanges in Chile, Mexico, Colombia and Peru with the aim of fostering new business development that could potentially include cross-border trading and the development of new products. As of September 2018, the total value of these investments was BRL395 million (US 104 million), just 1% of total assets. B3 has also set up a strategic initiative with the Shanghai Stock Exchange to sell market data via seven licensed vendors. Meanwhile, it has done something similar with the Argentine exchange, Bolsa y Mercados, in which it provides tech support enabling access to the derivatives market through its PUMA trading system.

We view these partnerships as positive because they allow B3 to gain expertise in the business dynamics and regulatory framework of other markets, as well as the opportunity to enhance revenue diversification in terms of clients and geographies. However, given the scale of B3's existing revenue, which we expect to exceed BRL5.1 billion (USD 1.2 billion) for full year 2018, it is unlikely that revenue from global partnerships will become a significant share of B3's top line in 2019. Management seems intent on expanding the local operation by attracting foreign participants for listing or trading in Brazil, instead of seeking to grow operations abroad in its many investments in the region.

Technology initiatives to have fringe benefits but ensure B3 is on the cutting edge

B3's efforts in financial technology focus on the following fronts:

» Membership in the R3 consortium: Along with other leading global and Brazilian financial service companies, B3 is part of the R3 consortium to explore the use of blockchain technology

» Foresee program: a B3 research hub that aims to foster innovation in Brazil's financial markets

» Redpoint eventures: B3 contributed to a redpoint fund, which is an early stage venture capital firm focused on the internet

» BLK's robotrader platform for brokers and asset managers

B3's IT systems are already heavily digitized and because of its existing preeminent market position, technology initiatives will likely have fringe benefits to its day to day businesses such as increasing its service offering or investments in small companies. A recent example of this was B3's announcement on 8 November 2018, that it had made a binding offer to acquire 75% of BLK Sistemas Financeiros Ltda. (unrated), a technology company specializing in electronic and algorithmic trading that provides real time pricing data and personalized trading solutions via its Robotrader platform. BLK expanded the products B3 offers to the market because until then the company had not offered an interface enabling real time screen trading to buyside institutional investors until this acquisition.

Finally, via its membership of the international R3 consortium, B3 does already have access to the most advanced blockchain technology that could be applied in the operations of financial market infrastructure companies, ensuring it is on the cutting edge of the latest developments. The company is also working with Banco Bradesco S.A. (Ba2, stable ba2) on a possible platform for registering financial instruments that uses blockchain technology.

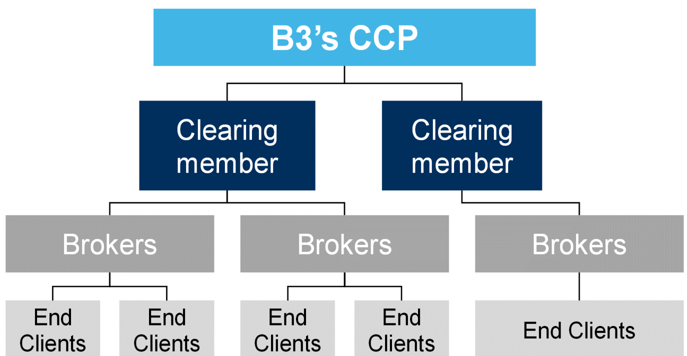
Risk management of CCP activities will continue to be a credit strength

B3 operates Brazil's large and systemically critical central counterparty clearing house (CCP) and depositary (CSD) across multiple assets including equities and derivatives. The efficient running and risk management of these operations is the backbone of B3's financial market infrastructure and is key to B3's intrinsic creditworthiness because it is exposed to default risk from market participants.

Importantly, B3 complies with the Committee on Payment and Settlement Systems of the Bank for International Settlements (CPSS) and the Technical Committee of the International Organization of Securities Commissions' (IOSCO) principles for financial market infrastructures. These are the internationally accepted requirements for risk management of CCPs and CSD, and B3 publishes a detailed self assessments per key principle factor outlining its compliance to them. We consider this a key sign of B3's effective risk management which has proved resilient during Brazil's recent recession, the worst in its history.

Structurally, B3's risk management specifically benefits from its client specific model and the layers of protection, or safeguards, that precede its own exposure in the event that a client, broker or clearing member were to default. Under Brazilian regulation, B3 can access and map risk exposures to the actual end client and is not limited to seeing exposures solely at clearing members (Exhibit 13), as may be the case at some other CCPs. This allows both efficient risk management on an ex-ante basis, whereby systems can block potential problematic and risky trades for certain clients, as well as enabling B3 to pressure both clearing members and brokers to attempt to mitigate risk before exposures even enter B3's systems.

Exhibit 13
B3's is able to map risk exposures to specific clients



Source: Moody's Investors Service

B3 has several layers of safeguards before its own resources would be called upon. These include 1) the defaulting customer's collateral & margin under the broker and clearing member; 2) a defaulting broker's collateral; 3) a defaulting clearing member's contributions to a default fund. Margin and collateral accepted by B3 are mainly cash and sovereign bonds as well as bank certificates of deposit, letters of credit and stocks. Only after each of the first three levels have been breached would B3's first level of liability arise, namely in the form of a BRL600 million default fund. This would be followed by mutualized protection in the form of a default fund comprised of contributions from non defaulting members. B3 also sets aside an additional dedicated cash position of BRL1.2 billion to cover CCP risk.

Because B3 is vertically integrated across multiple assets classes that include derivatives, its risk management practices tend to be more complex than for those CCPs that clear and settle relatively simple cash product transactions, like those that are operated by the US' Depository Trust & Clearing Corporation (DTCC, Aa3 stable). However, B3 consolidated all its clearing operations and in August 2017 it released BRL 21 billion of collateral requirements because it was able to offset the positions of market participants across all markets, resulting in lower collateral requirements, without risking the safety of the system. Via its vertical integration, B3 is able to actively control and monitor market participants at every step of the trading, clearing and settlement and this in particular provides it with a means of maintaining effective risk management, ensuring the efficient operations of the key CCP and CSD market infrastructure services.

Moody's related publications

» B3 S.A. - Brasil, Bolsa, Balcao: B3's trading platform tech acquisition is credit positive (November 2018)

» Asset management - Brazil: Low interest rates, steadier management fees support stable outlook (November 2018)

» B3 S.A. - Brasil, Bolsa, Balcao: Update to credit analysis (October 2018)

» Banking - Brazil: Economic recovery drives stable outlook, loan growth to offset low interest rates (September 2018)

» CME Group and Intercontinental Exchange: Very strong clearing operations reinforce holding companies' creditworthiness (March 2018)

Endnotes

1 In October 2016, faced with a weak economy and subdued inflation, Brazil's central bank began an unprecedented period of monetary easing and began cutting the official SELIC interest rate, then at 14.25%. Interest rates have since fallen to 6.5% and have been in single digits since June 2017, the longest period of single-digit rates in Brazil's history.

2 Given the maximum issuance cap of 10% of total assets per bank, we estimate the market size could be as much as BRL600 bilion, based on the asset size of the largest five banks in Brazil.

3 B3 submitted a pricing proposal for public comment, which was then approved both by Brazil's Securities Commission (CVM) and central bank.

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