

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

11/2020/GPW (42) April 23, 2020

Analyst: Sylwia Jaśkiewicz, CFA

Sector: Construction materials
Fundamental rating: Hold (→)
Market relative: Overweight (↑)
Price: PLN 14.00
12MEFV: PLN 18.50 (→)

Market Cap: US\$ 71 m
Bloomberg code: FRO PW
Av. daily turnover: US\$ 0.03 m
12M range: PLN 10.30-18.25
Free float: 31%

Ferro

Recommended action

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

We upgrade our ST relative rating from Neutral to Overweight. Though Ferro's 1Q19 financial results were record high, we do not anticipate the Company's operating line in 1Q20 to decline. We expect FX differences to have an impact on Ferro's 1Q20 net profit. We believe that 2Q20 demand is difficult to forecast while commodities prices seem to be favorable for the Company.

Demand for the Company's products/goods is driven by the development of the residential market in the region (63% of the Company's FY19 revenues came from foreign markets 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. Distribution of goods and products is carried out through the traditional (66%) and modern (34%) channels. There is a one-to-two year shift in demand with respect to the construction of apartments. A positive factor for the Company is the shortening of renovation and product life cycles. Besides, the replacement of accessories is not currently a significant expense and is often combined with interior decoration and depends on the current fashion. Current circumstance will undoubtedly affect the housing market and demand for the Company's goods however we assume that apartments will be still finished which in turn will trigger demand. It may also help with the demand drop in the downturn that Ferro' products belong to the lower-end market.

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	7.4	7.8	7.3	6.6
Adj P/E	x	6.9	7.8	7.3	6.6
EV/EBITDA	x	5.6	6.2	5.7	5.1
EV/EBIT	x	6.2	7.1	6.6	5.9
DPS	PLN	1.12	0.75	1.13	1.22
Gross dividend yield	%	8.0	5.4	8.1	8.7
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. 1Q20 consolidated results: May 19
2. 1H20 consolidated results: Sept. 17
3. 3Q20 consolidated results: Nov. 19

Valuation

An update of our financial forecasts coupled with the valuation horizon forward shift does not change our 12M EFV for the Company representing a 50%-50% mix of the outcome of the DCF FCFF and peer-relative valuations at PLN 18.5 per share. The DCF/peer-relative valuation yields PLN 21.8 (from PLN 20.3)/15.2 (from PLN 16.7) per share.

Fig. 1. Ferro; DCF Valuation (PLN m)

FCFF terminal growth	1.0%
WACC in residual period	9.3%
Residual value	539.2
PV of residual value	356.5
PV of FCFF	154.6
Enterprise value	511.1
Net debt	65.0
Dividend	16.0
Equity value	462.1
Number of shares (million)	21.2
12M EFV (PLN)	21.8

Source: DM BOŚ SA estimates

Fig. 2. 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. 3. Ferro; Peer-relative comparison

Spółka	P/E			EV/EBITDA			EV/EBIT		
	2020E	2021E	2022E	2020E	2021E	2022E	2020E	2021E	2022E
Villeroy & Boch	3.6	2.7	2.7	30.1	10.7	9.5	10.5	5.0	4.9
Fortune Brands	9.9	8.3	7.2	15.2	12.5	11.0	11.2	9.7	8.4
Masco	10.9	9.7	8.1	18.7	16.0	14.6	12.3	10.7	8.2
Nilfisk Holding	7.4	5.6	4.7	13.2	9.2	7.7	18.6	12.1	9.5
Tarkett	5.3	3.9	3.8	32.8	8.0	8.1	17.4	8.7	8.4
Vatti Corporation	8.9	7.4	6.9	12.8	11.2	11.9	8.7	7.5	7.8
Nichiha	2.8	2.5	2.0	6.9	7.1	6.7	3.8	3.6	2.9
Norcros	4.0	3.7	3.1	5.2	4.7	4.4	5.6	4.3	3.8
Vestel Beyaz Esya Sanayi	3.8	3.7	3.7	5.1	4.8	4.5	4.4	4.1	5.9
Decora	6.8	6.7	6.6	4.7	4.6	4.5	6.3	6.2	6.1
Mercor	5.7	4.1	3.9	4.9	3.8	3.6	7.0	5.0	4.7
Lena Lighting	7.8	7.5	7.2	4.4	4.1	3.7	6.1	5.6	5.1
Median	6.3	4.8	4.3	9.9	7.5	7.2	7.8	5.9	6.0
Ferro	7.8	7.3	6.6	6.2	5.7	5.1	7.1	6.6	5.9
Implied Ferro's price based on peers (PLN)	11.2	9.3	9.1	24.2	19.6	20.8	15.7	12.3	14.3
Implied Ferro's price (PLN)	15.2								

Source: Bloomberg, DM BOŚ SA estimates

1Q20E financial results

1Q20 quarter seems to have been quite successful. We forecast 1Q20 revenues at PLN 118 million (+8% yoy) with strong sales on two biggest markets, Poland and Czechia which delivered 12% and 3% yoy dynamics, respectively in 4Q19. We hope for sales growth in Hungary, Slovakia, Romania and other markets (+35%/+4%/+10%/+26% yoy in 4Q19).

Similarly to the previous quarter, in 1Q20 we expect to see a high growth rate of costs of wages, related mainly to the implementation of the Company's strategy. Qoq decline of costs of wages in 1Q20 should stem from booking sales bonuses in 4Q19.

We assume a slight yoy drop in the Group 1Q20 EBIT margin to 15% from 16% in the base period. Currently the situation on the currency and commodities front looks good, however this should be visible in the Company's EBIT margin in 1-2 quarters time.

We forecast 1Q20 net financial costs at PLN 2.5 million vs PLN 1.4 million in 1Q20 and PLN 2.2 million 4Q19. We believe the net financial result may be depressed in 1Q20 by FX losses that we estimate at PLN 1.5 million.

It should also be noted that even though the Company's results in 1Q19 were record high, we still expect stabilization on the operating level and believe the expected slight NP yoy drop will stem from negative FX differences.

2020E outlook

2019 and 2020 were supposed to be the years of the strategy implementation, thus we can expect a larger-scale accumulation of costs, while the years 2021-2023 should be a period of a faster growth. It seems that in 2019 the strategy implementation costs were quite low and though they were to increase in 2020 we assume some projects shift into the next year.

The COVID-19 pandemic and restrictions implemented by governments may affect the Group's results and liquidity materially. The Group operates in a B2B model and current orders are carried out smoothly, however the limited consumer activity may hamper handling of some orders. Thus we downgrade our financial forecasts for the Group.

We expect the Group's flat revenue in a yoy perspective and NP yoy decline stemming from the strategy implementation and demand lowering. We expect a negative impact of restraints with respect to large DIY stores operations on the Group's financial results in 2Q20. Provided the pandemic does not recur in the autumn, one can assume a demand growth, though we deem this assumption as ambitious. That is why our financial forecasts, especially for 2020, carry a significant risk of error.

The Group's profitability is determined by (i) pricing, (ii) goods purchase prices/production costs (pricing formulas for the merchandise from China are based on copper and zinc quotations in Shanghai), and

Fig. 4. Ferro; 1Q20 financials' forecasts

IFRS consolidated (PLN m)						yoy chg	Realisation of 1Q results in				yoy chg
	1Q19	2Q19	3Q19	4Q19	1Q20E		2019	2020E	FY19	FY20E	
Sales	109.4	105.8	122.1	113.9	118.2	8%	24%	26%	451.3	451.3	0%
EBITDA	18.7	14.4	21.5	12.3	19.5	4%	28%	33%	66.9	58.7	-12%
EBITDA margin	17.1%	13.6%	17.6%	10.8%	16.5%	-	-	-	14.8%	13.0%	-
EBIT	17.5	12.7	19.8	10.6	17.8	2%	29%	35%	60.6	50.9	-16%
EBIT margin	16.0%	12.0%	16.2%	9.3%	15.1%	-	-	-	13.4%	11.3%	-
Pre-tax profit	16.1	11.7	17.7	8.5	15.3	-5%	30%	33%	54.0	47.0	-13%
Pre-tax profit margin	14.7%	11.1%	14.5%	7.4%	13.0%	-	-	-	12.0%	10.4%	-
Net profit	13.0	9.5	14.5	2.9	12.4	-4%	33%	33%	40.0	38.1	-5%
Net profit margin	11.9%	9.0%	11.9%	2.6%	10.5%	-	-	-	8.9%	8.4%	-

Source: The Company, DM BOŚ SA

Fig. 5. Ferro; Changes in DM BOŚ SA forecasts

IFRS consolidated (PLN m)	2020E			2021E		
	current	previous	change	current	previous	change
Sales	451.3	472.4	-4%	473.8	505.4	-6%
EBITDA	58.7	59.3	-1%	62.7	64.6	-3%
EBIT	50.9	53.1	-4%	53.9	57.4	-6%
NP	38.1	39.2	-3%	41.0	43.0	-5%
Net debt	65.0	100.3	-35%	57.2	97.3	-41%

Source: DM BOŚ SA estimates

(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.

It is worth noting that at the end of March prices of aluminum/copper/zinc denominated in US\$ and PLN were lower by 22%/25%/35% and 15%/18%/30%, respectively, which in our view should support the Group's EBIT profitability in 2Q and 3Q20 even though we assume negative FX rate differences booked into financial costs (9%/7% PLN weakening vs US\$/EUR in a qoq perspective).

We forecast the Group's EBIT margin drop to 11.3% in 2020 from 13.4% in 2019. According to our estimates wages costs will increase yoy related to the strategy implementation. We expect the Group's NP to reach PLN 38 million in 2020 (-5% yoy).

We assume slightly lower capex than were planned before – at PLN 8 million. Given the current uncertainty on the market we cannot rule out the possibility of a lower yoy dividend payment. The Company's management intends to issue a dividend payment proposal in June when it will be possible to assess – at least partially – the short-term impact of the pandemic on the market. We assume a PLN 16 million dividend payment in 2020 and forecast the Group's net debt (with leasing) at PLN 65 million at the end of 2020 vs PLN 76 million at the end of 2019.

Strategy

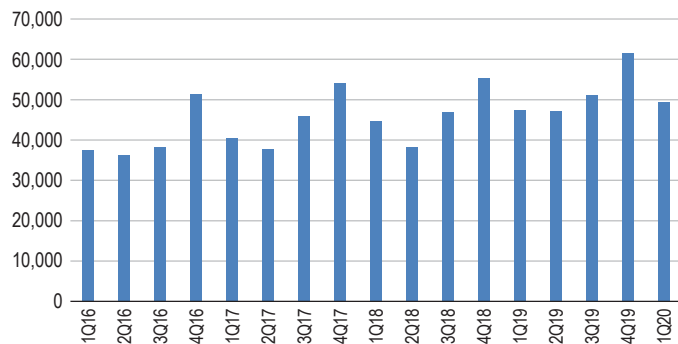
In March 2019, the Company adopted a strategy for the years 2019-2023. There are four main pillars of the strategy: (i) integration and optimization, (ii) eco-awareness and innovation, (iii) speed and flexibility, (iv) introduction of new distribution channels and products. Integration and optimization are aimed at consolidating central functions within the Group through the integration of external and internal processes, aggregation of databases and implementation of a coherent human resources management system which should enable building a customer-oriented organization. Eco-awareness and innovation allow the introduction of comprehensive solutions consisting in the creation of a system offer and the introduction of solutions related to the economic consumption of water and energy. The Company works on expanding its offer in the high-end segment, providing services dedicated to architecture firms. The phrasing “fast and flexible” means supporting the development of e-commerce, optimization and integration of the supply chain, market expansion intensification and strengthening of market shares. Ferro intends to improve the availability and completeness of its offer by increasing the speed of deliveries and the range of its assortment (supplementing the offer for bathroom design). Besides, it wants to focus on improving its brand recognition. In this area, there are potential acquisition projects, which should enable the Company to (i) expand or strengthen its product range and (ii) enter new geographical markets or strengthen its position in existing markets. The introduction of new distribution channels and products is to take place through the implementation of projects in the area of offer segmentation and brand repositioning, acquisition of new B2B customers and introduction of sales-related services and complimentary assortment. The Company has been slowly building its presence in the investment-related segment.

The Company's management maintains the implementation of the strategy which is to result in 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. Ferro intended to make acquisitions in Poland or Central Europe, in line with the announced strategy. The Group wanted to focus on introducing new solutions related to the economical use of water and energy, and to develop new distribution channels. It planned to intensify its activities in the Adriatic region as in December it had opened a sales office in Croatia to service this region, as well as to enter new markets. To increase its production capacities, the Company bought two machines and planned investment in logistics and warehousing. The Company handles sales from Znojmo and Skawina. We believe these plans will be realized, but with more caution.

The market environment/ increase in the number of dwellings

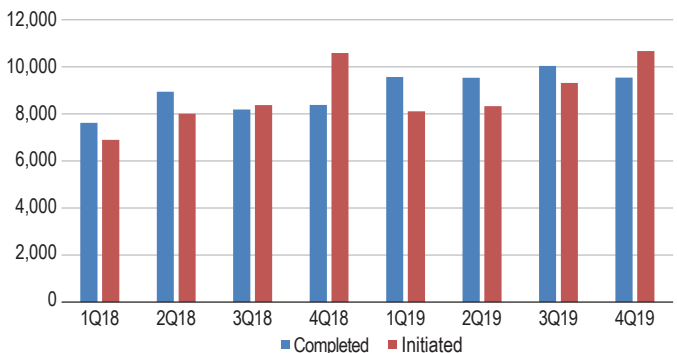
The economic situation on the markets where the Group operates was favorable in 2019. According to CSO, in 2019 in Poland (i) 237,000 dwellings were started, up 7% yoy, (ii) 207,000 dwellings were delivered, up 12% yoy, and (iii) 268,000 building permits were issued, up 4% yoy. In 1Q20 in Poland (i) 53,000 dwellings were started, down 3% yoy, (ii) 50,000 dwellings were delivered, up 4% yoy, and (iii) 59,000 building permits were issued, up 4% yoy. In March (i) 19,000 dwellings were started, down 21% yoy, (ii) 829,000 dwellings were under construction, up 3% yoy, and (iii) 22,000 building permits were issued, up 11% yoy, and (iv) 16,000 dwellings were delivered, up 7% yoy. According to the Czech Statistical Office, in 2019 in Czechia the construction of 39,000 dwellings (+17% yoy) was commenced, and 36,000 dwellings (+8% yoy) were finished.

Fig. 6. Poland; The number of completed dwellings



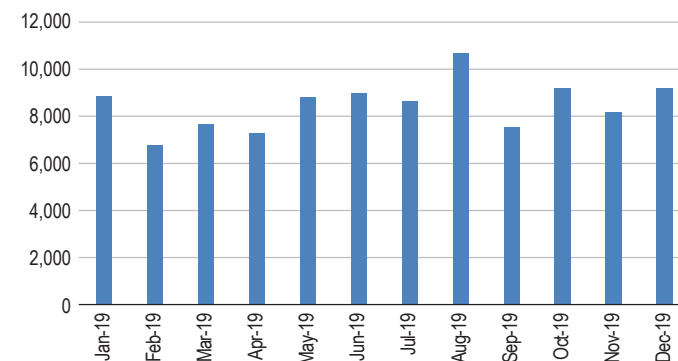
Source: CSO

Fig. 7. Czechia; The number of constructed dwellings



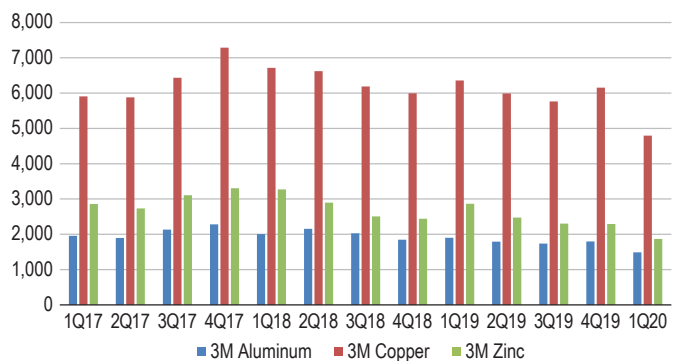
Source: Czech Statistical Office

Fig. 8. Romania; The number of building permits



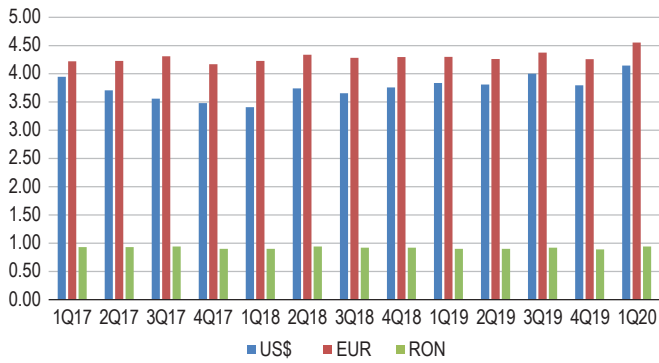
Source: CEICDATA

Fig. 9. Raw material prices (eop, US\$)



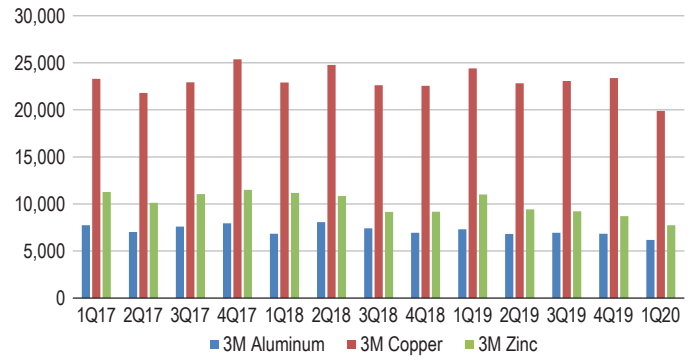
Source: Bloomberg

Fig. 10. FX vs PLN (eop)



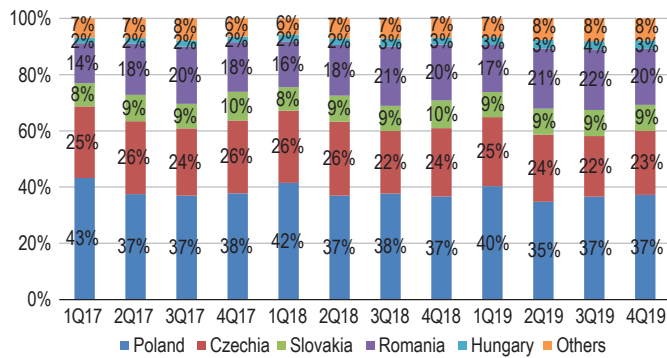
Source: Bloomberg

Fig. 11. Raw material prices (eop, PLN)



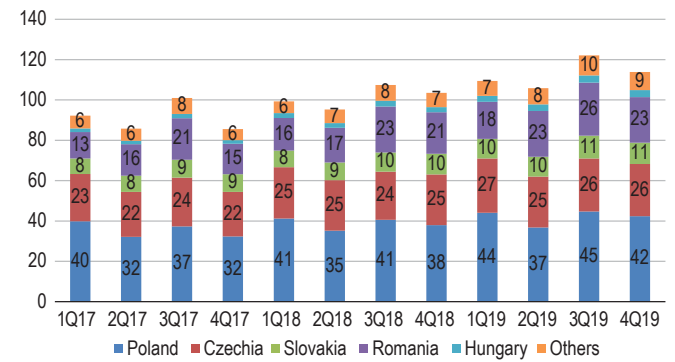
Źródło: Bloomberg

Fig. 12. Ferro; Revenue – geographical structure



Source: Company, DM BOŚ SA

Fig. 13. Ferro; Revenue – geographical segments (PLN m)



Source: Company, DM BOŚ SA

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. 14. 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. 15. 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. 16. 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	41	3	12	0
Percentage	34%	48%	4%	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	2	7	0	3	0
Percentage	17%	58%	0%	25%	0%

Distribution of DM BOŠ's current market relative recommended weightings

	Overweight	Neutral	Underweight	Suspended	Under revision
Numbers	34	27	12	12	0
Percentage	40%	32%	14%	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	2	5	2	3	0
Percentage	17%	42%	17%	25%	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	→

* 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	-

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

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