

**30/2019/GPW (153)** December 5, 2019

This report is prepared for the Warsaw Stock Exchange SA within the framework of the Analytical Coverage Support Pilot Program. This is a selected fragment of DM BOŚ SA's research report.

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# Rafako

**Sector:** Construction  
**Fundamental rating:** Sell (↓)  
**Market relative:** Underweight (→)  
**Price:** PLN 1.034  
**12M EFV:** PLN 0.75 (↓)

**Market Cap:** US\$ 34.2 m  
**Bloomberg code:** RFK PW  
**Av. daily turnover:** US\$ 0.26 m  
**12M range:** PLN 0.852-2.375  
**Free float:** 57%

## The equity story

Our conviction that the majority of the risk factors that could hurt the Company have already materialized turned out to be wrong. Disappointing, in our view, 3Q19 results shed a new light on Rafako's situation. The Company is still struggling with delays in contracts which result in a low sales. In our opinion, Rafako will not be able to realize all backlog orders this year.

What worries us the most is the fact that, despite write-offs made in 2Q19, the Company still recognizes negative margins on contracts. This time, the main reason for the loss recorded by Rafako in 3Q19 were incurred and planned costs related to the implementation of the Jaworzno project. The increase in costs was mainly caused by the delayed implementation of the start-up process, and thus the postponement of assembly, finishing and supervision works. It may constitute a risk factor for the timely contract completion and for the expected dividend payment.

Moreover, we identify further significant risks associated with possible write-offs on the loan granted to PBG, and PBG bonds (in total c. PLN 35 million). The 'parent company' successively postpones the deadlines for redemption of the next tranche of bonds, which only confirms the extent of financial problems. It is becoming more and more probable that the bondholders will acquire Rafako's shares (are kept as a collateral). Such movement may result in an immediate supply of shares.

Given the abovementioned we downgrade our LT fundamental recommendation to **Sell** (from Hold previously). On the other hand we uphold our ST market-relative bias at **Underweight**. Rafako's valuation drops from PLN 1.8 to **PLN 0.75** per share.

### Guide to adjusted profits

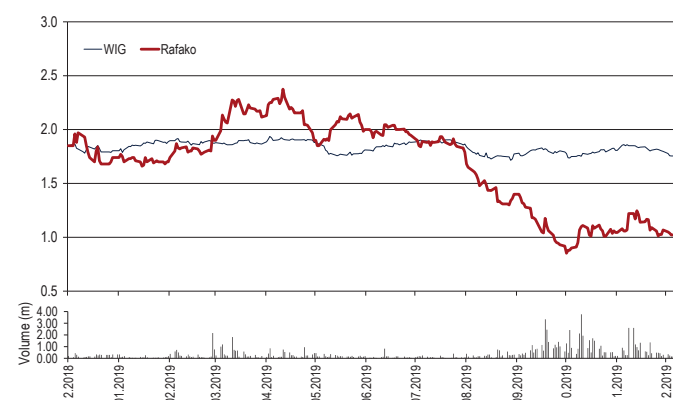
Profits adjusted for a release of provisions for the voluntary redundancy program (PLN 5.9 million)

### Key data

IFRS consolidated		2018	2019E	2020E	2021E
Sales	PLN m	1,268.8	1,161.3	2,378.9	1,192.7
EBITDA	PLN m	55.4	-104.0	42.4	25.3
Adj EBITDA	PLN m	49.5	-104.0	42.4	25.3
EBIT	PLN m	40.5	-121.8	29.0	12.6
Adj EBIT	PLN m	34.6	-121.8	29.0	12.6
Net profit	PLN m	33.6	-124.7	20.8	6.9
Adj net profit	PLN m	28.8	-124.7	20.8	6.9
Adj EPS	PLN	0.23	-0.98	0.16	0.05
EPS yoy chg	%	163	-533	-117	-67
Net debt	PLN m	32.1	45.0	15.9	15.3
P/E	x	4.6	neg.	6.3	19.0
P/CE	x	3.0	neg.	3.9	6.7
EV/EBITDA	x	3.3	neg.	3.5	5.8
EV/EBIT	x	4.7	neg.	5.1	11.7
DPS	PLN	0.00	0.00	0.40	0.00
Gross dividend yield	%	0.0	0.0	38.7	0.0
No. of shares (eop)	m	127.4	127.4	127.4	127.4

Source: Company, DM BOŚ SA estimates

### Stock performance



Source: Bloomberg

### Upcoming events

1. Jaworzno contract completion: January 31, 2020
2. Release of FY19 results: probably end of April 2020

**Risk factors**

1. Failure of claims satisfaction – the Company's financial condition might deteriorate significantly with no compensations granted.
2. Failure in the Jaworzno III contract – the testing phase in Jaworzno III – the Company's biggest-ever contract – is underway and the most crucial moment will be synchronization of the completed power unit with electrical grid (planned in the second half of August); in the case of its failure the final delivery date (set at November 20, 2019) may be endangered. Any delay will most likely result in contractual penalties in the amount of 0.09% of the contract's net value per any commenced day of delay (e.g. about PLN 4 million a day).
3. Loss of liquidity – a payment of contractual penalties may result in insolvency.
4. Write-offs on bonds and loans granted – given the PBG's poor financial standing (redemption of the bonds postponed several times), there is a material risk of write-offs, we think. In the last balance sheet Rafako booked PLN 10.8 million loan to PBG, with the maturity date at the end of the FY19 and PBG bonds worth PLN 24.8 million.
5. Supply of Rafako's shares that are a collateral of PBG's debt – due to postponements of bond redemption there is a real risk of Rafako's share acquisition by debt holders and their massive supply in a ST.
6. Small scale of contracting – material slowdown of new contracts acquisition may translate into inferior financial results and weaker financial condition of the Company.
7. More difficult access to insurance/banking guarantees – limiting the access to funding makes a new contracts acquisition more difficult.
8. Increasing completion – no more room for a construction of new coal-fueled power units in Poland may result in increasing competition in the remaining market segments such as: construction of environmental protection installations or oil&gas construction. The enhanced market competition may have an adverse impact on the profitability of newly acquired contracts.
9. Contractual penalties - contractual penalties, usually in the amount of 10% of the contract value, can undermine the Company's financial condition.
10. Materials price hikes – though curbed by the cost provisions created by the Company at the stage of the offer calculation this risk will burden the financial result in case of strong cost increase exceeding the level of provisions created.

**Catalysts**

1. Obtaining claims from clients - will allow the Company to maintain the profitability of contracts and a stable financial position.
2. Successful completion of the Jaworzno III power unit – this will bring about the payment cash-in, favorable references, banking guarantees release, dividend capacity and cessation of risk related to the contractual penalty payment.
3. Loan repayment and bond redemption by PBG – it will mean that significant risk factors (write-offs, sale of Rafako's shares) expired and financial position got better.
4. Improvement of OCF – breaking the negative trend in OCF (cumulative c. PLN -250 million since FY16), should be an important catalyst for Rafako's shares.
5. Backlog increase – new contracts acquisition will translate into a business scale-up.
6. Launch of new technologies – vital competitive edge
7. Access to new insurance/banking guarantees – improvement of access to funding will enable Rafako to enter a bigger number of tenders and scale up its business.

- **4Q19E results.** We think that Rafako will not be able to complete all the backlog orders this year. We tentatively estimate 4Q19 sales on c. PLN 344 million (-11% yoy). We still uphold our assumption regarding the claims satisfaction by the end of the year. Hence, we estimate 4Q19 results will be supported with PLN 107 million. Estimated EBIT and net profit should stand at PLN 92 million and PLN 75 million, respectively.
- **Mid-term outlook.** The next year remains under the Jaworzno settlement impact. If everything goes well, Rafako should stabilize the results and partially fill the FY19 loss. We also assume that all delayed works will be realized next year.
- **Financial forecast.** After disappointing 3Q19 results, we revise our FY19 forecast downwards. Delivered margins are far from previously assumed, hence we cut Jaworzno profitability to 6% and Vilnius to 3%. We assign 7% margin to newly acquired energy contracts. We also reduce to 7% the maximum margin possible to obtain in the future for gas contracts. Additional costs that burdened Jaworzno contract result in a decrease of our expectations regarding the possible dividend payment to PLN 51 million, i.e. PLN 0.40 per share.
- **Valuation.** Peer-relative valuation is based only on FY21. We still consider FY20 unrepresentative, hence we omit it in our valuation.
 

We add another 2029 year to our explicit forecast and to the DCF FCFF valuation as well and thus move the valuation horizon one year forward. At the same time, the downward revision of financial forecasts results in a 58% decrease in our 12M target price (consisting of 75% DCF FCFF and 25% peer-relative valuation) to PLN 0.75 per share (previously PLN 1.8).

**Fig. 1. Rafako; Valuation summary (PLN)**

DCF (75%)	0.74
Peer companies (25%)	0.78
<b>Final valuation</b>	<b>0.75</b>
Current share market price	1.034
<i>Upside (downside) to the current market price</i>	<i>-27%</i>

Source: DM BOS SA estimates

- **Risk to financial forecast.** We consider our forecasts as a high risk. Any delays in contracts will result in lower sales than forecasted. Failure to claims satisfaction or a delay in Jaworzno completion are also significant risk factors for our estimates.
- **Recommended action.** We see Rafako's shares overvalued and recommend to sell them. Moreover we identify many serious risk factors that additionally strengthen our conviction.

**Fig. 2. Rafako; Change in BOS forecast**

IFRS consolidated (PLN m)	2019E			2020E			2021E		
	current	previous	change	current	previous	change	current	previous	change
Sales	1,161.3	1,691.3	-31%	2,378.9	1,848.9	29%	1,192.7	1,192.7	0%
EBITDA	-104.0	24.2	n.m.	42.4	66.0	-36%	25.3	38.2	-34%
EBIT	-121.8	9.7	n.m.	29.0	52.3	-44%	12.6	25.2	-50%
Net profit	-124.7	6.6	n.m.	20.8	38.8	-47%	6.9	15.7	-56%
Net debt	45.0	36.2	24%	15.9	39.2	-59%	15.3	1.9	718%

Source: DM BOS SA estimates

Fig. 3. Rafako; DCF valuation

(PLN m)	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	>2029E
Sales	1,161.3	2,378.9	1,192.7	1,252.5	1,355.6	1,374.0	1,403.0	1,433.1	1,464.4	1,497.0	1,530.9	
chg yoy	-8%	105%	-50%	5%	8%	1%	2%	2%	2%	2%	2%	
EBIT	-121.8	29.0	12.6	16.6	22.6	22.3	22.8	23.2	22.6	22.0	21.3	
chg yoy	n.m.	n.m.	-57%	32%	36%	-1%	2%	2%	-3%	-3%	-3%	
Effective cash tax rate (T)	-2.3%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	
EBIT (1-T)	-124.7	22.9	9.9	13.1	17.8	17.6	18.0	18.3	17.9	17.3	16.8	
chg yoy	n.m.	n.m.	-57%	32%	36%	-1%	2%	2%	-3%	-3%	-3%	
EBITDA	-104.0	42.4	25.3	28.8	34.3	33.7	33.9	34.3	33.6	33.0	32.4	
chg yoy	n.m.	n.m.	-40%	14%	19%	-2%	1%	1%	-2%	-2%	-2%	
Depreciation	17.8	13.4	12.7	12.2	11.7	11.4	11.2	11.1	11.0	11.1	11.1	
EBIT (1-T) + D	-106.8	36.3	22.7	25.3	29.6	29.1	29.2	29.4	28.9	28.4	27.9	
chg yoy	n.m.	n.m.	-38%	12%	17%	-2%	0%	1%	-2%	-2%	-2%	
Capex	-5.0	-5.5	-6.1	-6.7	-7.4	-8.1	-8.9	-9.8	-10.8	-11.4	-11.4	
Change in NWC	95.8	20.0	-0.5	-20.3	-23.6	-30.7	-6.2	-6.5	-6.7	-6.9	-7.2	
<b>FCFF</b>	<b>-16.0</b>	<b>50.8</b>	<b>16.0</b>	<b>-1.7</b>	<b>-1.4</b>	<b>-9.7</b>	<b>14.0</b>	<b>13.1</b>	<b>11.4</b>	<b>10.1</b>	<b>9.3</b>	
chg yoy	n.m.	n.m.	-68%	n.m.	n.m.	n.m.	n.m.	-6%	-13%	-12%	-7%	1%
<b>Cost of equity</b>												
Risk free rate (nominal)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Equity risk premium	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Unlevered beta	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
Leveraged beta	1.81	1.49	1.50	1.50	1.50	1.54	1.46	1.36	1.30	1.30	1.30	1.30
<b>Required rate of return</b>	<b>13.5%</b>	<b>11.9%</b>	<b>12.0%</b>	<b>12.0%</b>	<b>12.0%</b>	<b>12.2%</b>	<b>11.8%</b>	<b>11.3%</b>	<b>11.0%</b>	<b>11.0%</b>	<b>11.0%</b>	<b>11.0%</b>
<b>Cost of debt</b>												
Cost of debt (pre-tax)	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Effective tax rate	-2.3%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%
<b>After-tax cost of debt</b>	<b>6.1%</b>	<b>4.7%</b>	<b>4.7%</b>	<b>4.7%</b>	<b>4.7%</b>	<b>4.7%</b>	<b>4.7%</b>	<b>4.7%</b>	<b>4.7%</b>	<b>4.7%</b>	<b>4.7%</b>	<b>4.7%</b>
<b>WACC</b>												
Weight of equity	61.7%	82.0%	80.7%	80.3%	80.8%	76.7%	84.6%	94.4%	100.0%	100.0%	100.0%	100.0%
Cost of equity	13.5%	11.9%	12.0%	12.0%	12.0%	12.2%	11.8%	11.3%	11.0%	11.0%	11.0%	11.0%
Weight of debt	38.3%	18.0%	19.3%	19.7%	19.2%	23.3%	15.4%	5.6%	0.0%	0.0%	0.0%	0.0%
After-tax cost of debt	6.1%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%
<b>WACC</b>	<b>10.7%</b>	<b>10.6%</b>	<b>10.6%</b>	<b>10.6%</b>	<b>10.6%</b>	<b>10.5%</b>	<b>10.7%</b>	<b>10.9%</b>	<b>11.0%</b>	<b>11.0%</b>	<b>11.0%</b>	<b>11.0%</b>
Discount multiple	1.00	1.00	1.11	1.22	1.35	1.49	1.65	1.83	2.04	2.26	2.51	
Discount factor	1.00	1.00	0.90	0.82	0.74	0.67	0.60	0.55	0.49	0.44	0.40	
<b>PV of free cash flow</b>	<b>-</b>	<b>-</b>	<b>14.5</b>	<b>-1.4</b>	<b>-1.0</b>	<b>-6.5</b>	<b>8.5</b>	<b>7.1</b>	<b>5.6</b>	<b>4.5</b>	<b>3.7</b>	
Sum of FCFFs PVs												34.9
Weight of debt in the residual period												0%
Weight of equity in the residual period												100%
Average cost of equity in the definite period												11.6%
Average WACC in the definite period												10.8%
WACC in the residual period												11.0%
<b>Residual growth of FCFFs</b>												<b>1.0%</b>
Residual value												94.2
Present value of the residual value												37.5
<b>Value of Rafako's operations</b>												<b>72.4</b>
Cash and equivalents, eop 2019E												34.8
Interest-bearing debt, eop 2019E												50.7
Dividend paid between now and valuation horizon												51.0
Minority interest, eop 2019E												12.5
<b>Equity value</b>												<b>94.9</b>
No. of shares (m)												127.4
<b>12M EFV Rafako's share (PLN)</b>												<b>0.74</b>

Source: DM BOŚ SA estimates

**Fig. 4. Rafako; Peer-relative valuation**

	P/E			EV/EBITDA		
	2019E	2020E	2021E	2019E	2020E	2021E
ALSTOM	16.8	19.2	16.7	8.9	9.4	8.3
DOOSAN HEAVY INDUSTRIES	neg.	6.1	5.0	5.7	5.3	4.9
HITACHI LTD	21.4	9.8	8.5	4.0	3.9	3.9
MITSUBISHI HEAVY INDUSTRIES	15.2	13.2	11.0	5.9	5.7	5.0
SIEMENS AG-REG	19.1	17.7	15.5	12.6	11.0	9.6
FLUOR CORP	neg.	10.8	8.8	neg.	5.0	4.5
INDIKA ENERGY TBK PT	13.0	8.5	15.0	2.7	2.3	2.3
JGC CORP	24.5	38.5	15.7	8.7	10.4	6.3
SAMSUNG ENGINEERING CO LTD	11.5	11.0	9.8	7.4	6.8	5.6
MASTEC INC	12.6	11.9	11.7	7.4	6.6	6.4
QUANTA SERVICES INC	12.6	10.5	9.7	8.1	6.6	5.7
DYCOM INDUSTRIES INC	18.4	20.4	18.2	n.a.	7.1	6.1
<b>Median</b>	<b>16.0</b>	<b>11.4</b>	<b>11.3</b>	<b>7.4</b>	<b>6.6</b>	<b>5.6</b>
<b>Rafako</b>	<b>neg.</b>	<b>6.3</b>	<b>18.7</b>	<b>neg.</b>	<b>3.4</b>	<b>5.8</b>
<b>Equity value of Rafako &amp; minorities (PLN m)</b>	<b>n.m.</b>	<b>247.8</b>	<b>97.8</b>	<b>n.m.</b>	<b>264.1</b>	<b>127.2</b>
Weight	0%	0%	50%	0%	0%	50%
Wighted average equity value of Rafako & minorities (PLN m)			112.5			
Value of minorities (PLN m)			12.5			
Implied EFV of Rafako (PLN m)			99.9			
<b>Average implied EFV per share (PLN)</b>			<b>0.78</b>			

Peer multiples as of December 4 close.

Source: Bloomberg, DM BOŚ SA estimates

**Financial statements (IFRS consolidated)**
**Fig. 5. Rafako; Income Statement**

(PLN m)	2016	2017	2018E	2019E	2020E	2021E
<b>Sales</b>	<b>1,875.3</b>	<b>1,782.6</b>	<b>1,268.8</b>	<b>1,161.3</b>	<b>2,378.9</b>	<b>1,192.7</b>
COGS	-1,751.0	-1,623.3	-1,150.1	-1,298.1	-2,264.1	-1,105.6
<b>Gross profit on sales</b>	<b>124.3</b>	<b>159.3</b>	<b>118.7</b>	<b>-136.8</b>	<b>114.7</b>	<b>87.1</b>
Selling costs	-32.0	-32.6	-24.4	-23.0	-18.4	-14.7
General administraton costs	-57.8	-61.1	-51.9	-51.7	-50.6	-51.6
R&D costs	0.0	-6.9	-6.2	-9.9	-11.9	-6.0
<b>Net profit on sales</b>	<b>34.6</b>	<b>58.6</b>	<b>36.2</b>	<b>-221.4</b>	<b>33.8</b>	<b>14.7</b>
Other operating income	3.6	10.3	12.7	110.1	11.9	6.0
Other operating costs	-13.5	-20.2	-8.4	-10.5	-16.6	-8.1
<b>EBIT</b>	<b>24.7</b>	<b>48.8</b>	<b>40.5</b>	<b>-121.8</b>	<b>29.0</b>	<b>12.6</b>
Financial income	5.0	2.1	8.5	5.4	0.6	0.1
Financial costs	-7.2	-11.6	-5.8	-5.7	-2.3	-1.8
<b>Pre-tax income</b>	<b>22.5</b>	<b>39.3</b>	<b>43.2</b>	<b>-122.2</b>	<b>27.4</b>	<b>10.9</b>
Income tax	-11.6	-34.2	-9.7	-2.8	-5.8	-2.3
<b>Net profit (loss) from continuing operation</b>	<b>10.9</b>	<b>5.1</b>	<b>33.5</b>	<b>-125.0</b>	<b>21.7</b>	<b>8.6</b>
Minority interest in net profit	0.4	1.0	-0.1	-0.3	0.9	1.7
<b>Net profit</b>	<b>10.5</b>	<b>4.2</b>	<b>33.6</b>	<b>-124.7</b>	<b>20.8</b>	<b>6.9</b>
<b>EBITDA</b>	<b>39.1</b>	<b>63.0</b>	<b>55.4</b>	<b>-104.0</b>	<b>42.4</b>	<b>25.3</b>

Source: Company, DM BOŚ SA estimates

Fig. 6. Rafako; Balance Sheet

(PLN m)	2016	2017	2018	2019P	2020P	2021P
<b>LT assets</b>	<b>310.5</b>	<b>290.6</b>	<b>294.7</b>	<b>235.3</b>	<b>295.8</b>	<b>228.2</b>
Fixed assets	178.6	170.9	146.6	132.5	123.5	115.7
Goodwill	9.2	9.2	9.2	9.2	9.2	9.2
Intangible assets	9.6	8.9	8.0	9.2	10.3	11.5
Public ground lease	0.0	0.0	29.0	29.0	29.0	29.0
LT other receivables	34.0	39.4	40.4	11.6	35.7	17.9
Shares in other units	0.8	0.2	1.4	1.5	1.5	1.5
LT financial assets	24.1	17.7	14.1	0.0	0.0	0.0
Deferred tax	54.2	42.5	42.0	38.4	78.8	39.5
Accruals	0.0	1.7	4.1	3.8	7.8	3.9
<b>ST assets</b>	<b>1,118.5</b>	<b>990.6</b>	<b>1,075.3</b>	<b>866.9</b>	<b>1,039.5</b>	<b>797.1</b>
Inventories	14.0	28.8	34.2	18.2	8.5	10.2
ST trade receivables	728.3	485.9	532.5	348.4	543.6	454.0
Construction contracts assets	218.2	251.3	381.4	406.5	404.4	262.4
Tax receivables	19.6	0.1	0.2	0.2	0.3	0.2
Derivatives	0.0	0.5	0.0	0.0	0.0	0.0
Other ST financial assets	11.2	4.7	7.6	18.6	0.0	0.0
ST loans granted	0.0	10.0	11.4	11.4	11.4	11.4
Cash & equivalents	107.5	180.3	88.7	45.9	34.8	40.7
Accruals	19.6	28.9	19.4	17.8	36.4	18.3
Assets available for sale	0.9	0.1	0.2	0.0	0.0	0.0
<b>Total assets</b>	<b>1,429.9</b>	<b>1,281.3</b>	<b>1,370.2</b>	<b>1,102.1</b>	<b>1,335.3</b>	<b>1,025.3</b>
<b>Equity</b>	<b>423.0</b>	<b>558.3</b>	<b>589.1</b>	<b>464.4</b>	<b>434.2</b>	<b>441.1</b>
<b>Minorities</b>	<b>9.0</b>	<b>8.6</b>	<b>8.5</b>	<b>8.2</b>	<b>9.1</b>	<b>10.8</b>
<b>Liabilities</b>	<b>997.9</b>	<b>714.3</b>	<b>772.6</b>	<b>629.5</b>	<b>892.0</b>	<b>573.4</b>
LT liabilities	73.8	91.6	75.3	52.2	96.3	50.2
Interest-bearing	3.5	2.1	8.3	7.5	7.0	6.5
Non-interest-bearing	64.2	60.0	36.5	27.6	59.4	29.0
Reserves	6.1	29.6	30.4	17.2	29.8	14.6
ST liabilities	924.1	622.7	697.3	577.3	795.7	523.2
Trade payables	513.5	390.0	342.5	363.5	452.8	309.6
Interest-bearing	149.2	101.2	112.5	83.4	43.8	49.5
Construction contracts	156.6	42.8	173.5	58.1	195.1	97.8
Non-interest-bearing	43.0	36.9	31.6	31.5	32.8	31.5
Reserves	51.2	35.8	15.2	17.1	29.8	14.6
Accruals	10.1	15.6	21.1	23.8	41.5	20.2
Others	0.5	0.3	1.0	0.0	0.0	0.0
<b>Total liabilities and equity</b>	<b>1,429.9</b>	<b>1,281.3</b>	<b>1,370.2</b>	<b>1,102.1</b>	<b>1,335.3</b>	<b>1,025.3</b>

Source: Company, DM BOS SA estimates

Fig. 7. Rafako; Cash Flow

(PLN m)	2016	2017	2018	2019E	2020E	2021E
<b>Gross income (loss)</b>	<b>22.5</b>	<b>39.3</b>	<b>43.2</b>	<b>-122.2</b>	<b>27.4</b>	<b>10.9</b>
Depreciation and amortization	14.4	14.2	14.8	17.8	13.4	12.7
NWC change:	-131.6	-78.2	-140.5	95.8	20.0	-0.5
Change in receivables	-268.7	225.0	-47.3	212.9	-219.3	107.5
Change in inventories	4.8	-0.6	-5.3	15.9	9.7	-1.7
Change in payables	125.6	-136.0	-79.3	10.5	110.3	-160.6
Change in reserves	0.0	-10.6	-9.1	-3.0	-19.8	9.6
Change in construction contracts	6.6	-156.0	0.6	-140.5	139.1	44.8
Tax paid	-22.4	-5.4	-9.3	-2.8	-5.8	-2.3
Others	4.4	0.5	0.6	0.9	13.6	-12.5
<b>Operating cash flow</b>	<b>-112.7</b>	<b>-29.5</b>	<b>-91.2</b>	<b>-10.5</b>	<b>68.6</b>	<b>8.3</b>
Capital expenditures	-6.8	-2.4	0.0	-5.0	-5.5	-6.1
Others	-0.6	-4.5	1.9	8.3	19.2	0.1
<b>Investing cash flow</b>	<b>-7.4</b>	<b>-6.9</b>	<b>1.9</b>	<b>3.4</b>	<b>13.7</b>	<b>-6.0</b>
Equity issue	0.0	163.4	0.0	0.0	0.0	0.0
Change in interest-bearing debt	34.6	-51.0	0.9	-29.9	-40.1	5.3
Dividends payment	0.0	0.0	0.0	0.0	-51.0	0.0
Interest	-3.9	-3.7	-4.3	-5.7	-2.3	-1.8
Others	-0.3	0.8	0.8	0.0	0.0	0.0
<b>Financing cash flow</b>	<b>30.4</b>	<b>109.5</b>	<b>-2.6</b>	<b>-35.7</b>	<b>-93.4</b>	<b>3.6</b>
<b>Total cash flow</b>	<b>-89.6</b>	<b>73.1</b>	<b>-91.9</b>	<b>-42.8</b>	<b>-11.1</b>	<b>5.9</b>

Source: Company, DM BOŚ SA estimates

Fig. 8. Rafako; Ratios

	2016	2017	2018	2019E	2020E	2021E
Sales growth (yoy)	21%	-5%	-29%	-8%	105%	-50%
Gross profit growth (yoy)	-2%	28%	-25%	n.m.	n.m.	-24%
EBITDA growth (yoy)	-27%	61%	-12%	n.m.	n.m.	-40%
EBIT growth (yoy)	-39%	98%	-17%	n.m.	n.m.	-57%
Net profit growth (yoy)	-69%	-60%	707%	n.m.	n.m.	-67%
A/R turnover days	118	124	146	138	68	153
Inventory turnover days	3	5	10	7	2	3
A/P turnover days	95	102	116	99	66	126
Cash cycle	26	28	40	47	5	30
NWC/Sales	4%	17%	32%	28%	12%	24%
Gross margin	6.6%	8.9%	9.4%	-11.8%	4.8%	7.3%
EBITDA margin	2.1%	3.5%	4.4%	-9.0%	1.8%	2.1%
EBIT margin	1.3%	2.7%	3.2%	-10.5%	1.2%	1.1%
Pretax margin	1.2%	2.2%	3.4%	-10.5%	1.2%	0.9%
Net margin	0.6%	0.2%	2.6%	-10.7%	0.9%	0.6%
ROE	2.5%	0.8%	5.9%	-23.7%	4.6%	1.6%
ROA	0.8%	1.2%	3.0%	-9.6%	1.9%	0.7%
Current Ratio	1.2	1.5	1.5	1.5	1.3	1.5
Quick Ratio	1.2	1.5	1.5	1.4	1.2	1.5
Net debt/EBITDA	1.2	net cash	0.6	net cash	0.4	0.6

Source: Company, DM BOŚ SA estimates



## BASIC DEFINITIONS

**A/R turnover** (in days) =  $365/(\text{sales}/\text{average A/R})$   
**Inventory turnover** (in days) =  $365/(\text{COGS}/\text{average inventory})$   
**A/P turnover** (in days) =  $365/(\text{COGS}/\text{average A/P})$   
**Current ratio** =  $(\text{current assets} - \text{ST deferred assets})/\text{current liabilities}$   
**Quick ratio** =  $(\text{current assets} - \text{ST deferred assets} - \text{inventory})/\text{current liabilities}$   
**Interest coverage** =  $(\text{pre-tax profit before extraordinary items} + \text{interest payable})/\text{interest payable}$   
**Gross margin** =  $\text{gross profit on sales}/\text{sales}$   
**EBITDA margin** =  $\text{EBITDA}/\text{sales}$   
**EBIT margin** =  $\text{EBIT}/\text{sales}$   
**Pre-tax margin** =  $\text{pre-tax profit}/\text{sales}$   
**Net margin** =  $\text{net profit}/\text{sales}$   
**ROE** =  $\text{net profit}/\text{average equity}$   
**ROA** =  $(\text{net income} + \text{interest payable})/\text{average assets}$   
**EV** =  $\text{market capitalization} + \text{interest bearing debt} - \text{cash and equivalents}$   
**EPS** =  $\text{net profit}/\text{no. of shares outstanding}$   
**CE** =  $\text{net profit} + \text{depreciation}$   
**Dividend yield** (gross) =  $\text{pre-tax DPS}/\text{stock market price}$   
**Cash sales** =  $\text{accrual sales corrected for the change in A/R}$   
**Cash operating expenses** =  $\text{accrual operating expenses corrected for the changes in inventories and A/P, depreciation, cash taxes and changes in the deferred taxes}$

DM BOŠ S.A. generally values the covered non bank companies via two methods: comparative method and DCF method (discounted cash flows). The advantage of the former is the fact that it incorporates the current market assessment of the value of the company's peers. The weakness of the comparative method is the risk that the valuation benchmark may be mispriced. The advantage of the DCF method is its independence from the current market valuation of the comparable companies. The weakness of this method is its high sensitivity to undertaken assumptions, especially those related to the residual value calculation. Please note that we also resort to other valuation techniques (e.g. NAV-, DDM- or SOTP-based), should it prove appropriate in a given case.

## KEY TO INVESTMENT RANKINGS

This is a guide to expected price performance in absolute terms over the next 12 months:

**Buy** – fundamentally undervalued (upside to 12M EFV in excess of the cost of equity) + catalysts which should close the valuation gap identified;  
**Hold** – either (i) fairly priced, or (ii) fundamentally undervalued/overvalued but lacks catalysts which could close the valuation gap;  
**Sell** – fundamentally overvalued (12M EFV < current share price + 1-year cost of equity) + catalysts which should close the valuation gap identified.

This is a guide to expected relative price performance:

**Overweight** – expected to perform better than the benchmark (WIG) over the next quarter in relative terms  
**Neutral** – expected to perform in line with the benchmark (WIG) over the next quarter in relative terms  
**Underweight** – expected to perform worse than the benchmark (WIG) over the next quarter in relative terms

The recommendation tracker presents the performance of DM BOŠ S.A.'s recommendations. A recommendation expires on the day it is altered or on the day 12 months after its issuance, whichever comes first.

Relative performance compares the rate of return on a given recommended stock in the period of the recommendation's validity (i.e. from the date of issuance to the date of alteration or – in case of maintained recommendations – from the date of issuance to the current date) in a relation to the rate of return on the benchmark in this time period. The WIG index constitutes the benchmark. For recommendations that expire by an alteration or are maintained, the ending values used to calculate their absolute and relative performance are: the stock closing price on the day the recommendation expires/ is maintained and the closing value of the benchmark on that date. For recommendations that expire via a passage of time, the ending values used to calculate their absolute and relative performance are: the average of the stock closing prices for the day the recommendation elapses and four directly preceding sessions and the average of the benchmark's closing values for the day the recommendation expires and four directly preceding sessions.

### Distribution of DM BOŠ's current recommendations

	Buy	Hold	Sell	Suspended	Under revision
Numbers	38	35	8	8	0
Percentage	43%	40%	8%	9%	0%

### Distribution of DM BOŠ's current recommendations for the companies which DM BOŠ has supplied with material investment services within the last 12 months

	Buy	Hold	Sell	Suspended	Under revision
Numbers	3	6	1	2	0
Percentage	25%	50%	8%	17%	0%

### Distribution of DM BOŠ's current market relative recommended weightings

	Overweight	Neutral	Underweight	Suspended	Under revision
Numbers	34	37	10	8	0
Percentage	38%	42%	11%	9%	0%

### Distribution of DM BOŠ's current market relative recommended weightings for the companies which DM BOŠ has supplied with material investment services within the last 12 months

	Overweight	Neutral	Underweight	Suspended	Under revision
Numbers	2	5	3	2	0
Percentage	17%	42%	25%	17%	0%

## Banks

**Net Interest Margin (NIM)** =  $\text{net interest income}/\text{average assets}$   
**Non interest income** =  $\text{fees\&commissions} + \text{result on financial operations (trading gains)} + \text{FX gains}$   
**Interest Spread** =  $(\text{interest income}/\text{average interest earning assets})/(\text{interest cost}/\text{average interest bearing liabilities})$   
**Cost/Income** =  $(\text{general costs} + \text{depreciation})/(\text{profit on banking activity} + \text{other net operating income})$   
**ROE** =  $\text{net profit}/\text{average equity}$   
**ROA** =  $\text{net income}/\text{average assets}$   
**Non performing loans (NPL)** = loans in 'basket 3' category  
**NPL coverage ratio** =  $\text{loan loss provisions}/\text{NPL}$   
**Net provision charge** =  $\text{provisions created} - \text{provisions released}$

DM BOŠ S.A. generally values the covered banks via two methods: comparative method and fundamental target fair P/E and target fair P/BV multiples method. The advantage of the former is the fact that it incorporates the current market assessment of the value of the company's peers. The weakness of the comparative method is the risk that the valuation benchmark may be mispriced. The advantage of the fundamental target fair P/E and target fair P/BV multiples method is its independence of the current market valuation of the comparable companies. The weakness of this method is its high sensitivity to undertaken assumptions, especially those related to the residual value calculation. Assumptions used in valuation can change, influencing thereby the level of the valuation. Among the most important assumptions are: GDP growth, forecasted level of inflation, changes in interest rates and currency prices, employment level and change in wages, demand on the analysed company products, raw material prices, competition, standing of the main customers and suppliers, legislation changes, etc. Changes in the environment of the analysed company are monitored by analysts involved in the preparation of the recommendation, estimated, incorporated in valuation and published in the recommendation whenever needed.

LT fundamental recommendation tracker

Analyst	Recommendation	Report date	Reiteration date	Distribution date	Expiry date	Performance	Relative performance	Price at issue/reiteration*	EFV (12 months)
<b>Rafako</b>									
Michał Stalmach	Buy	10.12.2015	-	10.12.2015	04.12.2016	-16%	-22%	6.70	10.10 →
Michał Stalmach	-	-	13.12.2015	14.12.2015	-	-	-	6.99	10.10 →
Michał Stalmach	-	-	17.01.2016	18.01.2016	-	-	-	7.15	10.10 →
Michał Stalmach	-	-	15.02.2016	16.02.2016	-	-	-	7.29	10.10 →
Michał Stalmach	-	-	18.02.2016	19.02.2016	-	-	-	7.39	10.10 →
Michał Stalmach	-	-	21.03.2016	22.03.2016	-	-	-	8.10	10.10 →
Michał Stalmach	-	-	13.04.2016	14.04.2016	-	-	-	8.42	10.10 →
Michał Stalmach	-	-	16.05.2016	17.05.2016	-	-	-	7.95	10.10 →
Michał Stalmach	-	-	27.06.2016	28.06.2016	-	-	-	5.89	10.10 →
Michał Stalmach	-	-	24.07.2016	25.07.2016	-	-	-	6.50	10.10 →
Wojciech Romanowski	-	-	11.08.2016	12.08.2016	-	-	-	6.59	9.30 ↓
Wojciech Romanowski	-	-	31.08.2016	01.09.2016	-	-	-	6.78	9.30 →
Wojciech Romanowski	-	-	12.10.2016	13.10.2016	-	-	-	6.36	9.30 →
Wojciech Romanowski	-	-	01.11.2016	02.11.2016	-	-	-	6.02	7.30 ↓
Wojciech Romanowski	-	-	02.11.2016	03.11.2016	-	-	-	6.02	7.30 →
Wojciech Romanowski	-	-	14.11.2016	15.11.2016	-	-	-	5.98	7.30 →
Wojciech Romanowski	Buy	04.12.2016	-	05.12.2016	09.05.2017	36%	6%	5.61	7.30 →
Wojciech Romanowski	-	-	12.01.2017	13.01.2017	-	-	-	6.24	7.30 →
Wojciech Romanowski	-	-	08.02.2017	09.02.2017	-	-	-	7.22	7.30 →
Wojciech Romanowski	-	-	21.02.2017	22.02.2017	-	-	-	7.13	7.30 →
Wojciech Romanowski	-	-	07.03.2017	08.03.2017	-	-	-	8.80	7.30 →
Wojciech Romanowski	-	-	11.04.2017	12.04.2017	-	-	-	8.05	7.30 →
Wojciech Romanowski	Hold	09.05.2017	-	10.05.2017	25.03.2018	-34%	-31%	7.62	7.30 →
Wojciech Romanowski	-	-	30.05.2017	31.05.2017	-	-	-	8.07	7.30 →
Wojciech Romanowski	-	-	12.07.2017	13.07.2017	-	-	-	8.05	7.30 →
Wojciech Romanowski	-	-	26.07.2017	27.07.2017	-	-	-	7.70	7.30 →
Wojciech Romanowski	-	-	03.09.2017	04.09.2017	-	-	-	5.90	7.30 →
Wojciech Romanowski	-	-	15.10.2017	16.10.2017	-	-	-	4.75	7.30 →
Wojciech Romanowski	-	-	05.11.2017	06.11.2017	-	-	-	4.49	7.10 ↓
Wojciech Romanowski	-	-	09.11.2017	10.11.2017	-	-	-	4.24	4.70 ↓
Wojciech Romanowski	-	-	15.11.2017	16.11.2017	-	-	-	4.09	4.70 →
Wojciech Romanowski	-	-	10.12.2017	11.12.2017	-	-	-	4.18	4.70 →
Wojciech Romanowski	-	-	10.01.2018	11.01.2018	-	-	-	4.80	4.70 →
Wojciech Romanowski	-	-	13.02.2018	14.02.2018	-	-	-	4.89	4.70 →
Wojciech Romanowski	-	-	12.03.2018	13.03.2018	-	-	-	4.83	4.70 →
Wojciech Romanowski	Under revision	25.03.2018	-	26.03.2018	22.05.2018	-18%	-17%	4.80	Under revision
Wojciech Romanowski	-	-	16.04.2018	17.04.2018	-	-	-	4.20	Under revision
Wojciech Romanowski	Sell	22.05.2018	-	23.05.2018	09.12.2018	-50%	-49%	3.94	2.90 →
Wojciech Romanowski	-	-	29.05.2018	30.05.2018	-	-	-	3.74	2.90 →
Wojciech Romanowski	-	-	16.07.2018	17.07.2018	-	-	-	3.46	2.90 →
Wojciech Romanowski	-	-	02.08.2018	03.08.2018	-	-	-	3.54	2.90 →
Wojciech Romanowski	-	-	30.08.2018	31.08.2018	-	-	-	3.38	2.90 →
Wojciech Romanowski	-	-	11.10.2018	12.10.2018	-	-	-	2.02	2.90 →
Wojciech Romanowski	-	-	23.10.2018	24.10.2018	-	-	-	2.03	2.90 →
Wojciech Romanowski	-	-	14.11.2018	15.11.2018	-	-	-	1.45	2.90 →
Wojciech Romanowski	Hold	09.12.2018	-	10.12.2018	05.12.2019	-48%	-46%	1.970	2.80 ↓
Wojciech Romanowski	-	-	10.01.2019	11.01.2019	-	-	-	1.740	2.80 →
Wojciech Romanowski	-	-	04.02.2019	05.02.2019	-	-	-	1.800	2.80 →
Wojciech Romanowski	-	-	26.02.2019	27.02.2019	-	-	-	1.800	2.80 →
Wojciech Romanowski	-	-	26.03.2019	27.03.2019	-	-	-	2.170	2.80 →
Wojciech Romanowski	-	-	22.04.2019	23.04.2019	-	-	-	2.155	2.80 →
Wojciech Romanowski	-	-	24.04.2019	25.04.2019	-	-	-	2.045	2.80 →
Wojciech Romanowski	-	-	30.05.2019	31.05.2019	-	-	-	1.980	2.80 →
Wojciech Romanowski	-	-	17.07.2019	18.07.2019	-	-	-	1.934	2.80 →
Wojciech Romanowski	-	-	23.07.2019	23.07.2019	-	-	-	1.868	2.40 ↓
Wojciech Romanowski	-	-	30.07.2019	31.07.2019	-	-	-	1.830	2.40 →
Wojciech Romanowski	-	-	20.08.2019	21.08.2019	-	-	-	1.330	2.40 →
Wojciech Romanowski	-	-	25.08.2019	26.08.2019	-	-	-	1.310	2.30 ↓
Wojciech Romanowski	-	-	01.09.2019	02.09.2019	-	-	-	1.400	2.30 →
Wojciech Romanowski	-	-	02.09.2019	03.09.2019	-	-	-	1.400	2.30 →
Wojciech Romanowski	-	-	05.09.2019	06.09.2019	-	-	-	1.312	2.30 →
Wojciech Romanowski	-	-	30.09.2019	01.10.2019	-	-	-	0.918	2.30 →
Wojciech Romanowski	-	-	13.10.2019	14.10.2019	-	-	-	1.110	2.30 →
Wojciech Romanowski	-	-	24.10.2019	25.10.2019	-	-	-	1.008	1.80 ↓
Wojciech Romanowski	-	-	17.11.2019	18.11.2019	-	-	-	1.140	1.80 →
Wojciech Romanowski	-	-	25.11.2019	26.11.2019	-	-	-	1.058	1.80 →
Wojciech Romanowski	-	-	27.11.2019	28.11.2019	-	-	-	1.028	1.80 →
Wojciech Romanowski	-	-	01.12.2019	02.12.2019	-	-	-	1.068	1.80 →
Wojciech Romanowski	Sell	05.12.2019	-	06.12.2019	Not later than 05.12.2020	-	-	1.034	0.75 ↓

\* prices at issue/reiteration are the closing prices at the report or reiteration date

**Market-relative recommendation tracker**

Analyst	Relative Recommendation		Report date	Reiteration date	Distribution date	Expiry date	Price at issue/reiteration*	Relative performance
<b>Rafako</b>								
Michał Stalmach	Overweight	-	10.12.2015	-	10.12.2015	31.08.2016	6.70	-5%
Michał Stalmach	-	→	-	13.12.2015	14.12.2015	-	6.99	-
Michał Stalmach	-	→	-	17.01.2016	18.01.2016	-	7.15	-
Michał Stalmach	-	→	-	15.02.2016	16.02.2016	-	7.29	-
Michał Stalmach	-	→	-	18.02.2016	19.02.2016	-	7.39	-
Michał Stalmach	-	→	-	21.03.2016	22.03.2016	-	8.10	-
Michał Stalmach	-	→	-	13.04.2016	14.04.2016	-	8.42	-
Michał Stalmach	-	→	-	16.05.2016	17.05.2016	-	7.95	-
Michał Stalmach	-	→	-	27.06.2016	28.06.2016	-	5.89	-
Michał Stalmach	-	→	-	24.07.2016	25.07.2016	-	6.50	-
Wojciech Romanowski	-	→	-	11.08.2016	12.08.2016	-	6.59	-
Wojciech Romanowski	Neutral	↓	31.08.2016	-	01.09.2016	14.11.2016	6.78	-11%
Wojciech Romanowski	-	→	-	12.10.2016	13.10.2016	-	6.36	-
Wojciech Romanowski	-	→	-	01.11.2016	02.11.2016	-	6.02	-
Wojciech Romanowski	-	→	-	02.11.2016	03.11.2016	-	6.02	-
Wojciech Romanowski	Overweight	↑	14.11.2016	-	15.11.2016	21.02.2017	5.98	15%
Wojciech Romanowski	-	→	-	04.12.2016	05.12.2016	-	5.61	-
Wojciech Romanowski	-	→	-	12.01.2017	13.01.2017	-	6.24	-
Wojciech Romanowski	-	→	-	08.02.2017	09.02.2017	-	7.22	-
Wojciech Romanowski	Neutral	↓	21.02.2017	-	22.02.2017	09.05.2017	7.13	-15%
Wojciech Romanowski	-	→	-	07.03.2017	08.03.2017	-	8.80	-
Wojciech Romanowski	-	→	-	11.04.2017	12.04.2017	-	8.05	-
Wojciech Romanowski	Overweight	↑	09.05.2017	-	10.05.2017	26.07.2017	7.62	1%
Wojciech Romanowski	-	→	-	30.05.2017	31.05.2017	-	8.07	-
Wojciech Romanowski	-	→	-	12.07.2017	13.07.2017	-	8.05	-
Wojciech Romanowski	Underweight	↓	26.07.2017	-	27.07.2017	09.11.2017	7.70	-44%
Wojciech Romanowski	-	→	-	03.09.2017	04.09.2017	-	5.90	-
Wojciech Romanowski	-	→	-	15.10.2017	16.10.2017	-	4.75	-
Wojciech Romanowski	-	→	-	05.11.2017	06.11.2017	-	4.49	-
Wojciech Romanowski	Neutral	↑	09.11.2017	-	10.11.2017	25.03.2018	4.24	22%
Wojciech Romanowski	-	→	-	15.11.2017	16.11.2017	-	4.09	-
Wojciech Romanowski	-	→	-	10.12.2017	11.12.2017	-	4.18	-
Wojciech Romanowski	-	→	-	10.01.2018	11.01.2018	-	4.80	-
Wojciech Romanowski	-	→	-	13.02.2018	14.02.2018	-	4.89	-
Wojciech Romanowski	-	→	-	12.03.2018	13.03.2018	-	4.83	-
Wojciech Romanowski	Under revision	-	25.03.2018	-	26.03.2018	22.05.2018	4.80	-17%
Wojciech Romanowski	-	→	-	16.04.2018	17.04.2018	-	4.20	-
Wojciech Romanowski	Underweight	-	22.05.2018	-	23.05.2018	09.12.2018	3.94	-49%
Wojciech Romanowski	-	→	-	29.05.2018	30.05.2018	-	3.74	-
Wojciech Romanowski	-	→	-	16.07.2018	17.07.2018	-	3.46	-
Wojciech Romanowski	-	→	-	02.08.2018	03.08.2018	-	3.54	-
Wojciech Romanowski	-	→	-	30.08.2018	31.08.2018	-	3.38	-
Wojciech Romanowski	-	→	-	11.10.2018	12.10.2018	-	2.02	-
Wojciech Romanowski	-	→	-	23.10.2018	24.10.2018	-	2.03	-
Wojciech Romanowski	-	→	-	14.11.2018	15.11.2018	-	1.45	-
Wojciech Romanowski	Neutral	↑	09.12.2018	-	10.12.2018	30.09.2019	1.970	-53%
Wojciech Romanowski	-	→	-	10.01.2019	11.01.2019	-	1.740	-
Wojciech Romanowski	-	→	-	04.02.2019	05.02.2019	-	1.800	-
Wojciech Romanowski	-	→	-	26.02.2019	27.02.2019	-	1.800	-
Wojciech Romanowski	-	→	-	26.03.2019	27.03.2019	-	2.170	-
Wojciech Romanowski	-	→	-	22.04.2019	23.04.2019	-	2.155	-
Wojciech Romanowski	-	→	-	24.04.2019	25.04.2019	-	2.045	-
Wojciech Romanowski	-	→	-	30.05.2019	31.05.2019	-	1.980	-
Wojciech Romanowski	-	→	-	17.07.2019	18.07.2019	-	1.934	-
Wojciech Romanowski	-	→	-	23.07.2019	23.07.2019	-	1.868	-
Wojciech Romanowski	-	→	-	30.07.2019	31.07.2019	-	1.830	-
Wojciech Romanowski	-	→	-	20.08.2019	21.08.2019	-	1.330	-
Wojciech Romanowski	-	→	-	25.08.2019	26.08.2019	-	1.310	-
Wojciech Romanowski	-	→	-	01.09.2019	02.09.2019	-	1.400	-
Wojciech Romanowski	-	→	-	02.09.2019	03.09.2019	-	1.400	-
Wojciech Romanowski	-	→	-	05.09.2019	06.09.2019	-	1.312	-
Wojciech Romanowski	Underweight	↓	30.09.2019	-	01.10.2019	24.10.2019	0.918	8%
Wojciech Romanowski	-	→	-	13.10.2019	14.10.2019	-	1.110	-
Wojciech Romanowski	Neutral	↑	24.10.2019	-	25.10.2019	01.12.2019	1.008	7%
Wojciech Romanowski	-	→	-	17.11.2019	18.11.2019	-	1.140	-
Wojciech Romanowski	-	→	-	25.11.2019	26.11.2019	-	1.058	-
Wojciech Romanowski	-	→	-	27.11.2019	28.11.2019	-	1.028	-
Wojciech Romanowski	Underweight	↓	01.12.2019	-	02.12.2019	Not later than 01.12.2020	1.068	-1%
Wojciech Romanowski	-	→	-	05.12.2019	06.12.2019	-	1.034	-

\* prices at issue/reiteration are the closing prices at the report or reiteration date

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