

Brazilian Beef Sector

Picking up the pieces

The turmoil

Last Friday, markets were rocked by news of "Operation Flesh is Weak" by the Brazilian Federal Police, an investigation into the sale of nonconformity meat implicating sanitary inspectors from the Ministry of Agriculture and a handful of executives and managers from several Brazilian meat companies. As a result, twenty-one meat processing units from different companies (most of them only selling to the domestic market) were placed under investigation by the Brazilian government, with three of them banned from operating by the authorities.

Beef wasn't at the heart of the investigations... but there was some fallout

While most allegations involved plants producing proteins other than fresh beef, the reaction involved several suspensions by importing countries. China, Hong Kong, Egypt and Chile, representing a combined 53% of Brazil's beef exports, have all implemented country-wide suspensions (see pages 2-4). The question now is whether the "temporary" nature of the suspensions by China, Hong Kong and Egypt (48% of exports) will effectively imply that they will be lifted soon enough so that the actual impact on volumes is limited. Our gut feeling is that Brazil's position as a major supplier to most importing countries (e.g. Brazil = 81% of Egypt's beef imports) and the fresh beef sector's low exposure to the scandal should ensure that these bans are short-lived.

We'd focus on volume rather than price impact

Right off the bat, we remind investors that beef packing is a spread business. So, while trade embargoes will likely force companies to initially shift production to other locations (including the domestic market), potentially driving down beef prices, beef companies are also likely to reduce live cattle purchases, thus driving down cattle prices as well. So, the impact would be less on margins and more on volumes. And since beef exports represent only ~20% of Brazil's beef production, we also believe that the domestic market may not be as oversupplied as initially feared.

Minerva and Marfrig: assuming short-lived import bans, it seems priced-in

In a rough estimate, we believe the suspended export markets represent 28% and 9% of Minerva's and Marfrig's revenues, respectively. The actual impact, assuming a lengthy suspension, would likely be lower, since (i) both companies have beef processing units outside Brazil, with some capacity to supply the markets in question; and (ii) part of the volumes to these markets could be redirected to other locations. Minerva's and Marfrig's market cap has fallen R\$230mn and R\$93mn, respectively, since last Friday, respectively representing 20% and 5% of our current 2017 EBITDA estimates. So, unless we're genuinely looking at a lengthy trade ban of +1 years here, we believe the market reaction is (excuse the pun) overcooked.

Thiago Duarte

Brazil – Banco BTG Pactual S.A.
thiago.duarte@btgpactual.com
+55 11 3383 2366

Vito Ferreira

Brazil – Banco BTG Pactual S.A.
vito.ferreira@btgpactual.com
+55 11 3383 2984

ANALYST CERTIFICATION AND REQUIRED DISCLOSURES BEGIN ON PAGE 7

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Picking up the pieces

Table 1: Brazilian beef exports per country (2016)

Country (Destination)	Tonnes	% Total Volume	USD/Ton	Comments
Hong Kong	330,510	23.6%	3,466	Temporary suspension of all protein imports
Egypt	176,872	12.6%	3,117	Temporary suspension of all protein imports
China	165,754	11.8%	4,261	Suspension of custom clearance of freights from 65 players
Russia	138,785	9.9%	2,941	
Iran	94,985	6.8%	3,891	
Chile	71,027	5.1%	4,237	Temporary suspension of all protein imports
USA	33,269	2.4%	8,550	It will start to inspect a sample of 100% of proteins imported from BZ
UK	30,666	2.2%	4,577	Imports suspension from the 21 plants investigated
Italy	30,642	2.2%	6,214	Imports suspension from the 21 plants investigated
Saudi Arabia	29,239	2.1%	3,847	
Venezuela	22,704	1.6%	5,811	
Netherlands	22,665	1.6%	7,930	Imports suspension from the 21 plants investigated
UAE	20,896	1.5%	4,141	
Philippines	20,417	1.5%	2,681	
Algeria	18,166	1.3%	3,919	
Singapore	16,413	1.2%	4,016	
Israel	15,080	1.1%	4,848	Asked further information on the investigated plants
Lebanon	12,979	0.9%	4,942	
Jordan	12,097	0.9%	3,854	
Angola	10,731	0.8%	3,650	
Germany	10,058	0.7%	7,046	Imports suspension from the 21 plants investigated
Spain	9,554	0.7%	5,720	Imports suspension from the 21 plants investigated
Vietnam	8,900	0.6%	3,544	
Ivory Coast	8,761	0.6%	766	
Palestine	7,881	0.6%	3,338	
Belgium	6,824	0.5%	7,044	Imports suspension from the 21 plants investigated
Congo	5,753	0.4%	1,152	
Malaysia	4,143	0.3%	3,985	
Peru	3,846	0.3%	1,855	
Libya	3,106	0.2%	3,366	
Canada	3,069	0.2%	4,656	
Uruguay	3,020	0.2%	2,752	
Ukraine	2,924	0.2%	2,363	
Gabon	2,764	0.2%	1,848	
Sweden	2,712	0.2%	11,579	Imports suspension from the 21 plants investigated
Jamaica	2,252	0.2%	3,498	Temporary suspension of all protein imports
Guinea	2,247	0.2%	1,605	
Thailand	2,190	0.2%	1,357	
Cuba	1,913	0.1%	2,739	
Paraguay	1,871	0.1%	1,816	
Porto Rico	1,660	0.1%	4,978	
Albania	1,387	0.1%	3,569	
Qatar	1,318	0.1%	5,063	
Trinidad & Tobago	1,240	0.1%	3,388	
Serbia	1,206	0.1%	3,489	
Switzerland	1,132	0.1%	10,268	Imports suspension from 3 plants
Gambia	1,098	0.1%	2,098	
Bolivia	1,016	0.1%	1,671	
Bahamas	970	0.1%	3,403	
Turkey	961	0.1%	3,836	

Table 2: Brazilian beef exports per country (2016)

Country (Destination)	Tonnes	% Total Volume	USD/Ton	Comments
Azerbaijan	946	0.1%	1,790	
Georgia	944	0.1%	2,389	
France	923	0.1%	4,538	Imports suspension from the 21 plants investigated
Portugal	896	0.1%	5,104	Imports suspension from the 21 plants investigated
Gana	883	0.1%	1,993	
Serra Leoa	821	0.1%	839	
Oman	770	0.1%	3,868	
Aruba	738	0.1%	4,524	
Canary Islands	674	0.0%	5,088	
Comoros Islands	632	0.0%	2,661	
Iraq	615	0.0%	3,207	
South Africa	596	0.0%	2,622	
Australia	564	0.0%	3,848	
Mauritius	508	0.0%	3,892	
Liberia	504	0.0%	1,754	
Barbados	486	0.0%	3,467	
Netherlands Antilles	448	0.0%	3,866	
Armenia	408	0.0%	2,757	
Poland	407	0.0%	2,337	Imports suspension from the 21 plants investigated
Denmark	334	0.0%	10,272	Imports suspension from the 21 plants investigated
Nigeria	323	0.0%	2,353	
Seychelles	311	0.0%	3,746	
Macedonia	296	0.0%	3,341	
Tunisia	291	0.0%	4,172	
Bermuda	278	0.0%	3,809	
Lithuania	276	0.0%	2,308	Imports suspension from the 21 plants investigated
Malta	266	0.0%	4,680	Imports suspension from the 21 plants investigated
Senegal	251	0.0%	2,088	
Finland	245	0.0%	11,633	Imports suspension from the 21 plants investigated
Montenegro	232	0.0%	1,547	
Granada	206	0.0%	3,490	
Curacao	205	0.0%	3,751	
Maldiv Islands	193	0.0%	5,456	
Kyrgyzstan	192	0.0%	1,573	
Norway	175	0.0%	13,554	
South Korea	175	0.0%	4,206	
Benin	162	0.0%	3,173	
Turkmenistan	155	0.0%	1,665	
Belize	152	0.0%	3,467	
Camaroes	149	0.0%	2,128	
Bahrein	142	0.0%	5,077	
Kuwait	139	0.0%	5,583	
Kenya	138	0.0%	3,609	
Greece	133	0.0%	5,970	Imports suspension from the 21 plants investigated
Green Cape	131	0.0%	4,160	
Panama	131	0.0%	3,229	
Guyana	127	0.0%	3,071	
Romania	123	0.0%	3,211	Imports suspension from the 21 plants investigated
Austria	122	0.0%	4,189	Imports suspension from the 21 plants investigated
Moldovia	121	0.0%	2,372	

Source: ABIEC / BTG Pactual

Table 3: Brazilian beef exports per country (2016)

Country (Destination)	Tonnes	% Total Volume	USD/Ton	Comments
St. Vicent & Grenadines	117	0.0%	3,624	
St. Tome & Principe	112	0.0%	2,134	
Letonia	103	0.0%	2,699	
Marocco	100	0.0%	4,770	
Antigua e Barbuda	99	0.0%	3,636	
New Zealand	96	0.0%	3,740	
Suriname	92	0.0%	3,000	
Mali	88	0.0%	1,830	
St. Lucia	81	0.0%	3,765	
Brunei	69	0.0%	3,406	
Mauritania	65	0.0%	2,062	
Ireland	59	0.0%	4,220	Imports suspension from the 21 plants investigated
Micronesia	59	0.0%	3,746	
St. Cristovao e Neves	56	0.0%	3,554	
Kazakhstan	54	0.0%	4,000	
Dominica	52	0.0%	3,827	
Guam	51	0.0%	5,275	
North Korea	48	0.0%	4,813	
Cyprus	44	0.0%	5,136	Imports suspension from the 21 plants investigated
Estonia	41	0.0%	2,659	Imports suspension from the 21 plants investigated
France Polynesia	33	0.0%	5,576	
Rwanda	29	0.0%	3,448	
Indonesia	28	0.0%	4,107	
Tanzania	27	0.0%	5,370	
Haiti	27	0.0%	3,852	
Togo	27	0.0%	889	
Sri Lanka	26	0.0%	6,038	
Hungary	22	0.0%	2,455	Imports suspension from the 21 plants investigated
Bosnia & Herzegovina	21	0.0%	2,048	
Cayman Islands	18	0.0%	3,167	
Monaco	17	0.0%	5,000	
Samoa	16	0.0%	3,500	
Virgin Islands	15	0.0%	3,400	
Niger	11	0.0%	1,909	
Djibouti	10	0.0%	7,900	
Mozambique	10	0.0%	2,600	
Japan	4	0.0%	12,000	Imports suspension from the 21 plants investigated
Colombia	2	0.0%	21,000	

Source: ABIEC / BTG Pactual

Income Statement (R\$m)	12/2011	12/2012	12/2013	12/2014	12/2015	12/2016E	12/2017E	12/2018E
Revenue	21,647	23,839	18,753	21,073	20,710	19,365	20,633	22,262
Operating expenses (ex depn)	(20,069)	(21,979)	(17,306)	(19,271)	(18,827)	(17,729)	(18,796)	(20,156)
EBITDA (BTG Pactual)	1,751	2,134	1,372	1,686	1,820	1,551	1,837	2,106
Depreciation	(734)	(819)	(505)	(602)	(515)	(478)	(507)	(547)
Operating income (EBIT, BTG Pactual)	1,017	1,314	867	1,084	1,305	1,073	1,330	1,559
Other income & associates	0	0	0	0	718	(6)	0	0
Net Interest	(2,307)	(2,073)	(2,031)	(2,127)	(3,122)	(1,763)	(1,135)	(1,029)
Abnormal items (pre-tax)	0	0	0	0	0	0	0	0
Profit before tax	(1,290)	(759)	(1,164)	(1,043)	(1,099)	(696)	195	530
Tax	535	524	361	322	679	204	0	(53)
Profit after tax	(755)	(234)	(802)	(721)	(420)	(492)	195	477
Abnormal items (post-tax)	0	0	0	0	0	0	0	0
Minorities / pref dividends	2	11	(13)	(19)	(47)	(57)	(60)	(65)
Net Income (local GAAP)	(753)	(224)	(815)	(740)	(467)	(548)	135	412
Adjusted Net Income	27	307	(225)	(289)	596	(548)	154	452
Tax rate (%)	0	0	0	0	0	0	0	10
Per Share	12/2011	12/2012	12/2013	12/2014	12/2015	12/2016E	12/2017E	12/2018E
EPS (local GAAP)	(1.21)	(0.36)	(1.31)	(1.19)	(0.75)	(0.88)	0.22	0.66
EPS (BTG Pactual)	0.04	0.49	(0.36)	(0.47)	0.96	(0.88)	0.25	0.73
Net DPS	(0.15)	(0.09)	(0.33)	(0.30)	(0.19)	(0.22)	0.05	0.17
BVPS	9.24	10.68	8.28	6.56	4.47	2.06	2.27	2.53
Cash Flow (R\$m)	12/2011	12/2012	12/2013	12/2014	12/2015	12/2016E	12/2017E	12/2018E
Net Income	27	307	(225)	(289)	596	(548)	154	452
Depreciation	734	819	505	602	515	478	507	547
Net change in working capital	(60)	(1,442)	(189)	249	1,427	2,768	(84)	(75)
Other (operating)	0	0	0	0	0	0	0	0
Net cash from operations	(80)	(846)	(500)	111	1,475	2,698	557	884
Cash from investing activities	(947)	(1,054)	(811)	(639)	(448)	(495)	(558)	(672)
Cash from financing activities	94	56	204	185	917	(284)	(14)	(63)
Bal sheet chge in cash & equivalents	(399)	(299)	(1,367)	847	2,345	396	19	0
Balance Sheet (R\$m)	12/2011	12/2012	12/2013	12/2014	12/2015	12/2016E	12/2017E	12/2018E
Cash and equivalents	3,477	3,178	1,812	2,659	5,004	5,401	5,420	5,420
Other current assets	5,882	7,057	5,682	5,870	4,838	4,718	4,960	5,181
Total current assets	9,359	10,235	7,494	8,529	9,842	10,119	10,380	10,601
Net tangible fixed assets	11,683	12,094	7,734	8,145	7,042	6,888	6,938	7,063
Net intangible fixed assets	0	0	0	0	0	0	0	0
Investments / other assets	2,781	3,261	2,600	3,672	4,031	4,147	4,147	4,147
Total assets	23,824	25,590	17,828	20,346	20,916	21,153	21,466	21,811
Trade payables & other ST liabilities	4,396	4,129	2,565	3,002	3,397	6,046	6,204	6,349
Short term debt	2,277	3,559	1,123	1,821	2,009	2,012	2,012	2,012
Total current liabilities	6,673	7,687	3,689	4,822	5,407	8,057	8,215	8,360
Long term debt	8,920	8,679	7,817	9,400	10,012	9,588	9,608	9,648
Other long term liabilities	2,332	2,447	1,090	1,930	2,524	2,038	2,038	2,038
Total liabilities	17,925	18,814	12,595	16,153	17,943	19,684	19,862	20,046
Equity & minority interests	5,899	6,776	5,232	4,193	2,973	1,469	1,604	1,764
Total liabilities & equities	23,823	25,590	17,828	20,346	20,916	21,153	21,466	21,811

Company Profile:

Marfrig is a multinational company with operations in the food and food service sectors in Brazil and around the world. It is one of the largest meat processing companies, producing and selling beef, poultry, and its by-products and processed products in the domestic market and abroad. In the past few years, the company has expanded its geographical positioning through a series of acquisition in Brazil and worldwide.

Financial ratios	12/2014	12/2015	12/2016E	12/2017E	12/2018E
EBITDA margin	8.0%	8.8%	8.0%	8.9%	9.5%
Operating margin	5.1%	6.3%	5.5%	6.4%	7.0%
Net margin	-1.4%	2.9%	-2.8%	0.7%	2.0%
RoE	-6.3%	17.4%	-27.1%	11.5%	30.3%
RoIC	8.6%	11.5%	12.2%	17.2%	19.7%
EBITDA / net interest	0.8x	0.6x	0.9x	1.6x	2.0x
Net debt / EBITDA	5.1x	3.9x	4.0x	3.4x	3.0x
Total debt / EBITDA	6.7x	6.6x	7.5x	6.3x	5.5x
Net debt / (net debt + equity)	67.1%	70.2%	80.8%	79.4%	78.0%

Source: Company reports and BTG Pactual estimates. Valuations: based on the last share price of that year (E) based on share price as of 22 March 2017

Income Statement (R\$m)	12/2011	12/2012	12/2013	12/2014	12/2015	12/2016E	12/2017E	12/2018E
Revenue	3,977	4,380	5,457	6,987	9,525	9,827	10,655	11,501
Operating expenses (ex depn)	(3,678)	(3,941)	(4,920)	(6,313)	(8,504)	(8,777)	(9,447)	(10,208)
EBITDA (BTG Pactual)	328	469	551	653	1,020	1,037	1,208	1,294
Depreciation	(45)	(51)	(58)	(59)	(75)	(81)	(85)	(89)
Operating income (EBIT, BTG Pactual)	282	418	494	594	945	956	1,123	1,205
Other income & associates	0	0	0	0	(23)	0	0	0
Net Interest	(375)	(620)	(776)	(1,013)	(1,668)	(668)	(719)	(750)
Abnormal items (pre-tax)	0	0	0	0	0	0	0	0
Profit before tax	(92)	(201)	(282)	(419)	(746)	288	404	455
Tax	134	3	2	1	(54)	(85)	(101)	(114)
Profit after tax	42	(199)	(280)	(418)	(800)	203	303	342
Abnormal items (post-tax)	0	0	0	0	0	0	0	0
Minorities / pref dividends	2	4	(0)	0	0	0	0	0
Net Income (local GAAP)	44	(195)	(280)	(418)	(800)	203	303	342
Adjusted Net Income	145	48	88	46	327	(350)	386	466
Tax rate (%)	0	0	0	0	0	30	25	25
Per Share	12/2011	12/2012	12/2013	12/2014	12/2015	12/2016E	12/2017E	12/2018E
EPS (local GAAP)	0.18	(0.81)	(1.17)	(1.74)	(3.33)	0.85	1.26	1.42
EPS (BTG Pactual)	0.60	0.20	0.37	0.19	1.36	(1.46)	1.61	1.94
Net DPS	0.00	0.00	(0.29)	(0.44)	(0.83)	0.21	0.32	0.36
BVPS	3.00	3.71	2.33	2.38	(1.60)	2.72	3.99	4.14
Cash Flow (R\$m)	12/2011	12/2012	12/2013	12/2014	12/2015	12/2016E	12/2017E	12/2018E
Net Income	145	48	88	46	327	(350)	386	466
Depreciation	45	51	58	59	75	81	85	89
Net change in working capital	(94)	30	35	(197)	(37)	(395)	(121)	(66)
Other (operating)	0	0	0	0	0	0	0	0
Net cash from operations	(5)	(114)	(188)	(556)	(762)	(111)	267	364
Cash from investing activities	(161)	(126)	(165)	(269)	(234)	(210)	(174)	(184)
Cash from financing activities	402	631	833	2,001	1,802	(285)	(15)	17
Bal sheet chge in cash & equivalents	170	542	275	911	276	439	176	(0)
Balance Sheet (R\$m)	12/2011	12/2012	12/2013	12/2014	12/2015	12/2016E	12/2017E	12/2018E
Cash and equivalents	746	1,289	1,564	2,474	2,750	3,189	3,365	3,365
Other current assets	1,037	1,119	1,354	1,863	2,265	2,555	2,753	2,865
Total current assets	1,783	2,407	2,918	4,338	5,015	5,744	6,118	6,230
Net tangible fixed assets	1,454	1,645	1,732	2,434	2,719	2,802	2,891	2,986
Net intangible fixed assets	0	0	0	0	0	0	0	0
Investments / other assets	370	394	409	533	579	487	464	442
Total assets	3,607	4,447	5,059	7,304	8,312	9,032	9,473	9,658
Trade payables & other ST liabilities	439	551	821	1,133	1,497	1,392	1,469	1,514
Short term debt	622	614	596	804	1,547	1,264	1,264	1,264
Total current liabilities	1,061	1,164	1,417	1,937	3,043	2,655	2,732	2,778
Long term debt	1,494	2,133	2,914	4,602	5,461	5,510	5,571	5,673
Other long term liabilities	256	256	168	193	190	212	212	212
Total liabilities	2,811	3,553	4,499	6,732	8,695	8,377	8,515	8,663
Equity & minority interests	796	894	560	572	(383)	655	958	995
Total liabilities & equities	3,607	4,447	5,059	7,304	8,312	9,032	9,473	9,658

Company Profile:

Minerva is one of the largest Brazilian beef companies, producing and selling fresh and processed beef, as well as beef by-products. The company is among Brazil's three largest beef exports, selling its products to some 100 countries, in all five continents. It currently has a slaughter capacity of 17.3k heads per day, considering its units in Brazil, Paraguay, Uruguay and Colombia.

Financial ratios	12/2014	12/2015	12/2016E	12/2017E	12/2018E
EBITDA margin	9.3%	10.7%	10.6%	11.3%	11.2%
Operating margin	8.5%	9.9%	9.7%	10.5%	10.5%
Net margin	0.7%	3.4%	-3.6%	3.6%	4.0%
RoE	8.2%	349.3%	-259.6%	47.9%	47.8%
RoIC	19.8%	25.6%	23.6%	25.9%	26.8%
EBITDA / net interest	0.6x	0.6x	1.6x	1.7x	1.7x
Net debt / EBITDA	4.5x	4.2x	3.5x	2.9x	2.8x
Total debt / EBITDA	8.3x	6.9x	6.5x	5.7x	5.4x
Net debt / (net debt + equity)	83.7%	109.9%	84.5%	78.4%	78.2%

Source: Company reports and BTG Pactual estimates. Valuations: based on the last share price of that year (E) based on share price as of 22 March 2017

Required Disclosures

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The figures contained in performance charts refer to the past; past performance is not a reliable indicator of future results.

BTG Pactual Rating	Definition	Coverage *1	IB Services *2
Buy	Expected total return 10% above the company's sector average.	50%	50%
Neutral	Expected total return between +10% and -10% the company's sector average.	45%	40%
Sell	Expected total return 10% below the company's sector average.	5%	40%

1: Percentage of companies under coverage globally within the 12-month rating category.

2: Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

Absolute return requirements

Besides the abovementioned relative return requirements, the listed absolute return requirements must be followed:

- a Buy rated stock must have an expected total return above 15%
- a Neutral rated stock can not have an expected total return below -5%
- a stock with expected total return above 50% must be rated Buy

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Statement of Risk

Marfrig Alimentos S.A. [BRMRFG] - Main risks are 1) macro environment (interest rates, employment, currency among other), 2) exposure to commodities price volatility, 3) negative cash flow for most companies seen above average growth, 4) Sanitary and commercial restrictions.

Minerva S.A. [BRBEEF] - Minerva is subject to governmental negotiations, sanctions from importing countries, demand restriction due to animal diseases and tariffs imposition from some countries. In addition, volatility in costs of cattle may impact company's margins in the future.

Valuation Methodology

Marfrig Alimentos S.A. [BRMRFG] - Our TP is DCF-based, using Ke and g of 11.6% and 2.5%, both in USD terms

Minerva S.A. [BRBEEF] - Our TP is DCF-based, using Ke and g of 12.1% and 2.5%, both in USD terms.

Company Disclosures

Company Name	Reuters	12-mo rating	Price	Price date
Marfrig ^{1, 2, 4, 6, 18, 19, 20, 22}	MRFG3.SA	Neutral	R\$5.55	22-3-2017
Minerva ^{1, 2, 4, 6, 10, 18, 19, 22}	BEEF3.SA	Buy	R\$9.35	22-3-2017

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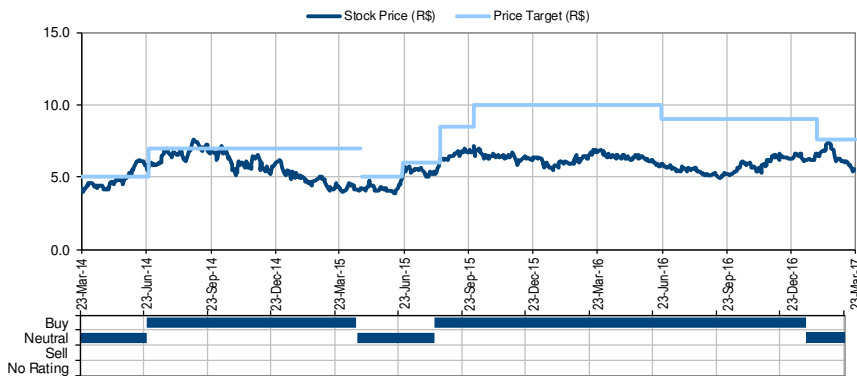
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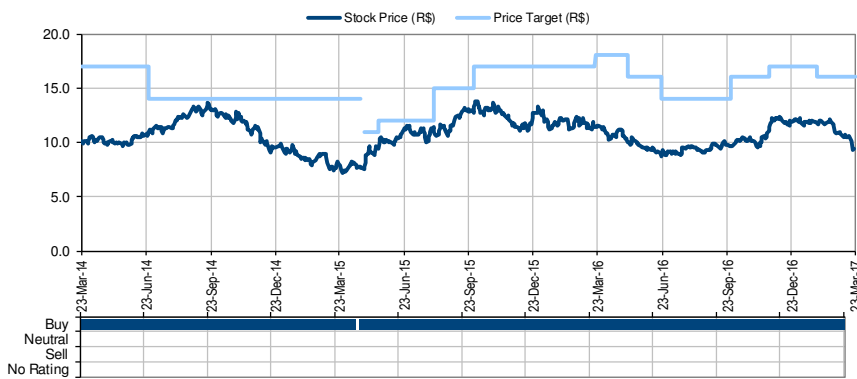
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Marfrig



Source: BTG Pactual and Economática. Prices as of 22 March 2017

Minerva



Source: BTG Pactual and Economática. Prices as of 22 March 2017

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