

14/2020/GPW (58) May 19, 2020

Analyst: Sylwia Jaśkiewicz, CFA

This report is prepared for the Warsaw Stock Exchange SA within the framework of the Analytical Coverage Support Pilot Program. This is a translation of the Polish analytical report.

Sector: Construction materials
Fundamental rating: Hold (→)
Market relative: Overweight (→)
Price: PLN 13.65
12M EFV: PLN 18.50 (→)

Market Cap: US\$ 69.8 m
Bloomberg code: FRO PW
Av. daily turnover: US\$ 0.025 m
12M range: PLN 10.30-18.25
Free float: 31%

Ferro

1Q20 financial results review

On May 19, after the market close, the Company revealed its 1Q20 financial results which proved to exceed our expectations slightly, mainly because of higher sales and positive FX differences, in particular.

Revenues growth. The Group 1Q20 revenues approached PLN 125 million (+14% yoy) and beat our forecast by 6%. 1Q20 dynamic was comparable to previous quarters (+10%/ +11%/ +14%/ +10% yoy in 1Q/ 2Q/ 3Q/ 4Q19). The positive growth dynamic was sustained on the Group's two biggest markets: Poland and Czechia (at +9% and +3% yoy, respectively). The high revenues dynamic prevailed in Romania (+39% yoy), Hungary (+55% yoy) and in the remaining countries where the Company operates (+24% yoy). The revenues in Slovakia were almost flat (-0.3% yoy).

Improving profitability. 1Q20 EBITDA margin grew 0.4 pp yoy and reached 17.5% vs 17.1% in 1Q19; this improvement was possible due to stabilization of wages cost growth and own goods and materials cost growth, both at +14% yoy. Costs of materials and energy increased by 6% yoy and lagged behind the revenues growth dynamic. We assume some costs of the strategy implementation (mainly at the level of salaries costs) to surface in 1Q20, however they were probably smaller than previously expected given the current circumstances. The Group's EBITDA and EBIT amounted to PLN 22 million (+17% yoy) and PLN 20 million (+14% yoy), respectively.

NI growth. 1Q20 result on financial activities reached PLN 0.2 million vs -1.4 million in 1Q19. Ferro realized positive FX differences while we expected negative ones. The Group's financial revenues amounted to PLN 1 million in 1Q20. The effective CIT rate was 18% vs 19% in the base period. The Group's 1Q20 NI reached PLN 16.5 million (+27% yoy).

Guide to adjusted profits
Income tax settlement.

Key data

IFRS consolidated		2019	2020E	2021E	2022E
Sales	PLN m	451.3	451.3	473.8	497.5
EBITDA	PLN m	66.9	58.7	62.7	67.4
EBIT	PLN m	60.6	50.9	53.9	58.3
Net income	PLN m	40.0	38.1	41.0	45.0
Adj net income	PLN m	42.9	38.1	41.0	45.0
Adj EPS	PLN	2.0	1.8	1.9	2.1
Adj EPS yoy chg	%	11	-11	8	10
Net debt	PLN m	75.8	65.0	57.2	46.8
P/E	x	7.2	7.6	7.1	6.4
Adj P/E	x	6.8	7.6	7.1	6.4
EV/EBITDA	x	5.5	6.0	5.5	5.0
EV/EBIT	x	6.0	7.0	6.4	5.8
DPS	PLN	1.12	0.75	1.13	1.22
Gross dividend yield	%	8.2	5.5	8.3	8.9
Number of shares (eop)	m	21.2	21.2	21.2	21.2

Source: Company, DM BOS SA estimates

Stock performance



Source: Bloomberg

Upcoming events

1. Release of 1H20 consolidated financial results: September 17
2. Release of 3Q20 consolidated financial results: November 19

Fig. 1. Ferro; 1Q20 financials vs forecasts

IFRS consolidated (PLN m)					1Q20 vs					Realisation of 1Q				yoy chg
	1Q19	2Q19	3Q19	4Q19	1Q20	1Q20E	1Q20E	forecasts	yoy	results in		FY19	FY20E	
						DM BOŚ SA	PAP	DM BOŚ/ PAP	chg	2019	2020E			
Sales	109.4	105.8	122.1	113.9	124.8	118.2	115.8	→/→	14%	24%	28%	451.3	451.3	0%
EBITDA	18.7	14.4	21.5	12.3	21.8	19.5	18.5	→/↑	17%	28%	37%	66.9	58.7	-12%
EBITDA margin	17.1%	13.6%	17.6%	10.8%	17.5%	16.5%	16.0%	-	-	-	-	14.8%	13.0%	-
EBIT	17.5	12.7	19.8	10.6	20.0	17.8	16.8	→/↑	14%	29%	39%	60.6	50.9	-16%
EBIT margin	16.0%	12.0%	16.2%	9.3%	16.1%	15.1%	14.5%	-	-	-	-	13.4%	11.3%	-
Pre-tax profit	16.1	11.7	17.7	8.5	20.2	15.3	n.a.	↑/n.a.	26%	30%	43%	54.0	47.0	-13%
Pre-tax profit margin	14.7%	11.1%	14.5%	7.4%	16.2%	13.0%	n.a.	-	-	-	-	12.0%	10.4%	-
Net profit	13.0	9.5	14.5	2.9	16.5	12.4	11.9	↑/↑	27%	33%	43%	40.0	38.1	-5%
Net profit margin	11.9%	9.0%	11.9%	2.6%	13.2%	10.5%	10.3%	-	-	-	-	8.9%	8.4%	-

Source: The Company, PAP, DM BOŚ SA

Stable indebtedness. 1Q20 OCF stood at PLN 0.7 million vs PLN -5.6 million in 1Q19. Capex at PLN 1.3 million was low (PLN 0.7 million in 1Q20). The Group's net debt (with leasing) at the end of 1Q20 reached PLN 77 million vs PLN 76 million at the end of 1Q19 and PLN 76 million/PLN 92 million at the end of FY19/FY18.

The Group's strategy. The Company's strategy targets the consolidated revenues and EBITDA at the level of PLN 700 million and PLN 90 million, respectively, in 2023 (2018-2023 CAGR of 11% and 10%). Investment expenditures in this period should not exceed the annual average of PLN 10 million, and the Group's ND/EBITDA multiple should not exceed 2.5x.

COVID-19 pandemic. The management informed that the pandemic followed by the restrictions implemented by governments globally affected Ferro's financial results. The Group operates in a B2B model and current orders are carried out smoothly, however the limited consumer activity translates into a decline of the demand for finishing and refurbishment services and lower number of orders placed by customers.

Recommended action

Given the significant risk related to the current housing market conditions we stick to our LT fundamental recommendation at Hold.

The Company's 1Q20 financial results are better yoy and slightly exceed our expectations. That is why we maintain our ST relative rating at Overweight and we add Ferro's equities to our monthly portfolio.

Ferro's 1Q19 results were record high however the Company managed to improve them in 1Q20 with EBIT and NI growing by 14% and 27% yoy, respectively (the latter due to positive FX differences driven by currency movements). It is difficult to predict the demand in 2Q (the Company detects its weakening), yet we believe it is worth noting that commodities prices are favorable for the Company's business; at the end of March prices of aluminum/copper/zinc denominated in USD and in PLN fell by 22%/25%/35% and 15%/18%/30% yoy, respectively. Favorable trends on the commodities market should prevail which in turn should support the Group's operating profitability in 2Q and 3Q.

Demand for the Company's products/goods is driven by the development of the residential market in the region (foreign markets delivered 63% of the Company's FY19 revenues after a 25% yoy increase). In the installation fittings segment, the replacement demand constitutes 55% and 45% comes from new investments. In the section of batteries and accessories, 80% of demand results from repairs and 20% from new residential investments. Goods and products are distributed through traditional (66%) and modern (34%) channels. A one-to-two year shift in demand with respect to the construction of apartments acts as a positive factor for the Company. Besides, the renovation and product life cycles are shortened and the replacement of accessories is not currently a significant expense and is often combined with interior decoration and depends on the current fashion. Current circumstances will undoubtedly affect the housing market and demand for the Company's goods however we assume that apartments under construction will be still finished

Fig. 2. Ferro; Changes in DM BOŚ SA forecasts

IFRS consolidated (PLN m)	2020E			2021E			2021E		
	current	previous	change	current	previous	change	current	previous	change
Sales	451.3	451.3	0%	473.8	473.8	0%	497.5	497.5	0%
EBITDA	58.7	58.7	0%	62.7	62.7	0%	67.4	67.4	0%
EBIT	50.9	50.9	0%	53.9	53.9	0%	58.3	58.3	0%
NP	38.1	38.1	0%	41.0	41.0	0%	45.0	45.0	0%
Net debt	65.0	65.0	0%	57.2	57.2	0%	46.8	46.8	0%

Source: DM BOŚ SA estimates

which in turn will trigger demand. Moreover, Ferro' products belong to the lower-end market which may also help with the demand drop in the downturn.

The Group's profitability is determined by (i) pricing, (ii) goods purchase prices (pricing formulas for the merchandise from China are based on copper and zinc quotations in Shanghai), and (iii) HR costs. Costs of commodities and goods purchase as well as transport prices are mainly denominated in US\$ (90%) and to a lesser extent in EUR (10%) while revenues are mostly generated in PLN and CZK which ties the realized margins to FX rates. Ferro can

be flexible in adjusting final prices to FX rates by the fine-tuning of discounts. The time delay between the order placement and payment execution is responsible for the FX differences booked in the financial costs.

Valuation

Our financial forecasts do not change. Our 12M EFV for the Company representing a 50%-50% mix of the outcome of the DCF FCFF and peer-relative valuations stays intact at PLN 18.5 per share. The DCF/peer-relative valuation yields PLN 21.9 (from PLN 21.8) due to the valuation horizon forward shift/15.0 (from PLN 15.2) per share.

Fig. 3. Ferro; Peer-relative comparison

Company	P/E			EV/EBITDA			EV/EBIT		
	2020E	2021E	2022E	2020E	2021E	2022E	2020E	2021E	2022E
Villeroy & Boch	3.7	2.8	2.9	n.m.	11.0	9.8	10.9	5.2	5.1
Fortune Brands	12.8	11.1	9.7	n.m.	n.m.	14.8	16.0	13.6	10.6
Masco	12.8	11.4	10.3	n.m.	n.m.	n.m.	14.8	12.9	11.5
Nilfisk Holding	9.5	5.8	4.8	n.m.	10.1	7.6	n.m.	13.3	9.7
Tarkett	6.0	4.3	4.1	n.m.	n.m.	10.4	n.m.	10.4	10.2
Vatti Corporation	8.6	7.2	7.0	12.4	10.9	10.1	9.0	7.8	8.2
Nichiha	3.8	4.4	3.4	8.2	10.2	8.2	5.4	9.3	5.1
Norcros	3.6	3.3	2.7	4.6	4.1	3.8	5.1	3.8	3.4
Vestel Beyaz Esya Sanayi	4.9	4.4	4.3	7.3	5.9	5.5	5.3	4.8	6.9
Decora	7.6	7.5	7.4	5.2	5.1	5.0	7.0	6.9	6.8
Mercor	5.8	4.2	3.9	4.8	3.8	3.6	6.9	5.0	4.6
Lena Lighting	8.8	8.5	8.1	5.0	4.7	4.3	6.9	6.4	5.9
Median	7.6	5.8	4.8	6.3	6.6	7.3	7.0	7.8	6.9
Ferro	7.6	7.1	6.4	6.0	5.5	5.0	7.0	6.4	5.8
Implied Ferro's price based on peers (PLN)	13.6	11.2	10.2	14.3	16.7	21.0	13.7	17.2	16.8
Implied Ferro's price (PLN)	15.0								

Source: Bloomberg, DM BOŚ SA estimates

Fig. 4. Ferro; Model DCF

	2021E	2022E	2023E	2024E	2025E
Cost of equity					
Risk free	4.5%	4.5%	4.5%	4.5%	4.5%
Equity market premium	5.0%	5.0%	5.0%	5.0%	5.0%
Unlevered beta	1.2	1.2	1.2	1.2	1.2
Leveraged beta	1.3	1.3	1.3	1.3	1.2
Required rate of return	11.1%	10.9%	10.8%	10.8%	10.6%
Cost of debt					
Pre-tax cost of debt	4.7%	4.7%	4.7%	4.7%	4.7%
Effective tax rate	19.0%	19.0%	19.0%	19.0%	19.0%
After-tax cost of debt	3.8%	3.8%	3.8%	3.8%	3.8%
WACC					
Equity share	77%	78%	79%	79%	81%
Debt share	23%	22%	21%	21%	19%
Cost of equity	11.1%	10.9%	10.8%	10.8%	10.6%
After tax cost of debt	3.8%	3.8%	3.8%	3.8%	3.8%
WACC	9.4%	9.4%	9.4%	9.3%	9.3%
Financial forecasts (PLN m)					
Sales	473.8	497.5	522.4	548.5	565.0
EBIT	53.9	58.3	59.7	62.1	63.0
NOPLAT	43.7	47.3	48.4	50.3	51.1
Depreciation	8.8	9.0	10.1	11.2	12.5
NWC change	-7.5	-7.9	-8.3	-8.7	-5.5
Capex	-11.0	-10.6	-10.9	-12.2	-13.5
FCFF	33.9	37.8	39.3	40.6	44.5

Source: DM BOŚ SA estimates

Fig. 5. Ferro; DCF Valuation (PLN m)

FCFF terminal growth	1.0%
WACC in residual period	9.3%
Residual value	539.3
PV of residual value	359.3
PV of FCFF	155.8
Enterprise value	515.1
Net debt	65.0
Dividend	16.0
Equity value	466.0
Number of shares (million)	21.2
12M EFV (PLN)	21.9

Source: DM BOŚ SA estimates

Risk factors

1. Economic slowdown in Europe
2. Falling demand for new flats (about a quarter of demand for the Company's products generated by new housing projects)
3. Lower frequency of renovations (replacement demand generates c. 75% of demand for the Company's products/goods)
4. High prices of construction materials (falling demand for finishing materials)
5. Workforce shortage (qualified staff needed due to the market expansion)
6. Wage pressure
7. High/volatile raw materials prices (of copper and zinc, in particular)
8. Unfavorable/volatile FX rates (38%/25% of revenues in PLN/CZK and 90%/10% of foreign supplies costs in US\$/EUR; currency risk when PLN and CZK weaken against US\$ and EUR)
9. Own brands developed by shopping chains (c. 33% of the Company's turnover realized in large-format chains)
10. Lack of attractive acquisition targets/ high valuations

Catalysts

1. Stable demand for new apartment flats (time delay between the construction and fit-out works)
2. Development of the market for renovations (new design elements, increasing frequency of renovations)
3. Expansion in European markets
4. Strengthening position on the existing markets
5. New products (expanding the product offer)
6. Repositioning of the Company's brands (new upper segment brands)
7. Favorable/stable FX rates
8. Favorable/stable raw materials prices
9. Brand promotion (intensifying online activities)
10. Potential acquisitions (if beneficial from the Group's perspective)

Financial statements (IFRS consolidated)
Fig. 6. Ferro; Balance sheet

(PLN m)	2017	2018	2019	2020E	2021E	2022E
Fixed assets	186.8	196.2	203.4	203.7	205.9	207.4
Other fixed assets	1.0	1.0	1.6	1.6	1.6	1.7
Current trade assets	177.4	193.7	206.7	247.0	259.6	280.3
- inventory	106.7	119.0	125.5	136.3	143.1	150.3
- net trade receivables	51.8	57.1	60.7	59.9	62.8	66.0
Accruals	18.9	17.6	20.5	50.8	53.7	64.1
Assets	365.2	390.9	411.6	452.3	467.2	489.4
Shareholders' funds	198.3	233.2	250.3	272.4	289.4	308.5
Reserves	35.1	8.1	8.1	8.1	8.1	8.1
Liabilities	131.8	149.6	153.2	171.7	169.7	172.7
- interest bearing debt	65.6	109.1	89.2	108.8	103.8	103.8
- trading liabilities	59.7	34.7	47.2	47.2	49.5	51.9
- other	5.6	5.8	9.7	8.7	9.3	9.9
Shareholders equity and liabilities	365.2	390.9	411.6	452.3	467.2	489.4
Ratios:						
Debt/Equity	0.3	0.5	0.4	0.4	0.4	0.4
Net WC / Total assets	0.3	0.4	0.3	0.3	0.3	0.3
Current ratio	1.5	1.6	1.7	2.0	2.1	2.2
Quick ratio	0.6	0.6	0.7	0.9	0.9	1.0
Sales / Total assets	1.0	1.1	1.1	1.0	1.0	1.0
Sales / Net WC	3.5	3.4	3.2	3.1	3.1	3.1
Inventory turnover (days)*	104	102	99	106	108	108
Average receivable turnover (days)*	48	49	48	49	47	47
Average accounts payable period (days)*	49	42	33	38	37	37
Cash conversion cycle (days)	103	108	113	116	118	118
ROA	11.2%	10.2%	10.7%	8.8%	8.9%	9.4%
ROE	19.2%	17.9%	17.7%	14.6%	14.6%	15.1%

*in relation to revenues

Source: Company, DM BOŚ SA estimates

Fig. 7. Ferro; Income statement

(PLN m)	2017	2018	2019	2020E	2021E	2022E
Net sales	364.7	405.6	451.3	451.3	473.8	497.5
Costs of operating activities	319.3	353.9	392.9	402.6	422.2	441.6
EBITDA	51.6	57.3	66.9	58.7	62.7	67.4
EBIT	47.7	53.6	60.6	50.9	53.9	58.3
Financial income	2.9	0.0	0.0	0.6	0.9	1.0
Financial costs	-10.1	-6.7	-6.6	-4.5	-4.2	-3.8
Pre-tax profit	40.5	46.8	54.0	47.0	50.6	55.6
Income tax	-29.5	-9.1	-14.0	-8.9	-9.6	-10.6
NP	11.1	37.7	40.0	38.1	41.0	45.0
Adj NP	39.6	38.6	42.9	38.1	41.0	45.0
Margins:						
EBITDA	14.2%	14.1%	14.8%	13.0%	13.2%	13.5%
EBIT	13.1%	13.2%	13.4%	11.3%	11.4%	11.7%
Pre-tax profit	11.1%	11.5%	12.0%	10.4%	10.7%	11.2%
NP	3.0%	9.3%	8.9%	8.4%	8.7%	9.1%
Adj NP	10.9%	9.5%	9.5%	8.4%	8.7%	9.1%
Nominal growth:						
Sales	9.7%	11.2%	11.3%	0.0%	5.0%	5.0%
EBITDA	12.4%	11.0%	16.7%	-12.2%	6.9%	7.5%
EBIT	16.1%	12.2%	13.2%	-16.1%	6.1%	8.2%
Pre-tax profit	11.1%	15.5%	15.4%	-12.9%	7.7%	9.8%
NP	-62.0%	240.8%	6.1%	-4.8%	7.7%	9.8%
Adj NP	36.2%	-2.6%	11.2%	-11.2%	7.7%	9.8%

Source: The Company, DM BOS SA estimates

Fig. 8. Ferro; Cash flow

(PLN m)	2017	2018	2019	2020E	2021E	2022E
Operating cash flow	61.4	-25.1	54.6	37.4	45.7	49.5
Pre-tax profit	48.7	46.8	54.0	47.0	50.6	55.6
Depreciation	3.9	3.7	6.3	7.8	8.8	9.0
Change in working capital	8.2	-44.7	0.8	-10.8	-7.5	-7.9
Other	0.7	-31.0	-6.5	-6.6	-6.2	-7.2
Net funds from investing activities	-4.3	-7.1	-4.4	-8.1	-11.0	-10.6
Capital expenditures	-4.4	-7.2	-4.6	-8.1	-11.0	-10.6
Other	0.1	0.2	0.2	0.0	0.0	0.0
Net funds from financial activities	-39.6	5.3	-51.9	1.1	-31.8	-28.6
Income from shares issue	0.0	0.0	0.0	0.0	0.0	0.0
Net change in debt	-12.4	15.0	-25.2	19.6	-5.0	0.0
Dividends paid	-25.5	-7.4	-23.8	-16.0	-24.0	-25.9
Other	-1.7	-2.3	-3.0	-2.5	-2.8	-2.7
Change in cash	17.6	-26.9	-1.8	30.4	2.8	10.4

Source: The Company, DM BOS 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	29	38	6	12	0
Percentage	34%	45%	7%	14%	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	8	0	3	0
Percentage	21%	57%	0%	21%	0%

Distribution of DM BOŠ's current market relative recommended weightings

	Overweight	Neutral	Underweight	Suspended	Under revision
Numbers	33	25	15	12	0
Percentage	39%	29%	18%	14%	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	3	5	3	3	0
Percentage	21%	36%	21%	21%	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)	
Ferro											
Sylwia Jaśkiewicz	Hold	-	21.07.2019	-	22.07.2019	04.12.2019	11%	20%	13.70	17.10	-
Sylwia Jaśkiewicz	-	→	-	30.07.2019	31.07.2019	-	-	-	13.50	17.10	→
Sylwia Jaśkiewicz	-	→	-	01.09.2019	02.09.2019	-	-	-	12.05	17.10	→
Sylwia Jaśkiewicz	-	→	-	10.09.2019	11.09.2019	-	-	-	12.10	17.10	→
Sylwia Jaśkiewicz	-	→	-	15.09.2019	16.09.2019	-	-	-	12.65	17.10	→
Sylwia Jaśkiewicz	-	→	-	13.10.2019	14.10.2019	-	-	-	13.40	17.10	→
Sylwia Jaśkiewicz	-	→	-	24.10.2019	25.10.2019	-	-	-	13.00	17.10	→
Sylwia Jaśkiewicz	-	→	-	17.11.2019	18.11.2019	-	-	-	13.00	17.10	→
Sylwia Jaśkiewicz	-	→	-	18.11.2019	19.11.2019	-	-	-	13.00	17.10	→
Sylwia Jaśkiewicz	Buy	↑	04.12.2019	-	05.12.2019	28.01.2020	17%	15%	15.20	17.80	↑
Sylwia Jaśkiewicz	-	→	-	08.12.2019	09.12.2019	-	-	-	15.00	17.80	→
Sylwia Jaśkiewicz	-	→	-	09.01.2020	10.01.2020	-	-	-	16.30	17.80	→
Sylwia Jaśkiewicz	Hold	↓	28.01.2020	-	29.01.2020	Not later than 28.01.2021	-21%	-1%	17.80	18.50	↑
Sylwia Jaśkiewicz	-	→	-	04.02.2020	05.02.2020	-	-	-	17.90	18.50	→
Sylwia Jaśkiewicz	-	→	-	06.02.2020	07.02.2020	-	-	-	17.50	18.50	→
Sylwia Jaśkiewicz	-	→	-	03.03.2020	04.03.2020	-	-	-	15.20	18.50	→
Sylwia Jaśkiewicz	-	→	-	30.03.2020	31.03.2020	-	-	-	12.25	18.50	→
Sylwia Jaśkiewicz	-	→	-	22.04.2020	23.04.2020	-	-	-	14.00	18.50	→
Sylwia Jaśkiewicz	-	→	-	23.04.2020	24.04.2020	-	-	-	14.00	18.50	→
Sylwia Jaśkiewicz	-	→	-	19.05.2020	20.05.2020	-	-	-	13.65	18.50	→

* 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
Ferro								
Sylwia Jaśkiewicz	Neutral	-	21.07.2019	-	22.07.2019	18.11.2019	13.70	-2%
Sylwia Jaśkiewicz	-	→	-	30.07.2019	31.07.2019	-	13.50	-
Sylwia Jaśkiewicz	-	→	-	01.09.2019	02.09.2019	-	12.05	-
Sylwia Jaśkiewicz	-	→	-	10.09.2019	11.09.2019	-	12.10	-
Sylwia Jaśkiewicz	-	→	-	15.09.2019	16.09.2019	-	12.65	-
Sylwia Jaśkiewicz	-	→	-	13.10.2019	14.10.2019	-	13.40	-
Sylwia Jaśkiewicz	-	→	-	24.10.2019	25.10.2019	-	13.00	-
Sylwia Jaśkiewicz	-	→	-	17.11.2019	18.11.2019	-	13.00	-
Sylwia Jaśkiewicz	Overweight	↑	18.11.2019	-	19.11.2019	28.01.2020	13.00	41%
Sylwia Jaśkiewicz	-	→	-	04.12.2019	05.12.2019	-	15.20	-
Sylwia Jaśkiewicz	-	→	-	08.12.2019	09.12.2019	-	15.00	-
Sylwia Jaśkiewicz	-	→	-	09.01.2020	10.01.2020	-	16.30	-
Sylwia Jaśkiewicz	Neutral	↓	28.01.2020	-	29.01.2020	23.04.2020	17.80	-1%
Sylwia Jaśkiewicz	-	→	-	04.02.2020	05.02.2020	-	17.90	-
Sylwia Jaśkiewicz	-	→	-	06.02.2020	07.02.2020	-	17.50	-
Sylwia Jaśkiewicz	-	→	-	03.03.2020	04.03.2020	-	15.20	-
Sylwia Jaśkiewicz	-	→	-	30.03.2020	31.03.2020	-	12.25	-
Sylwia Jaśkiewicz	-	→	-	22.04.2020	23.04.2020	-	14.00	-
Sylwia Jaśkiewicz	Overweight	↑	23.04.2020	-	24.04.2020	Not later than 23.04.2021	14.00	-4%
Sylwia Jaśkiewicz	-	→	-	19.05.2020	20.05.2020	-	13.65	-

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

This report has been prepared by Dom Maklerski Banku Ochrony Środowiska SA registered in Warsaw (hereinafter referred to as DM BOŚ SA) and commissioned by the Warsaw Stock Exchange SA (hereinafter referred to as WSE SA) pursuant to the agreement on the research report preparation between DM BOŚ SA and WSE SA within the framework of the Analytical Coverage Support Pilot Program described on the WSE SA website: <https://www.gpw.pl/gpwpa> (hereinafter referred to as the Agreement). DM BOŚ SA will receive a remuneration for the research report in accordance with the Agreement.

The production of the report was completed on May 20, 2020 at 7.20 a.m.

The report was distributed on May 20, 2019 at 7.30 a.m.

The report is an investment research within the meaning of Commission Delegated Regulation (EU) 2017/565 of 25 April 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council as regards organizational requirements and operating conditions for investment firms and defined terms for the purposes of that Directive. This report constitutes a recommendation within the meaning of Commission Delegated Regulation (EU) 2016/958 of 9 March 2016 supplementing Regulation (EU) No 596/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the technical arrangements for objective presentation of investment recommendations or other information recommending or suggesting an investment strategy and for disclosure of particular interests or indications of conflicts of interest. This report is for information purposes only.

This report constitutes neither investment advice nor provides investment service as referred to in Article 76 of the Act on Financial Instruments Trading as of 29 July 2005 (Journal of Laws, 2018, Item 2286 as amended), hereinafter referred to as the Act on Trading; it does not constitute any legal or tax advice, neither does it constitute an indication whether an investment is suitable or appropriate in an individual situation of an investor. In particular this report is not a personal recommendation based on any individual needs or situation of any investor. DM BOŚ SA informs that the investment advice services exclusively consist in the preparation of a personal recommendation based on individual needs and situation of a given client and transferring it to them. To receive this type of a recommendation an agreement on providing investment advice services must be signed with an investments company offering these services.

Neither the information nor the opinions expressed in the report constitute a solicitation or an offer to buy or sell any securities referred herein. The opinions expressed in the report reflect independent, current judgment of DM BOŚ.

This report was prepared with due diligence and scrutiny. The information used in the report is based on all public sources such as press and branch publications, company's financial statements, current and periodic reports, as well as meetings and telephone conversations with company's representatives prior to the date of report's release. We believe the above mentioned sources of information to be reliable, however we do not guarantee their accuracy and completeness. All estimates and opinions included herein represent our judgment as of the date of the issue. All opinions, forecasts, calculations and estimates herein constitute the author's subjective assessment as of the date of the issue and can be modified at any time without prior notice. DM BOŚ SA informs that this report will be updated in the manner as referred to in the Agreement, at least once a year.

DM BOŚ SA is an investment firm within the meaning of the Act on Financial Instruments Trading. The legal entity supervising DM BOŚ SA is Polish Financial Supervision Authority in Warsaw (Komisja Nadzoru Finansowego, KNF in Polish abbreviation).

Institutional sales

Bartosz Janczy
tel.: +48 (22) 504 32 46
b.janczy@bossa.pl

Tomasz Grabowski
tel.: +48 (22) 504 32 47
t.grabowski@bossa.pl

Grzegorz Kołodziejczyk
tel.: +48 (22) 504 33 34
g.kolodziejczyk@bossa.pl

Michał Zawada
tel.: +48 (22) 504 33 36
m.zawada@bossa.pl

Maciej Bąk
tel.: +48 (22) 504 33 78
m.bak@bossa.pl

Bartosz Zieliński
tel.: +48 (22) 504 33 35
b.zielinski@bossa.pl

Marcin Kozerski
tel.: +48 (22) 504 33 35
m.kozerski@bossa.pl

Marcin Stosio
tel.: +48 (22) 504 33 37
m.stosio@bossa.pl

Research

Sobiesław Pająk, CFA
(Equity strategy, TMT)
tel.: +48 (22) 504 32 72
s.pajak@bossa.pl

Sylwia Jaśkiewicz, CFA
(Construction materials, Consumer staples & discretionary, Health care)
tel.: +48 (22) 504 33 75
s.jaskiewicz@bossa.pl

Maciej Wewiórski
(Residential construction, Construction, Real estate)
tel.: +48 (22) 504 33 07
m.wewiorski@bossa.pl

Michał Sobolewski, CFA, FRM
(Financials)
tel.: +48 (22) 504 33 06
m.sobolewski@bossa.pl

Jakub Viscardi
(Telco, Consumer staples & discretionary, IT – hardware distribution, Utilities)
tel.: +48 (22) 504 32 58
j.viscardi@bossa.pl

Łukasz Prokopiuk, CFA
(Chemicals, Mining, Mining – machinery, Oil & gas)
tel.: +48 (22) 504 32 59
l.prokopiuk@bossa.pl

Tomasz Rodak, CFA
(Consumer discretionary, Video games)
tel.: +48 22 504 33 23
t.rodak@bossa.pl

Wojciech Romanowski
(Construction, Construction materials, Consumer discretionary)
tel.: +48 22 504 33 88
w.romanowski@bossa.pl

DM BOŚ SA, its management and supervisory bodies and employees do not take any responsibility for decisions taken on the basis of this report and opinions stated herein. Investors bear all responsibility for investment decisions taken on the basis of the contents of this report. The report is intended solely for private use of investors. Copyrights to this report belong to the WSE. The rules for use of this report have been specified in the Agreement. This report mustn't be redistributed, reproduced or conveyed in any manner or form conflicting with the rules defined in the Agreement.

This report is made available on the day of its issue in the public domain on the website <https://bossa.pl/analizy-i-informacje/wsparcie-pokrycia-analitycznego-gpw/ferro>

DM BOŚ SA is entitled to conveying or translation of the report into foreign languages on behalf of their clients and this shall not be sooner than making the report available on its website <https://bossa.pl/analizy-i-informacje/wsparcie-pokrycia-analitycznego-gpw/ferro>.

DM BOŚ SA follows internal regulations for handling of conflicts of interest which include in particular internal organizational and administration arrangements as well as information barriers established for prevention and avoidance of conflicts of interest related to recommendations. A special organizational arrangement that constitutes an information barrier is so called Chinese walls prohibiting an uncontrolled flow of information among particular organizational units or employees of DM BOŚ SA. Where justified, DM BOŚ SA can create Chinese walls upon the realization of a particular project. Potential conflicts of interests referring to a specific recommendation which is made available to the public or to a wide range of persons are disclosed either in the recommendation or in the document attached.

The person(s) preparing this report receive(s) variable compensation indirectly based upon the financial results of DM BOŚ which in turn depend – among other factors – on the result on the brokerage activity.

DM BOŚ SA has not held any long or short position net exceeding 0.5% of the issuer's basic capital in total with respect to the company/companies indicated.

Apart from the mentioned above cases, there are neither ties of any kind between DM BOŚ SA, the analyst/ analysts involved in the preparation of the report and the issuer(s) of securities as referred to in the report nor circumstances that can justifiably be expected to have a negative impact on objectivity of the recommendation with regard to interests or conflicts of interests on their part or on the part of any natural person or legal entity which pertains to the financial instrument or the issuer.

The report was not shown to the analyzed company before the distribution of the report.

Copyright © 2020 by DM BOŚ S.A.

Dom Maklerski Banku Ochrony Środowiska Spółka Akcyjna
ul. Marszałkowska 78/80
00-517 Warszawa
www.bossa.pl
Information: (+48) 0 801 104 104