

5/2019/GPW (15) February 5, 2020

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.

Analyst: Wojciech Romanowski

Sector: Construction
Fundamental rating: Sell (→)
Market relative: Underweight (→)
Price: PLN 0.777
12M EFV: PLN 0.66 (↓)

Market Cap: US\$ 25.9 m
Bloomberg code: RFK PW
Av. daily turnover: US\$ 0.18 m
12M range: PLN 0.769-2.375
Free float: 57%

Rafako

Investment summary and ratings

Recent news flow from the Company are not optimistic as the delivery of the most important contract in Rafako's history has been slightly delayed. The Company's claims that 4th of February is a feasible term when it would be able to deliver the unit to Tauron which, in turn, deems acceptance process of technical works would last till February 15. The delay stems from reasons beyond Rafako's control (the Regional Power Dispatch Centre limited an access of the unit to the power grid), however the Company cannot be sure that contractual penalties will not be imposed.

Earlier Rafako informed about the contract budget revision which resulted in a new estimation of a FY19 loss, at PLN -155.8 million, and lowering of an expected gross margin from 8% to 5%. Apparently the Company managed to obtain only c. 30% of claims.

Rafako has not updated about the remaining claims regarding the contracts in Kozenice and Vilnius. We assumed this issue would have been settled by the end of the past year and now we have to downgrade our forecasts for FY19.

Additionally the new management employed KPMG Advisory as an advisory to review the Company's funding model and identify possibilities of accessing new funding. In our opinion this movement confirms Rafako's difficult and complex financial situation.

On the other hand the Company entered into a cooperation agreement with ARP regarding the electric bus production and planned disposal of a stake in Rafako E-Bus. The cooperation with ARP may turn to be quite beneficial for the Company that currently does not have enough funding to launch the mass production alone. A strong partnership and inflow of payment for the stake sold can significantly improve both the project prospects an

Guide to adjusted profits

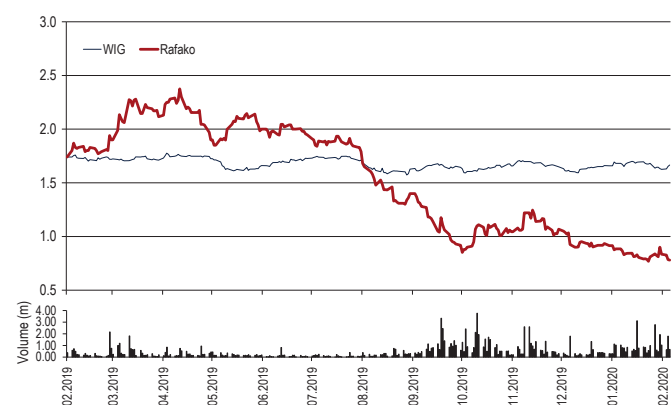
Profits adjusted for a release of provisions for the voluntary redundancy program (PLN 5.9 million)

Key data

IFRS consolidated		2018	2019E	2020E	2021E
Sales	PLN m	1,268.8	1,221.3	2,318.9	1,192.7
EBITDA	PLN m	55.4	-278.7	37.7	25.3
Adj EBITDA	PLN m	49.5	-278.7	37.7	25.3
EBIT	PLN m	40.5	-296.5	24.3	12.6
Adj EBIT	PLN m	34.6	-296.5	24.3	12.6
Net profit	PLN m	33.6	-286.1	16.2	6.3
Adj net profit	PLN m	28.8	-286.1	16.2	6.3
Adj EPS	PLN	0.23	-2.25	0.13	0.05
EPS yoy chg	%	163	n.m.	n.m.	-61
Net debt	PLN m	32.1	123.5	47.0	45.6
P/E	x	3.4	neg.	6.1	15.7
P/CE	x	2.3	neg.	3.3	5.2
EV/EBITDA	x	2.7	neg.	3.9	5.7
EV/EBIT	x	3.8	neg.	6.0	11.5
DPS	PLN	0.00	0.00	0.00	0.00
Gross dividend yield	%	0.0	0.0	0.0	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. Release of FY19 results: April 30, 2020
2. Release of 1Q20 results: May 29, 2020
3. Release of 1H20 results: September 30, 2020
4. Release of 1-3Q20 results: November 27, 2020

Rafako's condition. However we are not able to offer any valuation of Rafako E-Bus at the moment as the Company has disclosed no project details.

Following the adjustment of our financial forecasts our 12M EFV drops to **PLN 0.66** from 0.75 per share previously implying a -15% downside and we uphold our LT **Sell** fundamental recommendation. We believe that despite the completion of the Jaworzno power unit the result on this project will be far from expected and has lost its strong appeal as a catalyst as it was regarded before. Therefore we uphold our ST **Underweight** relative rating.

Financial forecasts

Following the news flow from Rafako we lower our FY19 forecasts as well as forecast for 2020 which stems from lower expectations of the Jaworzno contract profitability: currently 5% vs 6% previously. Additionally we abandon our previous assumptions regarding enforceability of third party claims. Given Rafako's strained financial situation we do not expect a dividend payment either after the completion of the Jaworzno project.

Quarterly forecasts

Rafako will release its consolidated financial report for FY19 on April 30.

We maintain our assumption that the Company will not be able to have completed all contracts assigned to 2019. We forecast sales exceeded PLN 400 million threshold (+5% yoy).

Rafako's gross profit on sales should be negative as the Company must have recognized c. PLN 70 million loss on the Jaworzno contract still in 2019. We estimate the average margin realized on the remaining contracts at 7%.

As we have mentioned before we do not expect any additional flows regarding the third party claims and forecast EBITDA/EBIT/net profit at PLN -78 million/-82.5 million/-86.9 million in FY19.

Fig. 1. Rafako; 4Q19 results' forecast

IFRS consolidated (PLN m)	4Q19E	3Q19A	4Q18A	qoq chg	yoy chg	FY19	FY18	yoy chg
Sales	403.6	298.6	385.6	35%	5%	1,221.3	1,268.8	-4%
Gross profit on sales	-58.5	-9.8	27.0	n.m.	n.m.	-205.6	118.7	n.m.
Gross profit on sales margin	-14.5%	-3.3%	7.0%	-	-	-16.8%	9.4%	-
EBITDA	-78.0	-25.9	10.9	n.m.	n.m.	-278.7	55.4	n.m.
EBITDA margin	-19.3%	-8.7%	2.8%	-	-	-22.8%	4.4%	-
EBIT	-82.5	-30.3	7.1	n.m.	n.m.	-296.5	40.5	n.m.
EBIT margin	-20.4%	-10.1%	1.8%	-	-	-24.3%	3.2%	-
Pre-tax profit	-82.7	-30.6	7.7	n.m.	n.m.	-296.9	43.2	n.m.
Pre-tax margin	-20.5%	-10.3%	2.0%	-	-	-24.3%	3.4%	-
Net profit	-86.9	-24.7	11.9	n.m.	n.m.	-286.1	33.6	n.m.
Net margin	-21.5%	-8.3%	3.1%	-	-	-23.4%	2.6%	-

Source: Company, DM BOS estimates

Fig. 2. Rafako; Change in BOS forecast

IFRS consolidated (PLN m)	2019E			2020E			2021E		
	current	previous	change	current	previous	change	current	previous	change
Sales	1,221.3	1,161.3	5%	2,318.9	2,378.9	-3%	1,192.7	1,192.7	0%
EBITDA	-278.7	-104.0	n.m.	37.7	42.4	-11%	25.3	25.3	0%
EBIT	-296.5	-121.8	n.m.	24.3	29.0	-16%	12.6	12.6	0%
Net profit	-286.1	-124.7	n.m.	16.2	20.8	-22%	6.3	6.9	-9%
Net debt	123.5	45.0	175%	47.0	15.9	195%	45.6	15.3	197%

Source: DM BOS estimates

Valuation

The downward revision of financial forecasts results in a drop of our 12M DFC FCFF valuation to PLN 0.68 per share.

We include FY22 in our peer-relative valuation. We still consider FY20 unrepresentative, hence we omit it in our valuation.

Our 12M target price (representing a 75%-25% mix of the outcomes of the DCF FCF and peer-relative) drops to PLN 0.66 per share (previously PLN 0.75).

Fig. 4. Rafako; Valuation summary

DCF (75%)	0.68
Peer companies (25%)	0.60
Final valuation	0.66
Current share market price	0.777
Upside (downside) to the current market price	-15%

Source: DM BOŚ estimates

Fig. 3. Rafako; Peer-relative valuation

	P/E			EV/EBITDA		
	2020E	2021E	2022E	2020E	2021E	2022E
ALSTOM	23.5	20.2	17.9	11.8	10.4	9.1
DOOSAN HEAVY INDUSTRIES	5.1	4.0	n.a.	5.3	4.7	n.a.
HITACHI LTD	13.3	7.4	7.6	4.1	3.9	3.6
MITSUBISHI HEAVY INDUSTRIES	12.3	10.2	10.5	5.5	4.9	4.7
SIEMENS AG-REG	17.2	14.6	13.2	10.3	9.1	8.1
FLUOR CORP	11.7	9.5	n.a.	5.6	5.0	n.a.
INDIKA ENERGY TBK PT	12.4	49.4	n.m.	n.a.	n.a.	n.a.
JGC CORP	35.0	15.4	11.0	8.4	5.5	4.2
SAMSUNG ENGINEERING CO LTD	10.3	8.9	7.5	6.4	5.1	4.5
MASTEC INC	10.6	10.5	9.2	6.1	5.8	n.a.
QUANTA SERVICES INC	10.1	9.4	9.5	6.3	5.5	n.a.
DYCOM INDUSTRIES INC	16.5	14.8	11.6	6.1	5.3	4.5
Mediana	12.3	10.3	10.5	6.1	5.3	4.5
Rafako	6.2	15.9	11.9	3.9	5.8	5.0
Equity value of Rafako & minorities	209.2	82.4	114.9	182.0	88.0	86.0
Weight	0%	25%	25%	0%	25%	25%
Wighted average equity value of Rafako & minorities			92.8			
Value of minorities			16.5			
Implied EFV of Rafako			76.3			
Average implied EFV per share (PLN)			0.60			

Peer multiples as a close of February 3

Source: Bloomberg, DM BOŚ estimates

Fig. 5. Rafako; DCF valuation

(PLN m)	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	>2029E
Sales	1,221.3	2,318.9	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	-4%	90%	-49%	5%	8%	1%	2%	2%	2%	2%	2%	
EBIT	-296.5	24.3	12.6	16.6	22.6	22.3	24.3	24.9	30.8	30.5	30.2	
chg yoy	n.m.	n.m.	-48%	32%	36%	-1%	9%	2%	24%	-1%	-1%	
Effective cash tax rate (T)	3.5%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	
EBIT (1-T)	-286.0	19.2	9.9	13.1	17.8	17.6	19.2	19.6	24.3	24.1	23.8	
chg yoy	n.m.	n.m.	-48%	32%	36%	-1%	9%	2%	24%	-1%	-1%	
EBITDA	-278.7	37.7	25.3	28.8	34.3	33.7	35.5	35.9	41.8	41.5	41.2	
chg yoy	n.m.	n.m.	-33%	14%	19%	-2%	5%	1%	16%	-1%	-1%	
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	-268.2	32.6	22.7	25.3	29.6	29.1	30.4	30.7	35.4	35.1	34.9	
chg yoy	n.m.	n.m.	-30%	12%	17%	-2%	5%	1%	15%	-1%	-1%	
Capex	-5.0	-5.5	-6.1	-6.7	-7.4	-8.1	-8.9	-9.8	-10.8	-11.2	-11.2	
Change in NWC	177.2	23.3	0.3	-16.0	-29.8	11.7	-4.1	-18.1	-5.2	-18.0	-2.7	
FCFF	-96.0	50.3	16.8	2.5	-7.6	32.7	17.3	2.8	19.4	6.0	21.0	
chg yoy	n.m.	n.m.	-67%	-85%	n.m.	n.m.	-47%	-84%	586%	-69%	252%	1%
Cost of equity												
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	1.87	1.54	1.54	1.52	1.53	1.42	1.34	1.33	1.30	1.30	1.30	1.30
Required rate of return	13.8%	12.2%	12.2%	12.1%	12.1%	11.6%	11.2%	11.2%	11.0%	11.0%	11.0%	11.0%
Cost of debt												
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	3.5%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%	21.0%
After-tax cost of debt	5.8%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%
WACC												
Weight of equity	54.9%	76.2%	76.6%	78.5%	77.9%	88.6%	96.1%	96.8%	100.0%	100.0%	100.0%	100.0%
Cost of equity	13.8%	12.2%	12.2%	12.1%	12.1%	11.6%	11.2%	11.2%	11.0%	11.0%	11.0%	11.0%
Weight of debt	45.1%	23.8%	23.4%	21.5%	22.1%	11.4%	3.9%	3.2%	0.0%	0.0%	0.0%	0.0%
After-tax cost of debt	5.8%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%	4.7%
WACC	10.2%	10.4%	10.5%	10.5%	10.5%	10.8%	10.9%	11.0%	11.0%	11.0%	11.0%	11.0%
Discount multiple	1.00	1.00	1.10	1.22	1.35	1.49	1.66	1.84	2.04	2.27	2.52	
Discount factor	1.00	1.00	0.91	0.82	0.74	0.67	0.60	0.54	0.49	0.44	0.40	
PV of free cash flow	-	-	15.2	2.1	-5.6	21.9	10.5	1.5	9.5	2.6	8.3	
Sum of FCFFs PVs												66.0
Weight of debt in the residual period												0%
Weight of equity in the residual period												100%
Average cost of equity in the definite period												11.5%
Average WACC in the definite period												10.8%
WACC in the residual period												11.0%
Residual growth of FCFFs												1.0%
Residual value												211.9
Present value of the residual value												84.2
Value of Rafako's operations												150.2
Cash and equivalents, eop 2019E												30.6
Interest-bearing debt, eop 2019E												77.6
Dividend paid between now and valuation horizon												0.0
Minority interest, eop 2019E												16.5
Equity value												86.7
No. of shares (m)												127.4
12M EFV Rafako's share (PLN)												0.68

Source: DM BOŚ SA estimates

Risk factors

1. Contractual penalties for a delay in Jaworzno – Rafako informed that due to reasons beyond the control of the Company the tests phase and technical works would end no sooner than by February 4 while the contracting party wants to finish the approval of the unit by February 15. According to the agreement the entry of the unit into services should have happened by January 31. Each commenced day of delay may result in contractual penalties amounting to 0.09% of the net contract value which is c. PLN 4 million per day.
2. Loss of liquidity – a payment of contractual penalties may result in insolvency.
3. Failure in new funding acquisition – KPMG Advisory was employed as an advisory to review possibilities of accessing new funding. When this fails, Rafako may turn up undercapitalized.
4. Write-offs on bonds and loans granted – given 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. Meagre contracting scale – 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. Acquisition of new funding – would improve the cash position.
2. Third-party claims enforceability - will allow the Company to maintain the profitability of contracts and a stable financial position.
3. Avoiding contractual penalties in the Jaworzno project – will enable the Company to generate a 5% gross margin.
4. Successful completion of the Jaworzno III power unit – will bring about the payment cash-in, favorable references, banking guarantees release.
5. Rafako E-bus disposal – the Company is not able to launch the electric bus production alone. The disposal of this company or part of the business will strengthen Rafako's net cash position.
6. Change of negative OCF trend – since 1Q16 cumulative OCF result has reached PLN -250 million and a reversal of this trend should become a material catalyst for the Company's share price.
7. Backlog increase – new contracts acquisition will translate into a business scale-up.
8. Launch of new technologies – vital competitive edge
9. Access to new banking and insurance guarantees – better access to funding will enable Rafako to enter a bigger number of tenders and scale up its business.

Financial statements (IFRS consolidated)
Fig. 6. Rafako; Income Statement

(PLN m)	2016	2017	2018	2019E	2020E	2021E
Sales	1,875.3	1,782.6	1,268.8	1,221.3	2,318.9	1,192.7
COGS	-1,751.0	-1,623.3	-1,150.1	-1,426.9	-2,209.3	-1,105.6
Gross profit on sales	124.3	159.3	118.7	-205.6	109.6	87.1
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	-11.6	-6.0
Net profit on sales	34.6	58.6	36.2	-290.2	29.0	14.7
Other operating income	3.6	10.3	12.7	4.2	11.6	6.0
Other operating costs	-13.5	-20.2	-8.4	-10.5	-16.2	-8.1
EBIT	24.7	48.8	40.5	-296.5	24.3	12.6
Financial income	5.0	2.1	8.5	5.4	0.6	0.1
Financial costs	-7.2	-11.6	-5.8	-5.7	-3.4	-2.6
Pre-tax income	22.5	39.3	43.2	-296.9	21.5	10.1
Income tax	-11.6	-34.2	-9.7	10.5	-4.5	-2.1
Net profit (loss) from continuing operation	10.9	5.1	33.5	-286.4	17.0	8.0
Minority interest in net profit	0.4	1.0	-0.1	-0.3	0.8	1.7
Net profit	10.5	4.2	33.6	-286.1	16.2	6.3
EBITDA	39.1	63.0	55.4	-278.7	37.7	25.3

Source: The Company, DM BOŚ SA estimates

Fig. 7. Rafako; Balance Sheet

(PLN m)	2016	2017	2018	2019E	2020E	2021E
LT assets	310.5	290.6	294.7	238.0	292.7	228.2
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	12.2	34.8	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	40.4	76.8	39.5
Accruals	0.0	1.7	4.1	4.0	7.6	3.9
ST assets	1,118.5	990.6	1,075.3	832.5	1,174.1	744.4
Inventories	14.0	28.8	34.2	17.7	8.5	10.2
ST trade receivables	728.3	485.9	532.5	317.5	670.3	412.1
Construction contracts assets	218.2	251.3	381.4	427.5	417.4	250.5
Tax receivables	19.6	0.1	0.2	0.2	0.3	0.2
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	20.9	30.6	41.8
Accruals	19.6	28.9	19.4	18.7	35.5	18.3
Assets available for sale	0.9	0.1	0.2	0.0	0.0	0.0
Total assets	1,429.9	1,281.3	1,370.2	1,070.5	1,466.7	972.6
Equity	423.0	558.3	589.1	303.0	319.2	325.5
Minorities	9.0	8.6	8.5	8.2	9.1	10.7
Liabilities	997.9	714.3	772.6	759.2	1,138.5	636.4
LT liabilities	73.8	91.6	75.3	56.7	94.1	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	30.3	58.0	29.0
Reserves	6.1	29.6	30.4	18.8	29.1	14.6
ST liabilities	924.1	622.7	697.3	702.6	1,044.4	586.2
Trade payables	513.5	390.0	342.5	428.1	662.8	331.7
Interest-bearing	149.2	101.2	112.5	137.0	70.6	80.9
Construction contracts	156.6	42.8	173.5	61.1	208.7	107.3
Non-interest-bearing	43.0	36.9	31.6	31.5	32.7	31.5
Reserves	51.2	35.8	15.2	18.8	29.1	14.6
Accruals	10.1	15.6	21.1	26.1	40.5	20.2
Others	0.5	0.3	1.0	0.0	0.0	0.0
Total liabilities and equity	1,429.9	1,281.3	1,370.2	1,070.5	1,466.7	972.6

Source: The Company, DM BOŚ SA estimates

Fig. 8. Rafako; Cash Flow

(PLN m)	2016	2017	2018	2019E	2020E	2021E
Gross income (loss)	22.5	39.3	43.2	-296.9	21.5	10.1
Depreciation and amortization	14.4	14.2	14.8	17.8	13.4	12.7
NWC change:	-131.6	-78.2	-140.5	177.2	23.3	0.3
Change in receivables	-268.7	225.0	-47.3	243.2	-375.3	275.1
Change in inventories	4.8	-0.6	-5.3	16.5	9.2	-1.7
Change in payables	125.6	-136.0	-79.3	76.4	253.6	-347.7
Change in reserves	0.0	-10.6	-9.1	-0.4	-21.8	9.0
Change in construction contracts	6.6	-156.0	0.6	-158.5	157.7	65.6
Tax paid	-22.4	-5.4	-9.3	10.5	-4.5	-2.1
Others	4.4	0.5	0.6	2.4	12.6	-11.0
Operating cash flow	-112.7	-29.5	-91.2	-89.0	66.3	10.0
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
Investing cash flow	-7.4	-6.9	1.9	3.4	13.6	-6.0
Change in interest-bearing debt	34.6	-51.0	0.9	23.6	-66.9	9.8
Interest	-3.9	-3.7	-4.3	-5.7	-3.4	-2.6
Others	-0.3	0.8	0.8	0.0	0.0	0.0
Financing cash flow	30.4	109.5	-2.6	17.9	-70.3	7.2
Total cash flow	-89.6	73.1	-91.9	-67.7	9.7	11.2

Source: The Company, DM BOŚ SA estimates

Fig. 9. Rafako; Ratios

	2016	2017	2018	2019E	2020E	2021E
Sales growth (yoy)	21%	-5%	-29%	-4%	90%	-49%
Gross profit growth (yoy)	-2%	28%	-25%	n.m.	n.m.	-21%
EBITDA growth (yoy)	-27%	61%	-12%	n.m.	n.m.	-33%
EBIT growth (yoy)	-39%	98%	-17%	n.m.	n.m.	-48%
Net profit growth (yoy)	-69%	-60%	707%	n.m.	n.m.	-61%
A/R turnover days	118	124	146	127	78	166
Inventory turnover days	3	5	10	7	2	3
A/P turnover days	95	102	116	99	90	164
Cash cycle	26	28	40	35	-10	5
NWC/Sales	4%	17%	32%	20%	8%	17%
Gross margin	6.6%	8.9%	9.4%	-16.8%	4.7%	7.3%
EBITDA margin	2.1%	3.5%	4.4%	-22.8%	1.6%	2.1%
EBIT margin	1.3%	2.7%	3.2%	-24.3%	1.0%	1.1%
Pretax margin	1.2%	2.2%	3.4%	-24.3%	0.9%	0.8%
Net margin	0.6%	0.2%	2.6%	-23.4%	0.7%	0.5%
ROE	2.5%	0.8%	5.9%	-64.1%	5.2%	2.0%
ROA	0.8%	1.2%	3.0%	-23.0%	1.5%	0.7%
Current Ratio	1.2	1.5	1.5	1.2	1.1	1.2
Quick Ratio	1.2	1.5	1.5	1.1	1.1	1.2
Net debt/EBITDA	1.2	net cash	0.6	n.m.	1.2	1.8

Source: The 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 = EBIT/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	33	42	5	8	0
Percentage	38%	48%	6%	9%	0%

Distribution of DM BOŠ's current market relative recommended weightings

	Overweight	Neutral	Underweight	Suspended	Under revision
Numbers	33	34	13	8	0
Percentage	38%	39%	15%	9%	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.

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	5	2	2	0
Percentage	25%	42%	17%	17%	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%

LT fundamental recommendation tracker

Analyst	Recommendation	Report date	Reiteration date	Distribution date	Expiry date	Performance	Relative performance	Price at issue/reiteration*	EFV (12 months)	
Rafako										
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	-25%	-27%	1.034	0.75	↓
Wojciech Romanowski	-	-	08.12.2019	09.12.2019	-	-	-	0.925	0.75	→
Wojciech Romanowski	-	-	17.12.2019	18.12.2019	-	-	-	0.935	0.75	→
Wojciech Romanowski	-	-	09.01.2020	10.01.2020	-	-	-	0.839	0.75	→
Wojciech Romanowski	-	-	16.01.2020	17.01.2020	-	-	-	0.830	0.75	→
Wojciech Romanowski	-	-	30.01.2020	31.01.2020	-	-	-	0.900	0.75	→
Wojciech Romanowski	-	-	04.02.2020	05.02.2020	-	-	-	0.784	0.75	→
Wojciech Romanowski	-	-	05.02.2020	06.02.2020	-	-	-	0.777	0.66	↓
Wojciech Romanowski	-	-	16.01.2020	17.01.2020	-	-	-	0.830	0.75	→
Wojciech Romanowski	-	-	30.01.2020	31.01.2020	-	-	-	0.900	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
Rafako							
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	-28%
Wojciech Romanowski	-	-	05.12.2019	06.12.2019	-	1.034	-
Wojciech Romanowski	-	-	08.12.2019	09.12.2019	-	0.925	-
Wojciech Romanowski	-	-	17.12.2019	18.12.2019	-	0.935	-
Wojciech Romanowski	-	-	09.01.2020	10.01.2020	-	0.839	-
Wojciech Romanowski	-	-	16.01.2020	17.01.2020	-	0.830	-
Wojciech Romanowski	-	-	30.01.2020	31.01.2020	-	0.900	-
Wojciech Romanowski	-	-	04.02.2020	05.02.2020	-	0.784	-
Wojciech Romanowski	-	-	05.02.2020	06.02.2020	-	0.777	-
Wojciech Romanowski	-	-	16.01.2020	17.01.2020	-	0.830	-
Wojciech Romanowski	-	-	30.01.2020	31.01.2020	-	0.900	-

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

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The production of the report was completed on February 6, 2020 at 8.30 a.m.

The report was distributed on February 6, 2020 at 8.40 a.m.

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